Comparison of household expenditure between urban slum and non-slum dwellers in a Southwestern metropolis, Nigeria

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Abstract

[EXSCINDED] Abstract Background The growth of urban slums has become a source of global concern due to the less-than-optimal conditions in which they exist. Of particular interest here, are the spending patterns of slum inhabitants in order to understand where funds are diverted from when a sudden health challenge occurs. This study sought to provide baseline statistics of household expenditure patterns of selected slums dwellers in southwestern Nigeria using non-slums dwellers as a comparison group.Methods The study utilised a retrospective descriptive cross-sectional design involving 450 respondents from both slums and non-slums. Information pertaining to spending patterns was collected using semi-structured questionnaires (adapted from the World Health Survey) and cost diaries. Results are presented as weighted means and weighted percentages.Results A total of 239 participants were slum dwellers while 211 were non-slum dwellers. Mean age of slum dwellers was 38years (95% CI: 35 – 42 years) while non-slum dwellers had a mean age of 39 years (95% CI: 36 - 41). Mean monthly income for slum dwellers was N93,118; 95%CI: N66,106 – N120,130 while that of non-slum dwellers was N269,700; 95%CI: N209,312 – N330,227. Mean monthly expenditure of N 21,335 was spent on food among the slum dwellers and N 25,131 among the non-slum dwellers. Both slum dwellers and non-slum dwellers spent a large proportion of their monthly income on food, rent, education and health care.Conclusion The earning capacity (income) of respondents from the slums is low compared to the non-slum counterparts. Money allocated to specific and basic household items account for major portions of the slum dwellers' income, thus they are less likely to be prepared to deal with costs of a medical emergency (compared to non-slum dwellers). Concerted efforts are needed to provide more jobs or empowerment schemes that can alleviate the burden of poverty in the slums and improve their living conditions also.

Introduction

Urbanization, defined as "a constant growing global phenomenon of increasing populations living in cities", is becoming more widespread. [1]. While this trend has been observed on a global scale, the inability to adequately handle it has been predominantly associated with low income countries [2]. As a result, there is a simultaneous growth of poverty among urban dwellers living in sub-par conditions called slums. To define a slum we draw on two inter-related definitions of slums; firstly an area with at least 300 residents or that has at least 60% of the households having poorly congested rooms with inadequate infrastructure, lack of proper sanitation and drinking water facilities [3]. Secondly, we define a slum as an urban colony that has not been authorized by the government and that lacks basic amenities such as durable housing, sufficient living area for inhabitants, access to improved water and sanitation facilities[4].

It is estimated that one out of three urban dwellers (one out of every six people worldwide) already live in a slum [5]. Nigeria is not exempted from the problem of rapid urbanization, with major cities reporting increased numbers of slums in urban areas [6,7]. Nigeria is one of the countries estimated to have the highest number of slum dwellers with as many as 60% of urban dwellers believed to be residing in

slums[8]. The combination of demographic (high number of youths), technological (availability of communication and recreational facilities in urban cities) and economic (the search for better incomes) factors have resulted in an even faster rate of migration from traditional villages to cities [8]. This is coupled with an absence of significant industrial expansion, conversion of agricultural lands for residential and industrial purposes and a lack of adequate planning required to handle the growing population in urban areas in Nigeria. These factors result in lower food production, increased pollution and coupled with the poor living conditions in slums impact population health negatively [9].

The growth of the urban slum-dweller population has become a source of global concern due to the less-than-optimal conditions in which they exist [10]. Residents of slums are subject to disproportionate and poor access to basic sanitation, proper urban and regional planning facilities which may lead to unprecedented health problems compared to non-slum dwellers [11–13]. Similarly, the urban poor have been noted to suffer from low incomes, unsatisfied basic needs (e.g. shelter, food and clothing) and are highly vulnerable when exposed to any form of risks [14,15]. Birhane et al (2014) suggest that as many as three-quarters of the urban poor have food insecurity arising from low incomes, low agricultural production and dependence on markets rather than self-production for food [16].

A direct consequence of these conditions is that urban slum dwellers have been noted to have lower spending power while indirect consequences include postponing expenditure on certain necessities such as healthcare until they become emergencies that are life-threatening [17,18]. For instance, a study conducted in Ebonyi state Nigeria found almost 30% of its respondents delayed seeking health care due to financial limitations [19]. This pattern of health seeking behavior has also been related to worse health outcomes for urban slum dwellers [20].

In order to understand how this increased vulnerability of slum dwellers plays out when faced with urgent health care needs, a baseline study was conducted to describe household expenditure among urban slum dwellers and non-slum dwellers within the local context of a metropolitan state of Southwestern Nigeria. This is part of a larger study which will investigate how these households coped with urgent unavoidable health care expenditure.

Methods

This cross-sectional study collected baseline data as part of a longitudinal study of the impact of unavoidable health care expenditure. Data were collected using interviewer-administered questionnaires. This study took place in Ibadan, the state capital of Oyo State. It is in the southwest geo-political zone of Nigeria with a landmass of 28,246.264 km^2 and a population of about 6,182,172 [21]. Oyo State consists of 33 local government areas (LGAs) that function as administrative units out of which 5 of the 33 local government areas make up the State capital (Ibadan). There are a total of 47 private secondary facilities (hospitals) and 93 public health facilities across the 5 local government areas. Among the public facilities, 79 are primary health care centres while 14 are secondary health facilities and tertiary facilities.

The participants were identified by first choosing the areas in Ibadan where there are large urban slums. The largest slums are in three (Ibadan northeast, Ibadan southwest and Ibadan southeast) of the five local government areas (Ibadan North, Ibadan North-East, Ibadan North-West, Ibadan South-West, and Ibadan South East), that make up Ibadan metropolis. These local government areas (LGAs) were purposively selected for this study [22]. In these three LGAs, all the tertiary hospitals [23], three public and three private secondary level hospitals were identified and included. The secondary level hospitals were randomly chosen. A researcher was present in each hospital, sequentially, on chosen days and any person who presented for an emergency surgery was invited to participate.

It was estimated that a sample size of 150 slum dwellers and 150 non-slum dwellers would give 80% power to detect an absolute difference of 15% in the proportion of participants who incur catastrophic health expenditure as being statistically significant at the 5% level. In order to allow for a loss of precision due to clustering effects, a total of 500 participants were approached. Fifty participants declined yielding a response rate (RR) of 90%. Thus, a total of 450 participants were eventually recruited for the study.

Study participants were those responsible for paying hospital bills of a household member that was admitted for emergency surgery. Participants had to be above the age of 18 years and resident for at least 12 months prior to the study in both slums and non-slums respectively. They had to be legally able to consent to participation and provide consent for a 1-month follow-up at the recruitment phase. As the larger study involved follow-up post discharge, only those participants who gave consent for such follow up were included in the baseline study.

The content validity of the instrument was established through review by a panel of five content experts with professional expertise in cost analysis. The process ensured that the tool was adequately able to measure the variable or constructs that it was meant to measure. It was then translated into Yoruba and back-translated to verify that the original meaning was not lost. Three types of questions were utilised; binary questions (such as yes/no); multiple choice questions (in which the options were mutually exclusive and covered all possible answers); specific questions that do not specify options (for example how old are you?).

A pre-test of the questionnaire was carried out among 50 participants that sought emergency care from similar secondary and tertiary health institutions in slums outside the study area, Oyo State. In this paper, we report household expenditure prior to hospitalization as recounted by the study subjects. An interviewer administered instrument, adapted from the world health survey – household questionnaire [24] consisting of a baseline survey and cost diary [25], were administered. The baseline data describes participants' age, marital status, ethnicity, educational status, religion, occupation, and income of payers while the cost diaries provide data on household expenditures prior to surgery. Data on household expenditures were collected based on how much was spent on eighteen items (food, utilities, education, transportation, entertainment, toiletries, communication, health care costs, voluntary insurance, all other goods & services, care requiring overnight stay, care by medical staff not requiring overnight stay, care by traditional healers, dentists, medication/drugs, healthcare products, diagnostic/laboratory care, any other

healthcare products not listed above). Eight sub-items assessed under utilities include rent, construction, gas, electricity, heating fuel, telephone, water and clothing.

Our explanatory variables included the age, marital status, religion, ethnicity, while the response variables were the amounts spent by each respondent on household expenditure, four weeks prior to surgery - actual household expenditure (AHE). The AHE was objectively estimated by providing a comprehensive list of routine expenditure to the participants who were asked to provide approximate amounts for expenses they had incurred and spent on, four weeks prior to the surgery. The recall period of four weeks was chosen to manage the delicate balance between ample and quality data – a time estimate that has been applied in similar studies [26].

In the analysis, the data was weighted (taking into consideration that within different hospitals, the probability of selecting a respondent may differ). Thus, we report weighted percentages in this study. Frequency tables were generated for relevant variables while descriptive statistics were used to summarize continuous variables. The results are presented as means and 95% confidence intervals, separately for the slum dwellers and the non-slum dwellers. The confidence intervals were calculated taking into account the clustering effects.

Approvals to conduct the study were obtained from the Ethics Review Committees of University of Witwatersrand Johannesburg (M170284), UI/UCH Ethical committee (UI/EC/17/0006) and Oyo state Ministry of Health (AD13/479/123). Written informed consent was also obtained from the patients and payers prior to questionnaire administration and respondents' anonymity were protected by ensuring that no individual identifiers existed in the instruments or in the electronic data set. Child assent in addition to written informed consent (from parent or guardian) was also obtained for patients who were less than 18years. The four principles of good ethics - non-maleficence, beneficence, justice and respect for autonomy were observed and adhered to during the entire study [27].

Results

Sociodemographic Characteristics of Respondents

The mean age for the payers from the slum dwellers was 38years (95% CI: 35 – 42 years) while non-slum dwellers had a mean age of 39 years (95% CI: 36 - 41) (Table 1). Mean age for patients from the slums 34years (95%CI: 32 - 36) while non-slum patients had a mean of 32 years (95% CI: 30 – 34 years). Majority of payers were between 30 and 39 years among both the slum dwellers (61.1%) and non-slum dwellers (57.9%) (Table 1). Respondents from the slums were mostly married (85.1%) as were respondents from the non-slum dwellers (93.4%). The proportion of respondents practicing Christianity among slum dwellers (64.4%) did not differ much from the non-slum dwellers (68.1%), similarly for those practicing Islam (35.6% in slums versus 31.9% in the non-slums) (Table 1). With regards to ethnicity, there were more internal migrants (non-Yoruba) among the slum dwellers (34.5%) than among the non-slum dwellers (21.1%) (Table 1).

Just over half of the non-slum dwellers (52.9%) had formal occupations, compared to only 31.3% of the slum dwellers, with about half of the slum dwellers (50.3%) having informal occupations. Fewer participants were unemployed among non-slum dwellers (0.8%) compared to slum dwellers (18.4%) (Table 1). With respect to educational status, more non-slum dwellers (48.2%) had tertiary education compared to slum dwellers (16.0%). Secondary education showed a reverse trend as more slum dwellers (43.6%) had secondary education compared to non-slum dwellers (39.3%) (Table 1).

A good proportion (72.2%) of payers from the slum earned less than N50,000 per month. As for the non-slum dwellers, only 33.6% earned less than N50,000 monthly. However a larger proportion of the non-slum dwellers (45.5%) earned between N100,000 – N499,999 compared to the slum dwellers (18.6%). Likewise for those earning more than N500,000 per month, a larger proportion of payers from non-slum areas(12.4%) earned more than N500,000 compared to their slum dwellers counterparts (5.1%) (Table 1).

The majority of patients were between 30-39years from both slums and non-slum areas (48.4% and 51.2% respectively) (Table 1). They were mostly spouses to the payers (71.7% of patients were spouses to payers from the slum areas while 72.8% of the patients were spouses to payers from the non-slum regions). Unlike the gender distribution observed in the payers, females constituted the main gender among the patients for both slum dwellers (90.3%) and non-slum dwellers (89.2%) (Table 1).

Distribution of household expenditure

The mean actual household expenditures (AHE) for slum dwellers was N 128,895 (95%CI: 114,391 - N 143,399) while that of non-slum dwellers was N 162,315 (95%CI: N 78,073 - N 246,556). Majority of slum dwellers (59.2%) and non-slum payers (50.8%) incurred a mean actual household expenditure of N 100, 000 – N 500,000. This was followed by mean actual household expenditure of < N 100,000 amongst the 2 parties also (39.8% of slum payers and 44.6% of non-slum payers) (Table 1).

The estimated mean monthly income for slum dwellers was N93,118; 95%CI: N66,106 – N120,130 while that of non-slum dwellers was N269,700; 95%CI: N209,312 – N330,227 (Table 1).

Mean monthly household expenditure patterns

Analysis shows that both parties incurred the largest expenditures on food expenditure; N21,335; 95%CI: N19,232 - N 23,437 among slum dwellers while the non-slum dwellers incurred and average of N25,131; 95%CI: N19,843 – N30,420 on food in a month (Table 2).

Other than food, the major household items that consumed a larger proportion of income of the slum dwellers was on rent (7.5% of their average monthly income), education (7.3% of their average monthly income), transportation (6.7% of their average monthly income) and lastly health care costs (5.9% of their average monthly income). Unlike the slum dwellers, the items that mattered more next to food expenditure for non-slum dwellers (9.3% of mean monthly income) included health care costs (3.8%), followed by rent (2.6%), transportation (2.5%), clothing (2.5%), before education (2.1%). (Table 3). Slum

dwellers incurred a larger proportion of their income on construction repair 3.3% compare to the non-slum dwellers (1.1%). This trend was also observed with telephone bills where slum dwellers incurred a larger proportion (3.7%) compared to non-slum dwellers (1.1%). Larger proportions of income was also observed more among slum dwellers with entertainment (3.6%) compared to non-slum dwellers (1.3%).

With respect to utilities alone, other than rent and clothing, both slum and non-slum dwellers incurred about the same proportion across all other utilities. These utilities include gas (1.0% Vs 0.63%), electricity (2.1% Vs 1.2%), heating fuel (1.8% Vs 0.9%) and water (1.3% Vs 0.95%). Other non-utility household expenditures with fairly similar average monthly expenditures included toiletries (2.2% Vs 0.63%), communication (1.8% Vs 0.7%), all other goods and services (0.3% Vs 0.2%), care by traditional healers (0.3% Vs 0.1%), dental care (0.2% Vs 0.01%), medication (0.7% Vs 0.4%), health care products (0.3% Vs 0.14%), diagnostic/ laboratory care (1.5% Vs 0.3%) (Figure 1).

Non-slum dwellers spent a larger proportion of their average monthly income only on voluntary insurance (0.8% Vs 1.2%), care requiring overnight stay in a health facility (1.08% Vs 1.12%), and any other healthcare products not listed above (0.14% Vs 1.11%) (Figure 2).

Discussion

This study sought to describe the patterns of household expenditure among urban slum dwellers and non-slum dwellers in a southwestern state of Nigeria. Expenditure pattern for a four week duration prior to the admission for an emergency surgical care, was sought. As expected, majority of both groups were Christian and of Yoruba ethnicity – consistent with the characteristics of the inhabitants of the geographical location of study area. Ethnic predominance differs and is largely determined greatly by the three major regions of the country - northern, eastern and western parts of the country. The predominance of Yorubas in our study thus, is a much expected finding since the research was conducted in southwestern region of the country that is mainly inhabited by this ethnic group [28].

An interesting observation in this study was that despite their lower educational status, slum dwellers spent more on education fees and supplies than non-slum dwellers. A factor that might have played an important factor in this observation is the average family size of both categories of respondents. Studies have consistently reported higher family sizes among slum dwellers, indicating that they have more children than non-slum dwellers [29,30]. This, in turn, leads to more spending in order to cater for the educational needs of their children.

Furthermore, studies have established that a major contributor to the low educational attainment among slum dwellers might be as a result of poor or limited access to educational facilities in slum areas. Since majority of slum areas are not government-approved, there is poor attention to provision of standard educational facilities within them [31], often times complicated by disabling home environments and child labor [32]. A pertinent but subtle factor that has received attention in literature is the importance and high value attached to quality education that slum dwellers possess. Empirical evidence from other low-income slum settings show that slum parents are not disinterested in their children's education and this

may motivate them to allocate a substantial part of their income to their children's education [2,29] – in a search for more standard educational facilities which are more likely to be situated in non-slum regions.

Nevertheless, as direct links have been established between educational levels and income [11,33], underlying and plausible reasons are provided for the low earning capacity experienced by slum dwellers. Literature has emphasized that discontinuation of children's education is a major coping strategy when faced with financial catastrophe from health costs among slum dwellers [34,35], which explains the higher rates of drop out despite the genuine interest and motivation to achieve literacy for children. Mugisha, in a study among Kenyan children, found higher enrolment rates among slum children below the age of 9 for females and below the age of 11 for males, compared to their urban counterparts [32]. Thus, higher expenditures on education may not necessarily translate into improved educational attainment.

Low earning capacity of slum dwellers as demonstrated in this study, accompanied by predominance of informal jobs, is consistent with other research findings [36,37]. A body of literature attests to the evidence, demonstrating that slum dwellers usually suffer from fewer employment opportunities, under-employment and other factors that contribute to their lower earning power [5,10,12]. In another study, Pramanik and Mukherjee (2013) were able to establish high wage rates and greater employment opportunities as important economic pull factors for migration that often results in the growth and proliferation of urban slums [38]. In the same study, income differential was significantly higher in the inner city compared to the periphery – a finding that refutes the income pattern in our study. This is because our slums are located within the inner core of the metropolis while the regions inhabited by non-slum counterparts are in the periphery. According to a United Nations report, slum dwellers rate lower on human development indicators than other urban households due to income inequalities, resultant health problems, less access to education, social services and poor employment [39].

Food was found to take the highest proportion of household expenditure amongst both slum and non-slum dwellers. This is consistent with findings in literature [40] that showed that respondents averagely spent more of their income on food. In another study, 'food was the single most important component of household spending', consuming up to 42.8% of total household expenditure [41]. Other than food expenditure, this study observed that slum dwellers spent considerably higher proportion of their mean monthly income on utilities (rent, telephone and construction repair), education and transportation, and health care costs. - consistent with findings in studies done in Asia, Africa and Latin America [18] and there may be several reasons for this disparity. First, as discussed earlier, is the issue of income. Low earning capacity (income) of slum dwellers relative to the non-slum dwellers' seemingly portrays the assumption that slum dwellers spend more on these household items. A second possibility is the poor living condition associated with slums. Non-governmental approved infrastructure in slums, probably associated with poorer quality, will promote larger expenditures as observed in the construction repairs of slum dwellers. Lack of access to basic amenities such as potable drinking water and waste disposal services, conditions which characterize slum areas, have been associated with increased morbidity

among different population segments [2,42,43] that very well explains the relatively large health expenditures incurred by the slum dwellers.

Two theories are proposed for why the non-slum dwellers consistently incurred larger proportions of their mean monthly income on voluntary insurance, health care costs requiring overnight stay and all other health care products not listed; and these are income and access. Better income fostered with improved and unhindered access to health care may translate to a higher demand by non-slum dwellers for available health care services and vice versa for the slum dwellers. The consequent better health enjoyed as a result of increased demand and access has led to wider gap in disparities that has been the underlying factor why the rich are healthier while the poor are sicker. The disparities have been a major concern in literature[44]. Consumer directed healthcare has also promoted health care disparities with wealth dimensions (promoting disparities), age dimensions (disparities occurring when the young and healthy pay less compared to middle aged) and gender related dimensions (disparities occurring when women spend more than male counterparts) [45] . Conversely, the reduced demand on available health care services also alludes to why the slum dwellers incurred more on herbal (traditional) care which are presumably more available in the slums and at more affordable rates. Herbal (traditional) care was found to be the first treatment choice for infertility in slums of Bangladesh [46]. Not surprisingly the availability of herbalists more in the slums will favour this patronage.

As partially discussed above, it is not surprising also that non-slum dwellers spent more on voluntary insurance. The popular and widely known form of insurance currently in Nigeria; the National Health Insurance Scheme (NHIS) is a government regulated social scheme that was launched in 2005 [33]. The coverage of scheme today is still largely limited and mandatory for the employees within the public and organized private sectors. As noted in the socio-demographic distribution of the respondents, non-slum dwellers are more likely to belong to this group than slum dwellers, thus validating the higher amounts spent by non-slum dwellers on health insurance premiums. Other studies among slum dwellers in similar sub-Saharan Africa settings show that slum dwellers are less likely to participate in health insurance schemes due to poor earning power, the need to prioritize immediate expenses and affordability of premiums [30,47].

Our study must be interpreted bearing in mind a few limitations. First, the amounts provided by the respondents are subject to varying degrees of recall bias. However, this was minimized by requesting provision of receipts or recall of events that assisted better with accurate recalls. Secondly, our study could not substantiate that this was the steady pattern of expenditure over several months before the study for both slum and non-slum dwellers. For instance, in the four weeks prior to the surgical emergency when the study was conducted, the influence of major life events that would have influenced spending patterns could not be eliminated nor accounted for during the recall process. Thirdly, the economies of scale that can be influenced by family settings (nuclear or extended) and marriage types (monogamy or polygamy), on total income was also not investigated nor accounted for. Lastly, considering that the research was carried out in the southwestern region of the country, findings from this study should be cautiously applied to slum regions in other areas of the country. Nonetheless, despite

these limitations, our study provides empirical and preliminary findings that document the spending patterns of slum and non-slum households in southwestern Nigeria.

Conclusion

This study examined and compared the spending patterns of slum dwellers with non-slum dwellers retrospectively before the advent of an emergency health condition. The earning capacity of respondents from the slums establishes them as urban poor due to their low income. Food expenditure consumed a substantial amount of income amongst both slum and non-slum dwellers.

Unlike the other group, slum dwellers spent more on other household items thus demonstrating their decreased utilization and unpreparedness to handle consequences of health care services when absolutely necessary. Concerted efforts are urgently needed not only to improve the living conditions in the slums with provision of jobs and empowerment schemes, that can alleviate the burden of poverty in the slums, but also increase accessibility and affordability to quality health care access thus helping to reduce health disparity that exists between the concerned parties.

This was a baseline study to assess the impact of unavoidable health care expenditure. The findings from this study establishes the objective of the next paper that will examine the proportion of households from slums and non-slums that incur catastrophic expenditure in a recent hospitalization for an emergency surgical care.

Declarations

Ethics approval and Consent to participate

Ethical approval for the conduct of the study was obtained from the Ethics Review Committees of University of Witwatersrand Johannesburg (M170284), UI/UCH Ethical committee (UI/EC/17/0006) and Oyo state Ministry of Health (AD13/479/123). Written informed consent was also obtained from the patients and payers prior to questionnaire administration and respondents' anonymity were protected by ensuring that no individual identifiers existed in the instruments or in the electronic data set. Data collection process was performed according to standard ethical guidelines. Consent was also obtained from doctors and matrons of respective and selected wards. Both written and oral consents were also obtained from the payers' prior to questionnaire administration and respondents' anonymity was protected by ensuring that no individual identifiers existed in the instrument or in the electronic data set. In situations where the patient was less than 18years, an additional assent was obtained from the patient in addition to the written consent provided by the guardian or payer in charge of the patient.

Consent to publish

Not Applicable

Competing Interests

No competing interests exists

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Authors' contributions

SF, JL and TO conceptualized the study. TO wrote out the study protocol and supervised data collection. All authors jointly analysed the data. TO wrote out the initial draft manuscript. All authors read and approved the final version for submission.

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SF is a professor at the University of Witwatersrand Johannesburg. JL is a professor of Biostatistics also at the University of Witwatersrand Johannesburg. TO is a doctoral candidate with the University of Witwatersrand and a cohort five fellow supported by the Consortium for Advanced Research Training in Africa (CARTA). He is also a lecturer and health systems researcher at the University of Ibadan, Nigeria.

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Availability of data and materials

The data that supports the findings of this study are available on request.

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Tables

Table 1 Socio-demographic characteristics of respondents

	Slum dwellers (N=239)		Non-slum dwellers (N=211)	
A. Payer Characteristics				
Mean Age of Payer (95% CI)	38.1 (34.7 - 41.6)		38.6 (36.3 - 40.8)	
Age of Payer (Grouped)	**Freq. (n)**	**Weighted %**	**Freq. (n)**	**Weighted %**
<30years	24	4.4	14	6.0
30 - 39 years	120	61.1	95	57.9
40 - 49years	66	24.6	65	31.5
50+ years	29	9.8	37	4.7
Gender of Payer				
Male	171	78.2	135	73.8
Female	68	21.8	76	26.2
Marital Status of Payer				
Not currently married	38	14.9	21	6.6
Currently married	201	85.1	190	93.4
Ethnicity of Payer				
Yoruba	155	65.5	161	78.9
Others	84	34.5	50	21.1
Education of Payer				
No formal schooling/ Primary	72	40.4	17	12.5
Secondary school education	100	43.6	62	39.3
Tertiary Education & above	67	16.0	132	48.2
Religion of Payer				
Christianity	156	64.4	141	68.1
Islam	83	35.6	70	31.9
Occupation of Payer				
Formal sector worker	76	31.3	120	52.9
Informal Sector	120	50.3	86	46.3
Unemployed	43	18.4	5	0.8
Mean Monthly Income of Payer (95% CI)	93,118 (66,106 - 120,130)		269,700 (209,312-330,227)	
Income bracket (per month of Payer) (Grouped)				
< N 50,000	209	72.2	70	33.6
N 50,000 - N 99,999	4	4.1	35	8.5
N 100,000 - N499,999	21	18.6	77	45.5
> N 500,000	5	5.1	29	12.4
B. Patient Characteristics				
Relationship to patient				
Self	58	20.2	38	15.3
Spouse	156	71.4	144	72.8
Others	25	8.4	29	12.0
Mean Age of Patient (95% CI)	34.2 (32.1 - 36.4)		31.9 (29.9 - 33.8)	
Age of Patient (Grouped)				
<30years	90	32.4	60	38.7
30 - 39 years	90	48.4	102	51.2
40 - 49years	37	13.0	31	8.2
50+ years	22	6.2	18	2.0
Gender of Patient				
Male	43	9.7	38	10.8
Female	196	90.3	173	89.2
C. Household Expenditure Pattern 4 weeks prior to surgery in Naira*				
Mean AHE** (for both SD&NSD)	N139, 688 (95%CI = N114, 098 - N165, 277)			
Mean AHE** for SD alone	N128,895: (95%CI = 114,391 - N143,399)			
Mean AHE** for NSD alone	N162,315: (95%CI = N78,073 - N246,556)			
Mean AHE				

< N 100,000	91	39.8	53	44.6
N 100,000 - N 500,000	135	59.2	136	50.8
N 500,000 - N1m	10	0.9	17	4.1
> N 1m	2	0.2	5	0.5

**$1 = N360; SD= Slum dwellers, NSD= Non-slum dwellers; **AHE = Actual Household Expenditures*

Table 2: Mean monthly expenditures of Household items by slum/non-slum dweller (in Naira)

		Slum Dweller		*Non-Slum*	
	Household Items	***Mean***	***95% CI.***	***Mean***	***95% CI***
	Food	21,335	19232 -23437	25,131	19843 - 30420
	Utilities				
a	*Rent*	6,933	4936 – 8929	7,006	-1018 – 15030
b	*Construction repair*	3,053	1992 – 4113	2,927	1937 – 3917
c	*Gas*	951	822 - 1080	1,710	136 – 3283
d	*Electricity*	1,935	1496 – 2374	3,194	1609 - 4780
e	*Heating Fuel*	1,716	1303 - 2130	2,304	1677 – 2931
f	*Telephone*	3,396	3182 – 3609	3,052	1809 – 4294
g	*Water*	1,195	1083 - 1307	2,575	1162 – 3988
h	*Clothing*	2,442	1562 – 3323	6,618	-8931 - 22167
	Education	6,791	4611 - 8972	5,555	2658 – 8452
	Transportation	6,254	4834 – 7674	6,630	4208 - 9052
	Entertainment	3,311	2133 - 4489	3,582	2145 – 5019
	Toiletries	2,069	445 – 3694	1,698	398 - 2998
	Communication	1,636	1,093 - 2179	1,896	1246 - 2545
	Health care costs	5,531	2170 – 8892	10,178	-110 - 20466
	Voluntary insurance	700	-114 – 1514	3,262	-3041 – 9566
0	All other goods & services	297	-19 – 612	510	-451 – 1471
1	Care requiring overnight stay in a health facility	1,005	588 – 1422	3,032	-1058 – 7123
2	Care by medical staff not requiring overnight stay that did not require overnight stay	1,398	171 – 2625	3,440	-2979 – 9859
3	Care by traditional healers	254	125 - 384	227	90 – 363
4	Dentists	164	-73 – 400	35	-42 - 112
5	Medication/drugs	608	263 -	1,195	-1179

			953		– 3568
6	Healthcare products	239	94 – 383	378	-208 - 965
7	Diagnostic/lab care	1,387	-133 – 2906	763	-617 – 2144
8	Any other healthcare products not listed above	132	27 – 238	2,985	-3327 – 9297

Table 3 Proportion of income spent on household items by slum/non-slum dweller (in Naira)

		Slum Dwellers Mean Monthly Income: N 93,118		*Non Slum Dweller* Mean Monthly Income: N 269,770	
	Household Items	***Mean***	***Proportion (95% CI)***	***Mean***	***Proportion (95% CI.)***
	Food	21,335	0.229 (0.21-0.25)	25,131	0.09 (0.07-0.11)
	Utilities				
a	*Rent*	6,933	0.075 (0.053 – 0.096)	7,006	0.025 (-0.003 – 0.056)
b	*Construction repair*	3,053	0.033 (0.021 – 0.044)	2,927	0.011 (0.007 – 0.015)
c	*Gas*	951	0.010 (0.009 – 0.012)	1,710	0.006 (0.0005 – 0.012)
d	*Electricity*	1,935	0.021 (0.016 – 0.026)	3,194	0.118 (0.006 – 0.018)
e	*Heating Fuel*	1,716	0.018 (0.014 - 0.023)	2,304	0.009 (0.006 - 0.011)
f	*Telephone*	3,396	0.037 (0.034 – 0.039)	3,052	0.011 (0.007 – 0.016)
g	*Water*	1,195	0.013 (0.012 – 0.014)	2,575	0.010 (0.004 – 0.015)
h	*Clothing*	2,442	0.026 (0.017 – 0.036)	6,618	0.025 (-0.033 – 0.082)
	Education	6,791	0.073 (0.050 – 0.096)	5,555	0.021 (0.010 – 0.031)
	Transportation	6,254	0.067 (0.052 – 0.082)	6,630	0.025 (0.016 – 0.034)
	Entertainment	3,311	0.036 (0.022 – 0.048)	3,582	0.013 (0.008 – 0.019)
	Toiletries	2,069	0.022 (0.005 – 0.040)	1,698	0.006 (0.002 – 0.011)
	Communication	1,636	0.018 (0.012 - 0.023)	1,896	0.007 (0.005 – 0.009)
	Health care costs	5,531	0.059 (0.023 – 0.095)	10,178	0.038 (-0.0004 – 0.076)
	Voluntary insurance	700	0.008 (-0.001 – 0.016)	3,262	0.012 (-0.011 – 0.036)
0	All other goods & services	297	0.003 (-0.0002 -0.007)	510	0.002 (-0.002 – 0.006)
1	Care requiring overnight stay in a health facility	1,005	0.011 (0.006 - 0.015)	3,032	0.011 (-0.004 – 0.026)
2	Care by medical staff not requiring overnight stay	1,398	0.015 (0.002 – 0.028)	3,440	0.013 (-0.011 – 0.037)
3	Care by traditional healers	254	0.003 (0.001 – 0.004)	227	0.0008 (0.0003 - 0.001)
4	Dentists	164	0.002 (-0.008 – 0.004)	35	0.0001 (-0.0002 – 0.0004)
5	Medication/drugs	608	0.007 (0.003 – 0.010)	1,195	0.004 (-0.004 – 0.013)
6	Healthcare products	239	0.003 (0.001 - 0.004)	378	0.001 (-0.0008 – 0.004)
7	Diagnostic/lab care	1,387	0.014 (-0.001 –	763	0.003 (-0.002

			0.031)		– 0.008)
3	Any other healthcare products not listed above	132	0.001 (0.0003 – 0.0025)	2,985	0.011 (-0.012 – 0.035)

**Prop = Proportion of income spent on Household item*

Figures

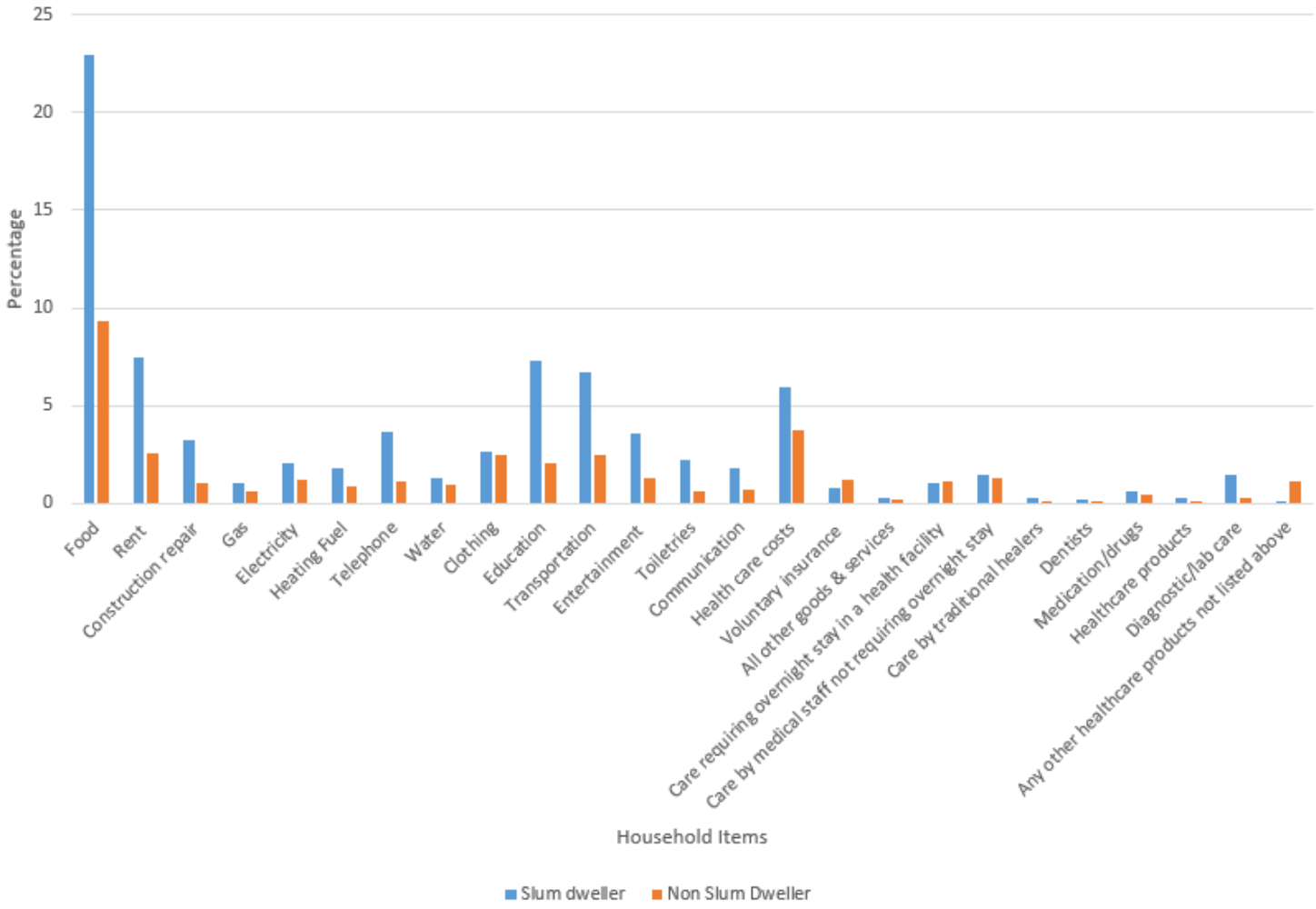

Figure 1

Proportion of income spent on food, utilities and non-food household

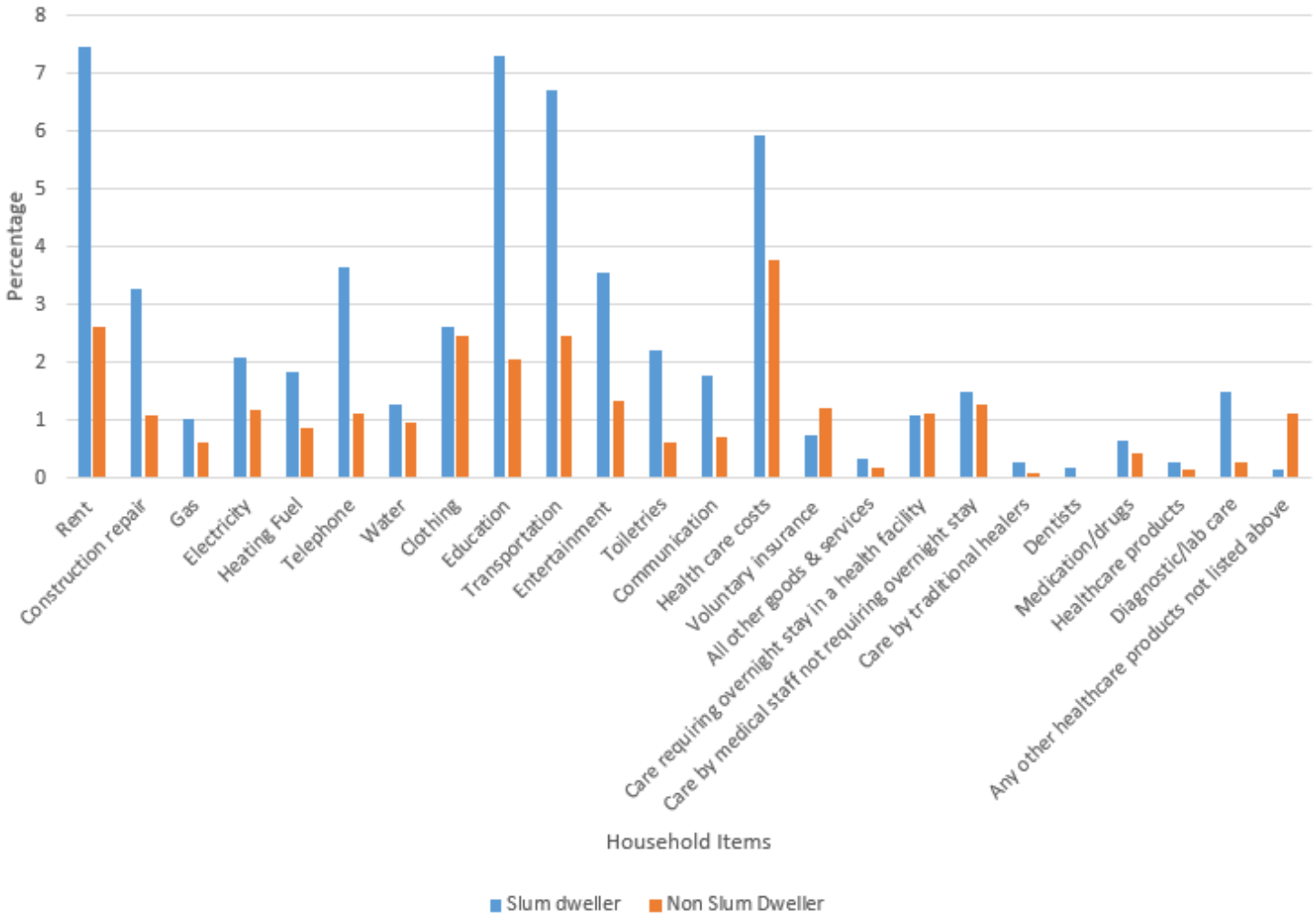

Figure 2

Proportion of income spent on utilities and non-food expenditure