Original Article

Effects of Health-Care Services and Commodities Cost on the Patients at the Primary Health Facilities in Zaria Metropolis, North Western Nigeria

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Abstract

Introduction: The payment for health-care services is a major problem for many poor patients in developing nations. The aim of the study was to examine the cost of services and commodities and how these affect the patients who utilizes the primary health-care centers in Zaria, North western Nigeria. **Methodology:** A descriptive cross-sectional survey of six primary health-care facilities in Zaria metropolis, namely Baban dodo, Tudun Wada, Magajiya PHCs from Zaria local government areas (LGA) and Samaru, Kwata, and Dogarawa PHCs from Sabon Gari LGA, was carried out. **Result:** The mean age of the respondents was 28.87± 8.63 years, most of them were married (53.3%), Hausa (63.3%), and Muslims (85.7%); also, they were unemployed housewives with daily stipends from their husbands less than 1 dollar/day. The major method for payment for health-care services was out of pocket (98.3%). More than one-third of the clients were not aware of the National Health Insurance Scheme (NHIS) (39%). There was a significant inverse relationship between the monthly income of the clients and the experience of financial stress and a positive association between patients' monthly income and awareness of the NHIS ($P < 0.05$). **Conclusion:** The respondents were paying user fees for essential health-care services at the primary health-care centers and this was not convenient for them. **Recommendation:** There is a need for the LGA health department to intensify the supervision of the activities at the PHCs. Standardization of prices of services and commodities and the implementation of the National Health Act may alleviate the burdens of the poor community members who access PHCs in Nigeria.

Keywords: *Commodities, National Health Act, primary health care, regulation, services*

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Introduction

Despite enormous developmental partners and government interventions, the payment for health-care services is a major problem in many developing nations including Nigeria.[1,2] The cost of the health-care services at tertiary centers is considered exorbitant by many poor patients in Nigeria.[3] The privately owned clinics are no-go areas for many poor Nigerians whose earnings are less than 1 dollar per day.[4] Therefore, the majority of the poor patients crowd themselves at the Primary and Comprehensive Health centers, forming a congregation during clinic days to be attended by very few doctors, nurses, and other health-care providers at these levels of the national health system, though majority of these facilities are not adequately equipped to cater for the health needs of the clients patronizing them.[4-6]

There is a popular saying "Health is wealth." A healthy nation is a wealthy nation because the populace will be at a better advantage to contribute immensely to the growth of the national economy.[7] Most developed nations today attained their present status by the enormous contributions

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of their healthy citizens.[8] Financial difficulties, on the other hand, render accessibility to basic health-care services difficult, worsening the cycle of poverty, ignorance, and disease in developing nations.[9]

To help alleviate the burden of the health-care cost, the Federal Government of Nigeria introduced the National Health Insurance Scheme (NHIS) in 2005.[10] This is a social security system that guarantees the provision of needed health services to persons on the payment of token contributions at regular intervals.[11] The beneficiaries are mostly civil servants in Federal employment.[12] The NHIS also proposed the concept of Community Health Insurance Scheme (CHIS), but the challenge of nonregular sources of income for the informal sectors has limited the community acceptability of this scheme.[13] Many Nigerians have to resort to out of pocket expenditures to pay for their health-care services. This has led to a growing concern about the economic impact of health-care expenditure on families and individuals clients at the community level.[14,15]

The primary health-care centers located in many communities are the first contact this group of the populace have with the national health system in Nigeria.[16] These facilities are the backbones of the country's health-care delivery system. The services at these centers should be accessible to all at affordable cost. This calls for urgent need to do more researches at the PHCs to ascertain the ability of the community members to afford the cost of the services at this level of the health-care system because of the current decline in the Nigeria economy and the attendant negative impact on the populace.[17] There are also scarcity of researches in Zaria metropolis, North western, Nigeria, on this subject matter. This current study intends to bridge this gap. It will also explore the sources of the health-care funds and the effects of payment for health-care services and commodities on the study community.

Materials and Methods

Background of the study area

Zaria is a guinea savannah region in the north western Nigeria. It is the home of the famous Ahmadu Bello University, Zaria, with a temperature range of 22.7 December-January during the harmattan as high as 28–30o in April. Rainfall is between April and October. Maximum rainfall occurs in August. The Zaria metropolis consists of two local government areas (LGAs): Sabon Gari and Zaria. The Sabon Gari LGA was carved out of Zaria LGA in 1996. The LGA is boarded by Giwa on the western part, Soba in the East, Kudan in the North and South with Zaria LGAs. Sabon Gari LGA has a total projected population of census of 338, 510 with 11 political wards: Bomo, Jama'a, Hanwa, Jushi, UngwanGabas, Chikaji, Muchiya, Dogarawa, Zabi, Basawa, and Samaru. It has 1 tertiary health center, 3 secondary health centers, and 25 PHCs.

The Zaria LGA has an estimated population of 548,584.[18] It is bounded by Sabon Gari in the West, Soba LGA in the East, and Igabi LGA in the South. The administrative headquarter is Zaria city, which have 13 political wards 7 in the northern and 6 in the southern division of the LGA namely Kufena, TukurTukur, Tudunwada, Gyellesu, Dambo, Fatika and Kwarabai B in the north, and AngwaJuma,, Babandodo, Kaura and Kwarabai A, Dutse Abba and Wuciciri. The major ethnic group is Hausa. There are people from different parts of Nigeria and other parts of the world resident in Zaria. The residents are predominantly farmers, artisans, traders, health workers, civil servants, students, and higher institution lecturers.

Study design

A descriptive cross-sectional survey of six primary health facilities in Zaria metropolis was carried out. Three PHCs, namely Samaru, Kwata, and Dogarawa, were selected by the simple random sampling technique from the list of 25 PHCs in Sabon Gari LGA and 3 PHC Babandodo, Tudun Wada, and Magajiya were also selected from the 45 PHCs in Zaria LGA.

The patients who came for health-care services at these PHCs during the period of the study constituted the study population. Patients' relatives, except the caregivers of sick children, and those who came for screening for employment or for school enrolment screening tests were not included in this study. The minimum sample size was 293 clients calculated using the proportion of out-of-pocket expenditures in Nigeria to be 74.4% as reported in a previous study.[17] For more accurate result, the sample size was increased to 300. We did not include nonresponse in the calculation of the sample size. This was because the study was clinic based, and we had planned to replace any client who declined interview with another willing client. No respondent, however, declined the interview.

A multistage sampling technique was used. In the first stage, Zaria metropolis was stratified to Zaria and Sabon Gari LGAs. Three PHCs each in Zaria and Sabon Gari LGAs were then selected by the simple random sampling technique: Baban dodo, Tudun Wada and Magajiya PHCs from Zaria LGA and Samaru, Kwata, and Dogarawa PHCs from Sabo LGA. A minimum of 50 clients were interviewed at each selected health facility. Structured interviewer administered questionnaires were used as the instruments for data collection. A total of 300 questionnaires were administered to the respondents. The researcher was assisted by six Community Health Extension Workers (CHEWs). They were trained on how to administer the questionnaires prior to data collection. The data collected were collated and cleaned

immediately after data collection. Data entries were done with the IBM SPSS Version 20, whereas Statacorp SE12 was used for both descriptive and inferential analysis. The level of statistical significance was set at *P* value ≤0.05 Appendix 3.

The ethical approval to conduct the research was sought from the Kaduna State Ministry of Health. The permission of the supervising heads of the study facilities and the individual verbal consents were obtained before data collection.

This research has some limitations. It was based on the oral reports given by the clients who were liable to recall bias. It was a clinic-based study, therefore, limited by the concept of the ice berg phenomenon.

Table 1: Socio demographic characteristic of the respondents (n = 300)

Demographic characteristics	Frequency	%
Age (mean =28.9years)		
14 - 23	95	31.7
24 - 33	117	39.0
34 - 43	60	20.0
> = 44	28	9.3
Sex		
Male	06	2.0
Female	294	98.0
Marital status		
Married	160	53.3
Single	26	8.7
Widowed	18	6.0
Divorced	24	8.0
separated	69	23.0
Ethnicity		
Hausa	190	63.3
Fulani	31	10.3
Yoruba	46	15.3
Igbo	9	3.0
others	24	8.4
Religion		
Islam	256	85.7
Christianity	43	14.3
Level of education		
primary	53	17.7
secondary	142	47.3
tertiary	65	21.7
no formal education	40	13.3
Occupational status		
house wife	66	22.0
trading	83	27.7
farmer	22	7.3
artisan	94	31.3
civil servant	30	10.0
unemployed	2	0.7
Monthly income N		
<5000 (< $20)	197	65.7
N5000-10,000 ($20-$40)	67	22.3
>10,000 (> $40)	36	12.0

Results

Majority of the respondents in this study were aged 24–33 years (39%) with a mean age of 28.87 ± 8.63 years, most of them were married (53.3%), Hausa (63.3%), majority were Muslims (85.7%) housewives, with monthly household allowances from their husbands less than 1 dollar/day (<5000 per month) [Table 1]. The major reason for visiting the health facilities was

Table 2: Main reasons for respondents visit to the primary health-care centers

Illness	Frequency	%
Common endemic diseases	118	39.3
Family planning services	13	4.3
Laboratory services	16	5.3
Immunization	20	6.7
Gynecology services	13	4.3
Delivery	14	4.7
Antenatal services	92	30.7
Chronic illness	08	2.7
Others	06	2.0
Total	300	100

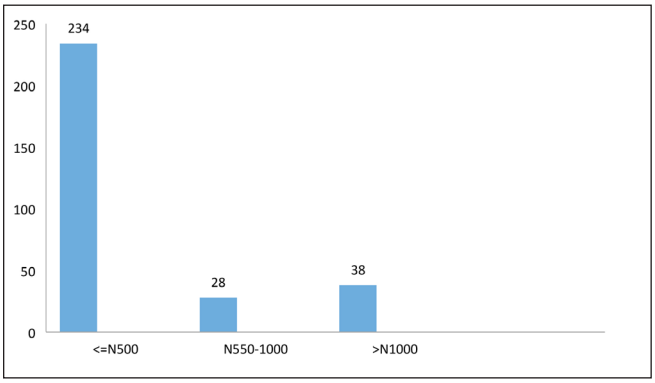

Figure 1: Total amount spent by the clients for essential health-care services per visit

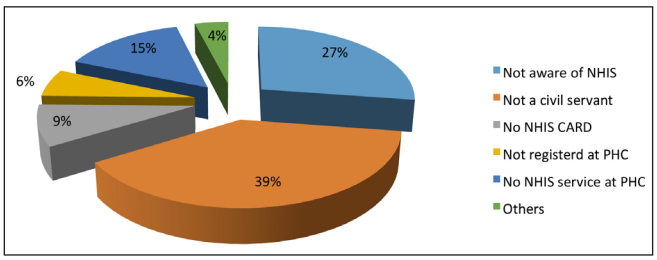

Figure 2: Reasons for not utilizing the National Health Scheme

Table 3: Cost of services and commodities reported by the study subjects

Cost (mean cost)	Frequency	%
Immunization (N107.00)		
N 50	16	72.5
N 100	12	54.5
> N 100	6	27.2
Total	22	100
Family planning (N250.00)		
N100–200	04	56.7
N300	01	16.7
N500	01	16.7
Total	06	100
Antenatal s consultations (N263.71)		
N100–200	20	28.6
N300	18	25.7
>N300	32	45.7
Total	70	100
Delivery services (N1,833.33)		
N 1500	02	16.7
N 1700	05	41.7
N 2000	04	33.3
N 2500	01	8.3
Total	12	100
Blood test (N202.17)		
≥N 100	06	26.1
N 150–200	09	39.1
≥300	08	34.8
Total	23	100
Cost of injections (N163.77)		
≥N100	33	55
N 150–400	24	40
≥N500	3	5.0
Total	60	100
Cost of syringes (N25.71)	05	71.4
N20	01	14.3
N30	01	14.3
N50		
Cost of IV Fluid (492.85)		
200N–400	05	71.4
≥N 500	02	28.6
Total	07	100
Cost of routine investigations during pregnancy (N1057.14)		
500		
1000	02	9.5
1200	08	38.1
Total	11	52.4
	21	100
Post abortion care (N1000)	01	100
N1000		

*($1= ₦250 as at the time of data collection)

Table 4: Respondents' major sources of essential health-care funding

Sources	Frequency	%
Husbands' out of pocket	141	47
Respondents' out of pockets	79	26.3
Cooperative/thrifts	14	4.7
Religious organization	11	3.7
Community donation	0 7	2.3
NHIS	05	1.7
Social worker	05	1.7
Employer	3	1.0
Sale of property	2	0.7
Loan/debt	2	0.7
No response	31	10.3
Total	300	100

Table 5: Immediate effects of the out of pocket health-care expenditures on respondents' household (n = 300)

Effects	Frequency	%
Constitute stress to the family	90	30
Cannot access required health-care services fully	67	22.3
Borrows money to pay for health-care services	11	3.7
Use children school fees for health-care services	10	3.3
Compromise family feeding	06	2.0
Spousal conflicts	5.0	1.7
Use house rent to pay for health-care services	1.0	0.3
No response	24	8.0
Total	300	100

Table 6: Association between Medical expenses, Awareness of NHIS and monthly income of the respondents

Variables	Monthly income			
	<N5000	>N5000	X2	P
Payment of hospital bill				
Out of pocket	147	73	3.30	0.069
Other sources	26	23		
Medical expenses				
Stressful	156	58	17.31	0.0001
Not stressful	41	45		
Awareness of NHIS				0.0001
Yes	18	32	23.42	
No	179	71		
Prefer NHIS				
Yes	87	64	7.92	0.005
No	84	29		
Amount spent in Hospital				
Less than N500	144	73	0.167	0.683
More than N500	53	30		

common endemic illnesses (39.3%), such as malaria, respiratory tract infections, and gastro intestinal diseases. A large proportion of the respondents were at the health facilities for the antenatal care (30.7%), family planning (13%), delivery (4.7%), and immunization services (6.7%) [Table 2].

This study was conducted when a dollar was exchanged for approximately N200 in Nigeria. The respondents paid an average of 107(0.5 USD) for immunization, 250(1.25USD) for family planning services, and 263.71(1.3 USD) to access antenatal care services. Cost of delivery at the PHCs in Zaria ranges from 1500 to 2500 ($7.5–12.5). The average cost of a blood test in most of the PHCs was N 202.17 (1 USD). The cost of IV fluid at the PHC could be up to N400.00 ($2). The various routine ANC laboratory tests, such as the PCV, malaria parasite test (MP), urine analysis, random blood glucose, HIV, and VDRL tests, cost between 1000 ($5) and 12,000 ($6). Postabortion care services were reported to cost N1000 ($5) [Table 3].

The total out-of-pocket pay in this study was 73.3.3%. The husbands paid for most of the clients' health-care services (47%), whereas 26.3% of the clients had to pay out of pockets. Some of the clients had to source for fund from thrifts (4.7%), religious organizations (3.7%), and community donations (2.3%), only 1.7% used the NHIS for payment for their health-care services [Table 4].

The payments for health-care bill were not convenient for 26.3% of the clients, whereas 67 (22.3%) could not access the required health services due to the financial cost. Some families (3.7%) had to borrow money to pay

for the primary health-care services. These expenses also affect the payment of school fees (3.3%), affect family feeding (2.0%), and resulted in marital disharmony (1.7%) [Table 5].

More than a quarter (27.6%) of the clients spent above than N500 ($2.5) at the PHC per visit Figures 1 and 2. Table 6 shows that the medical expenses were significantly more stressful, awareness lower, and the unmet need for the NHIS significantly higher for those with monthly income <N5000 ($P< 0.05$).

Discussion

Majority of the respondents in this study were aged 25–34 years (39%) with a mean age of 28.9 ± 8.63 years; they were within the reproductive and working age group,[19] but they were extremely poor with majority earning less than 1 dollar per day.[20] The "Megidas" (husband) gave the household maintenance allowance, paid for the clients health-care services (47%), others paid through thrifts (4.7%), religious organization (3.7%), community donations (2.3%), only 1.7% used the NHIS to pay for the health-care delivery services [Table 3]. The clients could not pay for health-care services without external intervention due to their poor financial state. The cycle of poverty, ignorance, and disease persists in this type of setting resulting in catastrophic health expenditures.[21] Previous studies have shown that some clients discharge themselves from the hospital against medical advice when they could not afford to pay.[22] Some of these clients sometimes expect financial assistance from the health workers to help purchase the prescribed drugs and pay medical expenses.

Various studies have shown that the people from the high socio-economic background would not come to such primary health-care centers because they believe that these facilities were for the poor masses only and not well equipped enough to meet the health needs of the affluent and the enlightened.[23] The high-class Nigeria citizens will prefer to seek medical help at the tertiary centers where they will meet with the specialist doctors even for the management of an ailment, such as simple malaria, that can be handled by the community health workers at the PHCs. This abuse of the health-care facilities in Nigeria and most other developing countries is basically due to the lack of trust in the primary and secondary health-care facilities to deliver quality health-care services. This lack of trust may not be misplaced because most of these PHCs are poorly situated, constructed, structured, financed, and equipped.[24] Therefore, the middle-class Nigerians patronize the tertiary centers mostly and occasionally the secondary facilities but rarely the primary centers, whereas the politicians, influential government executives, managing directors, and chief executive officers habitually engage in medical tourism to India, Dubai, London, America, and even to some other African countries for any ailment usually at the expense of the government or their employers. This is what is responsible for the socio demographic pattern of the respondents in this study which reflect mainly the less privilege community members especially women with low socio-economic conditions.[25]

In this current study, majority of the clients earned less than 5000 per month [Table 1] which is about $25 monthly or $0.83 per day. An income of less than 1 dollar per day has been described as extreme poverty.[26] The payment for health-care services was stressful to the family of 30% of the respondents, whereas only 26.3% reported that the cost were convenient for them to afford. Some families (3.7%) had to borrow money to pay for the health-care services at the PHCs. The expenses also affected the payment of school fees (3.3%), family feeding (2.0%), and caused marital disharmony (1.7%) [Table 4]. More than one-fifth (22%) of the clients spent more than N500 ($ 2.5) at the PHC per visit [Table 5]. This study therefore corroborates the report of other studies that it is the poorest among the poor who patronize the PHCs mostly.[27]

Majority of the respondents paid for immunization and family planning services. They were charged more than $1 to access ANC services (45.7%). These services especially the immunization and family planning were supposed to be rendered to the clients free of charge. However, the researchers discovered that the patients paid for these services due to various reasons such as logistic, scarcity of the commodities, maintaining the revolving funds, and illegal charges by the health-care workers. The demand for an essential service might be low not necessarily because of apathy for the service, but because of unaffordable cost.[28] For example, there was poor supply of vaccines and family planning commodities to the PHCs in Zaria metropolis during this study and this affected the cost of vaccine. These health commodities usually come to the facilities from the cold room of the local government health departments, which also got their supply from the state Ministry of Health. The Ministry gets vaccine supply from the National cold room.[29] They sell this vaccine to willing health-care workers who also have to sell them to clients at a higher selling price to make some profits. This is one of the major factors affecting the vaccine coverage rate and other essential services, such as the contraceptive prevalence rate in Nigeria. The uptake of these services were better in facilities that could overcome this challenge.[30] The inability to pay user fee for family planning might have contributed severely to

the poor utility rate and the poor contraceptive prevalent rate in Nigeria.[31] In this current study, only 4.3% of the clients were able to access the family planning services [Table 2].

The average cost for ANC services in this study is about N300 ($1.5) [Table 3] and about 1500 ($ 7.5) for a delivery service in a PHC, though lesser than user fees at the secondary, and tertiary facilities in Nigeria, but still very much unaffordable for most of these poor women. This might also be a major contributor to high prevalence of home deliveries reported in several studies in the Northern Nigeria.[32,33] The high cost of the postabortion care reported in this study may prevent women from seeking this service.[34,35] It should be noted that it was only one person who accessed this service at a PHC out of the 300 women that were involved in this current study. This low turnout for postabortion care may contribute to the already worsened statistics for the maternal mortality not only in the north but in the nation at large.[36] This cost need to be reviewed if the patient will continue to patronize these facilities for essential care. The principle of Ward Health Minimum package and the SURE P MCH need to be extended to all the PHCs in Nigeria. Report from other part of Africa have shown improvement in health seeking behavior when subsidy was introduced [37]

It was also noted in this study that the majority of the clients (27.3%) were not aware of the NHIS, and 39% did not use the NHIS because they could not access the service since they were not civil servants.[38] This has brought to the fore the urgent need to implement the informal sector health insurance scheme and the speedy implementation of the National Health Act which address the issues of primary health-care funding.

Conclusion

The cost of primary health-care services was unaffordable by the majority of the participants in this study resulting in catastrophic health expenditures which negates the principles of primary health care. There is an urgent need for regular supervision of the activities of all the PHC workers by the health department of the LGAs and the primary health care development agencies. Standardization of prices of services and commodities at the PHCs is recommended. Government poverty reduction programs, if extended to the community people, and the implementation of the National Health Act may alleviate the burdens of the community members who access primary health-care services.

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Conflicts of interest

There are no conflicts of interest.

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Appendix 3 DRAFT QUESTIONNAIRE

Sources of Health Care Financing and Effects of Health Care Services and Commodities Cost on the Patientsat the Primary Health Facilities in Zaria Metropolis, North Western Nigeria

[1] What is your age (years)?

[2] What is your marital status?

1) Married ☐ 2) Single ☐ 3) Widowed ☐
4) Divorced ☐ 5) separated ☐

[3] What is your ethnicity?

1) Hausa ☐ 2) Fulani ☐ 3) Yoruba ☐
4) Ibo ☐ 5) Others (specify)…….

[4] What is your religion?

1) Islam ☐ 2) Christianity ☐ 3) Others (specify)……..

[5] What is your highest level of education?

1) Primary ☐ 2) Secondary ☐ 3) Tertiary ☐ 4) No formal education ☐

[6] What is your occupation?

1) House wife ☐ 2) Trading ☐ 3) Farmer ☐
4) Artisan ☐ 5) Civil servant ☐ 6) Others specify ☐

[7] What is your monthly income?

1) Less than N5000 ☐ 2) N5000–10,000 ☐ 3) Greater than N10,000 ☐

[8] What are the main illness/service responsible for your visiting the hospital?

(Main reason for coming to the clinic) (specify)……

[9] If admitted in the facility, how long have you been on admission? ..... (specify in no of days only)

[10] How did you get money (major source) for your medical bills?

1) Out of pocket
2) Family and friends
3) Loans and debts
4) Cooperatives/thrifts
5) Community donation
6) Social workers
7) NHIS
8) Religious organization
9) Sales of property/farmland
10) Employee benefit (retainer ship)
11) Other (specify)…….

[11] If patient is not using NHIS, ask why?

1) Not aware of NHIS
2) Not a civil servant
3) The service is not yet available to the patient
4) Has registered but has not yet gotten the NHIS card
5) ABUTH is not one of the hospitals the patient has chosen as the Health care provider 6) Others specify……

[12] How has the medical expenses affected you?

1) Very convenient
2) Stress on the family
3) Indebtedness
4) Has not been able to get some services/drug due to lack if money
5) Others (specify)…….

[13] Would you prefer a health insurance scheme?

1) Yes ☐ 2) No ☐

[14] Since being in the hospital have you received any financial support from any person or organization apart from your family members since admission.

1) Yes ☐ 2) No ☐

[15] If yes, specify the organization or individual

1) Friends
2) Religious organization
3) NGOs
4) Philanthropist
5) Others (specify)

THANKS