



UMEÅ UNIVERSITY

Does health insurance contribute to improving responsiveness of the health system?

The case of elderly in rural Tanzania

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Dedication

To my grandparents, you instilled my interest to study health and care for the elderly people.

To my father, Joseph, you always trusted in me and built my confidence to face life challenges.

To my late mother Leah, you departed this world too early, even before one of your children could have been enrolled into PhD studies as you wished. I wish you were here today to celebrate it with us. I pray for your happiness in heaven, and I wish there was a phone in heaven to tell you that I am constantly loving and missing you.

To my brothers, sisters, in-laws, and your families, you have always been there for me in all times, thank you.

To my children: Joseph-Mafanikio, Aisline-Leah and Eileen-Felister, who allowed me to discover my happiness being a father. You counted the days I was away, and I always felt to be a privileged father.

To Specioza, my love, the owner of my heart. I love you with all my heart and I promise this feeling forever. I can proudly say that “This is our work, let us rejoice”.

And above all, the almighty God who gave me light and health to learn.

Table of Contents

Table of Contents	i
List of Tables	iii
List of Figures	iv
Abbreviations.....	v
Original Papers	vi
Abstract.....	viii
Prologue.....	x
How was this thesis originated?.....	x
Organization of the thesis.....	xii
Chapter One: Background.....	1
Brief historical overview of the health system in Tanzania	1
Health sector reform programme	1
Current organization and financing.....	2
Health insurance.....	4
<i>Health insurance in SSA</i>	<i>5</i>
<i>National Health Insurance (NHI).....</i>	<i>5</i>
<i>Social health insurance (SHI).....</i>	<i>6</i>
<i>Community-based health insurance (CBHI)</i>	<i>6</i>
<i>Benefits and challenges of HI in SSA</i>	<i>7</i>
Health insurance in Tanzania	7
<i>Community Health Fund (CHF).....</i>	<i>8</i>
<i>The National Health Insurance Fund (NHIF).....</i>	<i>9</i>
Chapter Two: Health System Context for The Elderly	11
Defining the elderly	11
Access to healthcare by the elderly citizens	11
Justification for the study.....	12
Aim	14
<i>Specific objectives:</i>	<i>14</i>
Conceptual framework	14
<i>The responsiveness framework.....</i>	<i>16</i>
<i>HI and responsiveness</i>	<i>16</i>
Chapter Three: Methods	19
The context of the study	19
Research process	21
Design and data collection	22
Data analysis	25
Ethical consideration.....	26
Dissemination efforts	26
Chapter Four: Results	29
Sub-study 1: Relationship between HI and health service use	29

<i>Use of outpatient and inpatient healthcare services</i>	30
Sub-study 2: HI and responsiveness of healthcare	32
<i>Performance of the responsiveness domains by HI</i>	34
<i>HI and responsiveness of healthcare services</i>	34
Sub-study 3: Perception of the providers regarding the functioning of HI for the elderly	34
<i>HI is an enabler of equitable access to healthcare</i>	35
<i>Shortage of resources affects service delivery</i>	35
<i>Lack of funds due to delayed reimbursement affects service availability</i>	36
Sub-study 4: The experiences and perceptions of healthcare services from the perspective of insured and uninsured elderly	37
<i>Disrespectful care is still common (dignity)</i>	37
<i>Involvement in care process (autonomy)</i>	37
<i>Keeping patients' information safe (confidentiality)</i>	38
<i>Patient–doctor relationship (communication)</i>	38
<i>Building appearance is valued (quality of basic amenities)</i>	38
<i>Bureaucracy and shortage of staff (prompt attention)</i>	39
<i>Insurance reinforces inequity (choice)</i>	39
<i>Accessibility of medicines and testing facilities (access)</i>	39
Chapter Five: Discussion	41
HI as an enabler of access	41
HI as a (non-) facilitator of responsiveness	42
Reasons for the low responsiveness among HI owners	44
Methodological considerations	46
Chapter Six: Conclusion	49
Conclusion	49
Recommendations	49
Acknowledgements	51
References	55
Appendixes	67

List of Tables

Table 1 Number of people aged 60+ in Tanzania	11
Table 2. An overview of the studies and the applied methodology included in this thesis	21
Table 3. HI ownership, health needs, demographic, and social economic characteristics of participants, stratified by sex (N=1899)	30
Table 4. Respondents' features by use of healthcare	32

List of Figures

Figure 1. The hierarchical structure of the Tanzanian health system.	3
Figure 2. Conceptual framework of responsiveness with four sub-studies in their area of focus.	15
Figure 3. Map of Tanzania and its regions (Tabora is number 30).	19
Figure 4. Map of Tabora with its districts and population.	20
Figure 5. Multivariable regression analysis of the relationship between HI ownership, demographic, and social-economic and health needs variables with OP; adjusted odds ratios and their 95% CI.	31
Figure 6. Multivariable regression analysis of relationship between HI ownership, demographic, and social-economic and health needs variable with IP; adjusted odds ratios and their 95% CI.	31
Figure 7. Percentage of participants rating the responsiveness domains in OP care by HI ownership. a Insured. b Uninsured.	33
Figure 8. Percentage of participants rating their responsiveness domains in IP care by HI ownership. a Insured. b Uninsured.....	33
Figure 9. Adjusted median quantile regression model on responsiveness to OP care, and their 95% CI.	34

Abbreviations

CHF	Community Health Fund
CBHI	Community Based Health Insurance
CCM	Chama cha Mapinduzi/Revolutionary Party
CHMT	Council Health Management Team
CI	Confidence Interval
DMO	District Medical Officer
FGD	Focus Group Discussion
GDP	Gross Domestic Product
HC	Health Center
HI	Health Insurance
HIV	Human Immunodeficiency Virus
HSRP	Health Sector Reform Programme
IP	Inpatient
LMIC	Low- and Middle-Income Countries
MUHAS	Muhimbili University of Health and Allied Sciences
NHI	National Health Insurance
NHIF	National Health Insurance Fund
OP	Outpatient
OOP	Out of pocket
OR	Odds Ratio
RHS	Regional Health Secretariat
RMO	Regional Medical Officer
SHI	Social Health Insurance
SIDA	Swedish International Development Agency
SSA	Sub-Saharan Africa
UHC	Universal Health Coverage
USD	United States Dollar
WHO	World Health Organization
WHO-SAGE	World Health Organization Study on Global AGEing and Health

Original Papers

Malale T, Amani PJ, Hurtig AK, Kiwara AD, Mwangu M, Lindholm L & San Sebastián M. Does health insurance contribute to improved utilization of health care services for the elderly in rural Tanzania? A cross-sectional study. *Global Health Action*. 2020; 13:1. DOI: 10.1080/16549716.2020.1841962.

Amani PJ, Tungu M, Hurtig AK, Kiwara AK, Frumence G & San Sebastián M. Responsiveness of health care services towards the elderly in Tanzania: does health insurance make a difference? A cross-sectional study. *International Journal for Equity in Health*. 2020; 19: 179. DOI:10.1186/s12939-020-01270-9.

Amani, PJ, San Sebastian, M, Hurtig AK, Kiwara AD & Goicolea I. The experience of providing the health insurance benefits to elderly in rural Tanzania: Providers' perspectives. Submitted.

Amani, P.J., Hurtig, AK., Frumence, G. Kiwara AD, Goicolea I & San Sebastián M. Health insurance and health system (un) responsiveness: a qualitative study with elderly in rural Tanzania. *BMC Health Service Research*. 2021, 21(1):1140. DOI:10.1186/s12913-021-07144-2.

Abstract

Background: Financing healthcare in Tanzania has for years depended on out-of-pocket payments. This mechanism has been criticized as being inefficient, contributing to inequity and high cost as well as denying access to healthcare to those most in need, including the elderly in rural areas. Health insurance was recently introduced as an instrument to enable equitable access to healthcare and thus to improve the responsiveness of the health system. Even though health insurance is expected to bring benefits to those who are insured, there is a lack of specific studies in the country looking at the role of HI in facilitating the health system responsiveness among vulnerable populations of remote areas.

Aim: The aim of this thesis is to understand if and how health insurance contributes to improving the responsiveness of the healthcare system among the elderly in rural Tanzania.

Methods: Four interrelated sub-studies (2 quantitative and 2 qualitative) were conducted in Igunga and Nzega districts of Tabora region between July 2017 and December 2018. The first two sub-studies are based on a household survey using an adapted version of the World Health Organization's Study on Global Ageing and Adult Health questionnaire. Elderly people aged 60 years and above who had used both outpatient and inpatient healthcare three and twelve months prior to the study, respectively, were interviewed. Whereas in sub-study 1 the focus was to investigate the role of health insurance status on facilitating access to healthcare, sub-study 2 assessed the relationship between health insurance and the health system responsiveness domains. In sub-study 3, interviews with healthcare providers were carried out to capture their perspective regarding the functioning of the health insurance. In the final sub-study 4, focus group discussions with elderly were conducted in order to explore their experience of healthcare, depending on their health insurance status. Crude and adjusted logistic and quantile regression models were applied to analyse the association between health insurance and access to healthcare (sub-study 1) and responsiveness (sub-study 2), respectively. For both sub-studies 3 and 4, qualitative content analysis was used to analyse the data.

Results: Sub-studies 1 and 2 involved a total of 1899 insured and uninsured elderly, while sub-studies 3 and 4 included 8 health providers and 78 elderlies respectively. Sub-study 1 showed that about 45% of the elderly were insured and HI ownership improved access and utilization of healthcare, both outpatient and inpatient services. In sub-study two, however, health insurance was associated with a lower responsiveness of the healthcare system. In general, all six domains: cleanliness, access, confidentiality, autonomy, communication, and prompt

attention were rated high, but three were of concern: waiting time; cleanliness; and communication. Sub-study 3 uncovered several challenges coexisting alongside the provision of insurance benefits and thus contributing to a lower responsiveness. These included shortage of human resources and medical supplies, as well as operational issues related to delays in funding reimbursement. In sub-study 4, the elderly revealed that HI did not meet their expectations, it failed to promote equitable access, provided limited-service benefits and restricted use of services within residential areas.

Conclusion: While HI seems to increase the access to and use of healthcare services by the elderly in rural Tanzania, a lower responsiveness by the healthcare system among the insured elderly was reported. Long waiting times, limited-service benefits, restricted use of services within schemes, lack of health workforce in both numbers and skills as well as shortage of medical supplies were important explanations for the lower responsiveness. The results of this thesis, while supporting the national aim of expanding HI in rural areas, also exposed several weaknesses that require immediate attention. There is a need to, first, review the insurance policy to improve its implementation, expand the scope of services coverage, and where possible, to introduce cross-subsidization between the publicly owned schemes; additionally, improvements in the healthcare infrastructure, increasing the number of qualified health workforce and the availability of essential medicines and laboratory services, especially at the primary healthcare facilities, should be prioritized and further investments allocated.

Keywords: SAGE, health insurance, healthcare use, older people, community health fund, rural, responsiveness, Tanzania.

Prologue

How was this thesis originated?

I am the third child, the only male in a family of eight. I lived with my parents, Joseph and Leah, in the Moshi rural district, along the slopes of Kilimanjaro Mountain during my childhood. As part of our culture, we lived in an extended family arrangement with our grandparents and other relatives. During this time, we used to help both our parents and grandparents with various tasks, including picking coffee beans, weeding in a banana and coffee plantation, and collecting and chopping firewood. In my early years, my health was compromised due to asthmatic allergy, and I had a series of emergent hospital visits and admissions. I wish to say that I admired the care and love I received from the nurses who attended me and thus I thought at that time to become like them. However, after completing primary education, I changed my mind and I joined St. James Seminary, a Catholic-owned school for secondary-level education (up to Grade 11) as a prerequisite to becoming a priest. However, after my secondary education, I again changed my path and joined a government school where I pursued a two-year advanced certificate of secondary education, specializing in arts subjects.

In 1997, I was working as a teacher at Sangiti secondary school in the Moshi district. I went home one evening to greet my parents and grandparents. It was rainy season and hard to get transport. I walked about 5 kilometres to get home late at night. Once I greeted my mother, she said to me, ‘Your grandfather is very ill, go quickly and see him’. I crossed over the dark banana plantation and arrived at my grandfather’s house. He said to me: ‘I am very sick, but I can manage, you may leave in the morning for your work.’ At 4 a.m., two cousins who lived with our grandparents came over and said, “Paul, Grandpa asked you not to leave, he is dying.” I could not bear the message, I rushed to find transport and luckily, I found it. When we reached at the hospital, he was diagnosed with severe anaemia and urgently required a blood transfusion. Since family relatives were supposed to donate blood for a sick member, I was one, among others, who donated it for my grandpa.

One year later (1998), I was selected to pursue an Advanced Diploma in Health Administration at the Institute of Development Management-Mzumbe (now Mzumbe University). After my graduation, I had the opportunity to work with Muhimbili University of Health and Allied Sciences (MUHAS) as a research assistant in the ‘HIV-related stigma and discrimination project’ in Dar es Salaam between June 2001 to December 2002. This project was based in three countries: Tanzania, Zambia and Ethiopia. The following year, however, I worked for some months for the private sector as a research assistant on governance and health

projects. In July 2003, I went back to Mzumbe University, but this time as a teacher in the Department of Health Administration (now Health Systems Management). In that same year, I was granted a scholarship to study Norwegian Language and Civilization (2003–2004) at Telemark University College, followed by a master's in public policy and management (2004–2007) at University College of Agder (now Agder University) in Norway. As I broke the news to my grandpa, he said, 'My grandson, I pray for your success in education, prosper in your career but never forget to care about us elderly (referring to older people). I hope you will study hard and become a medical doctor. I don't know who else will help us here in your absence, but I pray that you may come and see us alive.' He added, 'HIV is killing a lot of young people; elderly people are resuming caring responsibilities. Take good care of yourself.' After graduation at Agder, I came back to Tanzania in July 2007 and continued with my teaching position at Mzumbe University. In 2009, I was granted another scholarship by the Japanese International Cooperation Agency to study a master's in governance studies at Meiji University, Tokyo. This was a scholarship for government staff who would come back and work for the government. I came back in 2011 and joined my current employer, Mzumbe University.

As I remember, it was in 2008 when I first joined the National Health Insurance Fund (NHIF), mandatory for public servants. After I registered, among others, my parents (both paternal and maternal), I asked myself: how do other people get access to health insurance? What is the situation with other rural people like my parents? While reflecting on this, I got involved in 'HelpAge International', an international non-governmental organization focusing on elderly welfare. I moderated seminars for the elderly people in rural districts, particularly in the Mwanza and Morogoro regions where I could hear their cry regarding access to healthcare amid poverty.

As a university teacher, a PhD is an important academic requirement. While searching for PhD opportunities, I came across a call for PhD proposals under the SIDA-MUHAS and Umeå University collaboration project. I discussed my interest with Professor Angwara Kiwara and Dr Nathanael Siril, whom I had known for some years, and they advised me to submit my proposal. I had the opportunity to present a concept note for this project at MUHAS in June 2016 during a seminar which Anna-Karin was also present. I decided to do research on a topic that would strengthen my interest in public health and integrating my rural background with the healthcare needs of the elderly. This life path inspired the choice of the current thesis research area.

To improve the access, availability, and affordability to healthcare by socially disadvantaged populations, and thus reduce the effect of healthcare expenditures, the government of Tanzania introduced a health insurance system

in the mid-1990s. However, literature regarding its impact and assessing its purpose is extremely limited. Therefore, in this thesis, using a combination of both quantitative and qualitative methods, I decided to investigate whether health insurance had really contributed to increasing the access to and responsiveness of the healthcare among elderly in rural Tanzania.

Organization of the thesis

The thesis is structured in different chapters. Chapter one begins with a brief presentation of the Tanzanian health system, reflecting on the different reforms that have occurred since Tanzania became independent. In the same chapter, I continue explaining the organization and financial arrangements of the current health system, briefly describing the health insurance system across the sub-Saharan African (SSA) region and specifically within Tanzania. I then present in chapter two the health system context for the elderly, explaining the different aspects of access to healthcare that the elderly must face when in need, and the justification of the study. The aims and the conceptual framework that were adopted and guided the different studies conclude the chapter. In chapter three, the method and materials are presented, including a brief description of the setting, process, data collection, analysis, ethical considerations, and dissemination of the study findings. Chapter four focuses mainly on presenting the results that were obtained from the research process. These results are presented in the same chronological order as the study aims, starting with the quantitative studies and followed by the qualitative ones. The main findings of the study, structured in three major themes, are discussed in chapter five as well as the key methodological issues. Finally, the closing chapter six contains the conclusion and recommendations of the study.

Chapter One: Background

This chapter presents some background information on the Tanzanian health system. It begins with a brief historical overview of the health system in order to understand the different reforms that have occurred since the country became independent. I then continue describing the organization and financial arrangements of the current health system.

Brief historical overview of the health system in Tanzania

As a country, Tanzania (then Tanganyika) was a British protectorate up until December 9th, 1961. After becoming independent, the government took over the country's social and economic sectors and became the main provider of public services, including healthcare services. This decision was consolidated by the 1967 Arusha Declaration, which, permeated by a 'socialist ideology', cemented, among others, a healthcare policy that aimed to ensure access to healthcare for all. In consolidating its legitimacy, the government started collecting taxes to finance healthcare services. However, donor support remained a significant component in financing the social sector, particularly the health system. All these initiatives aimed at enhancing the availability, affordability, and access to better healthcare for all Tanzanians. In 1977, the government officially banned the private health practitioners and all the private/non-government profit-generating facilities. The administration, financing and provision of healthcare services was mainly through the government facilities, whether rural or urban. However, a network of non-government organizations (mostly faith-based facilities) were encouraged to provide healthcare services, especially among the rural population.

In the late 1970s and early 1980s, the government suffered a series of economic downfalls, which reduced its revenue and thus affected the capacity to finance the health sector [1]. For example, the rate of economic growth went down from 4.5% to 2.5% [2]. This economic collapse resulted in a trade imbalance, a rise in the price of oil and other foodstuffs, a war between Tanzania and her neighbour Uganda as well as the disintegration of the East African Community in 1977. Because of this underfunding, the quality of services in government facilities became compromised, leading to a shortage of medicines, medical equipment and supplies as well as a worsening of the healthcare infrastructure. In addition, poor management and low salaries affected the general morale of the healthcare workers, contributing to the collapse of the health system [3].

Health sector reform programme

Given these challenges, the government, following guidelines from the World Bank, initiated a health sector reform programme (HSRP) in the early 1990s with

the aim of improving the accessibility, sustainability, and efficiency of the healthcare system. This reform included several policies, guidelines, acts and initiatives that were implemented over the following years and attracted local and international support. The Private Hospital Regulation Act of 1977 was amended and allowed the return of private health facilities in 1992 [4]. In July 1993, cost sharing was introduced in the healthcare system [5], first implemented at the higher levels of referral facilities and after some years at the lowest levels, in health centres and dispensaries. Cost sharing included different mechanisms, such as drug revolving funds, out-of-pocket payments, community health funds (particularly in rural areas), and health insurance (HI) for the civil servants. Vulnerable groups – children below five years, pregnant women, specific diseases (tuberculosis, HIV) and people aged 60+ – were, however, eligible to have the cost of service waived at all levels of healthcare [6,7].

Nevertheless, various reports have indicated that the use of different mechanisms of cost sharing produced unexpected consequences on the poor and underprivileged groups, the elderly included [8,9]. For example, the utilization of healthcare services by the poorest groups decreased as they were unable to pay the user fees [10] as exemptions involved a long process. The identification of exempted individuals by the service providers was complicated as there were no clear criteria for defining poor individuals and household members across the districts. At the same time, being an elderly person aged 60 years or more was not in itself a sufficient justification for exemption. Thus, in 1999, the government reissued directives and made it a rule through the public gazette and parliament that people aged 60 years and above who were considered poor and who were not subscribed to the Community Health Fund (CHF) were to have the services fee waived. Recent evaluations, however, indicate that this process is not properly working either [6,11]. The lack of a single policy regarding waiver and exemption possibilities, beneficiaries being unaware of them and a limited local capacity to administer and manage the system, have contributed to the ineffective implementation of this policy.

Current organization and financing

The current national health system is highly decentralized and follows a referral hierarchical structure consisting of three main levels: primary, secondary and tertiary, the central government being the main provider of health services in the country. Available data show that in 2020, there were about 8,458 health facilities in the country, of which 72.5% belong to the government, 11.2% to religious groups, 15.2% to the private sector and 1.1% to different government institutions (Appendix 1). The administrative structure of the Tanzanian healthcare system is divided into three main levels.

At the top of the ladder (tertiary level), there are four referral hospitals (Figure 1) including government as well as privately owned facilities that operate in collaboration. Whereas the Kilimanjaro Christian Medical Centre – Northern zone and Bugando-Western zone are private, Muhimbili National Hospital – Eastern zone and Mbeya-Southern highlands zone are government owned. At this level, there are also several specialized and teaching hospitals including the Ocean Road Cancer Institute, Kibong’oto Infectious Diseases hospital, Jakaya Kikwete Cardiac Institute and Mirembe Psychiatry referral hospital.

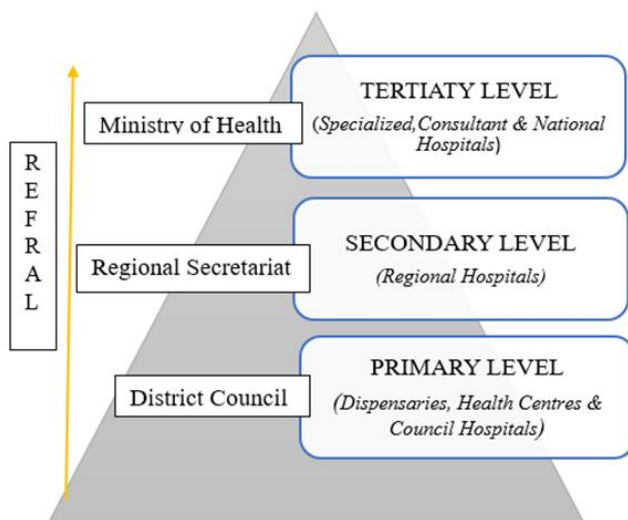


Figure 1. The hierarchical structure of the Tanzanian health system [12].

At the regional (secondary) level, a network of referral hospitals for all primary facilities within the region exist. These facilities are mainly owned by the government and are under the regional health secretariat (RHS), which is led by the regional medical officer (RMO) who represents the central ministry. The secretariat is responsible for health planning and management, making sure that the government health policies, strategies, guidelines, and plans are well implemented.

Dispensaries, health centres (HCs) and district hospitals (currently named council hospitals) operate at the lowest level (primary level) of the healthcare system and are closest to the community. While dispensaries provide mainly outpatient care, HCs offer both outpatient and inpatient services. Dispensaries are mainly staffed by two persons, a medical assistant, and a nurse, whereas the HCs are staffed by a minimum of 39 persons whose distribution is influenced by the centres’ functional areas, including outpatient, inpatient, eye care, laboratories, pharmacy, oral health, reproductive child health, administration,

community services, mortuary, laundry, and security. These two facilities are the frontline in providing primary health services – curative and preventive – particularly among rural dwellers. The council hospitals serve as the main referral centre for dispensaries and HCs (both private and public). Even though the primary health facilities operate with some autonomy, they are supervised and accountable to the district medical officer (DMO).

The current functioning of the DMO's office includes the administration of the daily operations of the district hospitals. Although the operationalization of the district responsibilities is highly decentralized, the control over planning and management of health services at the district level remains centralized. The DMO, who is an appointee of the Ministry of Health, reports to the local councils and has a huge responsibility to ensure effective health planning, coordination and implementation of health services at the local level. The DMO also receives support from the local Council Health Management Team (CHMT) as per the directive and guidelines of the central government. For easy execution of district health plans, both DMO and CHMT are required to annually prepare a comprehensive council health plan and budget to guide the development and delivery of health services in the district, which must be centrally approved.

The Tanzania's healthcare financing is highly fragmented, consisting of numerous sources. These include government contributions (through domestic collections (income tax and value added tax), grants from international development programmes, prepayment schemes (such as health insurance) and patients' out-of-pocket payments when accessing care. Donor contributions amount to over 40% of the total government spending in health. The national health account records the amount contributed by each source as well as the distribution of the funds in the health system (Ministry of Health, regions, and local government) each year. Despite the efforts taken by the country to improve the financing of the health sector, its spending has remained below the 15% allocation of the national budget as recommended by the Abuja Declaration in 2001. Financing healthcare at district level relies on a yearly approved central government budget based on the availability of funds, population size as well as the burden of disease in each region.

Health insurance

One of the important strategies of delivering and financing healthcare that many countries have focused on in the past years has been HI, as a core element towards Universal Health Coverage (UHC). According to Ekman [13], HI is a possible way of raising, organizing and pooling financial resources to finance ever-increasing health expenditure with a focus on protecting the poor and needy groups. In this chapter I will discuss the introduction and development of prepayment

mechanisms in the SSA region and then will move specifically to the case of Tanzania.

Health insurance in SSA

The way a health system is organized defines the access to healthcare services by the community around it. Lack of financial protection is one among many barriers that affect access to affordable and quality healthcare by the poorer groups in many Low- and Middle-Income Countries (LMICs) and especially in the SSA region. Other barriers include poor healthcare infrastructure and insufficient budget allocations and healthcare workers, in both numbers and skills [14]. For example, a number of studies have shown that half of the world's total population who lack financial risk protection reside in SSA [15,16]. Many SSA countries have been struggling to redress this challenge focusing on how to improve access that can equitably be enjoyed by all citizens at a reasonable cost, particularly by those residing in the rural areas. With this concern in mind, many SSA countries introduced different HI programmes in the mid-1990s [17] with the support of World Health Organization (WHO) [18]. Across SSA, a mix of insurance arrangements, with features that fall within national, social and community-based HI approaches, were set in place. I present here the three more common types of HI schemes that have been implemented in the health systems of the region.

National Health Insurance (NHI)

NHI refers to a mandatory scheme that focuses on extending protection to all citizens by law regardless of their socio-economic background. This arrangement is mainly funded through monthly deductions from the employees' salaries, a yearly set premium for non-government workers and some government tax to sustain its operationalization. Ghana, Rwanda and South Africa are among the few SSA countries that have promulgated this type of insurance. For example, in Ghana, the NHI started first as a community-based insurance scheme in the 1990s before being expanded nationally in 2004. The scheme operates in parallel with private HI. All the citizens are required by law to subscribe to one of these schemes to access basic healthcare benefits as determined by the NHI council.

A significant proportion of the population has been reached and enjoy healthcare at a reduced cost, though health expenses continue to bother a large part of the population [19] who are not subscribed to the HI. The Rwandan mandatory HI of 2007 sets another example of a successful HI that has reached 90% of its entire targeted citizens, especially in rural areas and in the informal sector [20]. Each member contributes an amount determined by the national system according to their income and vulnerability. The services are obtained through a network of public health services who provide primary healthcare and can make referrals.

However, it continues to suffer financial scarcities as unit costs exceed the resources that necessitate the government to pay health providers on behalf of the schemes [20].

Social health insurance (SHI)

SHI constitutes insurance arrangements that focus on distinct segments of the population. While this insurance is compulsory for formal sector employees and their statutory dependants, it remains as voluntary for the non-governmental sector [21]. This HI has been widely implemented in many SSA countries, such as Kenya, Nigeria, Uganda, Cameroon, and Senegal, and resembles the famous Bismarckian model of the eighteenth century that was introduced in Germany. The funding is based on member contributions that are jointly shared between the employer and employee. This fund is managed by the state, and entitlement and service benefits are defined by the member contributions [21].

Available literature indicates that this form of publicly controlled HI faces numerous challenges, such as failures to improve access, poor quality of services as well as limited resources availability, including medicines, and thus it has low enrolment [22]. For example, it is nearly two decades since the SHI was introduced in Nigeria and the enrolment has remained as low as less than 7% of its population. The scheme also covers a small number of services which affects the majority of the poor population [23]. In Kenya, where SHI was introduced in 1996 as a mandatory scheme for formal sector employees and in 1998 extended to voluntary coverage outside the government sector, only about 20% of the entire population is covered [24,25].

Community-based health insurance (CBHI)

CBHIs are voluntary arrangements that are usually implemented in parallel with NHI in order to provide cost protection to the population outside the government sector [17]. These arrangements are prominent in countries like Kenya, Ivory Coast, Cameroon, Ethiopia and Senegal. CBHIs are based on households' prepayment schemes administered by the government and have a flat rate premium payments and coverage. Under CBHIs, services are obtained at healthcare facilities near the members' geographical locations. This scheme is mostly available in the rural areas where the majority of the dwellers are socially disadvantaged. CBHI has successfully increased the use of healthcare (both inpatient and outpatient) as a result of reduced cost of care to the users in Cameroon [26], Ghana and Democratic Republic Congo [27]. However, most CBHI schemes have low participation rates, and the poorest people usually remain excluded. For example, a study from Senegal showed a high drop-out of CBHI members had enrolled earlier on with the scheme due to perceived poor quality of healthcare as well as failure to pay the premium [28]. A study from

Kenya cited poor knowledge about CBHI, low trust and a perception of the services being costly as reasons for the low uptake [29]. Although there is no extensive literature on how a low enrolment in CBHI in SSA is associated with lack of community involvement, a study from Rwanda showed that community participation may enhance trust, transparency and honesty and thus high enrolment [30].

Benefits and challenges of HI in SSA

There is no doubt that the attention that HI is receiving across the SSA countries is based on the perceived benefits associated with reducing the ever-increasing cost of care to both the patients and states. Widely, it is accepted as a mechanism for pooling health risks, preventing poor communities from falling into impoverishment and promoting efficiency and quality of healthcare [9]. Studies from Ghana [31] and Niger [32] have further shown that HI can promote access to equitable healthcare across the general population and reduce the burden of healthcare costs among the poor. More importantly, other studies from Ghana and Senegal [33–35] have shown that the insured population aged 60 years and older were able to access inpatient and outpatient care services more often than the uninsured.

Nevertheless, the implementation of HI has not been without challenges. Some of these include high administration costs, limited managerial and leadership skills and poor population coverage [36,37]. Experience from Ghana and Rwanda has also shown that the ability of the schemes to generate funds is hampered by the limited capacity of households to contribute, thus leaving many of the poor outside the system [38,39]. In Ghana, HI has failed to protect its members equally, the educated, wealthier and those living closer to healthcare facilities having benefited more [40]. Other studies have cited insufficient leadership skills, poor communication and the inability to pay the premium as reasons for low enrolment among poor members [41]. Insured clients in Gabon have additionally complained about health staff rudeness, shortage of drugs and non-coverage of essential medicines [42].

Health insurance in Tanzania

The need to improve the access to quality and affordable healthcare based on needs and not on the ability to pay has been a long-term goal of the Tanzanian government. Nevertheless, the increase in the cost of healthcare became a continuous challenge to many people, especially those living in the rural areas. To face this situation, Tanzania introduced, between the years 1990 and 2000, HI as an alternative way of raising and pooling financial resources and thus protect the poorest people from catastrophic healthcare expenditures [43]. Two parallel prepayment HI models, the Community Health Fund (CHF) and the National

Health Insurance Fund (NHIF) – a form of SHI – are currently functioning in the country.

Community Health Fund (CHF)

The CHF was piloted first in the Igunga district, Tabora region, in 1996, before it was rolled out in the other districts of the country. It aimed at providing coverage to the people outside the government sector and particularly in rural areas. Since its introduction, around 24% of the rural population has received coverage, below the 30% target that was expected by 2015. The CHF operates as a voluntary scheme primarily aimed at rural districts covering households' enrolments of up to six members. Each enrolled household receives a yearly renewable health access card that allows free access to primary healthcare services within the district [43]. The membership fee is determined by the district authorities and varies across districts. Currently, it stands at around 30,000 Tshs (13.9 USD) per household. These funds are deposited at the respective district CHF office where individual health facilities are required to make reimbursement requests for the services offered to the CHF members [44].

The distribution of funds is based on the district health plans that are directed and approved by the responsible local government. To increase the financial sustainability of the scheme, the government provides a matching grant that equals the household contributions. Experience from the rural districts has shown that the CHF funds are spent on the following: about 71% to purchase medicines and supplies; 18% to support facility rehabilitation and repair; and 11% to purchase receipt books and for printing CHF cards [45]. Households without CHF are required to pay out-of-pocket for consultations, drugs, laboratory tests and all other services that may be recommended by the physicians.

The implementation of CHF has not been without challenges. Delays, particularly from the government budget, and long administrative procedures are common, contributing to a shortage of funds in the facilities. Low enrolment rate and early dropouts in membership have frequently been reported. Kamuzora and Gilson [46] have discussed the inability to pay the premium, poor quality of healthcare, not seeing the point of paying for future use and poor trust on the CHF management as reasons for drop-outs. Msuya et al. [47] showed that CHF contributed to improving access to healthcare due to the removed need to pay at the counter, especially by the rural poor; however, it failed to reach the larger part of the population making it difficult to achieve equitable access to care. Other challenges include frequent shortages of medicines as well as poor collection and utilization of the revenue collected from the members, mistrust, a limited benefit package and delayed reimbursement, poor-quality care, the inability to pay

membership fees and an unclear exemption policy [43,46,48–50] affecting the schemes' services and the trust of the enrollees.

The National Health Insurance Fund (NHIF)

In 1999, the NHIF was established and officially began its operations in 2001. At the start, NHIF was directed only at government employees at both central and local levels. In 2013 the coverage was expanded to include the informal sector, but as a voluntary scheme. The scheme operates at the central and local government levels and is mainly funded through a contribution totaling 6% of the employee's monthly gross salary, which is evenly split between employer and employee. Those who choose to voluntarily subscribe to the NHIF, pay a required premium, which is between 23.79 and 36.23 USD per year. Since its introduction, the NHIF has enjoyed a continuous increase in membership even though the pace of coverage remains slow. For example, in the period between 2001/2002 to 2005, enrolment increased from about 160,000 to 240,000, respectively [51]. This grew to 3.5 million between 2012/13 and 2016/17 [52] and to 4.8 million beneficiaries in 2019, equivalent to 9% of the country's total population.

Membership to the NHIF can be lifetime. For example, retired employees who have contributed to the NHIF for at least 15 years remain covered without any requirement for extra premium payments until their death. However, the family coverage is reduced to only spouses. The services for NHIF members are obtained through a network of accredited public and private facilities at all levels of the healthcare system in the country. The fund has accredited more than 7,900 health facilities to offer services to the beneficiaries. Individual service providers across the region submit annual requests to the NHIF regional offices for repayment for the services offered to NHIF clients in the previous year. The NHIF coordinator at the health facility is responsible for this assignment. Reimbursement is made according to fees for services provided, depending on the type of healthcare facility level.

The current NHIF expenditure reports show an increase in healthcare costs. This trend sends an alert regarding the sustainability of the fund. Although the NHIF is becoming increasingly popular among the Tanzanian people, poor communication between the scheme, its members and providers as well as shortage of medicines and long waiting times increase the dissatisfaction among its members [53].

Chapter Two: Health System Context for The Elderly

Defining the elderly

In Tanzania, the definition of 'being old' has changed over time. Before 1995, a person was deemed 'elderly' at the age of 55, which was when someone retired from the civil service. However, with the ongoing political, demographic, and economic changes in the country, in 1996, 60 years was approved as the age when civil servants were allowed to become pensionable and officially retire.

	2002 Population Census (33.5 million)	2012 Population Census (43.6 million)
<i>Men</i>	918,087	1,170,323
<i>Women</i>	988,517	1,276,934
<i>Total</i>	1,906,904	2,447,257

Table 1 Number of people aged 60+ in Tanzania [54]

Although the population pyramid of the country mostly corresponds to young people, the number of persons living from 60 years and above is on the rise. For instance, in 1992 Tanzania was estimated to have 1.4 million older people (4% of the population). As seen in Table 1 above, the number rose to 1.9 million in 2002 and by 2012, 4.5% (2.4 million people) of the 43.6 million population was aged 60 years and above [54]. Among the East African countries, Tanzania records the highest number of elderly population, and the United Nations projects this population to increase to 8.3 million (10% of the total population) by 2050. In line with this population increase, life expectancy has risen from 51 to 63 years over the past decades [54]. The increasing number of older people together with a higher life expectancy increases the risk for non-communicable diseases and thus the cost for healthcare. This situation calls for intervention mechanisms aiming to enhance the healthcare of the elderly.

Access to healthcare by the elderly citizens

As in other African societies, and Tanzania in particular, elderly people were respected as the pillars and custodians of culture [55] and thus, caring for them at the time of illness was the responsibility of individuals, families and the whole society at large. However, the effects of globalization and rural–urban migration has weakened the traditional life of many communities and hence put the care of older people at risk and away from close relatives and families.

The entry point in the health system for the elderly is either the dispensary or the health centre in the district where the elderly person is residing. Depending on their situation and the nature of the health problem, they might be referred to higher levels for a more specialized care. However, the availability and provision of healthcare services at many dispensaries and health centres are unsatisfactory (both in quality and quantity) because most of these facilities are understaffed, deal with minor health problems, including malaria, do not have diagnostic services for major illnesses, patients experience long waiting hours, and medicines are always in short supply [56]. If they can, most elderly patients tend to bypass the lower-level facilities when seeking service [57].

The elderly have three payment possibilities when accessing healthcare: i) the normal out-of-pocket amount set by the government for regular doctor visits and medicines; ii) through the HI; or iii) they are exempted from payments if unable to be insured or pay the user fees. The exemption policy was introduced by the government in 1994 to ensure access to healthcare services for the poor and vulnerable groups. However, to be exempted usually takes long time and depends on the individual recommendations of the health committees at the respective village and ward levels. The system does not work well in practice and it is often difficult to find records on the amount of elderly exempted in the districts [6].

Whatever the payment option, the shortage of medicines and other services in the facility force them often to use costly private medical stores or pharmacies. As a consequence, many older people living in rural areas are being left out of the system and unable to access healthcare. Many of these elderly people would have been able to access care with the help of family members but because many have moved to the cities, the rural elderly remain without the support that was previously customary.

The introduction of the CHF is, to some extent, a means of providing waivers or exemptions to the rural poor, the elderly included. Since the CHF covers up to six members in one household, the elderly become one or two of these six members of the CHF once the household agrees and pays the premium set by the respective district. A registered elderly person is given an identification card to be used every time they need healthcare. Whereas before 2018 one card was given per household, today each member of the household receives an individual membership card.

Justification for the study

Many low-income countries, including Tanzania, are struggling to reduce their dependence on patients' out-of-pocket (OOP) payments to finance their healthcare systems [58,59]. Available literature shows a decrease in the use of OOPs, as it promotes inequity and prevents patients from seeking health services

[17,60,61]. Many African countries, including Ghana, Nigeria and Burkina Faso, have adopted HI as a reliable tool to finance the provision of healthcare services [62] based on its potential to protect and increase the utilization of healthcare services by the vulnerable groups, most of which often suffer catastrophic healthcare expenditures [62,63,64].

Starting from the mid-1990s, HI was introduced in the Tanzanian health system as a means to redress the ever-increasing expenditures on healthcare, as the government could not sustain the services through taxes alone. HI aims to guarantee the availability, accessibility and affordability of healthcare services to the people, especially to the vulnerable groups such as the elderly. The good news is HI has contributed to increasing the utilization of healthcare services in the general population [65]. Although there have been some studies conducted to study the HI in Tanzania [46,65–68], the information that is currently available is scanty and lacks specificity, particularly regarding how HI has facilitated the access to healthcare by the elderly. Despite the increased utilization of healthcare services by those with insurance, concern has been raised in relation to the quality of the services provided under HI. Most of the studies that have been done in this area, particularly in Tanzania, have examined the perception of patients in general but not of specific vulnerable groups, such as the elderly.

Before the HI was introduced, the existing OOP system made services inaccessible, particularly to economically vulnerable patients. According to Mwabu and Maluka [6,10], this system made some low-income households and individuals in Tanzania postpone attendance to medical facilities for treatment and hence reduced the revenue that the provider would generate to sustain the services. This postponement also increased the number of patients who developed chronic and hard to cure illnesses. After HI was introduced in Tanzania, some studies have identified operational challenges that have influenced the implementation of HI, including mistrust [43], limited benefit package and delayed reimbursement [43,50], poor quality of healthcare, inability to pay membership fees and an unclear exemption policy [46,48]. While available studies from Ghana, for example, have explored the challenges that providers face in providing HI services to the general population [69], to our knowledge no studies have specifically been conducted in Tanzania with a focus on the experience of healthcare providers in the delivery of HI services, not only to the general public, but also to the elderly.

As part of the implementation of the HI, a series of efforts and campaigns has been taking place by the government of Tanzania and the health system to motivate the people, including the elderly, to accept and register in the available HI schemes [70]. If the services provided by HI are to be improved, capturing the experiences of the users is necessary. Several quantitative and mixed-method

studies that have been conducted on HI in Tanzania [43,50] have shown an increased use and acceptability of HI by informal sector workers, particularly those residing in rural areas. However, challenges such as low enrolment, delayed reimbursement, unavailability of medicines and long waiting times [71], poor staff attitudes and limited or no diagnostic equipment [44], high premium for the poor, and limited referral services [72] have been reported. These findings have also been supported by other qualitative studies focused on understanding the views of the general population regarding the performance of HI [45]. However, there is a lack of studies specifically looking at the role of HI among the elderly in the country, especially from a qualitative perspective.

Thus, while recognizing the efforts of the government of Tanzania towards establishing universal HI coverage in the near future, this study seeks to investigate the contribution of HI to respond to the healthcare needs of the rural elderly in Tanzania. I believe that the findings of this thesis can be useful to service users and providers as well as informing health policymaking and planning on how to strengthen the HI system in the country.

Aim

The aim of this thesis was to understand if and how health insurance contributes to improving the responsiveness of the healthcare system to the elderly in rural Tanzania.

Specific objectives:

1. To assess whether health insurance has contributed to improving the utilization of healthcare by the elderly;
2. To examine whether health insurance has led to an enhanced responsiveness of the healthcare services from the elderly's perspective;
3. To explore the challenges of HI implementation from the providers' perspective;
4. To understand the experiences of the elderly regarding the healthcare provided under health insurance schemes.

Conceptual framework

The framework used in this thesis (Figure 2) is based on the one proposed by Mirzoev and Kane to measure responsiveness [73]. In the year 2000, the WHO introduced the concept of responsiveness as one of the essential goals of health system performance. The intention of WHO was to overcome the limitation of earlier patient satisfaction surveys that were considered to be subjective and lacked specificity [74] and thus failed to capture the experience of the patients regarding their interaction with the healthcare system. Therefore, the responsiveness concept aimed to respond to the patients' legitimate expectations

based on an identified common set of non-health domains [75,76]. These domains broadly intended to capture patients' feedback on factors related to the interaction with the health system (respect for persons) and the conditions in which they were treated (client orientation) [74].

Respect for persons includes three domains that focus on the ethical aspects of care: the right of patients to be valued and respected; the right to medical information for care or treatment choices; and the right to be ensured that the information discussed between patients and healthcare providers is kept confidential. Client orientation, on the other hand, with four domains, captures the patients' satisfaction with the facility structures and state of cleanliness; the capacity of the system to allow the patient to select and see a healthcare provider of his/her choice; the providers' ability to clearly listen and understand the patient, explain treatment options and enable patients to ask questions; and finally the ability of the system to reduce waiting time to get care [74].

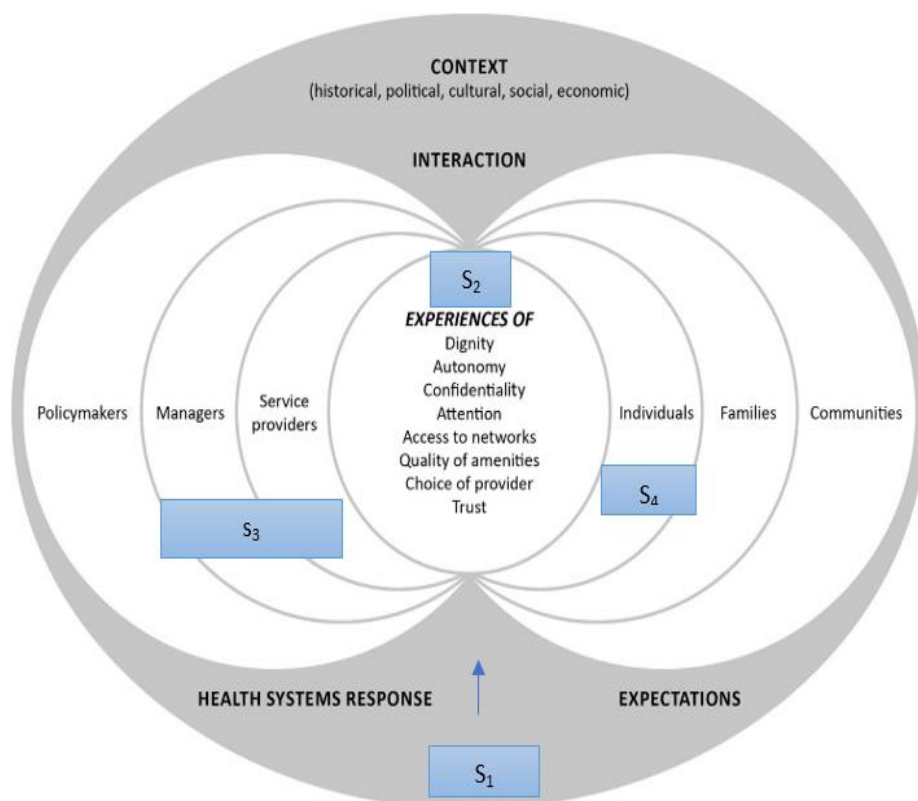


Figure 2. Conceptual framework of responsiveness with four sub-studies in their area of focus [73].

Studies from high-income countries have highlighted different concerns by service users regarding lack of trust, lack of prompt attention, lack of empathy and friendliness and lacking or limited involvement of patients in decision-making [77–80]. However, in LMICs, studies have shown choice of service provider, autonomy, prompt attention, quality of basic amenities and confidentiality as important areas of concern in terms of responsiveness [81–84]. In the SSA context, studies from South Africa [85] and Tanzania [86] have shown the usefulness of using the responsiveness domains to examine the functioning of the health system. These studies identified healthcare access, involvement in the care process, clear explanations and waiting time as important areas that needed the attention of the facility management in order improve the responsiveness.

The responsiveness framework

The ability of measuring responsiveness has been influenced by extensive literature from the disciplines of sociology, health financing, and management of health services as well as patients' rights [87]. In the model by Mirzoev and Kane, the domains of responsiveness form the core of the framework and denote the interlinkage between patients and service providers. Individual experiences of interaction with the health system are shaped by two factors: firstly, people's experience as influenced by their social and cultural background and context (family and communities); and secondly, the health system response towards those expectations affects the experiences. Health system responsiveness is therefore influenced by varied actors, policies and processes that will determine, among others, the availability, accessibility, and quality of the healthcare, shaping the experience of the patients through that interaction [74].

HI and responsiveness

According to WHO [88], the overall goal of a health system is threefold; i) to improve the health of the people; ii) to provide health services that are responsive to the changing healthcare demands; and iii) to ensure individuals and households are protected against the inequitable out-of-pocket healthcare expenditures. As previously mentioned, HI was introduced in Tanzania to mitigate the effects of OOP payments, with the long-term goal of improving healthcare access in order to achieve UHC [89]. For example, some studies conducted in the general population have shown that HI can enhance responsiveness [83,90]. Research conducted in Tanzania has shown that HI can contribute to improving the ability of healthcare systems to deliver inexpensive healthcare services, particularly among low socio-economic groups [75,91]. Research has also shown the usefulness of using responsiveness to examine the operationalization of health systems in the context of HI schemes. For example, results from two studies that looked at the performance of healthcare among the

insured clients in Nigeria [90] and Ghana [92] attracted attention of the management to improve patients' expectations in the domains of access, autonomy, communication and waiting time.

This thesis is grounded on four papers that build upon two hypotheses as depicted in Figure 2. In the first hypothesis, I wanted to test whether HI improved access to and utilization of basic healthcare services for the elderly in rural areas. This was examined in sub-study one (S1). The second hypothesis was that HI could not only increase access, but further improve the responsiveness of the healthcare and, thus, elderly with insurance could have a better experience of healthcare; this was the aim of sub-study two (S2). Based on the findings from the first two hypotheses, I then developed one additional research question to explore whether and how HI could additionally contribute to the provision of quality healthcare services. This was addressed in sub-study three by exploring the views of the service providers on how HI facilitated the provision of healthcare services to the elderly in relation to the dimensions of responsiveness (S3). Since preliminary results contradicted hypothesis two, I conducted a complementary qualitative study to better understand the reasons for the worst perception of responsiveness among elderly with HI (S4).

Chapter Three: Methods

The context of the study

Tanzania is a democratic country that has followed a multiparty system since 1992. The first multiparty election was in 1995 and the ruling party (CCM=Revolutionary Party) has remained in power for 44 years (since 1977). The country is in the eastern part of the African continent, bordering in the north with Uganda and Kenya, the Indian Ocean in the east, Mozambique and Malawi in the south, Zambia on the southwestern border and Congo, Rwanda and Burundi on the west (Figure 3). It hosts 125 ethnic groups with Swahili, the unifying language, spoken by 90% of the population. Tanzania's population is currently estimated to be 61.9 million with annual growth rate of 3.1% and a GDP per capita of 1,172 USD, being classified as a lower middle-income country since July 2020. The population structure is 'onion shaped', with 44.1% under 15 years concentrated at the bottom, 52% in the 15–59 years-old group at the middle and 4.5% in the 60 years and above group at the top.

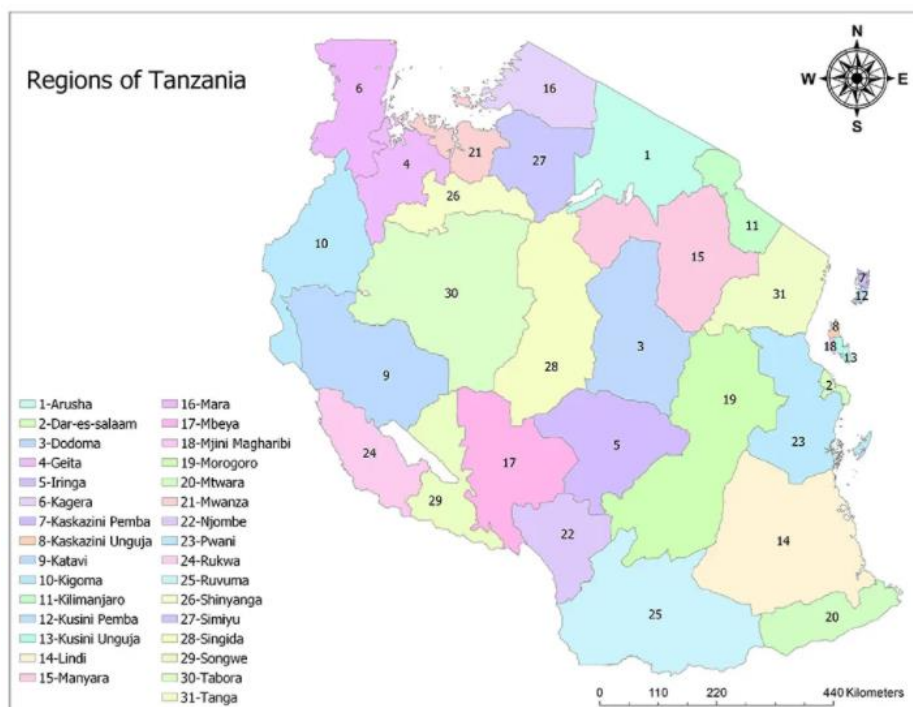


Figure 3. Map of Tanzania and its regions (Tabora is number 30) [54].

This research was conducted in the Tabora region, one among the 31 administrative regions in the country. Tabora region is in western-central

Tanzania and divided into seven districts (Figure 4). About 80% of the population are farmers and thus agriculture is the main economic activity, producing over 78% of the region's wealth. Tobacco, cotton, and rice are the main cash crops, whereas maize, sorghum, cassava, sweet potatoes and legumes are among the most common food crops produced. The region has a GDP per capita that has slowly increased from 664.4 USD in 2016 to 765.2 USD in 2020. The population census of 2012 reported a population of about 2.3 million people living in the seven districts.

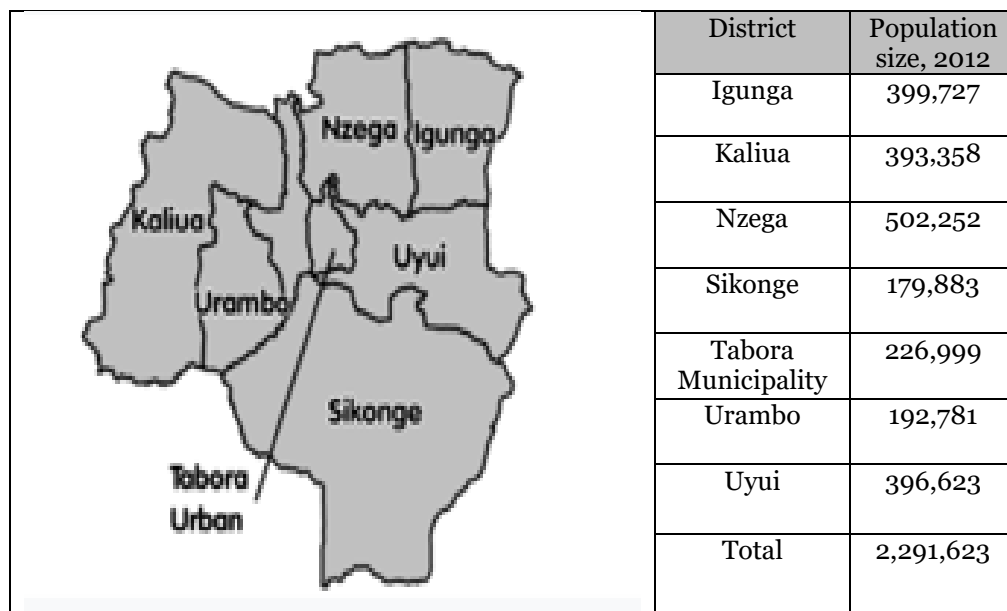


Figure 4. Map of Tabora with its districts and population. Source: bing.com/images & [54]

The study was conducted in the districts of Igunga and Nzega. Several reasons led to this selection: i) the Tabora region forms part of an ongoing health systems research project supported by the Swedish International Development Agency (SIDA); ii) Igunga was the first district in the country to experiment with HI i.e. the CHF in 1996, before it was rolled out into other districts; iii) both have the largest elderly population in the region; and iv) both neighbour one another, facilitating the logistics of the fieldwork.

These two districts are primarily rural, and most of their people live below the poverty line (less than two dollars per day) and depend on subsistence farming. As mentioned above, these two districts have the largest known numbers of elderly population in the region, that is 50,547 (30,006 for Nzega and 20,541 for Igunga) [54]. With regard to HI, the two districts have 5,571 elderly people subscribed to both NHIF and CHF schemes (2,604 for Igunga and 3,967 for

Nzega). In total, there are about 117 healthcare facilities; of these, three (1 public and 2 faith-based) are hospitals, 10 (8 public and 2 faith-based) are healthcare centres and 104 (96 public, 6 private and 2 faith-based) are dispensaries. HI coordinators exist for both schemes in each one of the districts.

Research process

This research is comprised of four sub-studies that were approached using quantitative and qualitative designs. The sub-studies are interconnected, in the sense that all revolve around the main objective, and the results of the quantitative studies partly informed the qualitative ones.

Sub-study	1	2	3	4
Aim	Analyse the association between health insurance and health service use in rural elderly	Assess the responsiveness of the healthcare services among the insured and non-insured elderly and explore the association of health insurance with responsiveness domains	Explore healthcare providers' perspectives on the provision of health insurance benefits for the rural elderly	Explore the experiences and perceptions of healthcare services from the perspective of insured and uninsured elderly
Approach	Quantitative		Qualitative	
Design	Cross-sectional		Exploratory	
Data source	Household survey		Interviews	Focus group discussions
Time collected	July –August 2017		November 2018	March - July 2019
Respondents	1899 insured and uninsured elderly who used healthcare in past 3 and 12 months, respectively		8 healthcare providers	8 FGDs with 78 insured and uninsured elderly men and women
Analytical approach	Logistic regression	Quantile regression	Qualitative content analysis	

Table 2. An overview of the studies and the applied methodology included in this thesis

Using these methodologies, and the interrelatedness of all the four sub-studies, made it possible to understand if and how health insurance contributes to improving the responsiveness of the healthcare system to the elderly in rural Tanzania. Between July and September 2017, I first collected the quantitative data (sub-studies 1 & 2) from the insured and uninsured elderly by using a household survey. The survey was based on the World Health Organization's Study on global AGEing and adult health (WHO-SAGE) (Appendix 2). It included several sections with questions regarding demographic and social-economic attributes, health and insurance status, health-seeking behaviours, dimensions of quality of healthcare and sickness history (3 and 12 months prior to the survey, respectively).

Having gathered and analysed the data for the quantitative studies, the qualitative sub-studies followed during 2018 and 2019. Whereas the focus of sub-study 3 was on facilitators and barriers that have influenced the delivery of HI benefits based on the experience of the service providers, sub-study 4 aimed to capture the factors that shaped the perception of the elderly regarding the quality of the insurance services. In Table 2, we present a summary of the four sub-studies.

Design and data collection

Sub-studies 1 and 2 are based on a population-based cross-sectional survey of insured and uninsured elderly people aged 60 years and above. I used a multistage sampling in order to select wards, villages, households and respondents from each district. Administratively, Nzega is divided into 37 wards with 151 villages and Igunga into 26 wards with 93 villages. First, through convenience sampling, I selected seven wards from each district based on reachability. Then I randomly selected 58 villages that were geographically accessible in both districts through a lottery method. Lastly, with the help of hamlet leaders, I selected 25 to 44 households with elderly persons from each village.

Importantly, the number of households was based on the sample size calculation. I estimated the required sample to be 733 based on an estimated prevalence of healthcare utilization (the outcome) of 40%, a design effect of 2, a significance level of 5% and an 80% power. The sample was doubled in order to improve its representativeness and taking into account the lack of participation. Only one respondent was identified per household; in the few cases where two or more were present, I used a lottery method to select one of them. For equity reasons, both female and male respondents had equal opportunity to participate. The respondents were eligible for the survey when they were aged 60 years and above, currently residing in the selected districts and had used an outpatient or inpatient service during the past three or 12 months before the survey.

Having developed the survey instrument (Appendix 2), I piloted it with a group of 12 randomly selected elderly men and women outside the study area. Informed by the results of the pilot, I developed a version to be used in the field. Eight research assistants who were fluent in the local Swahili and Sukuma languages and had at least a bachelor's degree assisted in data collection. I trained these data collectors on the survey's questions to increase their confidence and reduce misunderstandings or bias of the question terms by themselves or the respondents.

For sub-study 1, several variables were used. In order to capture healthcare utilization, I used two outcome variables: outpatient (OP) and inpatient (IP) healthcare utilization over the past three and twelve months, respectively. This was obtained based on two questions: (i) 'Over the last three months, did you receive any healthcare that did not include overnight stay in hospital or long-term care facility?' (Yes/No); and (ii) 'In the last 12 months, have you ever stayed overnight in hospital?' (Yes/No). Second, I determined the possession of HI (public or private) by asking whether the elderly were insured at the time of the survey and if so how long (less than or equal to one year, more than one year). Third, I captured the need for healthcare by using the following variables: (i) sex (female/male); (ii) age (categorized into 60–69, 70–79, >79); (iii) self-rated health, that is, 'How would you assess your general state of health today?' (very good, good, moderate, bad, very bad); (iv) burden of diseases: 'Have you experienced any disease(s) in the last three months?' (no diseases, one disease, more than one disease); and (v) diseases that triggered inpatient care: 'Did you experience any disease(s) in the last 12 months?' (no disease, one disease, more than one disease). Lastly, facilitators of healthcare access were captured by several demographic and socio-economic variables: (i) marital status, which included those who were married (i.e. currently married and cohabiting) and currently non-married (i.e. widows, separated, never married, and divorced); (ii) to capture education the question was asked: 'What is the highest level of education that you have completed?' (low = less than or equal to primary education; medium = secondary education; and high = above secondary education); and (iii) for income: 'What is the monthly total income of your household?' (low = those with less than or equal to 22.50 USD; high = more than 22.50 USD). These income levels were defined based on the Tanzanian basic-need poverty line (2011/2012) estimation of 36,482 Tsh per adult per month, which is roughly equivalent to 22.50 USD [93].

In sub-study 2, I measured the responsiveness domains by using five ordered Likert scale options; 1 = very good, 2 = good, 3 = moderate, 4 = bad and 5 = very bad, based on the general question: 'For your most recent visit to a healthcare provider/overnight stay, how would you rate the following: i) cleanliness of the facility's inside environment; ii) freedom to choose healthcare provider; iii)

freedom to talk privately to the provider; iv) involvement in deciding treatment; v) clarity of explanation by providers, and vi) time waited before being attended'. Cronbach's alpha was used to measure the reliability of the instrument, which ranged, depending on the domain, between 0.68 and 0.89, which can be considered as acceptable. As in the previous study, a 'Yes/No' question was used to determine HI status by asking the elderly if they possessed HI (public or private). The participants were requested to show their HI membership cards (all did), as well as to state the date they joined the scheme. The same demographic and socio-economic factors as in the previous sub-study were used as covariates. To enhance understanding of the variables, the survey questions were translated to Swahili language before the start of data collection.

A qualitative approach was used for sub-studies 3 and 4. These studies were inspired by the findings of the quantitative studies and aimed at prompting discussions regarding the participants' perception regarding quality of healthcare and the extent to which HI influenced the response of the healthcare system. For sub-study 3, I conducted in-depth interviews with purposely selected healthcare providers using an interview guide. We invited 12 participants from 11 healthcare centres and the two district hospitals from the two districts following the suggestion of the in-charge person at every facility. Inclusion criteria were to have at least three years of working experience at the facility, being involved in the provision of healthcare services to the elderly, and/or to have a certain responsibility with administration of HI. Before fieldwork, I pretested the interview guide (Appendix 3) with two persons from healthcare who did not form part of the study participants to check for clarity of the questions and to reduce ambiguity in the wording. The guide was revised accordingly, thereby rewording some phrases and removing some questions that seemed repetitive. The interview guide consisted of a set of open-ended questions that aimed at promoting discussion regarding providers' experiences of delivering HI services to the elderly. Participants were invited beforehand to a face-to-face interview at an agreed time and place.

Sub-study 4 is based on eight focus group discussions (FGDs) moderated by me and supported by a research assistant. The FGD involved a group of 9–12 elderly men and women, insured and uninsured, aged 60 years and above. The participants were selected purposely based on the criteria of having used healthcare in the 12 months and having not participated in the survey. With help of the hamlet leaders, I approached 90 potential respondents, of whom 78 (41 men and 37 women, 41 had HI) agreed to participate. The group had a mean age of 70 years. I developed and applied a set of open-ended questions (Appendix 3) that were inspired by the domains of the WHO responsiveness framework [77]: quality of basic amenities; dignity; confidentiality; choice; prompt attention; communication; and autonomy. The FGD guide was revised after being piloted

with three elderly person who did not form part of the study and did not participate in the survey.

The interview and FGD guides were developed by me and later revised several times by the research team. Before conducting the interviews and FGDs, I first explained the aim of the study and informed the participants about the right to withdraw from the study at any time. All the interviews and FGDs were conducted in Swahili, were audio-recorded, and lasted for approximately 45–65 minutes. During the process, probes were used to motivate discussion, to foster understanding and to explore new topics from their experiences. FGDs ended when the research team felt that the results developed provided sufficient answers to the research questions. All domains of the CONSolidated criteria for REporting Qualitative data (COREQ) checklist were observed in this study.

Data analysis

For the two quantitative sub-studies, data were entered into EpiInfo software and then transferred to Stata version 15. I first cleaned the data and then performed descriptive analysis of the sample to identify any missing values, but none were found.

Sub-study 1 is based on two major outcome variables: OP and IP healthcare use. I used logistic regression to assess the association between HI and use of outpatient and inpatient healthcare services by the elderly people in the past 3 or 12 months. I constructed four models for both variables. In model 0, the crude model, I included HI, the only independent variable. In model 1, the demographic (sex, age) and socio-economic variables (marital status, education, and income) were added and model 2 included the self-reported health variables. In the final model 3, all significant variables in the previous models were included. All regression models were adjusted for the clustered nature of the observations in the villages and the potential correlation within villages.

In sub-study 2, the degree of responsiveness was analysed by the type of care based on the five categories of responses (from very good to very bad). Then, to obtain a responsiveness index, the scores for each domain were first reverse coded to 5 = very good and 1 = very bad and then added, resulting in an index ranging from 6, indicating the lowest, to 30, the highest score [90]. In order to compare the health systems' responsiveness domains according to the possession or not of HI, I first performed chi-square tests. Instead of dichotomizing the index and since a non-normal distribution of the index was observed, a median quantile regression (50th percentile) was used to explore the specific association of the responsiveness index with HI ownership in a crude model first, and then adjusted for the significant demographic and socio-economic factors.

For sub-studies 3 and 4, both the in-depth-interviews and the FGDs were analysed using qualitative content analysis as proposed by Graneheim and Lundman [94]. The process started by transcribing the audio-taped interviews and FGDs, followed by translating the transcripts from Swahili to English to facilitate the analytical discussions in the research group. After transcribing the recorded data, I started reading the text while listening to the audio responses to enhance its accuracy and become familiar with the data. I then used the Open-code software version 4.2 to support the coding process by developing the codes from the data and inductively sorting the quotations into preliminary groups to depict the experience of the elderly with the healthcare system and the extent that they perceived the HI influenced this experience. The first step was to identify the meaningful units, which were afterwards condensed and labelled with codes. Thereafter, we grouped all the codes that had a similar pattern into similar categories and sub-categories. Whereas in sub-study 3 the developed codes were connected between the categories that described healthcare providers' perceptions on delivering the benefits of HI for the elderly, in sub-study 4 the codes were connected to the related domains of responsiveness, i.e the quality of basic amenities, dignity, confidentiality, choice, prompt attention, communication [77]. Several meetings with the supervisors were held to discuss the coding process, interpretations, trustworthiness and reliability of the findings.

Ethical consideration

The study protocol and the sub-studies of this thesis were reviewed and then approved by the Research and Ethics Committee of Muhimbili University of Health Sciences (MUHAS) in May 2017 (reference number 2017-05-24/AEC/Vol.XII/70). Permission to conduct data collection from the District Executive Directors of Igunga and Nzega districts was also obtained. Then, an informed written consent was obtained from all the participants and verbal consent from those who could not read and write. All the participants were informed about the purpose of the research, the data collection procedures, and the research team. All the generated information was anonymized to enhance the confidentiality and privacy of the participants.

Dissemination efforts

Several dissemination efforts have been made to make the research useful and reach researchers and policymakers and implementers in both international and local arenas. For example, in 2019 and 2021, two presentations were made at two international conferences in Malaysia (International Conference on Public Health) and Umeå (DevRes2021 Advancing Sustainable Transformation), respectively. In addition to the scientific publications, I also gave a presentation to a group of insurance users, managers, and national and local level health

system policymakers and administrators at a workshop organized by SIDA in the researched districts in November 2021.



Attended ICOPH 2019 and awarded best presenter certificate

Chapter Four: Results

In this chapter, I present a summary of the main results from the four sub-studies in the chronological order of the objectives. Detailed findings of each sub-study are accessible in the original publications attached at the end of this thesis.

Sub-study 1: Relationship between HI and health service use

In total, 1,899 elderly men and women aged 60 years and above formed the sample of the quantitative studies. Of the sample, 44.3% were insured, and of them, 94% belonged to either the CHF or the NHIF. Both sexes had a similar percentage of HI ownership. Around half (51%) were women and 58.7% belonged to the age group between 60 and 69 years. Regarding self-rated health, 28% reported their health as 'good', 48% as 'moderate' and 28% as 'bad'. Respectively, round 28% and 20% as well as 67% and 8% reported no disease and more than one disease past three months and 12 months before the study was conducted. More women (71%) than men (38.8%) were not currently married. About 59% had no education and 69% reported a household income of less or equal to USD 22.5 per month. While women had less education, they reported a similar income to men. Around two-thirds (76.78%) had used outpatient and 39.18% inpatient care in the past three and twelve months, respectively, with a similar distribution by sex (Table 3).

	Men	Women	Total (%)
Health Insurance			
No	529 (56.88%)	529 (54.59%)	1,058 (55.71%)
Yes	401 (43.12%)	440 (45.41%)	841 (44.29%)
Need variables			
Age			
60–69	517 (55.59%)	594 (61.3%)	1,111 (58.5%)
70–79	264 (28.39%)	242 (24.97%)	506 (26.65%)
>79	149 (16.02%)	133 (13.73%)	282 (14.85%)
Self-rated health			
Good	283 (30.43%)	244 (25.18%)	527 (27.75%)
Moderate	436 (46.88%)	484 (49.95%)	920 (48.45%)
Bad	211 (22.69%)	241 (24.87%)	452 (23.8%)
Diseases in the last three months			
No disease	265(28.49%)	268 (27.66%)	441 (28.07%)
Yes, 1 disease	471 (50.65%)	511 (52.73%)	982 (51.71%)
Yes, >1 disease	194 (20.86%)	190 (19.61%)	384 (20.22%)
Diseases in the last 12 months			

No disease	627 (67.42%)	642 (66.25%)	1,269 (66.82%)
Yes, 1 disease	228 (24.52%)	251 (25.9%)	479 (25.22%)
Yes, >1 disease	75 (8.06%)	76 (7.84%)	151 (7.95%)
Demographic and socio-economic variables			
Marital status			
Married	569 (61.18%)	279 (28.79%)	848 (44.66%)
Currently not married	361 (38.82%)	690 (71.21%)	1,051 (55.34%)
Education			
None	473 (50.81%)	654 (67.49%)	1,127 (59.35%)
Low	204 (21.91%)	158 (16.32%)	362 (19.06%)
Middle	219 (23.52%)	138 (14.26%)	357 (18.80%)
High	35 (3.76%)	18 (1.86%)	53 (2.79%)
Income			
≤ 22.5 USD	629 (67.63%)	673 (69.45%)	1,302 (68.56%)
> 22.5 USD	301 (32.37%)	296 (30.55%)	597 (31.44%)
Outcome variables			
Outpatient care used last 3 months			
No	223 (23.98%)	218 (22.50%)	441 (23.22%)
Yes	707 (76.02%)	751 (77.50%)	1,458 (76.78%)
Inpatient care used last 12 months			
No	581 (62.47%)	574 (59.24%)	1,155 (60.82%)
Yes	349 (37.53%)	395 (40.76%)	744 (39.18%)

Table 3. HI ownership, health needs, demographic, and social economic characteristics of participants, stratified by sex (N=1899)

Use of outpatient and inpatient healthcare services

A positive statistically significant association between HI and utilization of both OP and IP healthcare was observed in the crude and multivariable analysis. In the crude models, the results showed a greater likelihood for the insured elderly to visit both OP (OR = 3.03; 95% CI: 2.38, 3.84) and IP (OR = 3.59; 95% CI: 2.76, 4.67) healthcare when compared to the uninsured group. After adjusting for health needs, the demographic and economic variables, the relationship between HI and healthcare use remained strong; 2.20 (95% CI: 1.54, 3.14) in OP and 3.20 (95% CI: 2.46, 4.15) in IP, respectively (Figures 5 and 6).

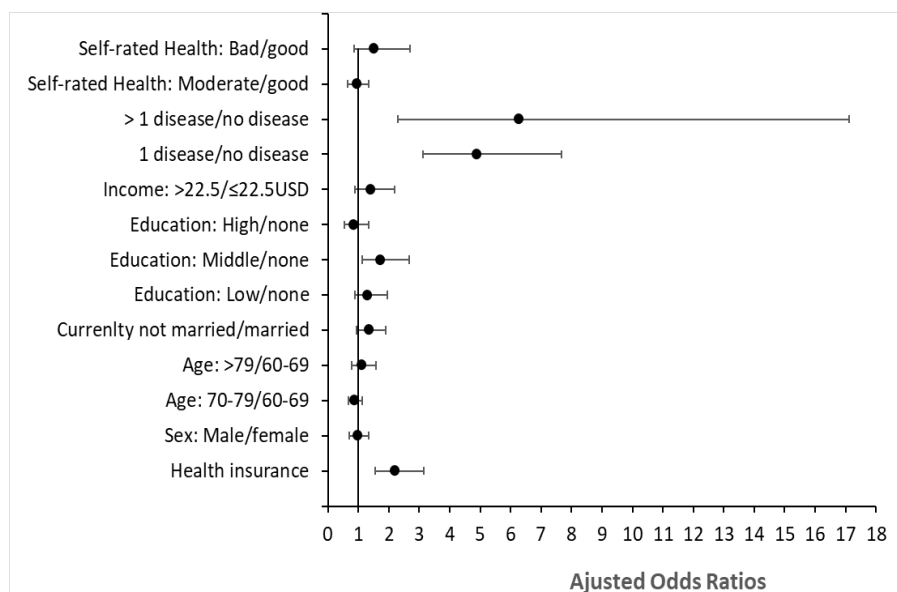


Figure 5. Multivariable regression analysis of the relationship between HI ownership, demographic, and social-economic and health needs variables with OP; adjusted odds ratios and their 95% CI.

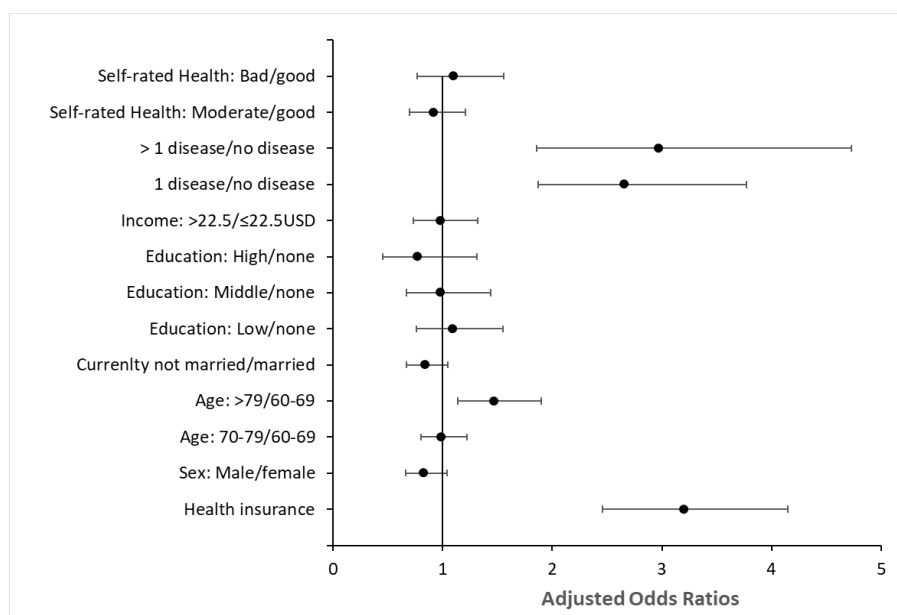


Figure 6. Multivariable regression analysis of relationship between HI ownership, demographic, and social-economic and health needs variable with IP; adjusted odds ratios and their 95% CI.

Sub-study 2: HI and responsiveness of healthcare

In the past 3 and 12 months prior to the study, 1,453 and 744 elderly participants had used both outpatient and inpatient healthcare services, respectively. The characteristics of these participants are presented in Table 4. Most of these participants were women (OP=52% and IP=53%), aged between 60 and 69 years (OP=58% and IP=57%), currently not married (OP=56% and IP=54%), not educated (OP=56.99% and IP=57%), and had an income below 22.50 USD (OP=67% and IP=68%). Around half of outpatients had insurance (50.31%), while the percentage was higher among the inpatients (63.04%).

Characteristics	Outpatient (n = 1453)	Inpatient (n = 744)
Sex		
Male	704 (48.45%)	349 (46.91%)
Female	749 (51.55%)	395 (53.09%)
Age		
60–69	849 (58.43%)	424 (56.99%)
70–79	378 (26.12%)	189 (25.40%)
> 79	226 (15.55%)	131 (17.61%)
Marital status		
Married	640 (44.05%)	344 (46.24%)
Other	813 (55.95%)	400 (53.76%)
Education		
None	828 (56.99%)	425 (57.12%)
Low	563(38.74%)	289 (38.84%)
High	62 (4.27%)	30 (4.04%)
Income		
≤ 22.50\$	970 (66.75%)	504 (67.74%)
> 22.50\$	483 (33.24%)	240 (32.26%)
Health insurance		
No	722 (49.69%)	275 (36.96%)
Yes	731 (50.31%)	469 (63.04%)

Table 4. Respondents' features by use of healthcare



Figure 7. Percentage of participants rating the responsiveness domains in OP care by HI ownership. *a* Insured. *b* Uninsured.



Figure 8. Percentage of participants rating their responsiveness domains in IP care by HI ownership. *a* Insured. *b* Uninsured

Performance of the responsiveness domains by HI

The prevalence of the six domains of responsiveness was calculated stratified by HI ownership. Except for waiting time, an overall good (including very good, good, and moderate $\geq 50\%$) responsiveness was reported in all other domains for the OP. Comparing to the uninsured, the insured elderly reported a lower responsiveness in all domains for both outpatient and inpatient care. Furthermore, the three domains of cleanliness, involvement in decision-making and waiting time performed statistically lower among the insured in both OP and IP services (Figures 7 and 8).

HI and responsiveness of healthcare services

In both the crude and adjusted quantile regression models for the OP and in the crude model for IP, a negative statistical association between HI and overall responsiveness was found. In the adjusted model, the perceived responsiveness of the OP decreased by one unit (-1 ; 95% CI: $-1.45, -0.45$) between the insured compared to the non-insured (Figure 9)

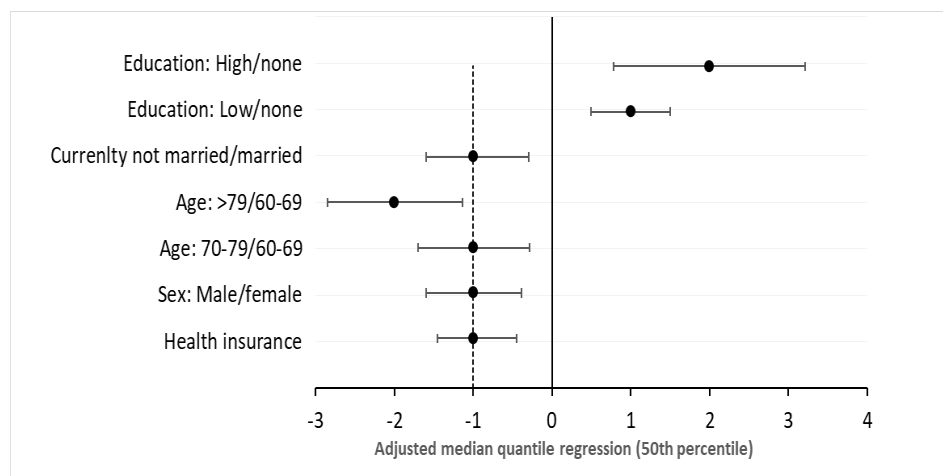


Figure 9. Adjusted median quantile regression model on responsiveness to OP care, and their 95% CI.

Sub-study 3: Perception of the providers regarding the functioning of HI for the elderly

In this sub-study, three categories were developed from the interviews that exemplify the perception of the providers when delivering HI services to the elderly. A brief summary of each category follows hereunder.

HI is an enabler of equitable access to healthcare

The use of HI to access healthcare was considered as a good option for elderly people. For instance, it was often mentioned throughout the interviews that HI enabled access to care when need arose and thus promoted their good health.

...it enables the elderly to get proper treatment at a hospital apart from going to buy tablets at a medical store without being diagnosed or given a prescription, this [self-medication] may lead to continued pain due to an inappropriate cure that may result in death, which could have been prevented... (Health system administrator)

In connection to this, the participants also highlighted the benefit of HI removing the financial barriers coming from out-of-pocket payments, which was a prerequisite of access to care among the uninsured groups.

.... health insurance card helps the elderly to get treatment without any payments...whether they are to be admitted or treated on a daily basis.... they do not need to have money to get treatment... (Health system administrator)

.... all with insurance are treated the same...they are able to access services, to be seen by a doctor, get laboratory tests and receive medicines, those that are available, as they reach the hospital... (Insurance coordinator)

Even though HI was expected to enhance the availability and access to quality healthcare, its success was dependent on the availability of other resources, as is discussed below.

Shortage of resources affects service delivery

Providers agreed that their ability to manage and deliver insurance benefits to the elderly was reliant on the existence of different types of resources. Considering the health workforce as a significant means for service delivery, they talked about how their scarcity impacted negatively in the quality of care, particularly waiting times.

...they (insured elderly) when they come, they want to get services without any delay and leave the facility [as soon as possible] ...however they have to wait a long time before the doctor sees them due to shortages of staff... (Health system administrator)

Likewise, quality care was further affected by the shortage of medicines and laboratory services in the facilities. In that respect there were inequalities between the owners of Community Health Fund (CHF) and the owners of NHIF, because owners of CHF faced extra costs when buying medicines and laboratory tests from private drugstores and laboratories, as the following quotations depict:

...there is lack of medicines for insured elderly with CHF, especially nerve-related, arthritis, diabetes and blood pressure which mostly are scarce ... they are not enough.... instead, they have to go and buy...for NHIF members there are arrangements for them to get the missing prescriptions from a pharmacy without being required to pay... (Clinical officer)

...due to a lack of ultrasound at our facilities; elderly face that problem, although they are supposed to be given services using both exemption and CHF...they have to get it somewhere else, in most cases through own payment...while those with NHIF obtain a form to get the medicines from an accredited facility... (Medical doctor)

Participants were also aware of the problems originating from the restricted benefit package under the CHF, which limits the service coverage outside the district of registration. As one of the participants expressed it:

...CHF covers very little and has a very long referral process, which causes most of the elderly to despair or end on incomplete treatment, because they are supposed to report first at the dispensary, thereafter they can go as far as to the district level only... when they travel to other districts, they will have to pay... (Clinical officer)

Lack of funds due to delayed reimbursement affects service availability

The third category relates to the HI financial system. In general, the healthcare providers acknowledged that HI constituted an important part of healthcare funding and that the refund process had improved over the years; as the insurance coordinator explained:

.... if the health facility has clearly documented and filled the claim forms appropriately, they are reimbursed without much delay.... (Insurance coordinator)

Still, there were also experiences of frustration as the insurance scheme often took a long time to reimburse the facilities for the services rendered to their beneficiaries. One medical doctor reflected ‘....it is like a dream to be paid our claims on time...’, whereas an insurance coordinator added ‘.... the refund process is always delayed and takes a long time...’.

This delay contributed to increasing the uncertainty of managers to effectively plan and budget for the healthcare:

.... delay of reimbursements causes unstable provision of health services; for example, medicines and other hospital equipment... (Insurance coordinator)

....it may even take two to three months to receive payments, this leads to poor services because we do not have money to make service replacements... (Health system administrator)

Sub-study 4: The experiences and perceptions of healthcare services from the perspective of insured and uninsured elderly

Eight main categories were developed in the analysis of the FGDs, indicating the experience and perceptions of the elderly people with the healthcare system and the extent to which HI has been able to satisfy their expectations. These categories correspond with the domains of health system responsiveness: respect for the person (dignity, autonomy, confidentiality, and communication); and client orientation (quality of basic amenities, prompt attention, choice and access) to healthcare system.

Disrespectful care is still common (dignity)

The views of the elderly in this domain were based on their experience on the type of attention they received from the healthcare providers during their interaction with the health system. Some appreciated that they received adequate attention from some providers at the facilities and reflected on improvement over time.

.... we currently thank God for having some health workers who give their services with all commitment; they care and respect us. They don't look down on us as they used to in the past... (FGD 1)

Nevertheless, many complained that HI was unable to guarantee better attention. Others even added that HI had negatively influenced the care provided and how the healthcare professionals refuse to admit the HI.

...you could get there very sick, and providers wouldn't care; you have no value. Medical personnel just pass around without doing anything...they despise the service, even when they listen to you, they don't pay much attention... (FGD 7)

....old man you are here again with your CHF, you never become tired, we don't accept these cards here... (FGD 2)

Involvement in care process (autonomy)

The need to provide information to individuals about their health status, risks, and treatment alternatives is a core domain of the responsiveness framework. Regarding the involvement of the patient in the care process, both insured and uninsured participants experienced a lack of involvement in their care-decision process.

...if you are lucky, you might be asked about the kind of treatment or medicines you normally take.... but in general, honestly it is the doctor who decides which medicine you should take and decides on every other thing... (FGD 2)

Keeping patients' information safe (confidentiality)

Ensuring confidentiality in the process of care was widely discussed in the FGDs and the respondents had mixed experiences. Some mentioned that confidentiality was not a big problem to them; others described experiences of violation of privacy by some providers:

...confidentiality is not a big problem today; it has been improved [and is] now different from the past...currently we are talking inside the room with the door closed... (FGD 3)

...some of the doctors would stop and talk to the patient along the corridor and start to ask you about your problems, illnesses, or sometimes they read your test results in front of other people and patients. Sometimes you could enter a doctor's room and he/she start to interrogate while the door was open and other people would be listening... (FGD 3)

Patient–doctor relationship (communication)

Communication between the provider and receiver of services is crucial in any health system. Although there was a general view that this aspect of healthcare had undergone improvements, the elderly with HI were concerned about the lack of proper communication between them and the providers.

...in fact, we members come in large numbers and the doctors are few...the doctors could not have much time to spend to listen to each patient and understand...before you explain, the doctor has already written the prescription for you... (FGD 6)

Building appearance is valued (quality of basic amenities)

The physical outlook of the facility infrastructure is relevant for both medical and non-medical staff as they attend patients. Even though the elderly, both insured and uninsured, appreciated the ongoing efforts of the government to improve hospital buildings across the districts, participants, especially the insured, expressed their concern with the lack of facility space and unsatisfactory cleanliness throughout the facilities.

...in some facilities, the environment is not adequately cleaned, sometimes the cleaning is done while patients are already at the hospital and also some patients are drying their clothes on the walls and on the grass... (FGD 3)

...I wish that there could be a building a bit larger for the insured elderly people only. This is because the designated place is too small and there are so many elderly people... (FGD 4)

Bureaucracy and shortage of staff (prompt attention)

Regarding waiting time for healthcare, several participants appreciated that waiting time was recently shorter than it used to be. However, they were concerned that the shortage of health providers contributed to long waiting times.

...it is true maybe that the number of human resources at many of our facilities are few in numbers. By simple observation, you realize that they take a very long time to attend [to] a few patients... If there were more doctors, things would go very fast... (FGD 2)

Elderly participants also complained that having health insurance did not necessarily mean a shorter waiting time because of the bureaucratic process they had to follow regarding registration and access to medicines and laboratory services:

...it is hectic sometimes with the CHF. Registration takes [a] long [time because staff have] to get the patients' files. You may arrive at the health facility at nine in the morning and get out three or four in the afternoon if you are lucky...and with your CHF you cannot get services, medicines, or even laboratory tests quicker... (FGD 1)

Insurance reinforces inequity (choice)

Even though a free and quick access to healthcare was expected from those with health insurance, CHF members were however concerned with the limited coverage of their insurance, particularly when compared to those with NHIF.

.... a person with insurance [NHIF]) has free access to healthcare facilities; even when medicine is not available, he/she can get it at a private store. Honestly...we had to take her [my wife] to Muhimbili National hospital [Dar es Salaam] because my insurance [NHIF] could pay for the services... (FGD 3)

...my wife was treated here at Igunga, then was transferred to Ocean Road Hospital [Dar es Salaam]. Although we had the CHF insurance, it just helped here at Igunga, but when we reached Ocean Road Hospital things changed and with great costs... (FGD 5)

Accessibility of medicines and testing facilities (access)

Being an additional domain not included in the WHO responsiveness set, this last category reflects the complaints of the elderly about accessing resources such as

medicines and diagnostic facilities. Most agreed that shortages were common at health centre and hospital levels and, consequently, they were referred to private drugstores and laboratories, which often implied the possibility of not having access to them at all:

...we are always told that there is no medicine or sometimes we get half a dose and the rest we are told to go and buy from private pharmacies... (FGD 1)

...when it is a bit advanced like a full blood picture, dialysis etc., they ask you to go [to] private laboratories in town. There you use your money, and it is very expensive because they do not accept CHF... (FGD 3)

Differences between insurance schemes were also highlighted regarding the prescription of medicines.

...the insured normally is given prescription[s] for medicine at the hospital; if [it is] not available, a form is filled in so that they can go and get it at the pharmacy [NHIF].... [for] those under CHF, once they miss the medicine, they are supposed to buy on their own from the pharmacies... (FGD 4)

But even when medicine was available, several insured participants complained about the attitude of certain healthcare providers who preferred cash over HI when collecting medicines.

...I came here knowing that I would be attended because I have my insurance card, but providers at the medicine window refused it and they said we don't accept these CHF cards... (FGD 2)

Chapter Five: Discussion

This study aimed to understand how HI had influenced the responsiveness of healthcare services among the rural elderly in Tanzania. In this chapter I discuss these findings in the context of three major themes: HI as an enabler of access; HI as a non-facilitator of responsiveness; and reasons for the low responsiveness among HI owners.

HI as an enabler of access

The elderly in this rural setting agreed that HI was an important facilitator of access to and utilization of both outpatient and inpatient healthcare services. These findings put forward the usefulness of HI in removing the OOP payments, which for years have been considered a precondition of access to healthcare [95,96]. These results align with those from similar studies conducted inside Tanzania [50,89,97–99] as well as in the SSA region [100,101]. For example, a study looking at the perceptions of one rural community in the country regarding HI, reported CHF as being a well-accepted alternative method for financing healthcare and thus reducing OOP payments [50]. Regardless of the type of scheme, another studies showed that the possession of an HI card increased the likelihood of timely seeking and utilizing healthcare after adjusting for healthcare needs [99]. Additionally, another study that analysed the healthcare-seeking behaviour among members of the two government -owned schemes, CHF and NHIF, suggested that the uninsured experienced delays and lower access to healthcare [89]. Several other studies from the SSA have also revealed that HI has the potential to provide risk protection, thereby reducing the burden of healthcare costs among the poor and elderly [102] and making it a key mechanism for achieving universal health coverage [103].

In the qualitative studies of this thesis, HI was also perceived as an important support to access and utilize healthcare by the elderly. Both providers and the elderly commented on how HI, by eliminating fees, contributed to decrease the financial barriers of the health system. These opinions are in line with the findings of a study by Marwa et al. [50] which explored the views of a rural community regarding CHF in the country. In our study, participants accepted that CHF enabled rural people to better access healthcare. Similarly, several other studies from within and outside the country have pointed towards the same direction [101,104].

Additionally, results from sub-study 1 suggested both a horizontal and vertical fairness in access to OP and IP care associated with HI. Horizontal equity refers to access to healthcare for users with equal needs, independent of socio-economic factors (see Figures 5 and 6). Although studies on this area are scarce in Tanzania, this result is, in some way, similar to that by Mtei et al. [105], which suggested a fairly equal delivery of healthcare benefits among beneficiaries of CHF. However, different results to mine include those from Ghana [106–109] and Japan [110,111], which reported a pro-rich inequity, whereas for the same needs, those with higher income had a better access to HI and used more OP than their lower-income counterparts.

On the other hand, vertical equity refers to a situation in which users with unequal health needs, receive different care [112]. As evident in Figures 5 and 6, those who reported to have had more diseases, used more healthcare, after adjusting for non-need factors. Although in Tanzania there are no studies with comparable results, vertical equity has been observed in other LMICs. For example, in Ghana a study by Williams et al. [113] that examined the predictors of healthcare use among elderly women showed that those with an increased number of diseases used the healthcare more often. Similar results have also been reported by other studies from India [114] and Vietnam [115]. The numerous efforts that have been taken by the government of Tanzania since independence toward eliminating barriers in access to healthcare by those most in need might have largely contributed to this observance.

HI as a (non-) facilitator of responsiveness

The elderly in our study did generally report a good responsiveness ($\geq 50\%$) for all the domains in both OP and IP healthcare. High levels of responsiveness are commonly found in the literature from within and outside the country. For example, a recent study from Tanzania that investigated responsiveness at the primary healthcare from the general population also reported high scores in the different domains [86]. Regarding HI, in a study from South Africa [83], elderly aged above 49 years reported good responsiveness in all domains related to OP and IP regardless of their insurance status, and in another study from Nigeria [90], both insured and uninsured reported high responsiveness regarding OP services.

In our study, compared to the uninsured, the insured elderly reported worse responsiveness in all domains (Figures 7 and 8). These results have some similarities and differences with those from other parts of the continent. Whereas a study from Ghana [103] reported similar results on the basis that insured patients often perceived the quality of healthcare as worse, another study from

Burkina-Faso [116] found no difference in the perception of the quality of healthcare between insured and uninsured patients.

Regardless of their insurance status, the domains of access, confidentiality and autonomy in OP and IP were highly scored by the elderly. This finding is, however, different from a previous South African study [83], in which service users were mostly concerned with the access and autonomy domains. The observed high score in access may possibly be linked to the efforts currently in place to improve the delivery of healthcare through the primary healthcare system across the country. Confidentiality also performed satisfactorily, similarly to the South African study [83] in which a high responsiveness (74.2%) in this domain was reported. The possibility of patients being able to access to their medical reports gave them an opportunity to be part of the care process and thus enabled them to make informed choices [80,90], which is a health right.

On the other hand, the domains in which insured elderly were mainly concerned included prompt attention, quality of basic amenities and communication. The scores of prompt attention were lower (18.15% in OP and 21.85% in IP) than in the South African study (58.2% for OP and 68.6% for IP) [83] and 68% for OP in the Nigerian one [90]. Several factors, including large numbers of patients seeking healthcare at the same time, a shortage of healthcare professionals in both numbers and skills, long administrative procedures, shortage of medicines, providers' negative view towards the elderly and a slow insurance claims process have been reported in the literature [117–119]. The results regarding cleanliness of the facilities (21.35% for IP) were also low compared to other studies, where levels of around 70% have been found [85]. In the view of the participants, the facilities' buildings were mainly small and deficient in terms of cleanliness in both the inside and outside surroundings. This situation made the patients feel uncomfortable and unwelcomed. Furthermore, the dissatisfaction with the communication domain reflected a lack of attention by the service providers to the concerns of the elderly. The aftermath of a lack of clear communication at various levels of care may make patients not able to understand their situation, feel unhappy with the provider and lead to a decreased trust in the healthcare delivery system.

It goes without saying that our study showed differences in service coverage and access among the CHF and NIHF schemes. This situation creates inequality regarding service utilization among the members of these two publicly owned schemes. Similar experience has also been evident in a study that was conducted in Tanzania in which the benefits obtained by CHF members were restricted to the primary facilities within the districts of registration [105]. In addition, another study that explored the risk distribution across CHF and NHIF schemes in Tanzania warned that the presence of multiple funds with different benefits

packages and serving diverse population groups could promote an inequitable use of healthcare services [89]. Similar findings have been reported across LMICs. For instance, experience from Jordan showed that members of the Ministry of Health insurance had a higher probability of seeking care compared to other insurance schemes [120], whereas in China, healthcare inequalities have been reported among subgroups of insurance enrollees [121].

Reasons for the low responsiveness among HI owners

As previously mentioned, three dimensions of the WHO framework on responsiveness were noticeably rated low by the insured elderly. Two of these dimensions – lack of prompt attention and poor quality of basic amenities – relate to the organization of the healthcare system, whereas the lack of good communication directly connects to the attitudes of the healthcare providers towards the patients.

Insured patients reported suffering long waiting times at different stages of the care process. At arrival, insurance holders experience a long process of registration before they can be attended. It is worth adding that the elderly had expected that having HI would make the process easier, quicker and would make them receive more attention from the providers. This did not seem to happen, which led to dissatisfaction. Another contributory factor was that patients were given appointments without the number of patients being taken into consideration. As a result, health facilities became crowded, particularly in the insured section, and thus waiting time increased. To complicate the situation, there is a huge shortage of healthcare providers in the Tanzanian primary healthcare system and particularly in those facilities located in the rural areas. Several studies have shown that government facilities suffer a shortage of over 67% of their required levels of medical doctors in the country [122,123] This scarcity, particularly at the primary health-care level, affects the ability of the facilities to sufficiently and in a timely manner serve the service users, particularly the insured [11].

Lack of quality of basic amenities was the second relevant factor considered by the elderly. While the government of Tanzania initiated the Primary Health Services Development Programme (2007–2017), among others, to rehabilitate and upgrade the infrastructure of primary health facilities [124], several studies in the country have reported that these facilities are not well maintained [125–127]. Studies have insisted that an appropriate health system infrastructure is a prerequisite for the successful implementation of HI in LMICs [17,27]. A lack of proper cleanliness and basic amenities cannot only put patients at risk of contracting pathogens, but also may cause them to refrain from joining a HI or attend healthcare services more generally.

A good communication between providers and users of the healthcare influence patients' satisfaction and compliance with the medical treatment and advice. The elderly with HI were dissatisfied with how providers interacted with them. Insured elderly neither got the time they needed to talk to the providers, nor were they offered a clear explanation of their diagnosis and treatment. As discussed earlier, this situation may have been influenced by the shortage of providers at the primary healthcare level. Another important reason was the lack of respect that the insured elderly often experienced while interacting with the providers. For example, some insured elderly complained that HI did not attract the respect they had expected, neither did they receive better attention. This feeling is also echoed by another study from the country that showed disrespectful care continues to be common at the primary healthcare [128] level in the country despite the efforts of the government to eliminate it.

In this research, two additional issues that affected the HI functioning and possibly resulted in a negative experience of health system responsiveness by the insured were brought forward in the discussions with the service providers. These included inadequate funds to finance healthcare and delays in the reimbursement process from the insurance schemes. Even though, in practice, the Tanzanian health system is decentralized and places service delivery responsibility at the lowest government level, there is limited information about the actual distribution of local financial resources from the district office to the facilities. It was, for example, in the year 2000 when the Direct Health Facility Financing was introduced under the Regional Administration and Local Government to enhance fiscal decentralization in the health sector with a focus on improving basic healthcare services [129]. One study has reported inadequate funding due to limited budgets [130], challenging the availability of healthcare, especially across primary healthcare in rural Tanzania. In connection to inadequate funding, another national study showed that the lack of resources in the healthcare system affected the availability of medical equipment and medicines, which in turn negatively affected the care provided to the patients [131]. These results are similar to those from other countries in SSA whose healthcare budgets are hampered by an inability of the governments to finance healthcare [132,133]. Our findings also showed that a delayed reimbursement can further affect service delivery and consequently lower responsiveness. Although this problem was partly attributed to the limited knowledge of the providers regarding the reimbursement process required by insurance schemes, this delay is against the requirements of the HI Act of 2001, which states that repayment of claims should be settled within 60 days after being submitted [134]. These challenges can lead to the reduction of health workers' confidence to do their job, increase the inefficiency of the health services, and therefore to a perceived low quality of care and responsiveness.

Methodological considerations

In the process of conducting this research, both quantitative and qualitative approaches were used to collect, analyse, and interpret the data. This chapter describes several methodological strengths and limitations related to this thesis.

In the quantitative studies, questions from the standardized WHO-SAGE survey were used to collect information, which enabled the comparisons with other studies that have used the same instrument in SSA and elsewhere. I obtained a high response rate (above 80%), probably influenced by the reputation of Muhimbili University in the region, the collaboration of the community leaders and the skills of the data collectors.

To address the effect of non-response rate and attrition bias on the reliability and validity of the findings, I doubled the sample size to have a better gender representation. Because of the self-reported nature of the data collection, several possibilities for bias could have been present. Respondents' bias and interviewers' misinterpretation were minimized through pilot testing and training of the data collectors prior to the fieldwork starting. Recall bias could have been present in several questions, which I tried to reduce by requesting a random sample of the elderly to show their HI card as well as hospital admission record during the interview. Since the respondents were selected by me with the help of hamlet leaders, self-selection bias was not a relevant concern.

Two specific issues related to HI are worth mentioning. Adverse selection has been reported when more sick than healthier individuals opt to enrol in an HI scheme. Even though this was a possibility in this study, in the Tanzanian context the risk for this behaviour is minimal because the insurance models in the country are mainly voluntary in nature, not subject to health conditions and with a small fee equal for all. Even though in this thesis I did not assess moral hazard (the habit of indulging in an unhealthy lifestyle if the price of such behaviours is paid for by others) and the excessive use of healthcare, which may also be common behaviour among the insured, it was partially considered when the adjustment for health needs was performed in the regression models. While I was not in the position to know how many participants belonged to which insurance scheme, I am aware that there exist differences in HI enrolment in the different districts nationally, making these findings not generalizable.

For the qualitative sub-studies, several measures were taken to increase the trustworthiness of the findings [135]. The participants were purposively selected based on their ability to contribute to the study aims. I used an emergent design using interview guides partly inspired by the findings of the quantitative sub-studies and revising them to add relevant topics based on preliminary analysis of

previous interviews. To facilitate the assessment of the credibility of our results, categories were developed and quotations from the scripts were provided to illustrate that the interpretations were grounded in the data. As in the quantitative studies, I made sure that both men and women participated in the FGDs and took measures to guarantee that men did not dominate the discussions. Since the FGDs and interviews were conducted in Swahili and later translated into the English language, it is possible that some important meanings from the original narration got lost in the translation process. Nevertheless, the trustworthiness of the study findings was enhanced as I personally conducted the interviews with the providers and moderated the FGDs with the elderly, in addition to my familiarity with the language and culture of the respondents.

Chapter Six: Conclusion

Conclusion

This is, to my knowledge, the first study that has focused on investigating the contribution of HI to improving access to and the responsiveness of the healthcare system to the rural elderly in Tanzania. Almost half (45%) of the elderly who participated in the quantitative studies had health insurance. Possession of HI contributed to increasing the access to and use of healthcare services. The observed positive association between HI and use of both OP and IP healthcare by the insured elderly in this rural setting supports the national aim of introducing HI to protect the less privileged part of the population against the ever-increasing cost of care. Despite the observed importance and usefulness of HI to this population, the results also suggested a lower responsiveness of the healthcare among the insured elderly. The domains of access, confidentiality and autonomy in OP and IP were highly scored by the elderly, while prompt attention, quality of basic amenities and communication performed low, particularly among those with HI. Several explanations for the low responsiveness were identified: long waiting times; limited-service benefits; restricted use of services within schemes; lack of health workforce in both numbers and skills; and a shortage of medical supplies.

Recommendations

Based on the findings of this thesis, the following recommendations are worth to be considered:

1. The responsible authorities, both at the insurance schemes and at the Ministry of Health, should increase efforts to boost insurance coverage to underprivileged groups, particularly those in the rural areas, in order to further reduce OOP payments and increase equitable access to healthcare services.
2. The CHF policy should be revisited to improve its implementation, expand the scope of services coverage, and where possible, to introduce cross-subsidization between the publicly owned schemes.
3. Further investment in primary healthcare and an expansion of the services provided by CHF beyond the district level should be prioritized.
4. Specific actions to improve the dimensions of prompt attention, quality of basic amenities and communication at all care levels should be implemented.
5. Further research is needed to understand the perception of the elderly people regarding HI in the other districts.

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Appendixes

Appendix 1: Number of health facilities by type and ownership in the country

Type/ownership	Hospitals	Health centres	Dispensaries	Total
<i>Government</i>	95	434	3889	4418
<i>Faith Based Organizations</i>	101	134	625	860
<i>Parastatals</i>	8	10	168	186
<i>Private</i>	38	55	787	880
<i>Total</i>	242	633	5469	6344

Appendix 2: Survey questions for insured and uninsured elderly.

Consent					
Hello. Good day. My name is _____. I am here to conduct a survey on the access and quality of health care services provided to the elderly under health care reform on behalf of Mr Tungu Malale and Mr Paul Amani, PhD students at MUHAS and UMEA Universities. You have been selected to participate in this study. We will be asking you some few questions about access and quality of health care services provided to the elderly in Nzega and Igunga Districts. The information that will be collected during this study will be used for academic purposes only. In the course of conducting this study, neither your name nor the names of other participants will be required to be included. You have the right not to answer any question or choose to stop the interview at any time. However, it is our hope that you will answer the questions that will help us to understand better the health and health care access of the elderly in these districts. Up to this point, do you have any question? Do I have your agreement to proceed? _____					
Village		Ward		Interviewer's signature Date	
INTERVIEWER					
Intro 01	Interview time		Time		
		Start		End	
		Hour	Minutes	Hour	Minute
Intro 02	Does the respondent have obvious cognitive limitation that prevent him /her from being interviewed? (SQ1001)		1. Yes 2. No		

		If YES, end the interview but record the sex (SEo5) and age (SEo7)
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A. Social Demographic information of the respondents				
SD01	Questionnaire number (SAGE Q1006)		Questionnaire #	Client #
SD02	How many people live in your household? (Interviewer - record the number)			
SD03	How many members aged less than 18 years that live in the households depend on you? (Interviewer - record the number)			
SD04	How many old people (60+ years old) are in the household?(interviewer: record the number)			
SE05	Do you have a friend or family member that can assist you if you become ill?		1. Always 2. Often 3. Sometimes 4. Never	
SD06	Which year were you born?		1.	
	How old are you now? (SAGE Q1011) (Interviewer: record the age)		2. 3. Don't know	
SD07	What is your current marital status? (SAGE-Q1012) (interviewer: circle the response)		1. Never married 2. Currently married 3. Cohabiting 4. Separated / Divorced 5. Widowed	
SD08	Have you ever been to school (SAGE Q1015)		1. Yes 2. No	

SD9	What is the highest level of education that you have completed? (SAGE Q1016) <i>(interviewer: circle the response)</i>	1. Less than Primary/grade four school 2. Primary school /grade 8 completed 3. Secondary school non-completed 4. Secondary school completed 5. Higher school (or equivalent) completed 6. College/Pre-University /University Completed 7. Post graduate degree completed
SD10	How many years of school including higher education have you completed (SAGE Q1017)	1. Number of Years 2. Don't know
SD11	Do you belong to a religious denomination? (SAGE 1019) <i>(interviewer: circle the response)</i>	1. No, none 2. Christianity 3. Muslim 4. Traditional belief 5. Other, please specify ... 6. Refused
SD12	How long have you been living in this village/town? (SAGE 1021)(interviewer: If less than 1 year enter 00	1. Number of Years 2. Don't know
SD13	Where were you living before? (SAGE 1022) <i>(interviewer: circle the response)</i>	1. In same community /locality /neighborhood 2. In another town in this region 3. In another rural area in this region 4. In another town/city outside this region 5. In another rural area outside this region 6. Outside the country
SD14	What kind of occupation have you had in your life? <i>(Interviewer: Several options can be indicated)</i>	1. Employed 2. Self-employed 3. Peasant 4. Housewife/househusband

		5. No job
SD15	Are you working now? (SAGE 1506) (interviewer: If NO skip to the next section)	1. Yes 2. No
SD16	What do you do? (Interviewer-record the activities mentioned)	
SD17	What is the main reason that you are working at present? (SAGE Q1507) (interviewer: circle the response)	1. Need income 2. Want to/Need to be active 3. Want feel useful 4. Help my family 5. Other, please specify.....
B. Socio-Economic information of the household		
SE 01	Who is the main financial provider in your household? (interviewer: circle the response)	1. Myself 2. Husband/wife 3. Children 4. Relatives 5. Other, please specify.....
SE 02	What is the monthly total income of your household? (This should be the sum of what all household members bring —together) (Rwanda Questionnaire) (interviewer: circle the response)	1. Less than 50,000 TSh. 2. 51,000-150,000 TSh. 3. 151,000-250,000 TSh. 4. 251,000-350,000 TSh. 5. 351,000-450,000 TSh. 6. More than 451,000 TSh. 7. Don't know (put 99)
SE03	Who is responsible for paying for medical care of the elderly in your household? (interviewer: circle the response)	1. Myself 2. Husband/wife 3. Children 4. Relatives 5. Other, please specify.....

SE04	What is the main source of drinking water for the members of your household? (<i>Rwanda Questionnaire</i>) (<i>interviewer: circle the response</i>)	1. Piped water into the house 2. Piped water into yard/plot 3. Public tap 4. Water from well or borehole 5. Surface water: Spring/ River/ Stream/Pond/Lake/ Dam/ Rainwater 6. Tanker truck 7. Other, please specify		
SE5	What kind of toilet facility does your household have? (<i>Rwanda Questionnaire</i>) (<i>interviewer: circle the response</i>)	1. Flush toilet inside 2. Improved latrine, chemical toilet, flush toilet outside 3. Pit latrine 4. No toilet 5. Other, please specify		
SE06	What type of fuel does your household mainly use for cooking? (<i>Rwanda Questionnaire</i>) (<i>interviewer: circle the response</i>)	1. Dung 2. Firewood 3. Charcoal 4. Paraffin, kerosene 5. LPG Gas 6. Electricity from grid, town gas 7. Bio gas 8. Other		
SE07	Does your household have electricity? (<i>Rwanda Questionnaire</i>)	1. Yes 2. No		
SE08	Does your household have..... <i>Several response alternatives possible (Rwanda Questionnaire)</i>	1. Byscle	Yes	No
		2. Motorcycle	Yes	No
		3. Television	Yes	No
		4. Radio	Yes	No
		5. Iron	Yes	No
		6. Refrigerator	Yes	No

	<i>(Interviewer: Several options can be indicated)</i>	7. Mobile phone	Yes	No
		8. Care	Yes	No
		9. A computer	Yes	No
		10. Land	Yes	No
		11. Cattle (goats,cows,pigs)	Yes	No
		12. None of the above	Yes	No
SE09		What is the main source of your income? <i>(Rwanda Questionnaire)</i> <i>(Several options can be indicated)</i>	1. Income from selling foodstuff/goods of own production 2. Salary/month. 3. Pension/month 4. Social protection scheme/month 5. Income from rental of property 6. My children 7. Other income/month	
SE10	How much do you get per month?			
C. General Health				
GH01	<i>How would you assess your general state of health today? (SAGE Q2000)</i> <i>(interviewer: circle the response)</i>	1. <i>Very good</i> 2. <i>Good</i> 3. <i>Moderate</i> 4. <i>Bad</i> 5. <i>Very bad</i>		
GH02	In the past three months, have you experienced any diseases? (If NO, skip to GH 04) Which disease(s)?	1. Yes 2. No		
GH03	<i>(interviewer: listen and circle the response)</i>	1. Breathing/respiratory problems 2. Heart disease 3. Cancer 4. Influenza and pneumonia 5. Diabetes 6. Arthritis 7. Body pain		

		8. Other, please specify
GHo4	Have you during the last three months believed yourself to be in need of medical care but refrained from seeking care? (<i>If the answer is No, go on the question GHo6</i>).	- Yes - No
GHo5	What was/were the reason(s) why you did not seek medical care? (<i>Swedish Questionnaire</i>). (<i>More than one answer can be given</i>)	- The problem cleared up - Waiting times too long - Difficult to get through on the telephone - Did not get an appointment quickly enough - Negative experience from previous visits - Financial reasons - Did not have time - Did not know where to go - Other reasons (Please specify.....)
GHo6	Have you, during the last three months refrained from buying medicine for which you had prescriptions? (<i>Swedish Questionnaire (If the answer is No, go to section D)</i>)	- Yes - No
GHo7	What is the main reason why you refrained from buying medicine for which you had prescriptions? (<i>Swedish Questionnaire</i>) (<i>More than one answer can be given</i>)	- Became well - Could not afford to buy the medicine - Had sufficient medicine already - Too far to the pharmacy - Did not think the medicine would help - Negative experience from previous visit to a pharmacy - Other reason (Please Specify.....)
D. Quality of life (EQ-5D-3L)		

EQ-5D is a standardized measure of health status developed by the EuroQol Group in order to provide a simple, generic measure of health for clinical and economic appraisal. Each of the 5 dimensions comprising the EQ-5D descriptive system is divided into 3 levels of perceived problems: Level 1: indicating no problem Level 2: indicating some problems Level 3: indicating extreme problems By placing a tick in one statement in each group below, please indicate which statements best describe your own health state today.		
QLo1	Mobility	1. No problems in walking about 2. Some problems in walking about 3. Confined to bed
QLo2	Self-Care	1. No problems with self-care 2. Some problems washing or dressing myself 3. Unable to wash or dress myself
QLo3	Usual Activities (<i>e.g. work, housework, family or leisure activities</i>)	1. No problems with performing my usual activities 2. Some problems with performing my usual activities 3. Unable to perform my usual activities
QLo4	Pain/discomfort	1. No pain or discomfort 2. Moderate pain or discomfort 3. Extreme pain or discomfort
QLo5	Anxiety/Depression	1. Not anxious or depressed 2. Moderately anxious or depressed 3. Extremely anxious or depressed
E. Knowledge on Health Insurance		
HIo1	Do you know or have you heard anything concerning Health Insurance?	1. Yes 2. No
HIo2	Can you tell me how did you come to know it?	1. Radio and Television 2. Health staff 3. Children and grandchildren

		4. Community leader 5. Member of the scheme 6. Employer 7. Don't know 8. Other, please specify.....
HIo3	What do you think HI is all about? <i>(interviewer: don't read the answers)</i>	1. Tool used to pay for medical expenses incurred by the insured 2. Protects people from postponing medical care 3. Protects people from loss of income 4. Protect people from heavy costs 5. Promotes sharing the expenses for health care between sick and health. 6. Don't know 7. Other, please specify
HIo4	Have you ever had Health Insurance? <i>(If NOT go to Question HI 13)</i>	1. Yes 2. No
HIo5	Do you have health Insurance now? <i>(SAGE Qo411) (if NO skip number HI13)</i>	1. Yes 2. No
HIo6	Which insurance scheme are you a member? <i>(Read the scheme and circle)</i>	1. Public – (NHIF, CHF, SBHI) 2. Private (AAR, Strategies) 3. Don't know
HIo7	When did you join HI?	1. Six months ago 2. 6 to 12 months ago 3. 1 year ago 4. More than one year 5. Don't know
HIo8	Why did you join HI? <i>(interviewer: listen and tick)</i>	1. To enjoy free access to health care 2. It is cost effective 3. Inability to pay every visit

		4. Security and peace of mind in times of illness 5. Prolonged illness 6. A demand from my children 7. Other, please specify.....
HI09	Who pays the insurance?	1. Myself 2. Husband/wife 3. My children 4. Relatives and friends 5. Other, please specify... 1. Yes 2. No
HI10	Are you willing to remain a member of HI?	
HI11	If YES, please state the reasons for you to remain a member of HI	
HI12	If NO, please state the reasons for you to remain a member of HI	
HI13	If not, why are you not a member of HI?	1. Have no interest on HI 2. I can pay for the services I need 3. Difficulties when enrolling in the scheme 4. Delayed issuance of ID 5. Registration takes too much time 6. I can afford to pay the monthly premiums 7. I have little trust on efficiency of HI service 8. Other, please specify
F. Access to health care services		
AH01	Over the last 3 months, did you receive any health care not including an overnight stay in hospital (SAGE 5026)	1. Yes 2. No 3. Don't know
AH02	In the last three months, what was the last health care facility you visited? (SAGE 5028)	1. Private doctor's office 2. Private clinic or health care facility

	<i>(interviewer: listen and tick one option only)</i>	3. Private hospital 4. Public clinic or health care facility 5. Public hospital 6. Charity or church run hospital 7. <i>Traditional healer</i> 8. Other, please specify
AHo3	Was this a nearest health facility?	1. Yes 2. No
AHo4	<i>What was the main reasons you needed care even if you did not get care (SAGE Q5029c)?</i> <i>(interviewer: more than one reason can be provided)</i>	1. Breathing/respiratory problems 2. Heart disease 3. Influenza and pneumonia 4. Diabetes 5. Arthritis (including pain on joints) 6. Body pain 7. Other, please specify
AHo5	Did you receive medical care or treatment for your problem?	1. Yes 2. No
AHo6	If NO, what were the reasons	1. Insurance wouldn't pay for 2. Couldn't get a referral 3. The wait was too long 4. The specialists are not available in my area 5. Couldn't get appointment 6. Couldn't afford to pay 7. Other, please explain....
AHo7	During your last visit to a health facility, did you pay for the service? <i>(if NO, skip to AH12)</i>	1. Yes 2. No 3. Don't know
AHo8	What services did you pay for?	1. Registration and doctor 2. Medicine 3. Lab tests

		4. Don't know 5. Other, please specify.... 1. _____ 2. Can't remember				
AH09	How much did you pay in total?					
	(Interviewer: record the amount)					
AH10	How much did you pay for?	1. Health care provider fee..... 2. Medicines..... 3. Lab test..... 3. Don't know..... 1. My self 2. My wife / husband 3. My child/children 4. My relative and friends 5. Other 6. Do not know				
AH11	Who paid this?					
In the next questions, I will ask you about your experience in the outpatient services <i>(interviewer: listen and tick)</i>						
AH12	For your most recent last visit to hospital how would you rate the following	Very good	Good	moderate	Bad	Very bad
AH13	the amount of time you waited before being attended to (SAGE Q5039)					
AH14	...how clearly health care providers explained things to you? (Q5020)					
AH15	your experience of being involved in making decision for your treatment (Q5021)					
AH16	the way the health services ensured that you could talk privately to providers (Q5022)					
AH17	...the ease with which you could see a health care provider? (Q5023)					
AH18	cleanliness in the health facility (Q5024)					

AH19	Overall, how are you satisfied with the care you received during your last visit? (SAGE Q5034)	1. <i>Very satisfied</i> 2. <i>Somewhat satisfied</i> 3. <i>Neither satisfied nor dissatisfied</i> 4. <i>Dissatisfied</i> 5. <i>Very dissatisfied</i>
<i>In the next questions, I will ask you about your overnight stay in a hospital or health care facility</i>		
AH20	In the last 12 months, have you ever stayed overnight in a hospital	1. <i>Yes, a hospital</i> 2. <i>No</i>
AH21	Over the last twelve months, how many different times were you a patient in a hospital for at least one night? (sage 5007) (interviewer-record number of times)	1. <i>Once</i> 2. <i>Twice</i> 3. <i>Thrice</i> 4. <i>More than three times</i> 5. <i>Don't know</i>
AH22	What type of hospital or facility was it? (Sage 5008a)	1. <i>Public health facility</i> 2. <i>Private health facility</i> 3. <i>Charity or church health facility</i> 4. <i>Don't know</i> 5. <i>Other, specify</i>
AH23	Which reasons best explain why you were last hospitalized? (5008b)	1. <i>Breathing/respiratory problems</i> 2. <i>Heart disease</i> 3. <i>Cancer</i> 4. <i>Influenza and pneumonia</i> 5. <i>Diabetes</i> 6. <i>Arthritis (pain on joints)</i> 7. <i>Body pain</i> 8. <i>Other, please specify</i>
AH24	How did you get there? (5009)	1. <i>Private vehicle</i> 2. <i>Public transportation</i> 3. <i>Taxicab</i>

		4. Ambulance or emergency vehicle 5. Bicycle 6. Walked 7. Don't know
AH25	About how long did it take you to get there? (5009)	_____ hours : minutes
AH26	Did you pay?	1. Yes 2. No
AH27	How much did you pay for?	1. Health care provider fee..... 2. Medicines..... 3. Lab test..... 4. Don't know.....
AH28	How much did you pay in total? (Interviewer: record the amount)	1. _____ 2. Can't remember
AH29	Who paid for your hospitalization?	1. My self 2. Wife/husband 3. Children 4. Other family member 5. Non-family member 6. Mandatory insurance scheme 7. Voluntary insurance scheme 8. Hospitalization was free
AH30	What was the outcome or results of your of your hospitalization? Did your condition ...	1. Get much better 2. Get better 3. No change 4. Get worse 5. Get much worse
AH31	Have you during the last 12 months believed yourself to be in need of hospitalization but refrained from seeking care?	1. Yes 2. No 3. Don't know

AH32	<i>What was /were the reason(s) why you did not seek medical care (more than one answer can be given -SE Question 33b)</i>	1. <i>The problem cleared up</i> 2. <i>Waiting time too long</i> 3. <i>Difficult to get through on the telephone</i> 4. <i>Did not get an appointment quick enough</i> 5. <i>Negative experience from previous visits</i> 6. <i>Financial reasons</i> 7. <i>Did not have time</i> 8. <i>Did not know where to go</i> 9. <i>Other reasons</i>				
	I now want to know your experience for the overnight stay in the hospital (interviewer: listen and tick)					
AH33	...the amount of time you waited before being attended to...	Very good	Good	Moderate	Bad	Very bad
AH34	...your experience of being treated respectfully					
AH35	How clearly health care providers explained things to you					
AH36	your experience of being involved in making decision for your treatment					
AH37	...the way the health services ensured that you could talk privately to provider					
AH38	the ease with which you could see a health care provider?					
AH39	...cleanliness in the health facility					
AH40	Overall, how satisfied were you with the care you received during your last hospital stay.	1. <i>Very satisfied</i> 2. <i>Satisfied</i> 3. <i>Neither satisfied nor dissatisfied</i> 4. <i>Dissatisfied</i> 5. <i>Very dissatisfied</i>				

Appendix 3: Interview and Focus group discussion guides

a. Interview guide for health providers (S3)

Introduce the purpose of the study, getting consent of the respondent and taking some notes on bio data. (age, sex, education background/level, work position, time in service).

- a) For how long have you been involved in the provision of health care services to the elderly?
- b) How is the experience of providing care to the elderly? What challenges/opportunities do you think are the most relevant?

Probe: How does insurance scheme influence care from your perspective? Treatment equal for everyone? Feeling about health insurance?

- c) What/Which key challenges have you been facing in providing care to the elderly? Insured elderly?

Probe: challenges related to: policy and guidelines, benefit package vs service coverage, referral process and system, ethical issues, availability of human resources (e.g. geriatricians) vs workload, payment and reimbursement mechanisms, accreditation process etc.

- d) What are the consequences of the challenges you have identified in providing healthcare to elderly? What about the to the insured elderly?

- e) What do you think is necessary to overcome the challenges you face in the attention to the elderly?

Probe: in your opinion, what should be done in order to improve the situation?

b. FGD/ Interview Guide questions for the elderly (S4)

Introduce the purpose of the study, getting consent of the respondent and taking some notes on bio data. (age, sex, education background/level, work position, time in service).

- a) How has your health been the last year?
- b) Have you had the need to go to any health care facility?
- c) How was your experience when you went there?

Probe: availability of services, referral process and system, privacy, waiting time, availability of human resources (e.g., geriatricians), payment mechanisms, communication with providers, involvement in decision making, accreditation process etc.

- d) How did you deal with the costs derived from care? Did your insurance scheme cover all the costs?
- e) What do think about health insurance? (Positive and negative aspects of being insured).

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