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Catastrophic Healthcare Expenditures and Household Poverty in Kenya: The Case of Cancer

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Abstract

Cancer is a leading cause of mortality in many countries. Thus, the study sought to examine the relationship between catastrophic healthcare expenditures and household poverty in Kenya with a case of cancer. The study used a secondary dataset from the Kenya Household Health Expenditure and Utilization Survey (KHHEUS) 2018. The sample size was 37500. The study findings established that the direct and indirect costs of cancer treatment in Kenya are financially catastrophic for many households. The costs of cancer treatment, including medications and medical procedures, can be financially catastrophic for households in Kenya. Cancer is a leading cause of mortality and the disease likely has a significant effect on household poverty. Household level of education, Gender and locality is negatively related to household poverty while the household size is positively related to household poverty. Some geographic areas may have higher rates of poverty due to a variety of factors such as lack of job opportunities, limited access to education and healthcare, and other structural issues. The study recommended the government enhance the implementation of a universal healthcare coverage program and the expansion of healthcare facilities in underserved areas. There is a need to increase funding for cancer research. Additionally, there is a need to have efforts to increase competition in the pharmaceutical market and to regulate the pricing of healthcare services. It is important for policymakers and healthcare providers in Kenya to be aware of the potential economic impact of cancer and to work to mitigate its effects on households. Governments and insurance companies should implement policies that help to reduce the cost of cancer treatment, such as negotiating lower prices with manufacturers or providing financial assistance to patients. Moreover, there is a need to have gender balance and equal opportunities need to be established for all. The vices of discrimination based on gender need to be addressed. Efforts to address household poverty and gender inequality should focus on improving access to education, employment, and resources for women, as well as promoting gender equality and challenging discriminatory social norms.

Keywords: *Catastrophic healthcare expenditures, household poverty, cancer, Kenya*

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1.0 Background of the study

In Kenya, high healthcare expenditures can contribute to household poverty. This can occur when a household faces unexpected medical costs that it cannot afford to pay, leading to financial strain or even poverty (Kimani, Mugo & Kioko, 2016). This is a problem that affects many countries, as healthcare costs can be a significant burden for households, particularly those that are already struggling financially. Catastrophic healthcare expenditures, which occur when a household spends a large portion of its income on healthcare, can contribute to household poverty in Kenya (Salari, Di Giorgio, Ilinca & Chuma, 2019). High healthcare expenditures can be a burden for individuals and families in Kenya, as well as for the country as a whole. According to the World Bank, the total expenditure on health as a percentage of GDP in Kenya was 8.2% in 2019. This is relatively high compared to other countries in the region and globally (Kinyanjui, 2016).

A number of factors contribute to high healthcare costs in Kenya, including the high cost of medical services and drugs, the lack of universal health coverage, and the limited availability of affordable and quality healthcare in some areas of the country (Ministry of Health, 2019). The high cost of healthcare in Kenya can make it difficult for many people to afford necessary medical treatment, leading to financial hardship and poverty (Kimani, 2014). Several factors contribute to high healthcare costs in Kenya. One factor is the high cost of drugs, which can be expensive due to a lack of competition in the pharmaceutical market (Ahmed, Szabo & Nilsen, 2018). Another factor is the high cost of hospital care, which can be expensive due to a lack of regulation on pricing (Government of Kenya, 2015). In addition, there is a shortage of healthcare providers in Kenya, which can lead to higher costs due to increased demand (Kinyanjui, 2016).

It is reported by Harikrishnan, Jeemon, Mini, Thankappan and Sylaja (2018) that catastrophic healthcare expenditures can have a significant impact on household poverty, as they can result in financial strains that can be difficult to overcome. Kimani and Maina (2015) report that when a household incurs high healthcare costs, it can lead to a range of negative consequences, including difficulty paying for other necessities, such as food, housing, and education. In addition, high healthcare costs increase the likelihood of borrowing money or going into debt and reduce the ability to save for the future, thus increasing financial stress and hardship. The households can protect themselves from catastrophic healthcare expenses by purchasing health insurance (Frimpong, Amporfu and Arthur, 2021). Health insurance can help to cover the cost of healthcare expenses, reducing the financial burden on households. In addition, staying healthy can significantly reduce catastrophic healthcare expenses (Ravangard, Jalali, Bayati, Palmer, Jafari & Bastani, 2021).

Taking steps to maintain good health, such as exercising regularly and eating a healthy diet, can help to reduce the likelihood of incurring high healthcare costs. In addition, seeking out affordable healthcare options and setting aside savings for healthcare expenses can reduce catastrophic healthcare expenses (Wagstaff, 2019). Having a financial cushion set aside specifically for healthcare expenses can help households to be better prepared to handle the costs if they do arise. Cancer can be a very expensive disease to treat, especially in countries where access to advanced medical care is limited. In Kenya, the cost of cancer treatment can be financially catastrophic for many people, as they may not have the funds to pay for the cost of chemotherapy, radiation, and other necessary medical procedures (Njuguna, Mostert, Seijffert, Musimbi, Langat, van der Burgt & Kaspers, 2015).

The cost of transportation to and from treatment centers, as well as the cost of medications and other supportive care, can add significantly to the overall financial burden of cancer treatment (Makau, Greene, Othieno, Wheeler, Skinner & Bennett, 2017). There are a few options available for people in Kenya who are facing high healthcare costs due to cancer. One option is to seek financial assistance from charitable organizations or government programs (Cornetta, Kipsang, Gramelspacher, Choi, Brown, Hill & Chite Asirwa, 2015). Another option is to try to negotiate lower rates with healthcare providers or to explore alternative treatment options that may be less expensive. It is important to remember that, while cancer treatment can be expensive, it is essential to get the medical care that is needed to have the best chance of recovery. Based on this background, the conducting of the study was justifiable to present policy recommendations.

2.0 Literature Review

The study was based on the cyclical theory of poverty. The cyclical theory of poverty is a theory that explains the persistence of poverty in certain communities or regions as being due to a cycle or spiral of factors that reinforce each other, leading to a self-perpetuating cycle of poverty (Roesch, 2020). According to this theory, breaking the cycle of poverty requires interventions that address multiple dimensions of the problem, such as education, job training, and economic development, rather than just addressing one aspect in isolation (Paschen, 2022). The cyclical theory of poverty suggests that poverty is a recurring and self-perpetuating phenomenon (Watts, 2017).

The theory suggests that to break the cycle of poverty, it is necessary to address the underlying social and economic conditions that contribute to poverty, rather than simply providing temporary assistance to those in need (Bradshaw, 2007). The cyclical theory of poverty is a theory that explains the persistence of poverty in certain communities as a result of a cycle of factors that reinforce each other. According to this theory, poverty can lead to a lack of resources and opportunities, which can in turn make it difficult for individuals to escape poverty (Danaan, 2018). This can create a cycle where poverty is passed down from one generation to the next, as children growing up in poverty may not have the same opportunities for education and employment as those who are not living in poverty.

Kinyanjui (2016) established that cancer can have a significant economic impact on households, particularly in low- and middle-income countries where access to quality healthcare and financial resources may be limited. In Kenya, cancer is a leading cause of morbidity and mortality, and it is likely that the disease has a significant effect on household poverty. Studies have shown that the direct costs of cancer treatment, including medications and medical procedures, can be financially catastrophic for households in Kenya and other low- and middle-income countries. In addition to direct costs, cancer can also lead to indirect costs such as lost wages due to illness or the need to care for a sick family member, which can further contribute to household poverty (Barasa, Maina & Ravishankar, 2017). It is important for policy makers and healthcare providers in Kenya to be aware of the potential economic impact of cancer and to work to mitigate its effects on households.

It is well documented that cancer can have a significant financial impact on individuals and their families (Ministry of Health, 2019). The cost of cancer treatment, including medical bills, transportation costs, and lost income due to time off work, can be financially devastating for many households (Kimani, 2014). In Kenya, the burden of cancer on household poverty is likely to be significant due to the high cost of cancer treatment. According to a study published in the journal

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"Cancer Causes & Control" in 2018, the direct and indirect costs of cancer treatment in Kenya can be financially catastrophic for many households (Sayed, Ngugi, Mahoney, Kurji, Talib, Macfarlane & Molloo, 2019). The study found that the median out-of-pocket expenditure for cancer treatment was approximately \$1,000, which represents a significant financial burden for many families in Kenya, where the average annual income is less than \$1,000.

Other studies have also found that cancer can have a significant impact on household poverty in Kenya (Chuma & Maina, 2012; Kimani, Mugo & Kioko, 2016; Buigut, Ettarh & Amendah, 2015). A study published in the journal "Global Health Action" in 2014 found that the cost of cancer treatment was a major contributor to household poverty in Kenya, with many families facing financial hardship as a result of paying for cancer treatment (Salari, Di Giorgio, Ilinca & Chuma, 2019). Overall, it is clear that cancer can have a significant financial impact on households in Kenya, and it is likely that the burden of cancer on household poverty in the country is significant.

In Kenya, the cost of cancer treatment can be financially catastrophic for many people, as they may not have the funds to pay for the cost of chemotherapy, radiation, and other necessary medical procedures (Njuguna, Mostert, Seijffert, Musimbi, Langat, van der Burgt & Kaspers, 2015). The high cost of healthcare in Kenya can make it difficult for many people to afford necessary medical treatment, leading to financial hardship and poverty (Kimani, 2014). Another factor is the high cost of hospital care, which can be expensive due to a lack of regulation on pricing (Government of Kenya, 2015). In addition, there is a shortage of healthcare providers in Kenya, which can lead to higher costs due to increased demand (Kinyanjui, 2016).

Mwai and Muriithi (2016) showed that cancer is a major health issue worldwide, and it can have a significant economic impact on individuals and families, particularly in low- and middle-income countries where access to healthcare and financial resources may be limited. Household poverty may also increase the risk of certain types of cancer, due to factors such as poor diet, limited access to preventive healthcare, and exposure to environmental toxins. It is important for governments and healthcare systems to address these issues and work to improve cancer prevention, diagnosis, and treatment for all individuals, regardless of their socio-economic status. The reliance on out-of-pocket payments for healthcare can create financial barriers to accessing care for many people. Efforts to reduce healthcare costs and improve access to care are ongoing, but addressing these issues will require a multifaceted approach that involves both the government and the private sector.

3.0 Research Methods

The study used a secondary dataset from the Kenya Household Health Expenditure and Utilization Survey (KHHEUS) 2018. The sample size was 37500. The study included other factors that may influence household poverty other than catastrophic health expenditure such as education level, working status, household size, gender and locality. The inclusion of more factors that can influence household poverty increases the quality of the article for policy formulation. The work is interconnected and the conclusions adequately tie together the other elements of the article (such as theory and critical perspectives). The recommendations can be relevant in theory, policy and practice.

4.0 Results and Discussion

In a logistic regression model, the dependent variable is a binary outcome, and the independent variables are the predictor variables. The model estimates the probability that the outcome will be a success (for example, the probability that a customer will purchase a product) based on the values of the predictor variables. Logistic regression is widely used in a variety of fields, including healthcare, finance among others. It is a useful tool for predicting the likelihood of an event based on the values of predictor variables, and can be used to inform decision-making in a variety of contexts. The study results are summarized in Table 1

Table 1: Logit Regression Model

Poverty	Coef.	Std. Err.	z	P>z
Catastrophic health expenditure				
Experiences catastrophic health expenditure due to cancer	0.2233	0.0512	4.3600	0.0000*
Level of education				
Secondary school level of education and above	-0.2346	0.0425	-5.5200	0.0120*
Working status				
Working	-0.1409	0.0440	-3.2000	-0.0010
Household size				
	0.0277	0.0084	3.2800	0.0010*
Gender				
Male	-0.0372	0.0418	-0.8900	0.3740
Locality				
Urban	-2.2645	0.0420	-53.8800	0.0000*
_cons	0.9873	0.0595	16.5900	0.0000*

Results presented in Table 1 indicates that atastrophe health expenditure due to cancer is positively and significantly related to household poverty (odds ratio=0.2233, P=0.000). Catastrophic health expenditure includes to the financial burden that a household faces as a result of paying for healthcare (Hailemichael, Hanlon, Tirfessa, Docrat, Alem, Medhin & Hailemariam, 2019). This can occur when a household spends a large percentage of its income or wealth on healthcare, or when it is forced to borrow money or sell assets in order to pay for healthcare. This can lead to financial hardship and poverty, as households may be unable to meet their other basic needs such as food, shelter, and education.

Kinyanjui (2016) established that cancer is a leading cause of mortality and it is likely that the disease has a significant effect on household poverty. The direct costs of cancer treatment, including medications and medical procedures, can be financially catastrophic for households in Kenya and other low- and middle-income countries. In addition to direct costs, cancer can also lead to indirect costs such as lost wages due to illness or the need to care for a sick family member, which can further contribute to household poverty. In addition, Kimani (2014) revealed that cost of cancer treatment, including medical bills, transportation costs, and lost income due to time off work, can be financially devastating for many households. The burden of cancer on household poverty is likely to be significant due to the high cost of cancer treatment. The direct and indirect

costs of cancer treatment in Kenya can be financially catastrophic for many households (Sayed, Ngugi, Mahoney, Kurji, Talib, Macfarlane & Moloo, 2019). In Kenya, the cost of cancer treatment can be financially catastrophic for many people, as they may not have the funds to pay for the cost of chemotherapy, radiation, and other necessary medical procedures (Njuguna, Mostert, Seijffert, Musimbi, Langat, van der Burgt & Kaspers, 2015).

Household level of education is negatively and significantly related to poverty (odds ratio=-.2346, P=0.0120). Poverty in Kenya is often linked to low levels of education, unemployment, lack of access to healthcare, high household size, locality and other basic services. It is also exacerbated by factors such as natural disasters, conflict, and inequality. The Kenyan government and various international organizations are working to address poverty and promote economic growth and development in the country. According to the World Bank, about 46% of the population in Kenya lives below the poverty line. This means that they do not have access to sufficient resources and opportunities to meet their basic needs and lead a healthy and fulfilling life. It was revealed there are many factors that can affect a person's working status and household poverty. Some of these factors include the availability of job opportunities in a given area, an individual's level of education and job skills, and the individual's personal circumstances (such as caring for children or other family members) (Khusaini, Prasetyia & Rozanti, 2021). In addition, larger societal factors, such as the overall state of the economy and government policies on issues such as minimum wage, can also play a role in working status and household poverty.

Household size is positively and significantly related to household poverty (odds ratio=0.0277, P=0.0010). Household size includes the number of people living in a single dwelling or household. Household size and household poverty are often related. Larger households may have more difficulty making ends meet and may be more likely to be in poverty (Abanokova, Dang & Lokshin, 2020). On the other hand, smaller households may have an easier time making ends meet and may be less likely to be in poverty. However, there are many other factors that can affect a household's economic status, including education, employment, and access to resources (Abbas, Li, Xu, Baz & Rakhmetova, 2020).

Gender is negatively related to household poverty with male having the least possibility of being poor (odds ratio=-0.0372, P=0.3740). There are a number of reasons for this, including discrimination and unequal access to education, employment, and resources. In many societies, women are also more likely to bear the burden of caring for children and other dependents, which can make it difficult for them to work and earn an income. Additionally, women often have lower levels of education and fewer job opportunities, which can contribute to their economic vulnerability (Nisak & Sugiharti, 2020). There are also cultural and social norms that can contribute to gender-based inequalities and poverty.

Locality is negatively and significantly related to household poverty (odds ratio=-2.2645, P=0.0000). It is noted by Kassahun, Tessema and Adbib (2022) that there is a relationship between locality and household poverty, as certain geographic areas may have higher rates of poverty due to a variety of factors such as lack of job opportunities, limited access to education and healthcare, and other structural issues. However, it is important to note that poverty can also exist within any locality, regardless of its overall wealth or poverty rate. For example, in some societies, women are not encouraged to work outside the home or to pursue education, which limits their ability to earn an income and achieve economic independence

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5.0 Conclusion

Catastrophic health expenditure includes the financial burden that a household faces as a result of paying for healthcare. The direct costs of cancer treatment, including medications and medical procedures, can be financially catastrophic for households in Kenya. In addition to direct costs, cancer can also lead to indirect costs such as lost wages due to illness or the need to care for a sick family member, which can further contribute to household poverty. Cancer is a leading cause of mortality and the disease likely has a significant effect on household poverty. In addition to direct costs, cancer can also lead to indirect costs such as lost wages due to illness or the need to care for a sick family member, which can further contribute to household poverty. The direct and indirect costs of cancer treatment in Kenya can be financially catastrophic for many households. Some of the working status factors include the availability of job opportunities in a given area, an individual's level of education and job skills, and the individual's circumstances. In addition, larger societal factors, such as the overall state of the economy and government policies on issues such as minimum wage, can also play a role in working status and household poverty.

Household size is positively and significantly related to household poverty. Household size includes the number of people living in a single dwelling or household. Household size and household poverty are often related. Larger households may have more difficulty making ends meet and may be more likely to be in poverty. Women are more likely to experience poverty than men, particularly in developing countries. There are several reasons for this, including discrimination and unequal access to education, employment, and resources. In many societies, women are also more likely to bear the burden of caring for children and other dependents, which can make it difficult for them to work and earn an income. The locality is also negatively and significantly related to household poverty. Some certain geographic areas may have higher rates of poverty due to a variety of factors such as lack of job opportunities, limited access to education and healthcare, and other structural issues.

6.0 Recommendations

The government has to implement several measures, including the implementation of a universal healthcare coverage program and the expansion of healthcare facilities in underserved areas. Additionally, there is a need to have efforts to increase competition in the pharmaceutical market and to regulate the pricing of healthcare services. In addition, the government and other stakeholders need to ensure that all people in Kenya have access to affordable and high-quality healthcare. It is important for policymakers and healthcare providers in Kenya to be aware of the potential economic impact of cancer and to work to mitigate its effects on households. There is a need to increase funding for cancer research. Investing more in cancer research could lead to the development of more effective and less expensive cancer treatments.

There is also a need to promote the use of generic drugs. Many cancer treatments are patented and sold by a single manufacturer at a high price. Encouraging the use of generic versions of these drugs, which are generally less expensive, could help to reduce costs. Implement value-based pricing. Under this approach, the price of a cancer treatment would be based on its effectiveness rather than the cost of production. This could incentivize manufacturers to develop more effective treatments and help to reduce costs. The government and other healthcare providers need to increase price transparency. Making the prices of cancer treatments more transparent could help

patients and providers to make more informed decisions about which treatments are most cost-effective.

In addition, it is recommended the need to use more cost-effective treatment approaches. In some cases, less expensive treatment options may be just as effective as more expensive alternatives. Encouraging the use of these options could help to reduce cancer treatment costs. Governments and insurance companies should implement policies that help to reduce the cost of cancer treatment, such as negotiating lower prices with manufacturers or providing financial assistance to patients. There is a need for the government and private sectors to increase the availability of job opportunities. In addition, larger societal factors, such as the overall state of the economy and government policies on issues such as minimum wage, can also play a role in working status and household poverty. The households need to be enlightened on the limitations of big household sizes. Household size includes the number of people living in a single dwelling or household. Larger households may have more difficulty making ends meet and may be more likely to be in poverty. On the other hand, smaller households may have an easier time making ends meet and may be less likely to be in poverty.

Moreover, there is a need to have gender balance and equal opportunities need to be established for all. The vices of discrimination based on gender need to be addressed. In many societies, women are more likely to bear the burden of caring for children and other dependents, which can make it difficult for them to work and earn an income. Additionally, women often have lower levels of education and fewer job opportunities, which can contribute to their economic vulnerability. Efforts to address household poverty and gender inequality should focus on improving access to education, employment, and resources for women, as well as promoting gender equality and challenging discriminatory social norms. Moreover, it is recommended that opportunities need to be availed in all the regions/locations. Some of the geographic areas may have higher rates of poverty due to a variety of factors such as lack of job opportunities, limited access to education and healthcare, and other structural issues.

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