

THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

Household Catastrophic Health Care Expenditure: Evidence on the Effects of Out-of-pocket Health Care Payments on Household Income in East African Region

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Abstract:

Out Of Pocket Payments (OOPP) refers to the amount of money a patient pays for medical expenses that are not covered by a health insurance plan (National Cancer Institute, 2022). The World Health Organization (WHO) defines OOPP as the individuals' direct payments to healthcare providers at the time of service use (Kalantari, 2012). Developing countries are exposed to considerable socio-economic vulnerabilities. Catastrophic out-of-pocket spending has adverse effects on individual and household income, especially where policies on healthcare financing does not favor the poor. Health care funding and the quality of healthcare outcomes in development are inseparable. The World Health Organization Assembly resolution of 2005 on universal coverage and sustainable health financing, the Paris Declaration of 2001 on greater Investments in the Health Sector, Health Insurance and Financing, and the Sustainable Development Goal number 1 on ending all forms of poverty forms the basis of this study. African Governments committed through the Abuja Declaration, to allocate and spend at least 15 percent of government funds of their National GDP on health. In June 2015, Countries in the East African Community concurrently released their National budgets for the Financial Years 2015/2016. None of the countries had fulfilled the Abuja declaration promise on healthcare investment in East African Community. This study examined how different countries in East Africa have invested in healthcare and the state of out-of-pocket spending on household income. Related literature review will be analyzed, and conclusions and the way forward in relation to household healthcare spending in East African Countries will be discussed.

Keywords: Households, Poverty, catastrophic health care spending/expenditure, Out-of-pocket payments/spending, Universal health care, Healthcare financing, Health insurance

1. Background

Out of Pocket Payments (OOPPs) refer to the amount of money a patient pays for medical expenses that are not covered by a health insurance plan (National Cancer Institute, 2022). The World Health Organization (WHO) defines OOPP as the individuals' direct payments to healthcare providers at the time of service use (Kalantari, 2012). Out-of-pocket costs may include deductibles, coinsurance, co-payments, and costs for non-covered healthcare services. Catastrophic health expenditure (CHE) represents out-of-pocket (OOP) payments for health care exceeds a specified threshold of household's income or household's capacity to pay (CTP) (O'Donnell *et al.* 2008; WHO, 2000). There is no consensus on the threshold above which health expenditures are considered catastrophic. O'Donnell *et al.* (2008) defined CHE as direct OOP medical costs exceeding 10% of the monthly household income. The World Health Organization (WHO) (2000) defined financial catastrophe as the OOP expenditure exceeding 40% of the household income net of subsistence needs. The introduction of financial protection schemes seeks to pool funds to protect individuals against catastrophic health expenditures. Social health insurance reduces household vulnerability to high out-of-pocket payments for health services in times of illness through reduction in direct medical costs and loss of income due to ill health (WHO, 2010). Households pay for healthcare through subscriptions to health insurance schemes and direct out-of-pocket payment as they utilize services. Out-of-pocket payment (OOPP) is generally considered to be the least preferred mode of paying for healthcare. This is due to the fact that there is no pooling of risk and cross subsidization between individuals with varying health care needs. Individuals with greater health care needs bear the heaviest financial burden, irrespective of their ability to pay. As such, there is no equity in paying for health care. Out-of-pocket payments also expose households to the risk of catastrophic expenditures. This is a situation where a household spends a large proportion of income on healthcare, at the expense of other needs such as clothing and education for children. For interventional purposes, different stakeholders should be well-informed in relation to the extent in which OOPP affects different population categories, health care systems, localities and gender.

According to Liu *et al.* (2019), catastrophic health spending occurs when the amount a household pays out of pocket exceeds a predefined share of its capacity to pay for healthcare. This may mean the household can no longer afford to meet other basic needs (for example- food, housing, water, electricity and fuel for cooking and heating) or cannot afford to meet basic needs without drawing on savings, selling assets or borrowing. Capacity to pay for healthcare can be defined

in different ways:- *Numerator*: Out-of-pocket payments, defined according to the International Classification for Health Accounts as formal and informal payments made at the time of using any health care good or service provided by any type of provider; including user charges (co-payments) for covered services and direct payments for non-covered services; and excluding any pre-payment in the form of taxes, contributions or insurance premiums and any reimbursement by a third party such as the government, a health insurance fund or a private insurance company. *Denominator*: Using this metric, a household's capacity to pay for health care is defined as per adult equivalent total household consumption subtracted from a standard amount to cover basic needs. The standard amount is calculated as the average amount spent on food, housing (rent) and utilities (water, electricity and fuel used for cooking and heating) by households between the 25th and 35th percentiles of the household consumption distribution who report any spending on each item, respectively, adjusted for household size and composition using the Organisation for Economic Co-operation and Development (OECD) equivalence scales. These households are selected based on the assumption that they are able to meet, but not necessarily exceed, basic needs for food, housing and utilities. This standard amount is also used as a poverty line (basic needs line) to measure impoverishing health spending. *Disaggregation*: Results are disaggregated into household quintiles by consumption per person using the OECD equivalence scales. Disaggregation by place of residence (urban-rural), age or employment status of the head of the household, household composition and other factors included in country-level and regional-level analysis were relevant. Financial protection is measured at the level of the health system rather than at the level of different types of health care, diseases or patient groups. To fully understand progress towards universal health coverage, indicators of financial protection should be monitored jointly with indicators of service coverage and access to health services (where available). Out-of-pocket payments can create a financial barrier to access, resulting in unmet need, and lead to financial hardship among people using health services, including medicines (Liu *et al.*, 2019).

Catastrophic spending on healthcare from the pocket may affect the Universal health coverage (UHC) efforts. Universal health coverage (UHC) means that all people have access to the health services they need, when and where they need them, of sufficient quality to be effective while also ensuring that the use of these services does not expose the user to financial hardship. It includes the full range of essential health services, from health promotion to prevention, treatment, rehabilitation, and palliative care (WHO, 2022a). Increased access to high quality essential healthcare services is vital for holistic functioning of the society. According to WHO (2022b), at least, half of the world's population still lacks coverage of essential health services. Further, WHO asserts that over 930 million people spend at least 10% of their household income on healthcare. About 100 million people are pushed into extreme poverty each year because of out-of-pocket spending on health.

Achieving Universal Health Coverage is one of the targets the nations of the world set while adopting the SDGs in 2015. Countries reaffirmed this commitment at the United Nations General Assembly High Level Meeting on UHC in 2019. The inclusion of UHC in the SDGs presents an opportunity to promote a comprehensive and coherent approach to health, focusing on health systems strengthening – health policy. The sustainable development goals (SDGs) are all inter-related. SDG number 3 targets to ensure healthy lives and promote the well-being of people for all at all ages. Target 3.8 is summarized as to 'Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all'. To measure the realization of this target, countries have two important indicators. One is on Universal health coverage of essential health services (Indicator 3.8.1) and the other is on Proportion of population with large household expenditures on health as a share of total household expenditure or income (Indicator 3.8.2) (UN, 2022). The home to the Out-of-pocket healthcare spending and household income problem is SDG number one on ending poverty in all its forms everywhere by the year 2030. The solution to out-of-pocket spending in healthcare and Universal health coverage can be resolved through affordable, equitable and accessible healthcare financing systems.

The demand for social protection schemes, as a way of mitigating against the effect of out-of-pocket payments and poverty, is growing as social protection schemes prove to be successful in fighting against poverty. Social protection schemes, either voluntary and/or mandatory, have been adopted by middle and low income countries with the aim of increasing equity in access to health services and providing financial risk protection, especially for the poor (Garcia-Subirats *et al.*, 2014). The introduction of financial protection schemes seeks to pool funds to protect individuals against catastrophic health expenditures. Social health insurance reduces household vulnerability to high out-of-pocket payments for health services in times of illness through reduction in direct medical costs and loss of income due to ill health (WHO, 2010). Sood *et al.* (2014) indicated that poor households covered under these schemes tend to have reduced mortality, better access to care and reduce health care expenditures. Out-of-pocket payments by eligible households in this same study were also reduced by 64% for hospital admission fees.

WHO (2022c) confirms that COVID-19 pandemic has had major impact on essential health services. This was as a result of a recent key informant pulse survey which showed that disruptions of essential health services had happened in nearly all responding countries, and more so in lower-income than higher-income countries. A wide range of services were affected, including essential services for communicable diseases, non-communicable diseases, mental health, reproductive, maternal, newborn, child and adolescent health, and nutrition services. The pandemic was a major measure on the capacity of healthcare systems in the countries of the world to deliver essential health services. After COVID-19 outbreak, there was lack of government commitment and policy interventions on how the treatment cost for COVID-19 would be managed and the nature of support vulnerable citizens, especially low-income earners, could receive to cover costs of testing and treatment in Kenya. Most of the healthcare insurance companies were not ready to take the risk of covering individuals infected with COVID-19. This led to extremely high financial burden to families to the extent that some sold

their assets or either requested for financial support from well wishes. Some families have not recovered from the aftermaths of COVID-19 hospitalization even today.

2. Methodology

The study relied substantially on secondary (desk top) research and published work to identify existing literature on the effects of out-of-pocket health care payments on household income in East African Region through web-based generic search engines. On-line Published researches, relevant to this study, were examined. Currently, East Africa Community has seven member countries. However, six countries were involved in the study because the newest member (Democratic Republic of Congo - DRC) joined the community when this study had already commenced (before 29th March, 2022). Published papers from the six East African countries were used for analysis. These studies were sampled from Burundi, Rwanda, Kenya, Tanzania, Uganda and South Sudan. This study was guided by one study objective- To investigate the influence of Out-of-pocket payments on healthcare on the household income among East African Member Countries. Findings were drawn qualitatively from the literature reviewed. Interpretations and discussions of the findings were later done. Conclusion and recommendations were made on research on Out-of-pocket payments on healthcare and household income among East African member Countries.

3. Theoretical Framework

There are two common approaches for measuring catastrophic expenditure. The first method is by Wagstaff and Van Doorslaer (2002) in relation to budget share and the second method is by Xu, *et al.*, (2006) in relation to a household's capacity to pay. They define household's capacity to pay as remaining income after basic subsistence needs have been met. However, these definitions ignore variation in the capacity of households to cope with health care costs (savings, assets, credit and transfers from friends and relatives) (Flores *et al.*, 2008). The weaknesses, notwithstanding the two methods, provide important measures of catastrophic health expenditure. Moreover, these measures are also useful in making comparisons across societies or countries.

4. Overview from East African Countries

The data in table 1 below shows that none of five countries spent more than 15 percent of government domestic resources on health between 2012 and 2015. In 2015, Burundi allocated the highest percent of total government expenditure on health. It is worth noting that there is inconsistency in all East African Countries in terms of moving towards achieving the Abuja Declaration target of 15% government spending on health. Kenya has had the lowest percentage of the government expenditure spent on health, while Uganda has had a drastic decline in its budget to health in 2015. The trend is not consistent with the Abuja Declaration commitment.

Country	2012/2013	2013/2014	2014/2015	2015/2016
Burundi	9	10	10	13.8
Kenya	6.1	3.4	4.0	4.0
Rwanda	10.8	9.2	11.3	10.2
Tanzania	8.5	8.5	8.0	8.0
Uganda	7.7	8.6	8.4	5.3

Table 1: Government Health Budget as a Percentage of General Government Budget between 2012 and 2015
Source: EAC Countries Ministries of Health, EAC Countries Budget Speeches 2012-2015

In most low and middle income countries, households are a significant source of funds for health. Households pay for healthcare through subscriptions to health insurance schemes and direct out-of-pocket payment as they utilize services. Out-of-pocket payment is generally considered to be the least preferred mode of paying for healthcare. This is due to the fact that there is no pooling of risk and cross subsidization between individuals with varying health care needs. Individuals with greater healthcare needs bear the heaviest financial burden, irrespective of their ability to pay. As such, there is no equity in paying for health care. Out-of-pocket payments also expose households to the risk of catastrophic expenditures. This is a situation where a household spends a large proportion of income on healthcare, at the expense of other needs such as clothing and education for children. The total out of pocket expenditure, as percentage of private health expenditure for the year 2013 in East African region, was shocking. Burundi had 44.7%, Kenya had 75.5%, Rwanda had 44.6%, Tanzania had 52.1% and Uganda had 54% (WHO, 2019). South Sudan got her independence in the year 2011 and became a member of East African Community in 2016. Democratic republic of Congo applied in 2019 and became a member of East African Community in the year 2022.

From the above statistics, the less a country spends from their GDP on Health care expenditure, the more they spend on out-of-pocket payments among her citizens. This implies that households are burdened with health expenditure most in Kenya. During and after admission for treatment, there is a current trend that you might even exhaust your health insurance cover before your actual diagnosis of the problem is done. A number of individuals have gone to their pockets or even mobilized family, friends and relatives to cater for the unexpected accretion in treatment cost. The Sustainable development Goal number 1 is 'Ending poverty in all its forms everywhere by 2030'. This goal cannot be realized when households are spending their life time savings or assets for healthcare. With the current increment in non-communicable diseases and COVID-19 pandemic, many households, using out-of-pocket for medication, have been left devastated economically.

4.1. Kenya

According to WHO (2010), the Total Health Expenditure (THE) in Kenya was KSh 346 billion (USD 3,476 million) in 2015/16, which is higher than KSh 271 billion (USD 3,188 million) in 2012/13. Total health spending in 2015/16 accounted for 5.2% of GDP, which is less than 6.8% in 2012/13. Further, WHO (2010) noted that countries, whose entire populations have access to a set of services, usually have relatively high levels of [mandatory] pooled funds – in the range of 5–6% of gross domestic product (GDP). Kenya spent 2.5 % of pooled funds in 2015/16 on health.

Kenya's life expectancy is averaged at 61 years and this is an improvement as compared to the past few years (The Dutch Republic, 2016). Murunga, Mogeni, and Kimolo (2019), on *'Public Health Spending and Health Outcomes in Kenya'* explain that the Kenyan government has made substantial efforts to improve health outcomes as well as use of the health services. These efforts have been captured through the decrease in child mortality and decreased burden of major communicable diseases as compared to ten years ago. Other notable improvement is reduction in the mortality rate of under-5 children by 54 percent between 2003 and 2014. The death rate of the under-5 children was 115 in 1000 live births in 2003, but it reduced to 52 in 1000 live births in 2014. Further, there was an improvement in infant mortality rate. The country's infant mortality rate decreased from 77 in 1000 live births in 2003 to 39 in 1000 live births in 2014. However, neonatal mortality remains high contributing about 35 percent of the infant mortality rate. On maternal health, the maternal death rate has remained high at 362 deaths per 100,000 live births (GoK, 2017). Health care in Kenya is financed from three sources namely- government expenditure, out-of-pocket expenditure and donors (Munge & Briggs, 2013). In 2017/18 fiscal year, the government of Kenya allocated a total of KES 61.6 billion to health sector. Out of this, pro-poor budget allocations were as follows: KES 900 for free primary healthcare, KES 300 million for health insurance for older people and people with disabilities, KES 4.3 for free maternal healthcare and KES 3.4 billion for special grant (Republic of Kenya, 2017).

From the above, we can conclude that investment in child immunization programmes had implications on reducing the mortality rates of infant and children below five years in Kenya. Also, increase in the number of doctors per 100,000 population resulted into reduced infant mortality rates. Further, increase in female literacy levels led to reduced infant mortality rates. Public investment in health reduces the size of out-of-pocket expenditure thus relieving the population from poverty occasioned by catastrophic health expenditure. A healthy human capital implies a future dependable workforce for economic and social development. Thus, increased investment in public health in Kenya improves health outcomes.

The government of Kenya has embarked on a highly ambitious reform programme that aims to provide quality and affordable health care to all Kenyans. This is based on the Constitution of 2010 and the current health care policy 2014-2030. The first phase of the Universal Health Coverage (UHC) agenda is currently being piloted in four Kenyan counties and national rollout is planned by the end of 2022.

A study carried out by Salari, Di Giorgio, Ilinca, and Chuma (2019) on *'The Catastrophic and Impoverishing Effects of Out-of-pocket Healthcare Payments in Kenya'* found out that the incidence of catastrophic payments is more severe for the poorest households and in the rural areas and outpatient services are the main drivers of catastrophic payments. From the above study, socio-economic conditions, the presence of elderly in the household and of people affected by chronic conditions are key characteristics associated with the probability of incurring high OOP expenditures. The study concluded that the best predictors of outpatient care expenses in Kenya are age, wealth index, and education level of the household head. From the above findings, it can be understood that through the removal of user fees, the ongoing UHC agenda is expected to increase access to inpatient services and this may lead to a raising number of people experiencing catastrophic expenditure as well as higher poverty due to the high costs of inpatient care. Consequently, it is important that efforts to expand access to care are accompanied with interventions to protect citizens against catastrophic expenditure.

Mwenda, Nduati, Kosgei and Kerich (2021), on *What Drives Outpatient Care Costs in Kenya? An Analysis with Generalized Estimating Equations*, found out that, although the country continues to strive toward reforming its healthcare system, it faces challenges in the form of financial constraints such as- high debt, a high debt-to-gross domestic product ratio of 70%, weak institutional capacity, and a high unemployment rate almost 20%, which, in turn, raises the dependency ratio. Thus, there are significant obstacles to effective change; owing to a constrained budget, funds allocated to the healthcare sector remain low. The recent budget allocation of 9.1% to the healthcare sector as a proportion of total government budget is low; this is contrary to the 2001 Abuja Declaration on healthcare in Africa that at least 15% of the budget be allocated to the healthcare sector. Mwenda, Nduati, Kosgei and Kerich (2021) concluded that the best predictors of outpatient care expenses in Kenya are age, wealth index, and education level of the household head. From the above study, it can be understood that, households headed by older members were associated with higher spending. This can partly be explained by the fact that higher age could signify (a) the aged suffering from chronic and serious illnesses that are expensive to treat, (b) more members in the household needing these services, and (c) higher incomes to pay for a service.

Kenya's population is projected to hit 85 million people by 2050: fertility rate will drop from an average of 8.1 children in 1978 to 2.4 children by 2050, while life expectancy will rise to 68 years (The World Bank, 2010). Whereas the average number of children being born will keep dropping, more people will live longer than in the past. There is evidence to suggest effort towards welfare protection for the elderly in Kenya. The Older Persons Cash Transfer Program, started in 2007, gives a monthly stipend of \$20 to those over 65 years whose poverty levels are considered dire. Another program is the Health Insurance Subsidy Program (HISP) that targets the poorest and vulnerable, mostly the elderly, and provides them with health insurance coverage to enable them access health services (The World Bank, 2014). Kenyan households spend at least 10 percent of their income on health and that the catastrophic health expenditure is borne mostly by the

poor (Buigut *et al.*, 2012; Chuma & Maina, 2012). Furthermore, about 1.48 million Kenyans have been pushed below the national poverty line due to OOPHE (Chuma & Maina, 2012).

Opondo and Odhiambo (2020) carried a study on '*Out-of-pocket Health Expenditure among the Elderly in Kenya*'. From their study, results showed that the average number of visits by the elderly to the hospital was about 2 visits per person after travelling an average distance of 5.49 kilometers to get to the health facility. An extra kilometer to the health facility increased the probability of OOPHE by 38.57 percent. The average OOPHE for an elderly person was Kenya shillings (KES) 921 (about \$9). The highest spent amount was KES 150,000 (about \$1,500). The number of visits to the health facility reported a positive effect on OOPHE. One more visit increased the probability of OOPHE by 2.49 percent. Further, the presence of chronic illness was likely to increase the household's OOPHE by 41.72 percent holding other factors constant. An extra year lived, among the elderly demographic in Kenya, increased the OOPHE incurred by almost three times holding the other variables constant. Further results indicated that individuals with health insurance cover were 36.58 percent and were more likely to have higher OOPHE than those individuals without health insurance. Regarding the gender, male patients were found to be more likely to spend more on OOPHE compared to their female counterparts by 17.68 percent (Opondo and Odhiambo, 2020).

From the above findings, it can be concluded that the presence of chronic illnesses significantly increased OOPHE. Chronic diseases are a proxy variable for deteriorating health status, which ultimately cause increased demand and utilization of health services. Possessing health insurance significantly increased OOPHE. Being elderly exposes individuals to higher risk of utilizing more health services than if otherwise. Furthermore, the health insurer, who is consciously aware of the existing information asymmetry, chooses to discourage the likely moral hazard by introducing co-payments and policy limits which ultimately increase OOPHE. Adopting economic evaluation, through health technology assessment (HTA) would guide in having cost-effective health insurance benefit packages and further assist in strategic purchasing of health services. This would, in turn, lead to both technical efficiency (sufficiency of health services) and allocative efficiency (the right services) for the elderly thus protect them from OOPHE (Dang *et al.*, 2016).

MoH - Kenya (ND) carried a study on the '*Case for Increasing Public Investments in Health Raising Public Commitments to Kenya's Health Sector*'. From the study, it was found out that 12.7 percent of sick Kenyans do not seek health care when they are ill with high cost of services being one of the major barriers that accounted for up to 21 percent of those who did not seek care in 2013. Further, 2.6 million Kenyans (6.2 percent of households) were at risk of impoverishment as a consequence of expenditure on health care depleting household savings and were at a risk of falling into poverty. Overall, the population having access to health insurance averages 17 percent. However, the rate of insurance coverage is higher for urban population (27 percent) compared with rural population (12 percent). Health insurance coverage is positively correlated to wealth; in that insurance coverage is higher in the richest wealth quintiles at 42 percent compared with those in the poorest quintile at 3 percent.

The presence and affordability of health insurance among people is argued to have an insulating effect against Out-of-Pocket (OOP) payments and catastrophic health care expenditures (Liu, Chhabra, & Scott, 2020). In Kenya, the percentage of OOP health care spending as a share of total health expenditure accounted for 54% in 2001/2002, 39.3% in 2005/2006, 36.7% in 2009/2010, 39.8% in 2012/2013, and 23.6% in 2017/2018 (Ministry of Health, 2019). These OOP payments have been shown to deny many Kenyans the privilege of access and utilization of quality health services, while constantly thrusting hundreds of thousands into poverty annually, and posing detrimental impoverishing effects to tens of thousands more (Barasa, Maina, & Ravishankar, 2017). Kimani *et al.* (2016) asserted that the ability of households to finance health care greatly influence access and utilization of these services.

From the above findings, individuals with health insurance cover spend more from OOP on health care, compared to those without it. This could be due to the structure of health insurance plans in Kenya which are mostly designed to require members cost share a certain percentage of medical expenses as a condition for cover.

Barasa, Maina and Ravishankar (2017) carried out a study on '*Assessing the Impoverishing Effects and Factors Associated with the Incidence of Catastrophic Health Care Payments in Kenya*'. From the findings, the mean annual OOP health spending was KES 5325.12 for outpatient services and KES 941.04 for hospital admissions. Additionally, households on average spent KES 1966.67 on transport to and from a facility to seek outpatient and/or inpatient care. Transport costs, therefore, equaled almost a third (31.39%) of direct healthcare (inpatient plus outpatient) costs, and comprised 23.89% of total (direct healthcare plus transport) costs incurred to access healthcare. Direct OOP spending for outpatient services were the greatest driver (64.68%) of total OOP health spending (direct healthcare and transport costs), while payments for medicines comprised the highest proportion (44.57%) of direct healthcare payments (outpatient and inpatient OOP). The fact that outpatient care and costs of medicines are the greatest cost drivers of direct OOP costs paid to healthcare facilities should not be ignored. These findings are important given that often health financing schemes, specifically social health insurance schemes in Lower and middle income countries (LMICs), do not adequately and or/explicitly cover the cost of medicines as well as the cost of out-patient care. There is a need to review the healthcare insurance policies.

4.2. Uganda

All care delivered at government hospitals in Uganda is completely free of charge. There are no doctor's fees or hospital bills. However, if there are out-of-stock items or if equipment is broken or otherwise unavailable, then patients and their families must purchase those goods and services outside of the government facility before care can be rendered. For instance, if the hospital is out of gloves, bandages and antibiotics, then a family member must go to the local pharmacy to purchase these items and bring them back to the hospital so they can be used to treat the patient. Stock-outs happen

with great frequency at many government facilities around Uganda and in other developing countries (Windisch, Waiswa, Neuhann, Scheibe, and de Savigny. 2011; Pronyk, Nemser, Maliqi, Springstubb, Sera, Karimov, *et al.*, 2016).

Uganda's government allocations to the health sector remain far below the Abuja Declaration target of 15% of the total budget, and have not increased significantly since 2011. Total Health Expenditure (THE) is only 1.3% of GDP, far below the government's target of 4% (MoH of Uganda, 2015). Government contributes a mere 15% to THE, compared to 37% by households and 45% by donors, according to the most recent government data (MoH of Uganda, 2015). There are also concerns about how efficiently resources are being used. In recent years, roughly half (45%) of the allocated health budget has not been released for spending and of the budget actually released, nearly 15% goes unspent (MFPED, 2016). Households in Uganda bear a substantial financial burden for health care delivery.

In 2014, out-of-pocket expenditure was more than 40% of THE in Uganda (WHO, 2014). High out-of-pocket costs disproportionately affect poor and vulnerable households, forcing many to forgo health services. In 2011, 71.1% of women in the poorest income quintile reported that lacking money for treatment prevented them from accessing health care (UBOS and ICF, 2012). In Uganda, Many health facilities, particularly in rural areas, lack essential medicines, necessary staff, and are not offering care in line with clinical guidelines. This leads to huge disparities in access to services. For example, in 2012, only 27% of women in Karamoja, northern Uganda, gave birth in a health facility, compared to 93% in Kampala (UBOS and ICF, 2012). The ratio of Uganda's Total Health expenditure (THE) contribution by different stakeholders is disturbing Government (15%), Households (37%) and donors (45%). It is not possible to reach the Abuja declaration target of 15% contribution. Something here needs to be done.

According to Wemos health unlimited and ACHEST (2019), women, in Uganda, face multiple barriers to accessing critical routine and lifesaving maternal health care. The barriers fall into the 'Three Delays Model': i) delay in recognizing the need and deciding to seek care; ii) delay in reaching a healthcare facility; and iii) delay in receiving adequate and appropriate care. The latter is strongly linked with the absence of critical human resources. The WHO has recommended that in order to realize UHC as part of the SDGs, a country needs at least 4.45 professional health workers for every 1,000 inhabitants (WHO, 2016). If we apply this formula to Uganda, the total number of skilled health workers required by the country would be 167,765. In 2019, however, the number (i.e. of doctors, midwives and nurses) stood at just 27,761. Quality antenatal care and deliveries assisted by skilled health professionals can prevent unnecessary maternal and perinatal deaths. Most maternal and perinatal deaths occur around the time of delivery. One of the strategies to improve survival rates and health of women and newborns is to ensure that deliveries are conducted by skilled birth attendants. Skilled birth attendants are doctors, nurses, midwives and medical assistants or clinical officers.

Anderson *et al.* (2017) carried out a study on '*Out-of-pocket Payment for Surgery in Uganda: The Rate of Impoverishing and Catastrophic Expenditure at a Government Hospital*'. In this study, 295 patients were interviewed out of a possible 320 patients during the study period. Initially before the treatment, 46% of the patients met the World Bank's definition of extreme poverty (\$1.90/person/day). After receiving surgical care, an additional 10 patients faced extreme poverty, and 5 patients were newly impoverished according to the World Bank's definition (\$3.10/person/day). 31% of patients faced a catastrophic expenditure of more than 10% of their estimated total yearly expenses. 53% of the households in the study had to borrow money to pay for care, 21% had to sell possessions, and 17% lost a job as a result of the patient's hospitalization. Only 5% of the patients received some form of charity. Despite the availability of 'free care,' receiving an operation at a government hospital in Uganda can result in a severe economic burden to patients and their families.

4.3. Rwanda

Rwanda is one of the few African countries that have implemented Community Based Health Insurance Schemes (CBHIS) program. It is an integral part of its national healthcare financing system. The country started to implement the program, locally referred to as *Mutuelle de santé*, in 2004 and covered about 86% of the population in 2008 (MoH, 2010). All other things being equal, health insurance is expected to change the price of healthcare services, which could, in turn, increase utilization more (moral hazard). Although studies find that the program has significantly increased outpatient utilization rates, there are 3 concerns that the subsidized flat premium rate of about 2 USD per person is too high for the poor, especially for families of larger sizes (Shimeles, 2010; Lu *et al.*, 2012; Woldemichael and Shimeles, 2015). With additional expenses on transportation and non-essential drugs not covered by the insurance scheme, there is a debate that the insurance scheme could actually increase out-of-pocket cost, especially for the poor.

Woldemichael, Gurara and Shimeles (2016) carried a study on '*Community-Based Health Insurance and Out-of-pocket Healthcare Spending in Africa: Evidence from Rwanda*'. From the findings, the proportion of households with at least one family member enrolled in CBHI schemes were 42% and 76% in 2005 and 2010 respectively. About 5% of households had at least one family member covered through employment-based health insurance (RAMA, MMI, or other private health insurance). There are factors which determined enrollment to health insurance schemes: Families with higher income and wealth, families with chronic illnesses, and families with married elder people are all likely to enroll to insurance schemes. However, families with a male head, larger families, without good education background, and the poor were unlikely to enroll to insurance scheme. From the above findings, it can be concluded that insurance schemes' premiums are unfavorable to the poor, and also lack inclusiveness.

CBHIS in Rwanda an interesting case study for a number of reasons. The first and most important is that the country has scaled up coverage of CBHISs from just around 35% in 2006 to almost 85% in 2008, an exponential growth in a space of two years in the middle of uncertainty on its potential impact on health service utilization and protection from unforeseen health related income or consumption shocks. Such rapid growth and coverage is unprecedented in the history

of CBHISs (Mladovsky and Mossialos, 2007). Secondly, CBHISs in Rwanda have been accorded central place by policy makers so that they are integral parts of the country's health program, with a strong administrative and political support for their expansion and functioning. Third, the experiment has attracted so much interest that other countries are considering the Rwandan model as an alternative vehicle for health sector financing and delivery of basic health services.

Shimeles (2010) carried out a study on '*Community Based Health Insurance Schemes in Africa: The Case of Rwanda*'. From the findings, membership into CBHISs had a potential of increasing health care utilization by about 15% following an illness episode. Also, *Mutuelles* have been successful in increasing utilization of modern health care services and reducing catastrophic health related expenditure. Higher utilization of health care services was found among the insured non-poor than insured poor households, with comparable effect in reducing health-related expenditure shocks. From this study, it can be realized that some poor people may not fully utilize CBHI since all is not free. There are other layers of expenses to be born such as transport, prescription drugs, and others including the opportunity cost of time, especially for the casual laborers. Thus, in short, the CBHISs could be inefficient and iniquitous for the health service that is heavily subsidized by funds coming from the treasury as well as international aid.

In Rwanda, there was a marked increase in out-of-pocket medical expenditures from 24.46% in 2000 to 26% in 2015 (Cylus, Thomson and Evetovits, 2018). This has caused lags in medical services and leading to permanent poverty and some households are facing challenges of paying medical bills or may delay getting healthcare services because of financial constraints. Gaps in the implementation of the universal health coverage still exist. Despite, the policies that guide financial protection through community based health insurance schemes (CBHIS) and other insurance providers, in Rwanda, the average amount to pay for health services at household level or at individual level is not well-known. CBHI schemes in Rwanda are health insurance organizations based on a partnership between the community and health care providers (Francois and Damascene, 2005). The annual average of out-of-pocket health expenditures in Rwanda was 20185Rwf per household in the year 2020 according to Muremyi, Haughton, Kabano and Niragire (2020) who did a study on '*Prediction of out-of-pocket health expenditures in Rwanda using machine learning techniques*'.

4.4. Tanzania

Tanzania has made substantial progress toward Universal health coverage (UHC), though challenges remain. The under-five mortality rate fell sharply from 166 per 1,000 live births in 1990 to 54 per 1,000 live births in 2012. Overall coverage of health services, however, was among the lowest in East and Southern Africa. Nearly 10% of households had health expenditure greater than 10% of total household expenditure in 2012, and 2.5% were at the 25% threshold (WHO, 2014; WHO and World Bank, 2017). Tanzania's decentralized health system is financed through a mixture of sources. In 2014–2015, per capita total health spending in Tanzania (at current prices) was 73,365 Tanzania shillings (TZS), equivalent to 40 USD, among which 37% was from external assistance, 28% from domestic revenue, 26% from out-of-pocket payments, 7% from social insurance contributions and 2% from voluntary payment. Though external funds remain the largest financing source for Tanzania, its share has dropped from 48% in 2010. This paralleled the increasing importance of domestic revenues for health financing, with its share growing from 22% to 28% during the same period (WHO and World Bank, 2017).

Huihui Wang, Mariam Ally Juma, Nicolas Rosemberg & Mpoki M. Ulisubisya (2018) undertook a study on '*Progressive Pathway to Universal Health Coverage in Tanzania: A Call for Preferential Resource Allocation Targeting the Poor, Health Systems & Reform*'. From their study, it was realized that Tanzania is at a critical stage in refining health financing policies to accelerate progress toward UHC. A health financing strategy has been developed, envisioning a single national health insurance for the entire country, guaranteed coverage of the poor, and movement toward output-based payment mechanisms. A proposal to amend legislation for the NHIF and CHF is expected to be considered this year. This will provide a platform for more pro-poor financing policies for both supply-side and demand-side interventions. Under the PSSN, about 1.1 million households, which are 15% of the total population, were identified as extreme poor. On the demand side, there should be explicit efforts to bring the poor to service points by improving their knowledge, awareness, and reducing financial barriers.

Tanzanian health financing system is highly fragmented with various sources of financing. Healthcare is largely financed internally through domestic sources, which is 64%, while 36% is through external sources (WHO, 2021; MOHCDGEC, 2019). According to the National Health Accounts for 2015/2016, the relative share to the total health expenditure by financing sources is as follows: general taxation (34%), health insurance schemes (8%), out-of-pocket payments (22%) and donor support (36%). In Tanzania, about 6% of the Gross Domestic Product (GDP) is invested in healthcare, and 12% of government expenditure or total budget is spent on health, but still below the Abuja Declaration target of 15% (WHO, 2021; MoHSW, 2013). The recent health sector review in 2018 revealed that 33% of Tanzanians were covered by health insurance, 7% by National Health Insurance Fund for public formal sector employees mainly and mandatory, 25% by Community Health Fund as a voluntary scheme for informal sector workers and 1% covered by private health insurance schemes and other schemes (MoH CDGEC, 2019). Tanzania also has exemption and waiver policy to protect the poor and vulnerable groups (pregnant women, children under 5 years and elderly persons above 60 years) from financial risks of paying out-of-pocket for healthcare. However, the enforcement of these policies is weak.

Brinda, Andrés and Enemark carried out a study in 2014 on the '*Correlates of Out-of-pocket and Catastrophic Health Expenditures in Tanzania*'. From the study, findings revealed that with the meagre resources and a higher prevalence of disability, women are at a great risk of being confronted with the financial burden of OOP health expenditures. Many people rely on the services of traditional healers and face increased out-of-pocket health expenditure. Culturally ingrained beliefs for various illnesses and inconsistencies in health service access urge them to seek the

traditional healers with high OOP expenses. Due to the absence of social security systems, the older people either suffer financial burden through OOP payments or remain disabled without seeking health care. Increased prevalence of chronic diseases at household levels was a greater risk for catastrophic spending in Tanzania. The above study highlighted the effects of gender and age on OOPHE. However, comparative examination between rural and urban areas was missing.

4.5. Burundi

In 2006, Burundi removed user fees for pregnant women and children under five who were using a basic package of services in health centers, primary, and secondary referral hospitals. This package is now financed through a performance based mechanism (PBF) with support from the Ministry of Public Health, the World Bank, the European Union and other partners (Ministry of Public Health and Fight against AIDS, Burundi, 2012; Busogoro and Beith, 2010). In 2012, a total of \$18.5 million was transferred to facilities using this payment mechanism, based on the volume of services provided for a defined set of indicators, (Ministry of Public Health and Fight against AIDS, Burundi, 2012). Consequently, national statistics have shown an improvement in key reproductive health indicators (Ministry of Public Health and Fight against AIDS, 2015). Evidence also suggests that the PBF has led to an improvement in the probability of institutional deliveries, the use of modern family planning services, and the quality of most maternal and child care services (Bonfrer, Soeters, van de Poel, Basenya, Longin, Van de Looij F, *et al.*, 2013; Bonfrer, Soeters, Van de Poel, Basenya, Longin, van de Looij F, *et al.*, 2014).

In Burundi, also, obstetric deliveries, pregnancy-related care, immunization, tuberculosis and HIV treatment should be provided free of charge in all public and accredited facilities; however, the funding strategy for these services is radically different. This is under the current Performance-based financing and the free-healthcare policies (Ministry of Health, Burundi, 2012). According to the Institute for Health Metrics and Evaluation, (ND), the epidemiological profile of Burundi continues to be dominated by communicable, maternal, neonatal, and nutritional causes of illness. In 2010, these factors were responsible for 76% of all years of life lost – which was only a small reduction from 82% in 2000. Health conditions related to HIV infection and tuberculosis increased, and nutritional causes declined. In 2010, however, almost 58% of all children in Burundi were found to be chronically malnourished, with approximately half of them suffering from severe malnutrition.

A study carried out by Lim, Van Loggerenberg and Charter (2016) on '*An Overview of Burundi's Health System*' explained the situation as at 2013. Burundi's Health financing as at 2013 was as follows- The total health expenditure in 2013 was (current USD) USD 218 106 000, Public expenditure on health as percentage of total expenditure was 54.7%, Public expenditure on health as percentage of general government expenditure was 13.7%, OOP expenditure on health as percentage of total private expenditure was 44.7 %, Private insurance expenditure on health as percentage of total private expenditure was 1.8%, Expenditure of non-profit institutions serving households as percentage of total private expenditure was 52.2%, External funding (current USD) USD 159 862 000 (73.3% of the total health expenditure in the year 2013) and the Health expenditure as percentage of GDP was 8.0%- way below the Abuja declaration recommendation of 15%. Challenges in effective and efficient health care cover and affordable healthcare services jeopardize the UHC efforts. This consequently affects healthcare accessibility in Burundi. This country has a double tragedy in relation to healthcare service delivery. First, it is about availability of quality services and then the few available services may be too costly for the poor who lack healthcare insurance or lack enough money for OOPP.

A study was conducted by Chaumont, Muhorane, Moreira-Burgos, Juma and Avila-Burgos (2015) on '*Maternal and Reproductive Health Financing in Burundi*'. This study revealed that public expenditures on reproductive health in Burundi accounted for \$41,163,141 international dollars in 2012. This amount marked an increase of 16 % from 2010 and of 2.6 % over 2011 levels. As a percentage of total public health spending, reproductive health spending also increased from 15 % in 2010, to 17 % in 2011, and 19 % in 2012. Lack of available and accurate data for previous years impedes an analysis of the long-term changes in public expenditures on reproductive health in Burundi. It is important to track public health expenditures, even in settings with poor information systems, not only to monitor stated governmental policies and political engagement, but also to ensure that international and domestic fundings are aligned in their goals.

4.6. South Sudan

South Sudan gained independence in 2011, making this country the world's youngest nation. It had an estimated population of 11 million in 2019, with about 80% living in rural and remote areas (Government of South Sudan and World Bank, ND). More than 80% of the South Sudan population lived below the poverty line in 2016 and was agro-pastoralist. The literacy rate is low (34.52%), and it is even lower for women (28.86%) when they are compared to men (40.26%) (UNESCO, 2020). The maternal mortality ratio is 789 maternal deaths per 100 000 live births, and the infant mortality rate is 60 deaths per 1000 live births. The utilization of healthcare services is low, the rate for facility-based delivery is 21%, and only 2.6% of children had all nine recommended vaccinations (Belaid *et al.*, 2020). The Ministry of Health identified and prioritized a list of essential health services, known as the Basic Package of Health and Nutrition Services (BPHNS). This package should be affordable and accessible to most of the population at the primary and secondary healthcare levels. The government of South Sudan and other Multi donor agencies fund these packages (Justin and De Vries, 2019; Integrity, 2018).

In South Sudan, health services at government health facilities are entirely free (GoSS - Ministry of Health, 2012). However, it is a low income country (The World Bank, 2015) and majority (83%) of the estimated 11.9 million people live in rural areas with no or minimal access to healthcare facilities due to fewer numbers of health facilities and inaccessibility (Downie, 2012). This has resulted in some of the worst health indicators in the world; infant and under-five mortality rates

are reportedly at 102 and 135 per 1000 live births respectively (GoSS - Ministry of Health, 2012). Maternal mortality stands at 2054 per 100,000 (Oxfam, 2013), malaria kills an estimated 44,000 annually (Downie, 2012; National Bureau of Statistics, 2010), while the overall life expectancy at birth is 42 years. The fertility rate is among the highest in the world at 6.7% children per woman with 90% of women delivering without the help of skilled health professional (Oxfam, 2013). The government spending since 2007 to 2012 has been reducing; in 2007, it was 8.4%, in 2012, it was 2.2%, in 2014, it was 2.2%, and in 2016, it was 3% (Downie, 2012; Knoema, 2013). The total healthcare expenditure (THE) was reported at 38.8% in 2012. In 2012, 61.3% of THE came from private sources, of which 92.5% were directly out of pocket (Taggart, 2015). Private health insurance is very low and currently covers only 5.4% of the population (Knoema, 2013).

A document analysis study was carried out by Belaid, Sarmiento, Dimiti and Andersson (2022) on '*Community Participation in Primary Healthcare in the South Sudan Boma Health Initiative*'. From the findings, the top ten or so diseases in South Sudan are preventable communicable diseases. The high infant and maternal mortality rates in the Country are largely due to preventable conditions. It is imperative that the health system targets and engages individuals, households, and communities to communicate health risks and related costs for health action to improve health outcomes. Though the current model of community health intervention called for bottom up approach in need of assessment and intervention, it was difficult to ascertain this. Most of the health resources were externally borrowed. The populations were viewed as consumers for health services designed outside their *Boma*.

Basaza, Kon, Peter, David, Ogubi, and Lako (2017) carried out a study on '*Willingness to Pay for National Health Insurance Fund among Public Servants in Juba City, South Sudan*'. From the findings, when asked what they spend their earnings mostly on, majority of the respondents 315 (83%) spend most of their income on food, followed by 40 (11%) on education and 20 (5%) on healthcare and 1% (3) spend most of their income on communication. On willing to pay (WTP) for NHIF if it were introduced, over two-thirds (68%) expressed WTP for the scheme and only 32% were not interested. Out of 258 respondents, who expressed WTP for NHIF, 175 (67.8%) favored paying up to 5% of their income, 22.9% would pay between 6 and 10, while the rest (9.3%) could pay for an insurance premium of over 10%. Cumulatively, over 90% were willing to pay up to 10% of their income as insurance premium monthly. From the above findings, it can be concluded that the lower insurance coverage (5.4%) in South Sudan depicts lack of certainty in planning. However, with an average population of more than 90% of the respondents willing to pay for health insurance premium, it is clear that availability of these services, awareness creation and quality healthcare services are highly needed in South Sudan.

5. Conclusion and Recommendations

After carrying out this study on '*Household Catastrophic Health Care Expenditure: Evidence on the Effects of Out-of-pocket Health Care Payments on Household Income in East African Region*', it was concluded that the level of public investment on healthcare in a country affects out-of-pocket spending by households to a very great extent. Although some studies have been carried out in East African region on this subject matter, there seems to be scanty of new information from all the countries except Kenya. This is probably related to the complexity in ethical clearance for research, funding challenges and probably lack of commitment by scholars to explore the area. Increased out-of-pocket spending occurs when there is a challenge in relation to poor membership with insurance companies, disease prevalence, health care behavior and poor healthcare financing policies. From the researches done, the primary data from different stakeholders is missing and therefore, a need for a research to bring into light their experiences and perspectives. For East African countries to deal with household poverty related to OOP over spending, there is a need to deal with the issue of health insurance for Universal health Coverage. An empirical research within all East African Countries on this thematic area projecting awareness creation on Healthcare funding is important.

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