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The Financial Burden Of Out Of Pocket Expenditure From Total Household Incomes In Kakamega County

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Abstract
Objective. *The objective of the study was to assess contribution of OOP from total household incomes and the resulting financial burden.* ***Design.*** *A descriptive cross-sectional study was conducted in Kakamega County. Data collection was by means of a structured interviewer-administered questionnaire and a focus group discussion* ***Setting.*** *The study was carried out in Kakamega County* ***Sample.*** *using a multi-stage sampling technique, the respondents were household heads whose households were randomly selected (n= 348)* ***Analysis.*** *SPSS version 25 was used for data analysis, tables and graphs were used to present descriptive data. Bivariate analysis was used to find relationships of income and heath expenditure.* ***Main outcome measures.*** *Financial burden of accessing health care through the OOP mode.* ***Results.*** *There was a significant relationship between the health expenditure on relatives' medical expense and household income (OR: 1.2; 95% CI: 0.8 – 1.4; p=0.01). Households who spent 5000 shillings on relatives' health medical expenses, were 1.2 times more likely to earn less than 10,000 shillings per month. Protection against financial burden of out of pocket (OOP) on medical spending is an explicit health tenet within the constitution of Kenya.* ***Conclusion*** *Low economic status was a key determinant of household health expenditures that result in experiencing financial strain. Despite health reform efforts, financial protection is insufficient and varies to the disadvantage of the poor and vulnerable groups. Kakamega County is one of the Counties where households contributed 36% of the total health expenditure (THE) in the County Government health funding in the year 2013/2014 from OOP. Countries need to protect its populations against health expenditures that push them into poverty. Kakamega County is one of the poorest counties in Kenya with a poverty index of 49.7% compared to the richest County whose poverty index stands at 1.2%.... More research is required to understand why current mechanisms are not as effective as expected to lighten the burden of OOP on poor households in Kakamega County.*
Keywords. *Health financing, Health insurance, Out-of-pocket – (OOP), Catastrophic healthcare expenditure are health expenditures borne directly by a client to cover the full cost of the health good or service including transport to a health facility.*

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I. Background.

Financial protection is achieved when people especially the poor do not have to pay for health services from out of their pockets at the time they need it or when households' resources ensure the utilization of health services without sacrifice of present or future necessities of well-being such as poor nutrition or inadequate education (Kocha, et al., 2017). Kakamega County is one of the poorest counties in Kenya with a poverty index of 49.7% compared to the richest County whose poverty index stands at 1.2%. this is of great concern because of the burden placed on households due to OOP (Aswani, 2014). Kenya has made efforts at providing the population with guaranteed access to health services of high quality whilst being protected against financial risk. Among the efforts by the Government was to devolve health services to Counties to bring health care as close to the people in terms of decision making on areas that affected their health directly so that they would not suffer financial risk while accessing healthcare. The efforts the Government is making are geared towards universal health coverage. Despite this, there are challenges ranging from capacity gaps, human resource deficiency, lack of infrastructure and rampant corruption in institutions that support health services in Counties (Kimathi, 2017).

The protection against financial risk due to out-of-pocket spending (OOPS), defined as all payments that households pay directly while receiving health services, raises more and more importance, especially if these direct health payments are a major source of health financing. Such highly regressive payments cause each year financial hardship in countries at all income levels, i.e. financial catastrophe for about 150 million people worldwide while pushing 100 million people into poverty (WHO, 2010)

The burden of OOP on households has increased in many counties particularly as a result of inadequate health funding policy (Mulaki & Muchiri, 2019). The series of health reforms implemented over the last decades have not led to the achievement of OOP expenditure protection, (Ilinca et al., 2019), yet healthcare is still a major source of financial distress for Kenyans (Kimathi, 2017) and the quality of health services remains substandard in most health facilities (Amref, 2018). In a healthcare financing policy brief report to the Ministry of Health in Kenya, Njuguna & Wanjala (2019) noted that high cost of health services was a key barrier to 12.7 Kenyans failing to seek health care when they fell sick. Therefore, out of pocket spending remains a key source of accessing healthcare in Kenya due to limited health funding and or policies that cannot protect them from OOP by the government (Jelagat, 2017). This OOP mode of health spending can lead to households incurring catastrophic outcomes and expose them to increased states of poverty (WHO, 2018). In a report on accelerating attainment of universal health coverage, it was found that 2.6 households were using their savings on healthcare, thus predisposing them to falling into poverty (Republic of Kenya, 2015). Carefully designed and implemented health financing policies can help to address these issues.

This research was carried out in Kakamega County to assess if Governments efforts were being achieved to protect people from health expenditures through the OOP mode of payment. A major problem that prompted this study in Kakamega is that the proportion of people living below the poverty line in the County is 51.3 per cent as compared with the national level of 45.9 percent (Kakamega CDP 2013) and the County is rated among the poorest counties in Kenya, the poverty index stands at 49.2% compared to the richest county whose poverty index stands at 1.2% (Miheso, 2014) yet 54% of the people access health services through the OOP mode of payment (CGH/KAK 2019). International evidence has shown that people that are poor are more likely to suffer from serious illness due to poor quality of health services sought, and they may become impoverished due to accessing those services from the OOP mode of payment (Li et al., 2014).

The other problem observed were hospital bill waivers due to inability to pay for in-patient admissions. Between July 2015 and January 2016 in the largest referral hospital, the Kakamega County Teaching and referral Hospital (KCTRH) waivers accounted for 45% of the total number of admissions within that period. Reasons for non-payment was poverty and therefore inability to pay via the OOP mode of payment (Aswani, 2016). According to a study by Dutta et al, (2018), the poorest households in Kenya, who have greater health needs, are less likely to seek care, and they spend significantly less on health jeopardizing their health status. The reliance on out-of-pocket expenditure affects households who do not have adequate financial protection in that they face the risk of being pushed to deeper poverty or not seek healthcare at all should they fall ill (Aryeetey et al, 2016). Sickness associated with poor quality health services imposes additional expenditure on households mostly from LMICs (WHO,2018). Poor quality of health services and OOP mode of payment for the health services is a vicious cycle that deepens poverty and produces unfavorable health outcomes.

No studies have been made specifically to assess the financial burden imposed on households from the total HH income in Kakamega as a County. Most studies focused on Kenya as a Country as evidenced by a study by (Jelagat, 2017) that OOP spending on outpatient and inpatient services in Kenya accounted for approximately 78 percent (KShs 48.4 billion) and 22 percent (KShs 13.7 billion) respectively of total household health expenditures.

The government of Kenya has prioritized universal health coverage (UHC) in its Big 4 agenda for the next five years (Muraguri, 2013). Among the key strategies is to enhance the uptake of the National Health Insurance Fund (NHIF) in order to protect people from paying for health services directly from out of their pockets and improve quality of services as a key tenet for the realization of UHC (Amref, 2019)

II. Methods

The design explored in this study was non experimental, but a descriptive cross sectional survey research design. The study adopted a descriptive research so as to accurately and systematically describe the situation of healthcare expenditure in a population of Kakamega County households. The purpose of the study and the procedures of the questionnaire were explained to the participants. Those who agreed to participate completed an informed consent form and the questionnaire. The participants completed the questionnaires in person enabling them to ask questions or withdraw from the study at any time during the data collection.

2.1 Participants.

The sample consisted of 348 participants selected from the general population of residents who sought health services in Kakamega County (n= 348). Household heads were invited to participate in the anonymous survey by filling questionnaires following their consent. No incentive was provided to participants. All study protocols and the survey instrument were approved by the University Human Research Ethics committee and conducted in accordance with the ethical principles of the National Commission for Science, Technology and Innovation (NACOSTI).

2.2 Statistical Analysis

The households for the study were identified through a multistage cluster and simple random sampling approaches. The researcher generally used household healthcare budgets, to analyze the distribution of health care payments through user out-of-pocket expenditure. SPSS version 25 was used for data analysis, tables and graphs were used to present descriptive data. Bivariate analysis was used to find relationships of income and heath expenditure. Cronbach alpha coefficient to test reliability of data collection tools for the entire questionnaires was well above the lower limit of acceptability, of 0.70. The results indicated that the survey used in this study had a high level of reliability (Cronbach = 0.727), According to (Gliem & Gliem, 2003) a reliability coefficient of 0.65 or more is acceptable.

Data on the percentage of money spent from out of pocket on any mode of health care payment was determined from the total amount of household income of the health care consumers of Kakamega County using bivariate analysis

III. Results

3.1 Household income among household heads

Table 3.1 below is a summary of household income variables. In assessing respondents' household income two questions were used. With regards to the specific questions asked, 197 (56.6%) of the respondents reported to earn directly from business proceeds from their farm, as their key source of income, 51 (14.7%) reported to get income from a relative, while 40 (11.5%) earned directly from employment. When asked to rate their monthly household income per month, (250) 71.8% estimated a range of ksh 10,000- ksh 20,000 monthly, while 21.6% (n=75) estimated a range of ksh 5,000- ksh 10,000.\

Table 3.1: Summary of household income

Items	Response	N	%
Monthly source of income	Earning from employment	**40**	**11.5%**
	Peasant farming	**197**	**56.6%**
	Monthly income from a relative	**51**	**14.7%**
	Pension and retirement income	**13**	**3.7%**
	Workers compensation for injury/disability	**5**	**1.4%**
	Government allotment for belonging to a special group	**8**	**2.3%**
	Employment & business	**3**	**0.9%**
	Other	**31**	**8.9%**
Monthly income in shillings	Below 5,000	**11**	**3.2%**
	5001-10000	**75**	**21.6%**
	10001-20000	**250**	**71.8%**
	Above 20,000	**12**	**3.4%**

Source: Researcher 2019

3.2 Household heads' expenditure

Table 3.2 below is a summary of variables on expenditure. 53.2% (n=185) reported that they spent between 1000ksh-5000ksh on food monthly. 45.1% (n=157) reported that they spent between 5000ksh-10000ksh on rent monthly. 59.5% (n=207) reported that they spent 1000-5000ksh monthly on fuel for cooking and lighting, 74.1% (n=258) said that they spent between 1000-5000ksh on-farm inputs monthly while 74.1% (258) reported to spending between 1000-5000ksh on school fees monthly.

Table 3.2: Household expenditure

Items	Response	N	%
Monthly expenditure on food.	Below 500	**1**	**.3%**
	501-1000	**135**	**38.8%**
	1001-5000	**185**	**53.2%**
	Above 5000	**27**	**7.8%**

Monthly expenditure on rent.	Below 1000	**6**	**1.7%**
	1001-5000	**136**	**39.1%**
	5001-10000	**157**	**45.1%**
	Above 10000	**28**	**8%**
	None	**21**	**6%**
Monthly expenditure on fuel for cooking and lighting.	Below 500	**4**	**1.1%**
	501-1000	**129**	**37.1%**
	1001-5000	**207**	**59.5%**
	Above 5000	**8**	**2.3%**
Monthly expenditure on the farm.	Below 1000	**4**	**1.1%**
	1001-5000	**258**	**74.1%**
	5001-10000	**67**	**19.3%**
	Above 10000	**18**	**5.2%**
Monthly expenditure on school fees.	Below 1000	**3**	**.9%**
	1001-5000	**258**	**74.1%**
	5001-10000	**54**	**15.5%**
	Above 10000	**33**	**9.5%**

Source: Researcher 2019

3.3 Household heads' expenditure on health care

Respondents were asked how much they spend on healthcare and their responses are presented in the table 3.3. Respondents who reported to spend between 1000-5000ksh on relatives' medical expense in a month were 229 (65.8%) while those who reported spending 10000-50000ksh on inpatient healthcare in a month were 217 (62.4%). The following number and percentage of respondents 285 (81.9%) spent between 1000-3000ksh on outpatient healthcare per month. 294 (84.5%) of the respondents that reported to spend between 1000-5000 on transport to the health facility in a month.

Table 3.3: Health expenditure among household heads

Items	**Response**	**N**	**%**
Money spent on a relative's medical expense in the last month?	<1000	**1**	**.3%**
	1001-5000	**229**	**65.8%**
	5001-10000	**93**	**26.7%**
	>10000	**25**	**7.2%**
How much do you spend on inpatient healthcare per month?	10000-50000	**217**	**62.4%**
	50000-100000	**108**	**31%**
	Above 100000	**23**	**6.6%**
How much do you spend on outpatient healthcare per month?	<1000	**1**	**.3%**
	1001-3000	**285**	**81.9%**
	3001-5000	**42**	**12.1%**
	Above 5000	**10**	**2.2%**
How much do you spend on transport to health facility in a month	Below 500	**3**	**0.9%**
	501-1000	**47**	**13.5%**
	1001-5000	**294**	**84.5%**
	Above 5000	**4**	**1.1%**

Source: Researcher 2019

3.4 Association between health expenditure and Household income

Table 3.4 is a bivariate analysis of respondents' health expenditure and household income. Bivariate analysis on health expenditures that are associated with household income shows that there was a significant relationship between the health expenditure on relatives' medical expense and household income (OR: 1.2; 95% CI: 0.8 – 1.4; p=0.01) as shown in Table 4.10. Household heads who spent 1000ksh and above on transports to the health facility were one point three times more likely to earn Ksh 10,000 and above than those who spend below 1000 Ksh on transport to the health facility (OR: 1.3; 95% CI: 0.9 – 1.6; p=0.02). Health care

expenditures on relative's healthcare and transport to health facilities have been shown by this research that it takes up most of the health care budget in a household.

Table 3.4: Health expenditure associated with household income

Items	N	Household Income		Overall OR	95% CI	p-value
		>10,000ksh	<10,000ksh			
Money spent on a relative's medical expense in the last month?						
5000ksh and below	230	45.9	54.1	1.2	0.7 – 1.5	0.01
Above 5000ksh	118	58.3	41.7			
Amount spent on inpatient healthcare per month						
50000ksh and below	217	44.4	55.6	1.1	0.7 – 2.3	0.12
Above 50000ksh	131	60.2	39.8			
Amount spent on outpatient healthcare per month?						
3000ksh and below	286	42.8	57.2	0.6	0.5 – 1.0	0.2
Above 3000ksh	52	55.9	44.1			
Amount spent on transport to the health facility in a month						
1000ksh below	50	46.4	53.6	1.3	0.6 – 1.2	**0.02**
Above 1000ksh	298	62.3	37.7			

Source: Researcher 2019

IV. Discussion

The idea of financial burden of out of pocket expenditure might seem straightforward, in that the Government has made efforts to provide NHIF and to improve health systems in a bid to protect citizens and improve quality of health services. Offering expenditure protection for relief of financial burden is complex and needs more focus and concerted effort by the Government as was confirmed in the review of the health situation in Kenya literature. This is further corroborated by the research results from this study which showed that respondents were mainly spending from OOP to access health services.

4.1.2: Contribution made by OOP expenditure from the total household income of health care consumers in Kakamega County

From the study, the most basic needs that seemed to have many respondents spending 1000 – 5000 shillings was food, fuel for cooking and lighting. Majority of people spent even higher income on school fees and farm inputs, giving the conclusion that the relationship between income and expenditure was that a person spending 1000-5000 shillings per month on a relatives' medical conditions was 1.2 times more likely to earn more than 10,000 shillings and above. The study concluded that, the more one earned the more they were able to afford out of pocket expenditure on health care. Meaning that earning less meant that one spent less on health services. Differences in households' income explained most of the variations observed in household health expenditure. For example, households that earned more income on average spent more on health than households that earned less. This study also concluded that a lot of expenditure went to transport in order to access health care. It showed that there was a problem with access in terms of distance to health facilities, and only those who earned more than 10,000 shillings spent more on transport to reach health care facilities. It was observed that spending more on transport could mean using faster means such as a vehicle or a motorcycle unlike those that spent less on transport who would have used slower means such as bicycles. This corroborated with a study by Titheridge et. al., (2014) which stated that travel by faster modes of transport such as a car or train required more money than using other slower means such as a bicycle or motorcycle that deprived those in the lower income brackets from accessing key services like healthcare at the time they need it (Ali S, 2016).

V. Conclusion And Recommendation

This chapter focused on the summary of findings analyzed in chapter four. The summary of findings was based on the study's research objective. Consistent with this study's findings, recommendations were offered for how these findings would be used to inform different parts of the field, particularly regarding policy, practice and possible future research endeavors. In addition, there's a section dedicated to addressing the strengths and limitations of the study.

5.1 Summary and Conclusion of findings

This study confirmed that OOP expenditure protection was not reliably adequate to prevent financial hardship among a high percentage of households in Kakamega County despite continued health reform efforts in the County. The study further pointed to the urgency with which policy makers needed to increase public healthcare funding and provide a social health protection plan against OOP health payments that would provide financial risk protection which was currently absent and to improve quality of healthcare. The conclusions presented by the researcher were based on the research objectives of the study results.

5.1.2: Percentage contribution to OOP expenditure on health care from total household income

From the study, the most basic needs that seemed to have many respondents spending 1000 – 5000 shillings were food, fuel for cooking and lighting. School fees and farm inputs had the majority of people spending even higher, the conclusion of the relationship between income and expenditure was that a person spending 1000-5000 shillings per month on a relatives' medical conditions was 1.2 times more likely to earn 10,000 and above. It was therefore concluded that, the more one earned the more they were able to spend more from out of pocket expenditure on health care. Meaning that earning less denied someone the affordability to pay for health services. Differences in households' income explained most of the variations observed in household health expenditure. For example, households in the top income decile on average spent much more on health than households in the lowest income decile. This study also concluded that a lot of expenditure went to transport in order to access health care. It shows that there is still a problem with access in terms of distance to health facilities, and only those who earned more were likely to use better transport means that costed more to reach health care facilities, this corroborates with a study carried out in rural Uganda on factors affecting health seeking behavior by Musoke, Boynton, Butler and Musoke who found out that utilization of health facilities can be influenced by the cost of services, distance to health facilities, cultural beliefs, level of education and health facility inadequacies such as stock-out of drugs.

The heavy reliance on out-of-pocket payments may affect household living standards (Molla & Chi, 2017). If the government and people of Kenya are concerned about equitable financing burden, this study suggests that Kenya needs to reform the health systems financing scheme, this corroborates with a study by Munge and Briggs, (2014) who also concluded that Reforms to the Kenyan health-care financing system are required to reduce dependence on out of pocket payments.

When government's take on a greater responsibility for public health spending, this directly contributes to poverty reduction through improved health status and protection from catastrophic losses due to treatment costs (Becker, Wolf, Levine, 2006).

5.2 Recommendations

Based on the findings of this research, the following were the recommended corrective measures which could highlight the inability to access quality health services by the majority of the people in Kakamega County and advice on policy that would protect them from the financial burden of out of pocket expenditure.

5.2.1 Recommendation for policy

The review of the health sector showed that OOP expenditures were the principal means of financing health with little room for risk pooling. While this thesis strongly recommended a reduced reliance on direct out of pocket healthcare payments, it did not call for an immediate end to user fees. However, expanding the current health insurance coverage and move towards universal health coverage was seen as the most effective way to shield the population from the financial burden of OOP expenditures. While there was a policy for free medical services to the old, there should be a policy for free treatment of the very poor households especially in Kakamega being the poorest County in Kenya.

5.2.2. Recommendation for practice

Action from the County Government of Kakamega to ensure that people had health coverage and care that was affordable and was of adequate quality was important. This could be done through campaigns for enrollment into the National Health Insurance scheme (NHIF). The social ecological theory (SET) proved in many different situations, that in order to get the best results to solve a problem, as was the case with risk that came from the OOP mode of health purchase, it was best to approach the situation while addressing all levels of the framework. Establish policies at the public policy level, pool resources for enrollment into NHIF at community level, improve organizational structures like educational and religious facilities to develop and implement programs that would increase school enrollment and offer health education on being in control of ones' own health for the people of Kakamega County.

Action from the County Government of Kakamega to ensure that people had health coverage through increasing health budgets from the total Government budget was recommended. This would ease that burden of OOP expenditures on households in Kakamega County

5.2.3 Recommendations for future research

The analysis of catastrophic health expenditures in this study only took into account the expenditures of those households that used health services in Kakamega. This represented only households that sought healthcare services. Undoubtedly, there were many households who were too poor to afford the OOP expenditures for health care, hence were not able to use health services. By not including these households into the calculation of households needing OOP health expenditure protection, it was true that the burden of OOP across the population was not estimated. There was, therefore, need for a study that would estimate the total potential burden from OOP health expenditure by taking into account households which would have faced catastrophic health expenditure had they chosen to seek health care when they needed it (using a self-reported need for health care as a proxy for need). This study, therefore, suggested, as an area for further research, an examination of mechanisms for coping with large OOP expenditures.

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