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Willingness to pay for private voluntary health insurance in southeast Nigeria.

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ABSTRACT

The willingness-to-pay (WTP) for private voluntary health insurance (PVHI) was elicited from a random sample of respondents in southeast Nigeria. Most respondents were willing to enroll and pay for PVHI. The mean monthly WTP of respondents for their premium was 396 Naira ($3.3), whilst the mean monthly WTP of respondents for other household members was 261 Naira ($2.2) per household member. Rural dwellers and worse-off socio-economic status (SES) groups stated smaller WTP than urbanites and better-off SES groups. PVHI is a promising strategy for health financing in southeast Nigeria but unsubsidized PVHI will never cover everybody.

INTRODUCTION

The real challenge of health care financing in Nigeria as in many sub-Saharan African (SSA) countries lies not primarily in the acute scarcity of resources, but due to inefficient healthcare purchasing practices and paucity of insurance mechanisms.[1] The Nigerian National Health Financing Policy (NHFP) articulates funding of health sector not only from budgetary sources, but also from other mechanisms such as health insurance.[2] Also in many low and middle-income countries, there is a continuous search for better ways of financing the health system.[3]

Public expenditures in Nigeria account for 20-30% of total health expenditures whilst private expenditures accounts for 70-80% and the dominant private expenditure is out-of-pocket spending (OOPS).[4] OOPS does not give value for money and used to purchase mostly inappropriate services, thereby unnecessarily escalating healthcare costs.[5]

The dominant reliance on OOPS and the considerable absence of risk sharing is largely responsible for impoverishing health expenditures.[6] Private spending amounts to US$ 22.5 per capita, which constitutes 9% of household expenditures.[7]. Half of those who could not access care did not so because of its costs.[8]

One strategy to improve health financing in Nigeria is the National Health Insurance Scheme (NHIS), launched in 2005. This scheme is government-driven but operated by private sector health-maintenance organizations. Presently, the NHIS limits its coverage to federal government civil servants. It is contributory and the annual premium is 15% of the basic salary of the

employees, with the employer contributing 10% and the employee contributing 5%. The scheme for the civil servants is obligatory. The contributions paid by an employee under the program covers health benefits for the employee and five (5) dependants consisting, a spouse, four (4) children below the age of 18 years.[9] Additional dependants attract a surcharge. However, the contributions of two working spouses cover the two spouses and four (4) children only. The benefit package covers all outpatient are (including consumables), emergency care and essential healthcare services.

In addition to the NHIS, the NHFP provides for the use of private voluntary health insurance (PVHI) as one strategy for ensuring universal coverage with health insurance in the country. PVHI plays a significant role in health financing in some African countries.[10] PVHI is gradually albeit in still very small numbers making inroads into Nigeria in different forms. PVHI in Nigeria is expected to cover private sector employees not enrolled in the NHIS, people employed in the informal sector and even public servants desirous of having an additional health insurance cover to the NHIS. However, there is lack of information about the feasibility of PVHI and whether people will be willing to pay for the scheme. WHO provides a detailed review of implications of PVHI for developing countries.[11]

Hence, it is important to understand the willingness of consumers to enroll and pay for PVHI, which plays a large and increasing role around the world.[12] However, the value of PVHI is disputed. First, PVHI has been vulnerable to increasing health care costs.[13]. Second, there has been limited use of PVHI in the country for unclear reasons. Third, PVHI is criticized for catering to higher-end market

segments and, consequently, for jeopardizing equitable access to care as equal access to health services is an objective for any health reform.[14]

This study generates new knowledge by determining the levels of willingness to enroll and to pay for PVHI. Research is required to understand the determinants of private and social health insurance and the willingness and ability to pay for various health insurance schemes.[15] Beyond assessing the value of PVHI to consumers, information about the determinants of enrollment and WTP for PVHI are required for developing and implementing viable PVHI schemes so that informed choices are made in health care financing that contribute to social welfare.

RESEARCH METHODOLOGY

Study Area

The study was conducted in an urban area (Enugu) and a rural area (Ugwuoba) in Enugu State, located in southeast Nigeria. Enugu is the state capital. Enugu State has a population of more than 3.2 million people and is located close to coastal cities.[16] Enugu is the state capital. The rural community Ugwuoba with an estimated population of 45,000 people is located in Oji-river local government area, 45 kilometers from Enugu. The people in both areas are mostly of Igbo ethnic group, which comprise the third largest ethnic group in Nigeria with a population above 20 million people.

Study Tools and Sampling

Pre-tested interviewer administered questionnaire was used to collect data from a random sample of 200 households from the rural and 250 households from the urban area. The interviewers were trained over a period of three weeks to ensure their mastery of the questionnaire, which was translated to the local language (Igbo).

Household health costs

The questionnaire was used to collect information about the households healthcare costs (transportation and actual treatment) using a one-month recall period. Also, data was collected on the payment strategies that were used to offset the healthcare costs

Eliciting WTP for PVHI

The Contingent valuation method (CVM) was used to elicit willingness to pay (WTP) for PVHI using the bidding game question format.[17] Before eliciting WTP, a scenario was presented to the respondents describing PVHI, its potential benefits, benefit package and payment vehicle. All the respondents were read an introductory explanation (in the local language) about PVHI and the CVM scenario.

The scenario for PVHI amongst others, explained the benefit package, the fact that the premiums are to be paid before service utilization, and that HMOs are responsible for providing healthcare. The benefit package that was described to the respondents was similar to that now offered to federal civil servants under the NHIS. Hence, the benefit package in the proposed PVHI covered selected preventive, curative and health promotion services and they include: (1) out-patient care including necessary consumables; (2) Essential drugs and essential diagnostic tests; (3) Maternity care for up to four live births; (4) Preventive

care such as immunization, health education, family planning, antenatal and postnatal care; (5) Consultation with specialists such as physicians, pediatricians, obstetricians, gynecologists, general surgeons, orthopedic surgeons, ENT surgeons, dental surgeons, radiologists, psychiatrists, ophthalmologists, physiotherapists etc.; (6) Hospital care in a standard ward for stay limited to cumulative 45 days per year (7) Eye examination and care excluding provision of spectacles and contact lenses; (8) range of prosthesis (limited to artificial limbs produced in Nigeria); and (7) Preventive dental care and pain relief.

The WTP for the respondent was first elicited before that of other household members. The bidding game iteration was used to elicit WTP is presented in Exhibit 1. The starting-bid for eliciting WTP of respondents for themselves and for other household members respectively was 500 Naira ($4.2), which is the monthly capitation paid to providers under the NHIS. The bid was increased by 100 Naira if the response to the starting-bid was "Yes," and decreased by 100 Naira if the response to the starting-bid was "No." Then, irrespective of the response to the second question, the respondents were asked to state the maximum amount that they are willing to pay for PVHI premium bearing in mind their average monthly income, and expenditures on various items.

Data Analysis

Tabulations, testing of means, bivariate and multivariate analysis were the data analytical tools. The data was examined for links between socio-economic status (SES), geographic location and occupation with the insurance-related variables. For analyzing SES differences in some of the variables, an asset-based SES index was created using principal components analysis.[18] The first

principal component was used to derive weights for the SES index. The SES index was used to divide the households into quartiles. The SES index and the urban-rural differences were used to examine both socio-economic and geographic differentials of the key dependent variables. Chi-square tests were used to determine whether the trends of the major responses were statistically significant. Testing of means was used to compute the average healthcare costs that were paid using different payment strategies, as well as average WTP values for each SES quartile and people living in urban and rural areas. Ordinary least squares (OLS) multiple regression analyses were undertaken to investigate the relationship of elicited WTP for PVHI with explanatory factors.

RESULTS

There were 247 and 199 usable questionnaires (total of 446) for analysis in the urban and rural area respectively. Most of the respondents were household heads, married, male, middle-aged, with some formal education, and working as subsistence farmers. The most common household assets were radio sets, electric fans, and television sets. The average weekly household cost of food was 3,486.2 Naira ($29.1) and the weekly per capita cost of food was 704.3 Naira ($5.9).

In a period of one month to the date of the survey, an average of 1,615.7 Naira ($13.5) was spent by households on respondents that were ill and 2,434.1 Naira ($20.3) was spent on other household members that were ill in the same period. Out-of-pocket spending (OOPS) was used by more than 63% of respondents and 79% of other household members to pay for healthcare. Only one respondent and one other household member (0.4%) used health insurance. Installment payment was used by about 11% of both

respondents and other household members. People usually paid out of pocket using their own money. The average monthly health expenditure that was paid using OOPS by the entire sample was 1462.3 Naira ($12.2). However, the average monthly expenditure that was paid using OOPS by the most-poor SES (1st quartile), very poor SES (2nd quartile), poor SES (3rd quartile) and least poor SES (quartile 4) were $7.5, $6.2, $15.4 and $20.2 respectively.

Willingness to enroll and to pay for PVHI

Most of the respondents were willing to personally enroll in PVHI (Exhibit 1). The respondents also expressed a similar opinion with regards to other household members. Most of the respondents were willing to pay a monthly premium of 500 Naira ($4.2) for themselves, whilst a minority was willing to pay the same amount of money for other household members. Interestingly, 226 (53.2%) were willing to contribute some money so that the poorest people in their communities would benefit from health insurance. For the full sample of the respondents, the median monthly WTP for personal premium was 500 Naira ($4.2), whilst it was 200 Naira ($1.7) per person for other household members. The median monthly altruistic WTP amount was 33.3 Naira ($0.3). The mean WTP for respondents and for other household members were $3.3 and $2.2 respectively for the full sample. For only the respondents that were willing to pay, the mean WTP for respondents and for other household members were ($5.2) and ($5.0) respectively.

Exhibit 1[1]: Willingness to enroll and pay for PVHI for the full sample of the respondents.

WTP Variables	Measurement
Willingness of respondents to personally enroll in PVHI: n (%)	380 (86.0%)
Willingness of respondents to enroll other household members in PVHI: n (%)	377 (85.7%)
Willingness of respondents to pay 500 Naira monthly for self as a premium: n (%)	220 (52.1%)
Willingness of respondents to pay 500 Naira monthly for other household members as a premium: n (%)	98 (23.6%)
Willingness of respondents to pay for the poorest to benefit from PVHI: n (%)	226 (53.15%)
Mean WTP of respondents for self Mean (SD) 95% Confidence interval	 395.8 (304.8) 368.6 – 428.8
Mean WTP of respondents for other household members Mean (SD) 95% Confidence interval	 260.3 (247.3) 240.5 – 291.9

[1] Data was elicited from a random sample of respondents from two study areas in Enugu State, Nigeria

Differences in willingness to enroll WTP for PVHI by geographical area and SES

More proportions of people were willing to enroll in PVHI in the rural area but higher proportions were willing to pay in the urban area ($p<.05$) (Exhibit 2). The results show that 77.7%, 77.3%, 58.7% and 25.5% of urban respondents were willing to: enroll self; enroll other household members; pay for self; and pay for other household members. Similarly, 96.4%, 95.4%, 38.5% and 17.9% of rural respondents were willing to: enroll self; enroll other household members; pay for self; and pay for other household members in PVHI. The levels of WTP for PVHI were higher in urban area ($p<.05$). For only the respondents that stated a positive WTP, the mean WTP for the respondents was $5.5 and $4.5 in urban and rural areas respectively. Similarly, for only the positive WTP cases, the mean WTP for the other household members was $5.2 and $4.8 in urban and rural areas respectively.

Exhibit 2[2]: Geographic differences in willingness to enroll and to pay for PVHI

	Mean (SD) WTP self	Median WTP self	Mean (SD) WTP for other householders	Median WTP for other householders
Urban	459.1 (342.8)	500	292.4 (265.3)	200
Rural	314.6 (221.6)	200	218.7 (215.7)	100

[2] Data was elicited from a random sample of respondents from two study areas in Enugu State, Nigeria

Exhibit 3 shows that the more better-off the SES group, the more willing the people were to enroll themselves and other householders, and to pay for PVHI ($p<.01$). Exhibit 3 also shows that as SES increases so does the level of WTP to pay for PVHI ($p<0.01$). For only the positive WTP cases, the mean WTP for the respondents was $4.4, $5.1, $4.8 and $5.9 for SES quartile 1, SES quartile 2, SES quartile 3 and SES quartile 4, respectively. Similarly, for only the positive WTP cases, the mean WTP for the other household members was $4.6, $5.1, $4.8 and $5.3 for SES quartile 1, SES quartile 2, SES quartile 3 and SES quartile 4, respectively.

Differences in willingness to enroll and to pay for PVHI by type of occupation

More than 50% of the respondents belonging to all occupational groups were willing to enroll both themselves and other household members in PVHI scheme. However, less than 50% of farmers, government workers and self-employed professionals were willing to pay 500 Naira ($4.2) per month as premium. The majority of private sector employees and big business people (people engaged in commercial activities seen as being more than petty trading) were willing to pay 500 Naira ($4.2) monthly. However, less than 50% of all occupational groups were willing to pay 500 Naira ($4.2) monthly as premium for other household members. Interestingly, apart from farmers, 75% of all other occupational groups were willing to pay for the poor to benefit from PVHI. The highest mean WTP for self was elicited from big business people at 573 Naira ($4.8) monthly, whilst the least was elicited from farmers at 301 Naira ($2.5) monthly. Private sector employees were willing to pay the highest elicited amount of 308 Naira ($2.6) for other household members, whilst the least amount of 217 Naira ($1.8) was elicited from farmers

Exhibit 3[3]: SES differences in willingness to enroll and pay for PVHI

	Q1 Most poor n = 109	Q2 Very poor n = 109	Q4 poor n = 109	Q4 Least poor n = 109
Respondents willing to enroll self: n (%)	104(95.4%)	99(90.8)	86(78.9)	88(80.7)
Willing to enroll other household members: n (%)	104(95.4)	97(89.0)	84(77.1)	89(81.7)
Respondents willing to pay (self): n (%)	38 (34.9)	53(48.6)	58(53.2)	70(64.2)
Willingness to pay for other household members): n (%)	17 (15.6)	17(15.6)	28(25.7)	36(33.0)
Willingness to make altruistic contributions: n (%)	21 (19.3)	48(44.0)	74(67.9)	82(75.2)
Mean WTP of respondents for self: Mean (SD)	287.3 (203.3) ($2.4)	394.3 (271.2) ($3.3)	395.3 (249.6) ($3.3)	515.5 (410.2) ($4.3)
Mean WTP of respondents for other household members: Mean (SD)	203.8 (216.5) ($1.7)	244.2 (205.9) ($2.0)	283.8 (240.2) ($2.4)	318.3 (304.4) ($2.7)

[3] Data was elicited from a random sample of respondents from two study areas in Enugu State, Nigeria

Multiple Regression Analyses

The reduced models of WTP for self and WTP for other household members for PVHI showed that WTP for only the positive cases was positively statistically significantly related to acceptability of health insurance and socio-economic status of the households ($p<0.05$). The coefficients and standard errors for acceptability of health insurance and socio-economic status were respectively 166.4 (53.4) and 48.7 (8.6). The regression models were statistically significant ($p<0.01$).

DISCUSSION

Most people were generally willing to enroll and to pay for PVHI to be delivered by private firms. All segments of the population including government workers were willing to pay for PVHI. Nonetheless, this is tempered by the finding that level of current OOPS was more than mean WTP implying crudely that benefits may not outweigh the costs. However, when viewed from the background that most OOPS are for inappropriate and inefficient services[19], appreciable cost savings could be made if appropriate health services are purchased and consumed. If such inappropriate OOPS is significantly reduced, then the real cost per person of OOPS may not be so high. However, it is possible that neither public nor private payments would go entirely for care with benefits exceeding costs. The result indicates that there is a potential untapped market for private-sector PVHI in the country. However, issues regarding socio-economic and geographic inequity should be addressed.

The finding that subsistence farmers, petty traders, and the unemployed stated lower WTP amounts than other occupational groups could be because these people earn low levels of income and may not have enough money to pay for healthcare when

they are ill. Similar finding was reported with respect to insurance ownership by women in South Africa where high income individuals, white collar occupations, and gainfully employed were significant predictors of health insurance ownership.[20] The lower level of willingness to pay (WTP) of government workers could be because they are already enjoying some medical benefits and thus, they did not highly appreciate the marginal benefits of PVHI.

Although many people were desirous of enrolling in PVHI, especially the poorer socio-economic status (SES), this was limited by their budgetary constraints with the result that the rural dwellers and poorer SES groups, stated smaller WTP amounts than the urban and better-off SES groups. This likely reflects the higher income status of both urbanites and higher SES groups. Similarly, in South Africa, it was found that area of residence and income explained health insurance ownership among women.[21] The constraining effect of poverty on enrollment and payment of insurance premiums for PVHI calls for government intervention in the PVHI market in order to increase the coverage and provide enough clientele for the insurers to remain in business. However, when appropriately managed, PVHI can play a positive role in improving access and equity in developing countries.[22] Altruistic contributions at the community level is another way of raising additional funds for PVHI for improved access to appropriate health services, but more sustainable grants from governments and donors would be needed to subsidize and support PVHI in Nigeria.

All in all, unsubsidized PVHI may never cover everybody especially indigents, but if it covers some of the people willing and able to pay such as the better-off SES classes, that is at least better than having them face

high OOPS, such as was found in this study. Policy makers should work out appropriate subsidies and "regulate PVHI appropriately so that it serves public good of universal coverage and equity".[23] However, with *Phase I* of the National Health Insurance Scheme (NHIS) covering federal civil and public servants, and the planned *Phase II* of the NHIS targeting the organized private sector, the majority of the population -- informal sector workers and vulnerable groups -- will require subsidies to enroll in insurance schemes.[24] With around 58 percent of the population of 146 million living below the poverty line, subsidies will be needed for about 84 million people if health insurance is to be used to achieve universal coverage.[25] Finally, the possible replicability of these findings in other parts of Nigeria could be questioned since healthcare expenditure and health seeking patterns differ. However, the generalizability of the findings to Nigeria is supported by the fact that the southeast region is home to more than twenty million people and successful use of PVHI there might spread to the rest of the country. The differences in other regions arising from a function of income or socio-cultural differences should be taken into consideration in design of PVHI.

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