A Comparative Assessment of the Knowledge, Enrolment and Factors Affecting the Utilization of National Health Insurance Scheme Among Women Attending Antenatal Care in a Secondary and Tertiary Health Facility in Benin City, Nigeria.

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Abstract

Background: *Health insurance is a risk-pooling prepayment of healthcare cost and this study assessed the knowledge, enrolment and factors affecting the utilization of the National Health Insurance Scheme by women attending Antenatal Care in Benin City, Nigeria.*

Methodology*: A comparative cross-sectional study conducted among 604 pregnant women attending antenatal care in Central Hospital Benin and University of Benin Teaching Hospital in Benin City, Nigeria. Respondents were selected through a multistage sampling technique and data collected using self-administered semi-structured questionnaires, analyzed using IBM SPSS version 22.0 with level of significance set at p < 0.05.*

Results*: Thirty one (9.8%) respondents attending antenatal care in the secondary healthcare center were enrolled in the National Health Insurance Scheme compared to 21 (15.8%) respondents in the tertiary healthcare center. For 191 (66.8%) respondents in secondary health center, poor knowledge was responsible for non-enrolment in the Scheme compared to 67(59.8%) in the tertiary health center (p = 0.191). While inadequate funds was the hindrance to enrolment into health insurance, the absence of drugs/equipment was the major challenge to the utilization of health insurance services (p = 0.869).*

Conclusion*: Although awareness of National Health Insurance Scheme among the respondents was high, knowledge was poor. Enrolment into the scheme was almost two times higher among respondents in tertiary healthcare facility compared to the secondary healthcare facility. The absence of drugs, cost of registration and poor quality of services were major barriers to utilization of the National Health Insurance Scheme services.*

Keywords: Knowledge, Insurance Scheme, Enrollment, Utilization, Benin City

Introduction

Antenatal Care (ANC) given to pregnant women from conception till delivery is aimed at making pregnancy and childbirth a pleasurable experience and reducing maternal/child morbidity and mortality[1,2]. The major components of ANC involve ensuring a healthy pregnancy, ensuring a safe delivery, a proper postnatal recovery, care of the newborn, ensuring exclusive breastfeeding, and improvement of health seeking behavior in mothers[3]. In sub-Saharan Africa, the ANC coverage is 24.9%[4]. Factors responsible for this low level include household wealth status, ownership of health insurance, maternal education, the education of the husband, marital status, women's employment, cultural beliefs and history of previous obstetrics complications[4].

The cost of ANC is a major determinant of its utilization[5]. The cost of ANC in Africa though lower when compared to those in developed countries, is still widely unaffordable by the populace due to a high Index of poverty on the continent. In Nigeria, the cost of ANC is N35, 000 (equivalent to $85USD) in a public health facility, a price higher than minimum wage in the country[5]. Women that are insured have 96% increased likelihood of attending ANC and 129% increased likelihood of access to skilled delivery when compared to those not insured[6].

The high burden of financial expenditure on health prompted the establishment of the National Health Insurance Scheme (NHIS) of Nigeria under Act 35 of 1999 though it came into full operation in 2005[7]. The NHIS and private insurance have succeeded to some extent in providing coverage for federal and public sector workers, but their families, workers of private organization and a large majority of Nigerians are without any form of coverage. Majority of the enrollees in the Nigerian NHIS are in the formal sector, neglecting the informal sector which accounts for more than 80% employment in Nigeria[8]. With only 4.6% of Gross Domestic Product (GDP) as the total expenditure on healthcare, the Nigeria healthcare delivery system is characterized by weak response toward access to healthcare services[9]. The coverage of NHIS in Nigeria is less than 10%, a very low coverage for the over 200 million Nigerians. The low uptake of the scheme is attributed to its voluntary enrolment, unlike in Kenya, Rwanda and Ghana where enrolment is compulsory[10].

Women attending ANC have varied concerns about NHIS ranging from inability to cover healthcare costs, and reduce hardships from high cost of healthcare to poor quality of drugs. By the inherent ability of providing protection from financial ruin, health insurance is a critical factor in improvement of access to maternal and perinatal care.[11]

Despite the effort of the Nigerian government to improve Universal Health Coverage (UHC) using the NHIS, enrollment into the program still stands at 10% since its implementation. Other factors such as high patient volume, workforce longer years of operation and revenue have been identified as facilitators to provider facilities participating in health insurance. Furthermore, a mixed study of healthcare centers in southwestern Nigeria revealed that a higher proportion of secondary and tertiary facilities relative to primary facilities participated in Health insurance.[12] Vulnerable groups such as pregnant women and the elderly have been left out of the benefits of NHIS due to factors such charges in form of premiums, inadequate information, cultural background and educational status[13].

A high cost of ANC in sub-Saharan Africa results to high patronage of traditional birth centers and use of home deliveries, which is a contributory factor to the high

maternal mortality ratio in this region.[14] In a bid to ensure adequate utilization of ANC, there is need to protect pregnant women from the financial cost of the service. Coverage of maternal care by health insurance is an effective tool in eliminating cost of ANC thereby ensuring adequate utilization of ANC by poor and low-income earners and promoting good maternal care and safe motherhood.[15] Women that are insured have 96% increased likelihood of attending ANC and 129% increased likelihood of access to a skilled delivery; when compared to those not insured.[6] Several studies have revealed that pregnant women enrolled in the scheme have a better chance of receiving standard ANC, specialized hospital delivery as well as postnatal care rendered to the child[16]. This also translates to a reduction in maternal morbidity and mortality and serves as a tool in the achievement of Goal 2 of the Sustainable Development Goals (SDGs) and the Safe Motherhood Initiative.[11]

Studies demonstrate that insured and uninsured pregnant women generally expressed comparative levels of satisfaction with antennal services.[17] Generally, it has been demonstrated that knowledge of the principle of NHIS, socio-demographic factors such as age, sex, marital status and level of education were found to contribute to willingness to participate in the scheme.[18] Therefore the aim of this study was to determine the knowledge, enrolment and factors affecting the utilization of NHIS among women attending ANC in the University of Benin Teaching Hospital (UBTH) and the Central Hospital Benin (CHB), Benin City, Edo State, Nigeria.

Methodology

This study was conducted in the antenatal clinics of UBTH and (CHB), Edo State, Nigeria. The UBTH, a sister institution of the University of Benin is located in Ugbowo and was established following the enactment of Edict 12 of the Nigeria on May 12, 1973. The Obstetrics and Gynecology Department of the Hospital among other units provides antenatal care, fertility counseling, and gynecological surgeries. UBTH is a leading center in antenatal care in Nigeria.[19] The CHB is a specialist hospital providing secondary health care for the teeming population of Edo state. The hospital offers comprehensive antenatal, delivery and postnatal care through her obstetrics and gynecology department.[20]

A comparative cross sectional study design was adopted for this study and the study population were pregnant women attending antenatal clinics in UBTH and CHB, Edo State. A minimum sample size of 151 respondents was calculated for UBTH and 453 respondents for CHB using the formula for comparative studies[21]:

$$n1 = \frac{\left(Z\alpha \sqrt{(r+1)PQ} + Z\beta \sqrt{rp1q1+p2q2}\right)^2}{rd^2} \quad (Fleiss\ formula)$$

Where $n1$ was the sample size in CHB ($n_2 = rn_1$), $Z\alpha = 1.96$ (95% confidence interval), $Z\beta = 0.842$ (80% power) and r was the ratio of the average monthly population of pregnant women attending ANC in CHB (1835) to that of women attending ANC in UBTH (625), p1 was set at 0.085[22] and p2 set at 0.176.[22]

This study utilized a multistage sampling technique to select respondents. In stage one, a secondary and one tertiary healthcare facility were selected by balloting from a sample frame of the list of the secondary and tertiary healthcare facilities in the Ministry of Health. A stratified sampling methodology was adopted in stage two. There were four antenatal care units in each of the two centers and each was taken as a separate class. All the strata were considered for this study.

In stage three, a systematic sampling technique was used to select the respondents in each unit using the sample interval N/n, where N was the total number of ANC attendants in each unit and n the sample size allocated to the unit. The ANC register for each unit served as sampling frame from which respondents were selected. The first respondent was selected by simple random sampling using a table of random numbers and after which, the sampling interval was applied to the sampling frame to select the other respondents.

A self-administered questionnaire was used to obtain data for the study. The questionnaire was semi structured, containing open and closed ended questions based on the study objectives which was developed by the authors based on several studies of similar methodology. A pre-test of the questionnaires was carried out in a secondary healthcare center in Edo State that was not included in this study, to determine the comprehensibility, validity, sensitivity and reliability of data tools using 64 (10% of the minimum sample size) questionnaires. Data was collated and screened for completeness after which they were serially entered into IBM SPSS version 22.0 software for analysis with statistical significance set at $p<0.05$ and 95% confidence interval. The Occupation of respondents was coded into skill levels 1 to 4 based on ILO-ISC-08 classification. This classification was adapted to include skill level 0 to comprise of housewives, students, retired and unemployed.

Twenty one questions under five domains were used to assess knowledge. The domains were on understanding of NHIS, programmes of NHIS, ANC services offered by NHIS, NHIS stakeholders and the employees percentage paid as premium. A score of 1 was given for correctly answered option and 0 for wrong answers, giving a maximum score of 21 and minimum of 0. The total score was scaled down to 10. Knowledge of NHIS among the pregnant women was grouped into good knowledge (8-10), moderate knowledge (4-7), poor knowledge (≤3). Seven questions were used to ascertain the level of utilization of NHIS services and a four-point Likert scale was used for scoring. A score of 0 was awarded for the least correct answer and 4 for the most correct answer, giving a maximum score of 28 and a minimum score of 0. Scores were converted to percentages and grouped into Poor utilization (0-39.9%); Moderate utilization (40-69.9%) and adequate utilization (70-100%).

Ethical consideration

Ethical approval was obtained from Ethics and Research Committee Ministry of Health, Benin City (Ref No: HA. 737/120) before commencement of study. Individual informed consent was also obtained from each respondent prior to questionnaire administration

Results

A total of 604 respondents participated in the survey where the mean age of respondents in the secondary healthcare facility was 29.86 ± 4.96 years and 32.58 ± 4.79 years in the tertiary healthcare facility. The difference between the two means was statistically significant (t = 6.14, $p < 0.001$). Majority, 202 (84.5%) of the respondents in the secondary healthcare facility had secondary education while most 96 (44.5%) of the respondents in the tertiary healthcare facility had tertiary education showing a statistically significant difference (F < 0.001). However, there was no statistically significant difference in the marital status of the respondents (F = 0.0047), where majority were married (Table 1).

Majority of the respondents, 316 (70.0%) in the secondary healthcare facility and 133 (88.1%) in the tertiary healthcare facility were aware of health insurance. More than half of the respondents 182 (57.4%) in secondary healthcare facility and 79 (59.4%) in the tertiary healthcare facility had television as their source of information, while 173 (54.6%) and 70 (52.6%) in the secondary healthcare facility and the tertiary healthcare facility's source of information was health workers respectively. About 133 (42.0%) and 53 (39.8%) of the correspondents in the secondary healthcare facility and the tertiary healthcare facility respectively got their information from social media while 95 (30.0%) and 41 (30.8%) of the respondents got their information from workplace. Thirty six (11.4%) and 11 (8.3%) of respondents in the secondary healthcare facility and the tertiary healthcare facility respectively got their information from the radio (Table 2).

Sixty seven (14.8%) of the respondents in CHB and 48 (31.8%) in UBTH correctly identified NHIS as a form of risk sharing method of hospital expenses and this difference was statistically significant (P = 0.0001). When considering the knowledge of respondents on ANC services covered by NHIS, there was a statistically significant difference in the response of respondents for purchase of drugs, caesarean section and laboratory investigations with p-values of 0.021, <0.001, 0.049 and 0.002 respectively. About 152 (47.8%) of the respondents in the secondary healthcare facility reported 10% as the percentage employee premium to be contributed whereas a majority 73 (54.9%) of respondents in the tertiary healthcare facility correctly identified 5% as the percentage of premium. While 10 (3.2%) of respondents in the secondary healthcare facility did not choose any

amount as percentage of premium paid, only 1 (0.7%) respondent in the tertiary healthcare facility fell into this category. The difference in the knowledge of premium to be paid towards the NHIS was statistically significant (p = 0.005). Table 3 Only 31(9.8%) respondents in the secondary healthcare facility and 21(15.8%) respondents in the tertiary healthcare facility were enrolled into the NHIS. One hundred and ninety (66.8%) and 67 (59.8%) respondents in the secondary healthcare facility and the tertiary healthcare facility respectively, attested that poor knowledge was their reason for non-enrolment. A total of 91 (31.2%) of respondents in the secondary healthcare facility and 20 (17.9%) of respondents in the tertiary healthcare facility reported inadequate funds as their hindrance to enrollment. This finding was statistically significant (P = 0.005). For those on the NHIS, 26 (83.9%) respondents in the secondary healthcare facility and 15 (71.4%) in the tertiary healthcare facility reported affordability for healthcare service as their reason for enrollment. Among the 31 respondents enrolled in NHIS in the secondary healthcare facility, a majority of them (69.5%) agreed to the presence of challenges towards the utilization of NHIS whereas 76.2% of the 21 respondents enrolled in NHIS in the tertiary healthcare facility agreed to the presence of this challenges (Table 4).

A total of 14 (63.7%) and 9 (56.3%) respondents in the secondary healthcare facility and the tertiary healthcare facility respectively, reported absence of drugs/equipment as the major challenge. Another 40.9% of respondent in the secondary healthcare facility and 62.5% of respondents in the tertiary healthcare facility reported the poor quality of health services as the major challenge. About 15 (70.0%) respondents and 12 (75.0%) of

respondents enrolled in the secondary healthcare facility and the tertiary healthcare facility used the NHIS for booking for ANC. Another 62.9% and 75.0% of respondents in the secondary healthcare facility and the tertiary healthcare facility utilized the NHIS for purchase of drugs. About 50% of respondents in the secondary healthcare facility and 75% of respondents in the tertiary healthcare facility used the NHIS for vaginal delivery. (Table 5)

Most (48.5%) of the respondents who utilized NHIS were aged 26-30 years in the secondary healthcare facility whereas majority (61.9%) of the respondents were ≥30 years in UBTH. Respondents whose age was less than 26 years constituted 16.1% and 9.5% among those that utilized NHIS in the secondary healthcare facility and the tertiary healthcare facility respectively. The relationship between the mean age of respondents and the utilization of NHIS in both the secondary healthcare facility and the tertiary healthcare facility was found to be statistically significant (p = 0.023).

Majority of the respondents (87.1% in the secondary healthcare facility and 90.5% in the tertiary healthcare facility) utilizing the NHIS were married. Majority of the respondents accounting for 80.7% and 76.3% utilizing the NHIS in the secondary healthcare facility and the tertiary healthcare facility respectively had tertiary level of education while 16.1% and 14.3% of respondents in the secondary healthcare facility and the tertiary healthcare facility utilizing NHIS had secondary level of education.

Out of 31 enrolled respondents in the secondary healthcare facility, 13 (41.8%) had good knowledge about the scheme while 14 (45.2%) and 4 (13.0%) had moderate and poor knowledge respectively. There were 21 enrolled respondents who utilized NHIS services in the tertiary healthcare facility, out of which 12 (57.1), 6 (28.6%) and 3 (14.3) had good, moderate and poor knowledge about the scheme respectively. (Table 6).

Table 1: Socio-demographic characteristics of respondents.

Variable	CHB (n₁ = 453) f (%)	UBTH (n₂= 151) f (%)	Total (n = 604) f (%)
Age (years)			
<26	70 (87.5)	10 (12.5)	80 (13.2)
26-30	235 (81.9)	52 (18.1)	287 (47.6)
= 30	148 (62.4)	89 (37.6)	237 (39.2)
Mean age ± SD	29.86 ± 4.96	32.58 ± 4.79	
t – test	t = 6.14	p < 0.001	
Marital Status			
Single	56 (84.8)	10 (15.2)	66 (10.9)
Married	367 (72.8)	137 (27.2)	504 (20.5)
Co-habiting	17 (100)	0 (0)	17 (39.6)
Divorced	7 (63.6)	4 (36.4)	11 (1.8)
Divorced	6 (100)	0 (0)	6 (1.1)
		F = 0.005	
Level of Education			
None	24 (96.0)	1 (4.0)	25 (4.1)
Primary	107 (88.4)	17 (11.6)	124 (20.5)
Secondary	202 (84.5)	37 (15.5)	239 (39.6)
Tertiary	120 (55.5)	96 (44.5)	216 (35.8)
		F < 0.001	

*Multiple Response

Table 2: Awareness of Health Insurance among respondents

Variables	CHB (n₁ =453) f (%)	UBTH (n₂ = 151) f (%)	χ^2	p- value
Awareness				
Yes	317 (70.0)	133 (88.1)	19.535	**<0.001**
No	136 (30.0)	18 (11.9)		
Source of Information*	(nᵢ = 317)	(nᵢᵢ = 133)		
Television	182 (57.4)	79 (59.4)	0.152	0.697
Health workers	173 (54.6)	70 (52.6)	0.142	0.706
Social media	133 (42.0)	53 (39.8)	0.171	0.679
Workplace	95 (30.0)	41 (30.8)	0.033	0.856
Radio	36 (11.4)	11 (8.3)	0.954	0.329
Billboards/posters	10 (3.2)	2 (1.5)	0.984	0.321

*Multiple Response

Table 3: Knowledge of NHIS among Respondents

Variables	CHB (n₁ =453) f (%)	UBTH (n₂ = 151) f (%)	χ^2	p- value
Understanding of NHIS*				
Method of payment for hospital bill	174 (38.4)	86 (56.9)	3.668	0.055
Premium payment	134 (29.6)	68 (45.0)	2.971	0.085
Risk sharing method of hospital expenses	67 (14.8)	48 (31.8)	11.014	**<0.001**
Financial empowerment program	18 (4.0)	3 (2.0)	2.467	0.116
Way of government tax	28 (6.2)	5 (3.3)	3.549	0.059
ANC services covered by NHIS*				
ANC booking	216 (47.7)	105 (69.5)	5.353	**0,021**
Purchase of drugs	205 (45.3)	112 (74.2)	17.185	**<0.001**
Vaginal delivery	171 (37.7)	84 (55.6)	2.366	0.124
Caesarean section	114 (25.2)	61 (40.4)	3.866	**0.049**
Laboratory investigations	66 (14.6)	46 (30.5)	9.498	**0.002**
Postnatal care	42 (9.3)	23 (15.2)	1.239	0.265
Management of complication	19 (4.2)	13 (8.6)	2.028	0.154
NHIS stakeholders*				
Government	233 (51.4)	111 (73.5)	5.159	**0.023**
Employers	144 (31.8)	82 (54.3)	9.869	**0,001**
Employees	99 (21.9)	73 (48.3)	22.206	**<0.001**
HMOs	60 (13.2)	43 (28.5)	9.536	**0.002**
Employees percentage of premium				
None	10 (3.2)	1 (0.7)	14.663	**0.005**
5%	117 (36.0)	73 (54.9)		
10%	152 (47.8)	51 (38.4)		
15%	26 (8.9)	6 (4.5)		
20%	12 (4.1)	2 (1.5)		

*Multiple response

Table 4: Enrolment into NHIS among respondents

Variables	CHB f (%)	UBTH f (%)	χ^2	p- value
NHIS Enrolment	**($n_1 = 317$)**	**($n_2 = 133$)**		
YES	31 (9.8)	21 (15.8)	3.312	0.069
NO	286 (91.2)	112 (84.2)		
Reasons for Non-enrolment*	**($n_1 =286$)**	**($n_2=112$)**		
Unavailability	56 (19.6)	21 (18.9)	0.036	0.850
Poor knowledge	191 (66.8)	67 (59.8)	1.711	0.191
Unwillingness	67 (23.4)	32 (28.6)	1.140	0.286
Inadequate fund	91 (31.2)	20 (17.9)	7.800	**0.005**
Reasons for enrolment*	**($n_1 = 31$)**	**($n_2= 21$)**		
Reduction of financial burden	26 (83.9)	15 (71.4)	1.162	0.281
Affordability of healthcare	19 (61.3)	13 (61.9)	0.002	0.964
Job requirement	5 (16.1)	6 (28.6)	1.162	0.281
Husband's coverage	11 (35.5)	5 (23.8)	0.801	0.371
Awareness campaign	3 (9.7)	2 (9.5)	0.001	0.986
Academic requirement	2 (6.5)	1 (4.8)	0.066	0.798
Ideas for improvement of NHIS utilization*				
Increased awareness campaigns	26 (83.9)	20 (95.2)	1.585	0.208
Improved quality of services	23 (74.2)	19 (90.5)	2.137	0.144
Reduction in cost of registration	17 (54.8)	17 (80.9)	3.772	0.052
Inclusion of under-five	13 (41.9)	5 (23.8)	2.062	0.151
Provision of Anti-retroviral	8 (25.8)	7 (33.3)	0.346	0.557

*Multiple Response

Table 5: Utilization of NHIS among respondents

Variables	CHB ($n_1 = 31$) f (%)	UBTH ($n_2 = 21$) f (%)	χ^2	p- value
Presence of challenges towards NHIS utilization				
Yes	22 (69.5)	16 (76.2)	0.174	0.677
No	9 (30.5)	5 (23.8)		
Challenges/barriers*				
Absence of drugs/Equipment	14 (63.7)	9 (56.3)	0.027	0.869
Cost of renewal	13 (59.1)	4 (25.0)	2.980	0.084
Cost of registration	10 (45.5)	8 (50.0)	0.189	0.664
Poor quality of services	9 (40.9)	10 (62.5)	1.865	0.172
Distance from health facility	8 (36.4)	6 (37.5)	0.049	0.825
Services utilized*				
Booking for ANC	15 (70.0)	12 (75.0)	0.385	0.535
Purchase of drugs	14 (62.9)	12 (75.0)	0.719	0.397
Laboratory investigations	12 (59.1)	9 (56.3)	0.089	0.765
Vaginal delivery	11 (50.0)	12 (75.0)	2.381	0.123
Postnatal services	7 (31.8)	6 (37.5)	0.239	0.624
Management of common complication	5 (22.7)	2 (12.5)	0.469	0.494
Caesarean section	2 (9.1)	2 (12.5)	0.166	0.683
Composite Utilization Score				
Poor	8 (36.4)	1 (6.3)		
Average	10 (45.5)	10 (62.5)	5.367	0.068
Good	3 (18.1)	5 (31.2)		

*Multiple Response

Table 6: Socio-demographic factors and utilization of NHIS

Variable	Utilization of NHIS		Test statistics	p-value
	CHB (n₁ = 31) f (%)	UBTH (n₂ = 21) f (%)		
Age				
<26	5 (16.1)	2 (9.5)	t_{cal} = 3.991	**<0.001**
27-30	15 (48.5)	6 (28.6)	t_{cri} = 2.000	
= 30	11 (34.8)	13 (61.9)	Df = 50	
Mean age ± SD	28.45 ± 3.09	32.62±4.46		
Marital Status				
Single	2 (6.5)	0 (0.0)	F = 0.126	
Married	27 (87.1)	19 (90.5)		
Co-habiting	2 (6.4)	0 (0.0)		
Divorced	0 (0.0)	2 (9.5)		
Level of Education				
None	1 (3.2)	1 (4.7)	F = 0.806	
Primary	0 (0.0)	1 (4.7)		
Secondary	5 (16.1)	3 (14.3)		
Tertiary	25 (80.7)	16 (76.3)		
Spouse's level of Education				
Primary	1 (3.2)	0 (0.0)	F = 0.058	
Secondary	2 (6.5)	5 (23.8)		
Tertiary	28 (90.3)	16 (76.2		
Skill level				
Level 0	2 (6.5)	1 (4.8)	F = 0.967	
Level 1	3 (9.7)	1 (4.8)		
Level 2	6 (19.3)	4 (19.0)		
Level 3	4 (12.9)	4 (19.0)		
Level 4	16 (51.6)	11 (52.4)		
Monthly Income				
<30000	4 (12.9)	2 (9.5)	t_{cal} =0.503	0.617
30000 -69999	10 (32.3)	6 (28.6)	t_{cri} = 2.000	
= 70000	17 (54.8)	13 (61.9)	Df = 50	
Mean ± SD	61290.32 ± 32586.49	66333.33±39406.00		
Religion				
Christian	27 (87.1)	16 (76.2)	χ^2 =1.113	0.292
Islam	4 (12.9)	5 (23.8)		
Overall Knowledge				
Poor	4 (13.0)	3 (14.3)	χ^2 =1.5158	0.469
Moderate	14 (45.2)	6 (28.6)		
Good	13 (41.8)	12 (57.1)		

*Multiple Response

Discussion

The high level of awareness of NHIS observed in this study is attributable to the fact that most of the respondents have had ANC of at least two times, and so might have been sensitized on NHIS by health workers during the visits. Also women of the reproductive age group 15- 45 years are part of the larger pool of young individuals who are active on social media and hence might have been enlightened on NHIS on these platforms. This finding is relatable to

a study done in Lagos State, Nigeria which showed a high level of awareness of the NHIS at 90%.[22] This outcome is encouraging as it would mean that more individuals are aware of how to access equitable healthcare without incurring financial ruin.

Compared to the respondents in the secondary healthcare facility, pregnant women in the tertiary healthcare facility had moderate overall level of knowledge of the scheme. This outcome could be explained by the higher educational status of the respondents the tertiary healthcare facility which places them at better chances of accessing the various sources of information than the respondents in the secondary healthcare facility. It could be deduced from this that education is a major factor in the health seeking behavior of a people. This finding could be compared to a study done in Abakaliki, Ebonyi State which showed that despite a higher percentage of the traders who majorly had secondary level of education being aware of NHIS, only a smaller percentage of them really understood the core principles and provisions of NHIS.[18]

Apart from the better educational status and skill level of respondents in the tertiary healthcare facility, the better level of enrollment in the tertiary healthcare facility compared to the secondary healthcare facility was expected due to the availability of the NHIS services in tertiary health institutions which kicked off the scheme in 2005. The secondary healthcare facility is run by the Edo State Government which officially commenced the implementation of the NHIS in 2019. The secondary healthcare facility might have also suffered poor funding and the resulting sequelae of poor services prevalent in state hospitals in Nigeria[5].This general poor level of enrollment was also similar to a study done in Lagos, Nigeria which showed a low level of enrollment into the NHIS at 7.2%[22].

In Nigeria, the coverage of the days spent on admission in hospitals by NHIS is limited. The menace of out-of-stock syndrome of drugs and equipment could also be attributed as a factor in non-enrolment into NHIS. This factor could deter people from enrolling into the scheme. Most of the respondents agreed that reduction of financial burden was a reason for their enrollment into the NHIS. This is expected as majority of the pregnant women had spent between 10,000 – 19,999 naira in the ANC of index pregnancy, an amount accounting for two-third of the minimum wage of workers in Nigeria. The high cost of ANC is evident in studies across the country which identified inability to pay as a major barrier to accessing ANC by pregnant women. Thus, NHIS afforded these pregnant women a form of insulation from financial ruin and a significant opportunity to reduce Out Of Pocket (OOP) expenditure on healthcare services[15]. The high rate of non-enrollment in NHIS observed in this study could be explained by the presence of numerous challenges which could also be the reason for the low reuptake of the scheme in Nigeria in contrast to other developing countries of Kenya and Ghana where enrollment is high[10].

It was also observed from this study that women aged 26 – 30 years were more registered under the NHIS than their counterparts aged below 26 years of age. This could possibly be explained by the fact that this age group were mostly married, hence their household income was higher, thus making them better placed to access the services of NHIS. The better utilization of NHIS for healthcare for healthcare services by women whose spouses had tertiary level of education could be explained by the provision for inclusion of insurance of spouse and three other relatives of an enrollee by the

scheme. It could therefore be deduced that the spouses of these women were possibly enrolled in the NHIS. This observation is in accordance with a study which demonstrated that level of education and occupation of spouse was an indicator of the use of NHIS by women attending ANC[11]. This outcome validates the action of the NHIS board for targeting a wider coverage by inclusion of spouse and other family members.

The presence of an association between a higher knowledge composite score and the utilization of NHIS services is not unusual as higher knowledge will promote the utilization of the services and also prolonged utilization will promote the knowledge of the scheme in the enrollees.

Conclusion

There was a high level of awareness of NHIS among the pregnant women, however, the knowledge was very poor in both health facilities as only about one-twentieth and one-tenth of the respondents had good knowledge in the secondary healthcare facility and the tertiary healthcare facility respectively. Enrollment into the scheme was almost twice as high among respondents in the tertiary healthcare facility compared to those in the secondary healthcare facility, however enrollment was very low for both health centers. The major barriers to the utilization of NHIS in both the tertiary healthcare facility and the secondary healthcare facility were the absence of drugs and equipment, cost of registration, and poor quality of services of the NHIS.

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