Available online at Journalgurus

https://www.jhspract.com https://www.journalgurus.com

ORIGINAL ARTICLE

National Health Insurance Scheme Coverage for Pregnant Women in Jos, Nigeria: Implications for SDG-3

***** F. A. Magaji [1], J. M. Ali [1], W. Golit [2], J. Ogwuche [3], S. A. Anzaku [4], A.N. Ocheke [1], A.S. Sagay [1], G.E. Imade [1], T. A. Oyebode [1], V. C. Pam [1], A. I. Zoakah [1], J. Musa [1]

[1] University of Jos / Jos University Teaching Hospital, Jos, Nigeria, [2] Plateau State Specialist Hospital, Jos, Nigeria, [3] OLA Hospital, Jos, Nigeria, [4] Bingham University Teaching Hospital.

ABSTRACT

Objective*:* The National Health Insurance Scheme (NHIS) coverage among pregnant women has a nexus with access to maternal and child health services, and the attainment of Sustainable Development Goal 3 (SDG-3). We sought to determine the coverage of NHIS among women accessing antenatal care in Jos, Nigeria. **Methods:** This cross-sectional study of NHIS coverage among antenatal care attendees was undertaken between 1st November 2017 and 30th April 2018. Informed consent was obtained, demographic data, access and predictors for NHIS coverage were collected, and all women were registered and booked for ANC. Descriptive statistics and multivariate analysis using STATA Version 15 were performed. **Results:** There were 3,238 pregnant women that booked for care, 223 (6.9%) of the women had NHIS coverage. Women above 30 years (OR = 11.4; 95% CI = 1.94 – 458.49; *P* = 0.003); with tertiary education (OR = 3.9; 95% CI = 1.01 – 32.88; *P* = 0.044); of Plateau tribes (OR = 1.5; 95% CI = 1.17 - 2.05; *P* = 0.002); and multi-gravidae (OR = 5.4; 95% CI =3.40 – 8.99; *P* = 0.001) were significantly associated with coverage for NHIS. However, women who booked in the second trimester (OR = 0.52; 95% CI = 0.35 - 0.77; *P* = 0.001) were significantly less likely to be covered for NHIS. **Conclusions:** The NHIS coverage for pregnant women is low and much lower among women less than 30 years, with no formal education, and primigravidae. Unless more access and enrollments into NHIS is encouraged, findings have grave public health implications for achieving SDG-3 by 2030.

Keywords: Health-Insurance, Pregnancy, Coverage, SDG-3, Jos-Nigeria

INTRODUCTION

Improving maternal health as a means of achieving reduction in maternal and childhood mortalities have remained a priority for the global community. The interest of the international community to improve the health of women is demonstrated in the inclusion of key strategies to reduce maternal and

*** Corresponding Author E-Mail:**
magajif@unijos.edu.ng; +2348037008730

neonatal mortalities in the MDG and recently in the SDG-3. [1, 2]

Although, the implementation of the MDGs made appreciable gains in the reduction of maternal mortality ratio (MMR) of 43.9% and under-5 mortalities of 48% globally, the challenge of maternal, neonatal, and under-five childhood mortalities remain considerably high in developing countries including Nigeria. [3, 4] Nigeria shares a disproportionately high burden of the global maternal and neonatal mortalities, ranking as the first and second country in the world for the highest number of deaths among mothers and neonates, respectively. [5, 6] These poor indices may be linked with the low utilization of maternal healthcare services in the country. [7]

Nigeria is one of the countries in the last few decades to have launched an ambitious national health insurance initiative designed to move towards universal health coverage, to increase demand for improved access to care and reduction in household out-of-pocket health-care cost. [8] Health Insurance is a strategy that countries use to alleviate the adverse health outcomes of all citizens, especially the poorest. It is one of the methods that low-income countries may consider to achieve universal health coverage (UHC). Universal health coverage implies ensured access to and use of high-quality healthcare services by all citizens, especially the poor, and protection for all individuals from the catastrophic financial effects of ill health. [9]

National Health Insurance Scheme offers programs to cover the formally employed, urban self-employed, tertiary students, Armed Forces, some pregnant women, children under five, and such populations as the disabled and Prison inmates. [10] The extend of coverage of the NHIS in Nigeria is such that the informal sector and the unemployed are yet to be accounted for in the scheme. Even within the formal sector, not all government and corporate organization employees are enrolled within the scheme. Nigeria with only about 5 million people registered for NHIS, that is, about 3% of the population covered by the NHIS, both the Public and the Private Hospitals is therefore, still operating on a fee for service basis for the majority of clients. [11]

In a study evaluating the NHIS in Jos, Nigeria, 116 (58%) agreed that they were aware of the scheme, however, 60 (30%) disagreed that they had benefited from the NHIS. [12] In a study investigating the barriers to ANC uptake in Nigeria, the findings showed that 'getting money to go', 'distance from health facility', 'availability of transport to facilities' were the three leading barriers. [13]

Out-of-pocket spending for health care services is a major barrier for access to quality health care services. There are no studies identifying barriers to ANC services and pregnant women with NHIS coverage in our setting. This study was done to understand the factors associated with NHIS coverage among pregnant women accessing ANC services in Jos, Nigeria.

METHODS AND MATERIAL

This cross-sectional study was conducted in five health facilities in Jos, North-Central Nigeria: Jos University Teaching Hospital (JUTH), Plateau State Specialist Hospital (PSSH), Bingham University Teaching Hospital (BHUTH), Faith Alive Foundation Hospital (FAF), and Our Lady of Apostles Hospital (OLA) all caring for about 40% of the pregnant women in Jos. [14] Ethical approvals were obtained from the five Institutional Health Research Ethical Review Committees. This study sampled all-new antenatal clinic (ANC) attendees between 1st November 2017 and 30th April 2018 at their first visit haven obtained informed consent.

We used a structured questionnaire and collected data on socio-demographics, access to NHIS for ANC services, obstetric, and sexual risk factors for HBV infection. Registered women for ANC, also known as 'healthcare during pregnancy', were clinically evaluated in health centers staffed and equipped for maternity services and designated for this study. The women enrolled for the study were appropriately counseled, and provided with micronutrients supplementation (folic acid, and iron), medical screening, vaccination and preventive treatment for malaria, all aimed at ensuring safe pregnant outcomes. The study participants were also screened for hepatitis, human immunodeficiency virus, high blood pressure and gestational diabetes during the ANC visit.

All statistical analyses were performed on STATA 15 (Corp LP, USA). We performed descriptive statistics and relevant tests of

hypothesis to identify significant associations for NHIS coverage in the study population. We further built a multivariable logistic regression model for significant associations that were associated with NHIS access (P<0.05) to identify independent predictors of NHIS coverage among pregnant women. The results were presented as adjusted OR, with 95% Confidence interval. A p-value of < 0.05, was considered statistically significant.

RESULTS

A total of 3,238 women enrolled for prenatal care between November 1st, 2017 and April 30th, 2018. All but 26 women agreed to participate during their first visit and these 26 joined during their second prenatal visit with informed consent obtained. Mean age of the women was 29.03 ± 5.6 years and ranged from 15 years to 48 years. A total of 1,469 (45.4%) of the pregnant women had tertiary education and only 69 (2.1%) had no formal education. Most, 3,192 (98.6%) of the women were married and more than half, 1,837(56.7%) were multiparous, (Table 1). Table 1: Sociodemographic and Obstetric Features of Pregnant Women (n = 3,238)

Table 1: Sociodemographic and Obstetric Features of Pregnant Women (n = 3,238)

Socio-demographics	**Frequency**	**Percentage**
Age (years)		
15-19	107	3.3
20-24	596	18.4
25-29	1,029	31.8
30-34	907	28.0
35-39	489	15.1
40-44	104	3.2
45-49	5	0.2
Educational status		
None	69	2.1
Primary	219	6.8
secondary	1,481	45.7
Tertiary	1,469	45.4
Marital status		
Single	46	1.4
Married	3,192	98.6
Tribe		
Plateau tribes	1,303	40.2
Non-Plateau tribes	1, 935	59.8
Occupation		
Employed	1,955	60.7
Unemployed	1,273	49.3
Parity		
Primipara	1,090	33.7
Multiparous	1,837	56.7
Grand multiparous	311	9.6
Trimester		
1	534	16.5
2	1,187	36.7
3	1,065	32.6
4	461	12.2

On univariate analyses, the age of study participants (p <0.001), educational level (<0.001), tribe (<0.001), occupational status (<0.001), parity (<0.001), and trimester of ANC booking (0.006), were statistically significant with NHIS coverage,

Table 2: Association between Coverage of NHIS and Socio demographics (n = 3,238).

Factors	***NHIS Coverage***		**Total**	X^2	**P-value**
	Yes (%)	No (%)			
Age					
15– 19	1	106	107	53.99	<0.001*
20– 24	13	582	595		
25– 29	59	973	1,032		
30– 34	88	820	908		
35– 39	53	435	488		
40–44	11	92	103		
45–49	0	5	5		
Educational Status					
None	2	67	69	48.57	<.0018
Primary	7	212	219		
Secondary	64	1,417	1,481		
Tertiary	152	1,317	1,469		
Marital Status					
Single	1	45	46	1.65	0.200
Married	224	2,968	3,192		
Tribe					
Plateau tribes	113	1,190	1,303	45.03	<.001*

*Statistically significant.

(

Table 2). The odds for NHIS coverage was eleven times higher for those 30 years and above compared with those 19 years and below (OR = 11.4; 95% CI = 1.94 – 458.49; P = 0.003). Those who had tertiary education, the odds for NHIS coverage was four times higher compared with those without formal education (OR = 3.9; 95% CI = 1.01 – 32.88; P = 0.044); also, pregnant women of Plateau tribes had a 50% higher chance for NHIS coverage compared to non-Plateau tribes (OR = 1.5; 95% CI =1.17 - 2.05; P = 0.002); and the odds for NHIS coverage for multigravidae was five times higher compared to primigravidae (OR = 5.4; 95% CI =3.40 – 8.99; P = 0.001). However, the odds for NHIS coverage were 48% less likely for pregnant women who booked in the second trimester compared to first trimester (OR = 0.52; 95% CI =0.35 - 0.77; P = 0.001), (Table 3)

Table 3: Predictors of NHIS Uptake among Pregnant Women in Jos (n = 3,238)

Factors	NHIS coverage Yes	No	OR	95% CI	p-value
Age (years)					
15-19	1	106	Reference		
20-24	13	582	2.4	0.35 – 101.54	0.394
25-29	59	973	6.4	1.08 – 260.54	0.035*
30-34	88	820	11.6	1.94 – 458.49	0.003*
35-39	53	435	12.9	2.16 – 524.35	0.001*
40-49	11	92	12.0	1.67 – 522.08	0.003*
Educational status					
None	2	67	Reference		
Primary	7	212	1.1	0.20 – 11.16	0.901
secondary	64	1,417	1.5	0.39 – 13.03	0.567
Tertiary	152	1,317	3.9	01.01 – 32.88	0.044*
Marital status					
Single	1	45	3.4	0.57 –137.67	0.199
Married	114	2,968			
Tribe					
Plateau tribes	113	1,190	1.5	1.17 – 2.05	0.002*
Non-Plateau tribes	112	1,823			
Occupation					
Employed	77	1,196	1.3	0.95–1.71	0.097
Unemployed	148	1,807			
Parity					
Primipara	21	1,069	Reference		
Multiparous	176	1,659	5.4	3.40 – 8.99	< 0.001*
Grand multiparous	26	285	4.6	2.47 – 8.81	< 0.001*
Trimester					
1	54	480	Reference		
2	66	1,121	0.52	0.35 – 0.77	0.001*
3	77	979	0.70	0.48 – 1.03	0.053
4	28	433	0.57	0.34 – 0.94	0.021*

*Statistically significant.

DISCUSSION

This study reported the coverage for NHIS among pregnant women in Jos, Nigeria to be 6.9%. This coverage is slightly higher than the national coverage of 3% in the general population, which mostly reflects Federal Government employees and corporate organizations in Plateau state [11] However, this is likely a reflection of coverage in the setting of a city, with the majority of the population in the rural settings, the coverage for NHIS among pregnant women in the entire state could be lower.

World Health Organization (WHO) guidelines advise that out-of-pocket expenditure of more than 15 – 20% of total health expenditure can lead to impoverishment. [15] While Ghana and Rwanda, at 27% and 22% respectively, are approaching recommended guidelines, Nigeria still

have out-of-pocket spending of more than 50% of total health expenditure. [8]

High out-of-pocket costs of health care services can be caused by several factors, including absence of full population enrollment in NHIS coverage programs, absence of NHIS coverage of key populations including women and children, illegal billing by health facilities, and little understanding of benefits by service users. [8]

This low coverage of NHIS in Jos, Nigeria is associated with its attendant consequences to include lower utilization of maternal and childhood health services. Sub-optimal utilization of ANC services results in reduce benefits of ANC which included; early detection of high-risk pregnancies as women with risk factors suggestive of possible obstetric complications are identified through careful clinical evaluation and appropriate medical screening for specialize and individualized management plan. [7, 16] Anti-natal care is also known to increased chances of institutional delivery and hence prevention and / or treatment of the leading causes of maternal and early neonatal mortality through timely access to and or utilization of emergency obstetric care services. [7]

The findings in this study showed that pregnant women who were of older age group, higher level of education, and higher parity had higher odds for NHIS coverage. This would be associated with higher utilization of maternal and child health care services. The same findings were reported in the 2013 NDHS study, which showed significant association between ANC visits and maternal age, maternal working status, maternal educational level, husband's education level, wealth index and religion. [17] In a similar study investigating the barriers to ANC uptake in Nigeria, the study showed 'getting money to go', 'distance from health facility', 'availability of transport to facilities' as the three leading barriers. [13]

However, the study showed that the odds for NHIS coverage were 48% less likely for pregnant women who booked in the second trimester compared to first trimester. Anti-natal care is one of the pillars of the 'safe motherhood initiative' and remains a major public health intervention for preventing maternal and neonatal mortality, globally. [18] It therefore means that, those without NHIS coverage were associated with late or no ANC attendance and pregnant women denied of benefits of preventive interventions and improvement in maternal and neonatal outcomes.

Late or near absent ANC attendance is associated with less utilization of ANC services and determination of risk status of the pregnant women is jeopardized. Low utilization of maternal and child health services correlates strongly with maternal mortality rates and neonatal mortality rates. [19, 20] Specifically, it is shown that ANC attendance may reduce neonatal mortality and centers with low ANC attendance have higher maternal mortality rates. [21, 22]

The findings of this study would be a rich resource for policy development in the operations of the newly established Plateau state Health Insurance Scheme. The findings of study cannot be generalized due to the fact that it was conducted in an urban setting and confirmation of NHIS registration was not carried out to ascertain if study participants were captured.

CONCLUSIONS

The NHIS coverage for pregnant women is low and much lower among pregnant women who are less than 30 years, with lower levels of formal education, and primigravidae. This has grave public health implications for vulnerable populations including pregnant women attaining universal health coverage and achieving SDG-3 by 2030, which would be nearly impossible. Urgent steps should be taken to establish health insurance schemes at the sub-national levels, with emphasis to the private as well as the informal sectors to increase accessibility to the most vulnerable groups including the pregnant population.

Conflict of Interest

The authors declare no conflict of interest.

Grant Support

Research reported in this publication was supported by the Fogarty International Centre (FIC) of the National Institutes of Health and also the Office of the Director, National Institutes of Health (OD), National Institute of Nursing Research (NINR) and the National Institutes of Neurological Disorders and Stroke (NINDS) under award number D43TW010130. The content is solely the

responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Acknowledgment

We thank the midwives, counselors and laboratory staff in the five study sites for their contributions in the study. We equally thank the Data officer who ensured that every data is captured for analysis, and Dr. Musa, J provided writing assistance especially language help and proof reading of the manuscriptREFERENCE:

1. Gomez, GB, Foster, N, Brals, D, Nelissen HE, Bolarinwa, OA, Hendriks, ME, et al. Improving Maternal Care through a State-Wide Health Insurance Program: A Cost and Cost-Effective Study in Rural Nigeria. PLoS ONE, 2015; 10(9): e0139048.
2. Adewuyi, EO, Auta, A, Khanal, V, Bamidele, OD, Akuoko, CP, Adefemi, K, et al. Prevalence and factors associated with underutilization of antenatal care services in Nigeria: A comparative study of rural and urban residences based on the 2013 Nigerian demographic and health survey. PLoS ONE, 2018; 13(5): e0197324.
3. Alkema, L, Chou, D, Hogan, D, Zhang, S, Moller, A-B, Gemmill, A, et al. Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group. The Lancet. 2016; 387(10017): 462 – 74.
4. Adewuyi, EO, Zhao, Y, Lamichhane, R. Risk factors for infant mortality in rural and urban
5. Nigeria: evidence form the national household survey. Scandinavian J Pub Health; 2017; 45(5): 543 – 54.
6. National Population Commission (NPC) [Nigeria] and ICF International. Nigerian Demographic and Health Survey 2013. Abuja, Nigeria and Rockville, Maryland, USA: NPC and ICF International. 2014.
7. Adewuyi, EO, Zhao, Y. Determinants of neonatal mortality in rural and urban Nigeria: evidence from a population-based national survey. Pediatrics International. 2017; 59(2): 19 – 200.
8. Adewuyi, EO, Zhao, Y., Auta, A, Lamichhane, R. Prevalence and risk factors associated with non-utilization of healthcare facility for childbirth in rural and urban Nigera: Analysis of a national population-based survey. Scandinavian J of Pub Health, 2017; 45(6): 675 – 82.
9. Lagomarsino, G, Garabrant, A, Adyas, A, Muga, R, Otoo, N. Moving towards universal health coverage: health insurance reforms in nine developing countries in Africa and Asia. Universal Health Coverage 3; The Lancet. 2012; 380; 933 – 943.
10. Dutta, A, Hongoro, C. Scaling Up National Health Insurance in Nigeria: Learning from case studies of India, Colombia, and Thailand. Washington, DC: Futures Group, Health Policy Project. 2013; 1 – 39.
11. Lawumi, A (2015). Health Insurance: The theoretical basis. Access from: http://www.medicalworldnigeria.com/2015/01/health-insurance-the-theoritical-basis-by-dr-lawumi-adekola#.VL90C2Mpe00.
12. Odeyemi, IOA (2013). Assessing equity in healthcare through the national health insurance scheme of Nigeria and Ghana: a review-based comparative analysis. Int J Equity Health. 2013; 12 – 9.
13. Onyedibe, KI, Goyit, MG, Nnadi, NE. An evaluation of the national health insurance scheme (NHIS) in Jos, a north-central Nigerian city. Global Advanced Research Journal of Microbiology. 2012; 1(1): 005 – 012.
14. Fagbamigbe, AF, Idemudia, ES. Barriers to antenatal care use in Nigeria: evidence from non-users and implications for maternal health programming. MBC. Pregnancy and Childbirth. 2015; 15(1): 95.
15. National Bureau of Statistics Federal Republic of Nigeria: 2006 Population Census Official Gazette FGP 71/52007/2,500(OL24); Legal Notice on Publication of the Details of the breakdown of the National and State Provisional Totals 2006 Census. Available from: http//www.nigerianstat.gov.ng/connection/pop2006. [Last accessed on 2015 Aug 23].
16. World Health Organization (WHO). The World Health Report 2010. Health systems financing: the path to universal coverage. Geneva: World Health Organization, 2010.
17. National Collaborating Centre for Women's Children's Health. Antenatal Care: Routine Care for Healthy Pregnant Woman. London, UK: RCOG Press. 2008.
18. Dahiru, T, Oche, OM. Determinants of antenatal care, institutional delivery and postnatal care services utilization in Nigeria. Pan African Medical Journal. 205; 22(1).
19. Maine, D, Rosenfield, A. The Safe Motherhood Initiative: why has it stalled? America Journal of Public Health. 1999; 89(4): 480 – 2.
20. Berhan, Y, Berhan, A. Antenatal Care as a means of increasing maternal mortality: a systematic review. Ethiopian Journal of Health Sciences. 2014; 24: 93 – 104.
21. Darmstadt, GL, Bhutta, ZA, Cousens, S, Adam, T, Walker, N, De Bemis, L, et al. Evidence-based, Cost-effective interventions: how many newborn babies can we save? The Lancet. 2005; 365(9463): 977 – 88.
22. Raatikainen, K, Heiskanen, N, Heinonen, S. Under-attending free antenatal care is associated with adverse pregnancy outcomes. BMC, Public-Health. 2007; 7(1): 268.
23. CHEN, XK, Wen, SW, Yang, Q, Walker, MC. Adequacy of prenatal care and neonatal mortality in infants born to mothers with and without antenatal high-risk conditions. Australian and New Zealand Journal of Obstetrics and Gynaecology. 2007; 47(2): 122 – 7.