

Communities' Willingness to Pay for Healthcare in Public Health Facilities of Nakasongola District, Uganda

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Abstract

Poor countries continue to register decreasing revenue to finance health care amidst rising demand with consequently growing out of pocket expenditure on health exceeding 35% of the total health care expenditure; this scenario is observed in more than three quarter of Sub-Saharan African countries. For Uganda, the situation is even worse with about half of the national health expenditure financed from out of pocket despite tax-based national health services. In response, Uganda's Ministry of Health has placed health insurance at centre of financing health care in the medium term. This paper examines willingness to pay for health care in line with the planned policy of Uganda. We evaluated: willingness to pay for the health care in public health facilities; household characteristics associated with willingness to pay; how much households were willing to pay; and the preferred mode of payment. *Methods:* We interviewed 376 household heads or their representatives in four sub-counties of Nakasongola district for willingness to pay for the current or improved quality of health care in public health facilities. In order to explore how much the households were willing to pay per capita member of household per annum, we employed the contingency valuation method using the 'open-ended' bidding game. *Results:* Majority, 56.7% (199) of the respondents were not willing to pay for health care in public health facilities at the current level of quality. Willingness to pay grew from 43.3% (152) to 83.5% (293) for improved quality of care in public health facilities. Major operations, in-patient therapeutic care and health facility deliveries in that order were the services communities were most willing to pay for if quality of care matched their expectation. The median willingness to pay was Ugandan shillings 4,888 (\$1.56) (range 0-10,000 [\$3.19]) and once-annual prepayment was preferred by majority of respondents. Female-household headship, high-level of education of household head and belonging to lower income quintiles were positively associated with willingness to pay. *Conclusion:* The communities in Nakasongola district are willing to pay for health care in public health facilities provided the quality of care is improved. Given the low median amount of willingness to pay and the fact that persons from poor households were more willing to pay, planners of Health Insurance programs should devise progressive premium calculation mechanisms and further plan for government subsidy in order to take care of the poor.

Keywords

Willingness to Pay, Health Care, Public Health Facilities, Nakasongola District

1. Introduction

World over, populations have rated health as a top priority. As a result, health has frequently become a political issue as governments try to meet people's expectations [1].

Developing and transitional countries characterized by high-levels of poverty and poor access to healthcare are experiencing problems in development and implementation of health financing mechanisms that offer financial protection and improve access to health care. This implies that policy makers are faced with a steady stream of difficult decisions

regarding how-best to allocate the limited health resources in different contexts to improve efficiency, equity and make positive contribution to sound-financing health mechanisms. Every country has a form of health care financing mechanism that continues to undergo reform to suit the country-specific needs of the changing values, constrains and opportunities. The main health care financing models used are National Health Service, Social Health Insurance, Private Health Insurance, Community Health Insurance and direct purchase by consumers through Out of Pocket Payments (OOP) at point of service. The health financing models are often delineated into the three main functions they are supposed to fulfill: collecting revenues, pooling of risks and purchasing services [2]. Governments in low and middle-income countries continue to register decreasing or limited revenue to finance health care amidst rising demand [1]. This has resulted into growing OOPs as the largest source of health financing, evidently exceeding 35% of the total health care expenditure in more than three quarters of Sub-Saharan African countries [2]. This presents inequity in access to health care since the poor are often culprits of health systems that present high OOPs. Conversely, the rising cost of health care is placing more persons within economic-borderlines into iatrogenic poverty [3]. Accordingly, countries need to develop health financing mechanisms that can bridge the inequity in health care access and health status between the 'haves and have-nots'. A few middle and low-income countries devised structural reforms that respond to the challenge of raising sufficient resources and removing financial barriers to accessing health care. Brazil, Chile, Thailand, China, Mexico, and Rwanda are examples of countries that have made great strides in addressing the above challenge [1]. Uganda is a resource-constrained setting with income disparities spread across the country and its health care financing and delivery has undergone fundamental changes. For example Uganda introduced cost-sharing (fee for service) in public health facilities shortly after decentralizing health care delivery in 1993 with intention to lessen the impact of irregular payment of low health worker salaries, alleviate drug shortages, and strengthen community engagement in health care delivery [4]. This reform (cost-sharing) limited the poor from accessing health care. In 2001 the Government of Uganda abolished cost-sharing in an effort to reverse the erstwhile situation. This resulted into rise in service uptake – nationwide, the number of new cases treated in the health facilities increased by 19 percent among under-fives and 31 percent for the rest of the population [5]. This overwhelming demand resulted into decline in quality of health care [6]. To date, Uganda's health system continues to be financed through the tax-based national health services but with persistent OOPs associated with effects of poor quality, commodity stock out, under the table payments and 'elite' grade B facilities in public hospitals as well as payments in private-provider health facilities. Close to half of Uganda's total health expenditure is financed through OOP payment at the point of care [7] and by 2006, greater than 31.5% of households in Uganda experienced catastrophic health expenditure [8]. The government of

Uganda is in the process of tabling National Health Insurance bill for legislative enactment in the near future. Approaches that provide enough information to identify efficient and equitable health care financing strategies considerably involve packaging the opinions of all the stakeholders: particularly the community members. This study aimed to generate information on whether the consumers of health care would be willing to pay for health care in the public health facilities. Specifically, we evaluated: community's willingness to pay for the health care provided in public health facilities; household characteristics associated with willingness to pay; how much households would be willing to pay; and their preferred mode of payment.

2. Methods

2.1. Study Area

We conducted this study in Nakasongola district which is located in central Uganda. The health governing structure of the district is made up of 2 health sub districts. There are 30 recognized health facilities that comprise of a military hospital, 1 level IV health centre, 9 level III public health centers, 1 level III private not for profit health centre, 15 level II public health and 4 level II private not for profit health centers. Like any other public health service in the country, the residents of Nakasongola district access free health care in the public facilities.

2.2. Study Design

We employed a descriptive cross-sectional design with majorly quantitative methods of data collection and analysis. We conducted interviews with heads of households in July 2011 assessing for if they would be willing to pay for health care in public health facilities for the current level of quality, improved quality of health care; how much they would be willing to pay; and the preferred mode of payment. In order to explore how much the households were willing to pay per capita per annum, we employed the contingency valuation method using the 'open-ended' bidding game [9]. The household characteristics associated with willingness to pay that we evaluated include; age of the household head, sex of the household head, household size, level of education of the household head, employment of the household head and economic status of the household. Whereas we collected data on the rest of the household characteristics directly by interviewing the household heads, we employed proxy measures of wealth as a function of household characteristics and assets [10, 11]. We then ranked the socio-economic status of the community using a wealth ranking technique modified from the Uganda participatory poverty assessment which report items associated with wealth or poverty [11]. The data generated on the household characteristics and assets were later used to construct a wealth index for households using principal component analysis. The wealth index, a proxy measure of long time conditions of living separates the households into five (1 [poorest] to 5 [richest]) income

quintiles: group 1 (represents individuals living in households in the lowest quintile), 2 represents individuals in households in the second quintile, group 3 represents individuals in households in the middle quintile, group 4 represents individuals in households in the fourth quintile and group 5 for individuals in households in the highest quintile with 20% of the population with the lowest total asset scores representing individuals in the lowest wealth quintile; the next 20% in the second wealth quintile, and so forth [10].

2.3. Sample Size and Sampling Techniques

We employed the Cochran's formula to estimate the sample size for infinite population at 95% level of confidence, 50% prevalence of willingness to pay and desired precision of +/-5% and obtained 385 households. We then adjusted for finite population of 11,771 households in Nakasongola district and arrived at minimum sample size of 372 households. However, we interviewed 376 household heads. We selected 4 sub-counties of Kalongo, Lwabyaita, Nabiswera and Wabinyonyi using probability proportionate to size. After proportionately allocating 93, 79, 107 and 97 households to Kalongo, Lwabyaita, Nabiswera and Wabinyonyi respectively, we employed systematic random sampling to select the households in each sub-county. We identified the reference household using the bottle-spinning method as applied in the standard Expanded Program on Immunization surveys [12]. We then followed the sampling interval that varied from one sub-county to another in order to identify the corresponding interview locations until the desired sample size was attained.

2.4. Data Collection and Analysis

We trained data collectors who were able to speak the local language(s) on use of the sampling procedures, data collection tools, interview techniques and proceeded to pre-test the data collection tools. Data collectors worked in teams of three persons (2 data collectors and 1 supervisor) for each sub-county. Data were entered into *Statistical Package for Social Sciences* and also referred to as *Statistical Product and Service Solutions* (SPSS) and analysed using descriptive statistics. However, we employed the STATA to perform principal component analysis that formed the basis for computing wealth quintiles; and performing regression.

2.5. Quality Control

We trained data collectors and during the training, translated the key terminologies into the local languages with the aid of the data collectors to ensure the same and valid way of presenting such terminologies during interviews. The face validity of the data collection tools were verified by the second author and corrections made before pre-testing and further adjustment. The principal investigator supervised the data collection process alongside a sub-county supervisor to minimize errors in sampling, interviewing; and missing responses. The data were cleaned, double entered to ensure consistence before we conducted analysis.

2.6. Ethical Consideration

The main ethical issues involved in this study included informed consent, confidentiality and use of data. We sought permission to conduct this study at all levels of governance and obtained informed verbal consent of the respondents before proceeding with interviews. We conducted all the interviews in privacy and have made no reference to individuals in this report in order to protect identity of our respondents. Data generated from the field was used solely for the purpose of this study.

3. Results

We interviewed persons from 376 households and this represents a response rate of 101.1%.

3.1. Socio-Demographic Characteristics of Respondents

Majority, 84.3% (317) of the respondents were male. The respondents majorly constituted persons of age 30 years and higher (table 1).

Table 1. Demographic characteristics of respondents

Characteristic	Frequency (N=376)	Percentage (100%)
Sex		
Male	317	84.3
Female	59	15.7
Age category		
<20	1	0.3
20-29	85	22.8
30-39	139	37.4
40-49	84	22.6
50-59	36	9.7
60+	27	7.3

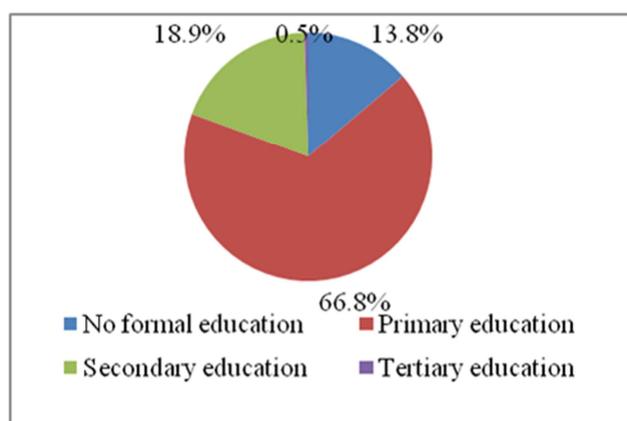


Figure 1. Highest level of education of household head.

3.2. Household Characteristics

The mean household size was 6.02 persons with majority of the household heads having only attained primary education. Figure 1 highlights the level of education of household heads. Up to 92.02% of the household heads work in informal sector with crop agriculture, the main source of informal

employment constituting nearly half, 49.3% of those in informal employment sector. The rest of the household heads engaged in casual labor provision, business, fishing, self employment, and cattle keeping as their source of income in descending proportions.

To assess economic status of households, we employed proxy indicators like ownership of certain household assets and the housing characteristics. Proxy indicators used included the following; ownership of 12 household durable consumption items, ownership of a functioning means of transport, type of animals/birds reared by the household; ownership of agricultural land and the type of house the respondents lived in. These indices were used to rank the households and construct wealth quintiles. Although we interviewed from the targeted 376 households, only 351 (93.4%) were found valid for wealth ranking. The remaining 25(6.6%) households were considered outliers and flagged out because they would reduce the reliability of the asset index data. Table 2 presents findings on the household assets and characteristics.

Table 2. Ownership of household assets and housing characteristics.

Themes	Ownership (n=351)	
	Yes	No
Durable assets		
Elec	25 (7.1)	326 (92.9%)
Radio	324 (92.3%)	27 (7.7%)
Television	20 (5.7%)	331 (94.3%)
DVD/video	15 (4.4%)	336 (95.7%)
Mobile phone	324 (92.3%)	27(7.7%)
Refrigerator	10 (2.8%)	341(97.2%)
Table	322 (91.7%)	29(8.3%)
Chair	326 (92.9%)	25(7.1%)
Sofa set	87 (24.8%)	264(75.2%)
Bed	332 (94.6%)	19(5.1%)
Cupboard	155 (44.2%)	196 (55.8%)
Clock	65 (18.5%)	286 (81.5)
Transport items		
Bicycle	296 (84.3%)	55 (15.7%)
Motorcycle	62 (17.7%)	289(82.3%)
Car	9 (2.6%)	342 (97.4%)
Boat	4 (1.1%)	347 (98.9%)
Animals		
Chicken or turkey or ducks	270 (76.9%)	81 (23.1%)
Goats or sheep or pigs	240 (68.4%)	111 (31.6%)
Cattle	243 (69.2%)	108 (30.8%)
Agricultural land		
10 acres or less	185 (52.7%)	166 (47.7%)
11- 45 acres	52 (14.8%)	299 (85.2%)
46 acres or more	12 (3.4%)	339 (96.6%)
Type of house		
Straw house	147(41.9%)	204 (59.1%)
Semi- permanent	83 (23.6%)	268 (74.6%)
Permanent	121(34.5%)	230 (63.5%)
Storied house	0(0%)	351 (100%)

Households in the poorest income quintile constituted the highest proportion of respondent households (table 3).

Table 3. Quintile constitution proportion of respondent households.

Quintile	Lowest	Second	Middle	Fourth	Highest	Total
	(1)	(2)	(3)	(4)	(5)	
	Frequency willing to pay					Percent
Frequency	111	31	71	73	65	351
Percent	31.6	8.8	20.2	20.8	18.5	100%

3.3. Willingness to Pay for Health Care

More than half, 56.7% (199) of the respondents were not willing to pay for health care in public health facilities at the current level of quality. When probed as to whether they would be willing to pay given improvement in quality of care, the proportion willing to pay grew from 43.3% (152) to 83.5% (293).

Major operations, in-patient care and health facility deliveries in that order were the services communities would be most willing to pay for if quality of care was improved. Table 4 details the type of services communities would be willing to pay for.

Table 4. Type of services communities would be willing to pay for given improved quality of care.

Type of services	Frequency (n=293)	Percent (%)
OPD		
Yes	189	64.5
No	104	34.5
Total	293	100.0
Delivery		
Yes	254	86.7
No	39	13.3
Total	293	100.0
In-patient care		
Yes	272	92.8
No	21	7.2
Total	293	100.0
Major operation		
Yes	281	95.9
No	12	4.1
Total	293	100.0

The median amount of money respondents were willing to pay was Ugandan shillings 4,888 (\$1.56) (range 0-10,000 [\$3.19]).

Table 5 presents frequency distribution of the amount of money respondents would be willing to pay for if the quality of health care were improved.

Table 5. Amount of money respondents would be willing to pay.

Amount in Ugandan shillings (\$)	Freq	Percentage
0 (0.00)	58	16.5
500 (0.16)	3	0.9
1,000 (0.32)	13	3.7
2,000 (0.64)	52	14.8
3,000 (0.96)	3	0.9
5,000 (1.60)	98	27.9
7,000 (2.23)	60	17.1
8,000 (2.55)	51	14.5
10,000 (3.19)	13	3.7
Total	351	100.0

Sex and level of education of household head were significantly associated with willingness to pay – the female headed households (Beta= 0.033, t-value = 0.611) and households headed by persons with higher levels of education (Beta=0.082, t-value =1.025) showing more willingness to pay for health care. Similarly, those in the lower wealth quintiles were more willing to pay than those in higher income quintiles. Majority, 58.4% (170) of the respondents willing to pay for desired quality of care preferred to pre-pay for health care once every year.

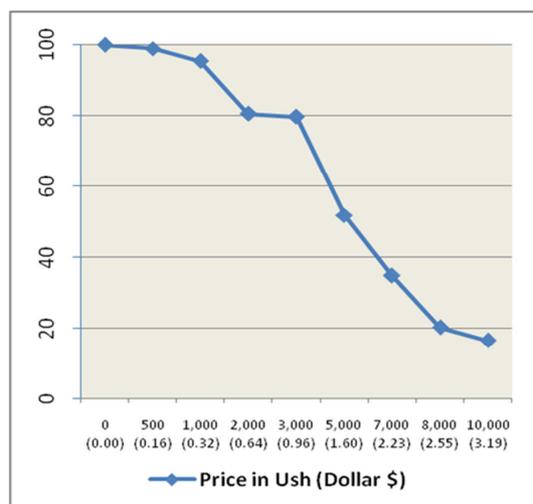


Figure 2. Willingness to pay (WTP) for Health care among potential users.

The rest preferred payment from out of pocket at point of service.

4. Discussion

Willingness to pay for any good depicts the economic value consumers attach to such goods [9], [13]. Majority of our respondents were not willing to pay for the current quality of health care provided in public health facilities of Nakasongola. Willingness to pay rose by almost half for improved quality of care in the same public health facilities that provide health care at a lower perceived quality at the moment. The Uganda Ministry of Health has planned to introduce social health insurance and community health insurance that will run alongside the existing private health insurance [8]. Our findings herein reflect strong willingness to pay for health care of better quality than the status quo. Aizuddin *et al.* show similar findings in their study to identify the factors that influence willingness to pay for health care [14]. They highlight that age, education and health care services' quality were positively associated with willingness to pay. Unfortunately, the Uganda Ministry of Health views health insurance primarily as a mechanism for mobilizing funds for the health sector [8] with risk pulling coming secondary. Other than communities resisting joining of voluntary health insurance schemes (community and private health insurance), the desired goals of averting OOPs and consequently catastrophic health expenditure may be in vain if quality

concerns are not addressed. Currently, Uganda's health system is financed through the tax-based national health services and 37% of Uganda's health expenditure is from out of pocket [7]. Poor quality of health care (in public health facilities) that not only makes people opt for private health services but also results into under the table payments and purchasing missing medicines/supplies from private pharmacies explain the high OOPs this 'theoretically' free financing mode is seeing. Nabyonga-Orem *et al.* show similar results in their analysis of the impact of user fee abolition on the attainment of universal coverage objectives [15]. This denotes that the health system is unlikely (through health insurance) to address OOPs and iatrogenic poverty arising from catastrophic expenditures if quality laps in the current health service delivery outlets are not addressed. Fortunately, the planned national health insurance comes with options for consumers to seek health care from private health providers. However, the low coverage with private health care provision and their tendency to remain concentrated in urban centers [8] means exclusion of the rural 85% [16] of Ugandans from accessing these services deemed of better quality hence inequity. The median amount communities were willing to pay per capita per annum was 4,888 (\$1.56). This translates to Ugandan shillings 170,380,101,944 (\$54,367,316.43), less than 1% of the projected Gross Domestic Product as at 2015 [17]. The communities showed highest willingness to pay for major surgical operations. This was closely followed by in-patient services and maternity care for childbirth. This finding is not surprising given the opportunity cost associated with 'not receiving' these (major surgery and in-patient care) services if and when indicated: disability or death since major surgeries or in-patient care is desired majorly for conditions that may be life threatening. The high willingness to pay for maternity care for childbirth underpins the importance attached to this normal but critical service to maternal and newborn survival. Such sentiments could be of great help to designers of the national health insurance program of Uganda since prioritizing services communities place high value to not only eases acceptability but also serves as 'putting into context' the desires of the beneficiary. Contrary to an earlier finding in Burkinafaso [18], our finding showed that household headship by females was more associated with willingness to pay than those by males – consistent with an earlier study in Tanzania [19]. The difference in power relationships between males and females in these contexts most likely explains this variation. Similarly, persons from households in the poorer income quintiles showed more willingness to pay than those in wealthier ones – another finding that does not surprise given that the poor are the main facers of avalanche of illnesses hence have the cause for more uncertainty than their rich counterparts. This however contradicts what other scholars have shown that willingness to pay was higher among richer income groups [20]. Report that the poor carry the burden of catastrophic health expenditure is well documented in Uganda [8]. Households headed by persons of higher-level of education showed more willingness to pay. The most preferred mode of payment was

the annual-pre-payment. This preferred mode of payment matches with the concept of health insurance that the Ministry of Health of Uganda is fronting for parliamentary enactment. This reduces rigor required for social mobilization since majority of the population subscribe to the concept of health insurance.

5. Conclusion

The communities in Nakasongola district are willing to pay for health care in public health facilities provided the quality of care is improved. However the median amount the communities were willing to pay points to the need for government subsidy since the total projected contribution may not match the total cost of health care provision for the entire year. This need (subsidization) was corroborated by the fact that the poor showed more willingness to pay. These findings point to the need for progressive methods of premium estimation. In so doing, the rich will be able to subsidize the health care needs of the poor. Given the varying determinants of willingness to pay at household level, planners of Uganda's National Health Insurance should embark on social mobilization and community dialogue, targeting the categories of households with determinants leading to non-willingness to pay.

Abbreviation

OOP: Out-of-pocket Payment

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