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## Comparative study of obstetric outcomes between women on health insurance scheme and women on out of pocket payment

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### Abstract

**Background:** Payment methods for healthcare services in a country impact the health status of its people and the health indices of the nation. Research findings have shown that care received and obstetric outcomes of women seeking natal care and their newborns are affected by their health insurance status.

**Objective:** Comparative study of obstetric outcomes between women on health insurance scheme and women on out-of-pocket payment.

**Materials and Methods:** The study was a prospective observational one involving 1655 women who delivered during the period of the study, out of which 33 were on health insurance and 1622 paid out of pocket for their delivery and care. The study compared the obstetric outcomes between women on health insurance and those who pay out of pocket for obstetric care services. The Statistical Package for Social Sciences (SPSS) version 20.0 was used for the data analysis. Univariate association between mode of payment and obstetric outcomes was explored using Pearson's chi-square test with statistical significance, p-value set at  $p < 0.05$ .

**Results:** Both the employed (66.7% vs 33.3%) and unemployed (77.1% vs 22.9%) had preponderance for the use of health insurance. There was statistical significance between ethnicity ( $p = 0.03$ ), marital status ( $p < 0.001$ ) and mode of payment. Among those who had preeclampsia, 20% had health insurance while 80% paid out of pocket. All the women (100%) who had intrauterine growth restriction (IUGR) were on health insurance while 76.2% of those who did not have IUGR made use of OOP, with statistical significance ( $p = 0.01$ ). The special care baby unit (SCBU) admission for babies of mothers on health insurance was 9.1% compared to 17.2% of those on out of pocket payments. Babies whose mothers made out of pocket payments suffered early neonatal death (END) compared to none among the babies of those that were insured.

**Conclusion:** The study concluded that out of pocket payment by pregnant women leads to poor obstetric and fetal outcomes.

**Keywords:** Health insurance, out of pocket payment, obstetric outcomes

### Introduction

Obstetric outcomes are live events from the age of viability to the newborn stage, and they vary from one pregnancy to another; these include fetal death in-utero, stillbirth, premature delivery, low birth weight, normal live birth and neonatal death<sup>[1]</sup>. These outcomes depend on many factors, some of which are socio-demographic, maternal, neonatal, socio-economic and healthcare factors<sup>[2, 3]</sup>.

The payment methods for healthcare services in a country impact the health status of its people and the health indices of the nation<sup>[4, 5]</sup>. Payment methods by healthcare consumers can be in two forms; pre-service payment, also known as indirect pooled payment, an example of which is the health insurance schemes and point-of-service payment that is referred to as out-of-pocket (OOP) payment<sup>[6]</sup>. Health insurance can be defined as a system of advance financing of health expenditure through contributions, premiums or taxes paid into a common pool to pay for all or part of health services specified by a policy or plan. It can be broadly categorized into social or private health insurance<sup>[7]</sup>. It is practised under a tight government legal framework and functions as social equity to protect vulnerable groups from the barriers to health care services<sup>[4, 8]</sup>.

The out-of-pocket payment is usually for user fee which is the charges levied for health care services covering consultation fee, drug costs, medical material costs and entrance fees [9].

In 1998, the Nigerian government introduced user fees, in a bid to improve quality healthcare, treatment outcomes and sustainability in the face of a dearth of resources, under the Bamako Initiative which promulgated cost-sharing and community participation for health care financing [10]. Going forward, continuous poor health indices and conflicting evidence on the impact of user fees [11, 13] among other reasons, led to the introduction of the National Health Insurance Scheme (NHIS). The NHIS became operational in 2005 under the Federal Government of Nigeria Act 35 of 1999 that established it. Its objectives include ensuring that every Nigerian has access to good healthcare services, protect families from the financial hardship of huge medical bills and ensure equitable distribution of healthcare costs among different income groups [7].

More than 95% of the payment for healthcare services in Nigeria is OOP from individuals and households, accounting for up to 64% of total health expenditure in a country where 34% of the population lives below the poverty line of one dollar per day [14, 15]. This introduces a barrier to health access, predisposes households to catastrophic expenditure and deepens poverty [16, 17].

Research findings have shown that care received and obstetric outcomes of women seeking antenatal care and their newborns are affected by their health insurance status and that women who pay out of pocket may have a poor outcome of pregnancy and delivery with poor prenatal care and perinatal services [18-21].

## Material and Methods

The study was carried out at the department of Obstetrics and Gynaecology of the Ekiti State University Teaching Hospital (EKSUTH), Ado Ekiti, Southwest Nigeria. The period of study was between January 1<sup>st</sup> to December 31<sup>st</sup>,

2015 and a prospective observational methodology was used. EKSUTH is a young teaching hospital that has produced four sets of medical doctors and provides tertiary services for Ekiti State and contiguous states of Ondo, Kwara, Kogi and Osun. The department has four units, which runs four antenatal clinics weekly with the provision of round the clock emergency obstetric and gynaecological care.

The proforma used contained variables for socio-demographic data such as age, income, ethnicity and employment status and obstetric outcomes, including antepartum, intrapartum and postpartum events of the index pregnancy with complications, if present and perinatal outcomes. The sources of the data were the patients' case notes, nurse's record sheets for each patient while the parturients provided additional important information where necessary to have robust data.

One thousand six hundred and sixty-five (1,655) women delivered during the period of the study, out of which thirty-three were on health insurance scheme and 1,622 paid out of pocket for their delivery and care. For each parturient on health insurance, three women matched with age and parity were selected for the study. The study compared the obstetric outcomes between women on health insurance and those who pay out of pocket for obstetric care services.

A research assistant and a community health officer were trained and employed full time for the data collection. Ethical clearance for the study was requested for and gotten from EKSUTH Ethics and Research Committee. The Statistical Package for Social Sciences (SPSS) version 20.0 was used for the data analysis. The results of the analysis were expressed in numbers and percentages after the use of descriptive statistics. Univariate association between mode of payment and obstetric outcomes was explored using Pearson's chi-square test with statistical significance, p-value set at  $p < 0.05$ .

## Results

**Table 1:** Comparison of baseline characteristic

Characteristics	Health insurance	Out of pocket payment	X <sup>2</sup>	P-value
Age (mean±SD)	31.91±3.72	30.79±5.20	1.12±0.98	0.25
Parity (mean±SD)	1.28±1.09	1.06±1.15	0.22±0.23	0.61
Income (mean±SD)	\$1040±\$ 697	\$1171±1164	\$1572±331	0.65
Ethnic group:	30 (25.6)	87(74.4)	7.75	0.03
Yoruba	0	1(100)		
Hausa Ibo	0	9 (100)		
Others	3 (60)	2 (40)		
<b>Marital status:</b>				
Married	33 (25.6)	96 (74.4)	7.93	<0.001
Single	(0)	3 (100)		
<b>Employment status</b>				
Employed	24 (22.9)	81 (77.1)	1.26	0.26
Unemployed	9 (33.3)	18 (66.7)		

Table 1 showed the univariate association between socio-demographic characteristics of the parturients and the mode of payment. The mean age for women on health insurance was 31.91 years with a parity of 1.28 while those that paid out of pocket were 30.79 years and 1.06 respectively. The mean income for the health insurance group was \$1040 and \$1171 for the OOP group. About 25.6% of Yoruba ethnic group had health insurance while 74.4% paid out of pocket.

All the Hausa and Ibo ethnic groups paid out of pocket while 60% vs 40% of other ethnic groups used health insurance and out of pocket respectively. Both the employed (66.7% vs 33.3%) and unemployed (77.1% vs 22.9%) had preponderance for the use of health insurance. There was statistical significance between ethnicity ( $p=0.03$ ), marital status ( $p<0.001$ ) and mode of payment.

**Table 2:** Obstetrics outcomes

Outcomes	Health insurance	Out of pocket payment	X <sup>2</sup>	P-value
<b>PIH</b>				
Yes	8 (25%)	24 (75%)	0.000	1.00
No	25 (25%)	75 (75%)		
<b>Preeclampsia</b>				
Yes	1 (20)	4 (80)	0.07	0.79
No	32 (25.2)	95 (74.8)		
<b>IUGR:</b>				
Yes	2 (100)	0 (0)	6.09	0.01
No	31 (23.8)	99 (76.2)		
<b>Mode of Delivery</b>				
Elective CS	4 (12.1)	5 (5.1)	2.23	0.33
Emergency CS	8 (24.2)	31 (31.3)		
Spontaneous Vagina Delivery	21 (63.6)	63 (63.6)		
<b>Placenta previa</b>				
Yes	2 (6.1)	1 (1)	2.84	0.09
No	31 (93.9)	98 (99)		
<b>Eclampsia</b>				
Yes	0 (0)	1 (1)	0.34	0.56
No	33 (100)	98 (99)		

Tables 2 and 3 showed the obstetric and fetal outcomes. Among the women with and without pregnancy-induced hypertension (PIH), 25% vs 75% had health insurance and OOP respectively. Among those who had preeclampsia, 20% had health insurance while 80% paid out of pocket. All the women (100%) who had intrauterine growth restriction (IUGR) were on health insurance while 76.2% of those who did not have IUGR made use of OOP, with statistical significance (p=0.01). Elective Caesarean section, 12.1%; emergency CS, 24.2% and spontaneous vagina delivery,

63.3% were recorded among parturients on health insurance while 5.1%, 31.3% and 63.6% respectively were recorded among those who paid out of pocket. Percentage with placenta previa among the health insured parturients were 6.1%, compared with 1% of the OOP, while 93.9% and 98% of health insured and OOP respectively never had placenta previa. None (0%) of those on health insurance suffered eclampsia compared with 1% of those who paid out of pocket (Table 2).

**Table 3:** Fetal outcomes

Outcomes	Health insurance	Out of pocket payment	X <sup>2</sup>	P-value
<b>SCBU Admin</b>				
Yes	3 (9.1)	17 (17.2)	1.26	0.26
No	30 (90.9)	82 (82.8)		
<b>Apgar score at 1 &lt; 7:</b>				
Yes	0 (0)	2 (2%)	0.68	0.41
No	33 (100%)	97 (98%)		
<b>Apgar score at 5 &lt; 7:</b>				
Yes	0 (0)	2 (2)	0.68	0.41
No	33 (100)	97 (98)		
<b>Stillbirth</b>				
Yes	0 (0)	1 (1)	0.34	0.56
No	33 (100)	98 (99)		
<b>End</b>				
Yes	0 (0)	1 (1)	0.34	0.56
No	33 (100)	98 (99)		

In Table 3, special care baby unit (SCBU) admission for babies of mothers on health insurance was 9.1% compared to 17.2% of those on out of pocket payments. None of the babies had an Apgar score of less than 7 at one and six minutes after delivery among women with health insurance; while 2% each was reported respectively for those who used out of pocket payment. One percent of those who paid out of pocket recorded stillbirth with no such occurrence among those with health insurance. Similarly, one percent of babies whose mothers made out of pocket payments suffered early neonatal death (END) compared to none among the babies of those that were insured.

**Discussion**

Socio-demographic comparative analysis of the respondents revealed that those that had health insurance were all married and this group constituted one out of four married women while all the singles paid out of pocket. The majority of respondents with pregnancy-induced hypertension (PIH) were those that paid out of pocket. Similarly, those with preeclampsia majorly belonged to the out of pocket payment group. These findings are not in tandem with Aderibigbe *et al.*, (2018) who reported that the prevalence of preeclampsia among the two groups were

similar <sup>[19]</sup>. However, it agreed with other findings which reported that women that are not on health insurance have poor obstetric outcomes during pregnancy, labour and delivery <sup>[18]</sup>.

Interestingly and with statistical significance, all those with intrauterine growth restriction (IUGR) were the health insured and the majority of those who never had IUGR were the respondents who paid out of pocket. The finding is contrary to the results of many studies which reported that insured women had significantly reduced risk for low birth weight babies than women who paid out of pocket <sup>[18, 19, 22]</sup>. Although to give credence to this as causality, randomized controlled studies would be required.

There were no differences in the obstetrics outcome as regards mode of delivery between the two groups, contrary to a report that risk for Caesarean section is reduced among women with health insurance <sup>[19]</sup>. Spontaneous vaginal delivery was majorly the mode of delivery for both groups, followed by emergency and elective CS. However, a higher proportion of the women on health insurance preferred elective CS while emergency CS were higher for the women that paid out of pocket. The suggested reason for this finding may be delayed presentation due to the concern for out of pocket payment, leading to late presentation that required emergency CS. Supporting this assertion is the study finding that uninsured women get reduced prenatal care compared with women on health insurance which may subsequently lead to emergency CS at delivery <sup>[18]</sup>. The predisposing factors to placental previa are mainly medical thus, the mode of payment may not explain why the majority of respondents with placenta previa were those who had health insurance in this study. The only eclampsia case was recorded among the OOP group; late presentation is one of the factors responsible for eclampsia in low socio-economic settings and this may be associated with out of pocket payment as stated in many studies <sup>[23, 24]</sup>. A similar finding was noted for stillbirth and early neonatal death (END) where the only case for each was from the OOP group. Adverse neonatal outcome such as END has been established to be one of the implications for out of pocket payment <sup>[18]</sup>.

One out of ten babies of women who had health insurance needed special care baby unit (SCBU) admission compared with two-fifth of the babies of the uninsured who paid out of pocket. Two-thirds of newborns that required SCBU admissions were that of out of pocket group, a finding that is similar to a finding by Lawani *et al.*, (2016). Apgar score assesses the health condition of a newborn immediately after birth<sup>[25]</sup>; two out of one hundred newborns whose mother paid out of pocket had an Apgar score of less than 7 at birth. This may be as a result of clinical factors like obstetric and medical factors and probably coupled with late presentation because of financial challenges associated with out of pocket.

## Conclusion

The study concluded that out of pocket payment by pregnant women leads to poor obstetric and fetal outcomes, such as emergency CS, eclampsia, stillbirth and early neonatal death. Therefore, we recommend that the National Health Insurance Scheme should improve its coverage to capture more of the Nigerian population and pregnant women in particular. This will improve the country's maternal, neonatal and child health indices. Also, it will help to achieve universal health coverage and have a quantum leap

towards actualizing the sustainable development goals for healthcare delivery.

## Conflict of Interest

Not available

## Financial Support

Not available

## Reference

1. Lawn JE, Blencowe H, Pattinson R, Cousens S, Kumar R, Ibiebele I, *et al.* Stillbirths: Where? When? Why? How to make the data count? *The Lancet*. 2011;377(9775):1448-1463.
2. Conde-Agudelo A, Rosas-Bermúdez A, Kafury-Goeta AC. Birth spacing and risk of adverse perinatal outcomes: A meta-analysis. *Jama*. 2006;295(15):1809-23.
3. Obembe TA, Bankole OT, Abbas G, Ajayi IO. Healthcare service payment methods and coping strategies of nomads and labor migrants in Oyo state, Nigeria. *The American Journal of Tropical Medicine and Hygiene*. 2020;102(5):1022.
4. Olakunde BO. Public health care financing in Nigeria: Which way forward. *Annals of Nigerian Medicine*. 2012;6(1):4.
5. Uzochukwu BS, Ughasoro MD, Etiaba E, Okwuosa C, Enzuladu E, Onwujekwe OE. Health care financing in Nigeria: Implications for achieving universal health coverage. *Nigerian journal of clinical practice*. 2015;18(4):437-444.
6. NHIS. National health insurance scheme operational guidelines. National Health Insurance Scheme-NHIS Secretariat Abuja, Nigeria; c2005.
7. Kutzin J, Organization WH. Health insurance for the formal sector in Africa: "Yes, but...". *World Health Organization*; c1997.
8. Adinma ED, Adinma BDJ. Community based healthcare financing: An untapped option to a more effective healthcare funding in Nigeria. *Nigerian Medical Journal*. 2010;51(3):95.
9. Federal Ministry of Health. The Bamako Initiative Programme in Nigeria. Abuja: Federal Ministry Of Health, Bamako Initiative Unit; 1994 - Google Search [Internet]. [cited 2023 Feb 24]. Available from: <https://www.google.com/search?q=Federal+Ministry+of+Health+The+Bamako+Initiative+Programme+in+Nigeria+Abuja%3A+Federal+Ministry+Of+Health%2C+Bamako+Initiative+Unit%3B+1994&oq=Federal+Ministry+of+Health+The+Bamako+Initiative+Programme+in+Nigeria+Abuja%3A+Federal+Ministry+Of+Health%2C+Bamako+Initiative+Unit%3B+1994&aqs=chrome..69i57j69i60.424j0j4&sourceid=chrome&ie=UTF-8>
10. Sambo MN. Essential drugs in primary health centres of north central Nigeria; where is Bamako initiative? *Nigerian Journal of Clinical Practice*. 2008;11(1):9-13.
11. James CD, Hanson K, McPake B, Balabanova D, Gwatkin D, Hopwood I, *et al.* To retain or remove user fees? Reflections on the current debate in low-and middle-income countries. *Applied health economics and health policy*. 2006;5:137-153.
12. Ogunbekun I, Adeyi O, Wouters A, Morrow RH. Costs and financing of improvements in the quality of maternal health services through the Bamako Initiative



- in Nigeria. *Health Policy and Planning*. 1996;11(4):369-384.
13. Onwujekwe O, Hanson K, Uzochukwu B, Ichoku H, Ike E, Onwughalu B. Are malaria treatment expenditures catastrophic to different socio-economic and geographic groups and how do they cope with payment? A study in southeast Nigeria. *Tropical Medicine & International Health*. 2010;15(1):18-25.
  14. Organization WH. The world health report: health systems financing: the path to universal coverage: executive summary. World Health Organization; 2010.
  15. Meda IB, Baguiya A, Ridde V, Ouédraogo HG, Dumont A, Kouanda S. Out-of-pocket payments in the context of a free maternal health care policy in Burkina Faso: a national cross-sectional survey. *Health Economics Review*. 2019;9:1-14.
  16. Saksena P, Hsu J, Evans DB. Financial risk protection and universal health coverage: evidence and measurement challenges. *PLoS medicine*. 2014;11(9):e1001701.
  17. Institute of Medicine (US) Committee on the Consequences of Uninsurance. Washington (DC): National Academies Press (US); 2002. - Google Search [Internet]. [cited 2023 Feb 24]. Available from: [https://www.google.com/search?q=Institute+of+Medicine+\(US\)+Committee+on+the+Consequences+of+Uninsurance.+Washington+\(DC\)%3A+National+Academies+Press+\(US\)%3B+2002.&oq=Institute+of+Medicine+\(U+S\)+Committee+on+the+Consequences+of+Uninsurance.+Washington+\(DC\)%3A+National+Academies+Press+\(US\)%3B+2002.&aqs=chrome..69i57j69i60.423j0j7&sourceid=chrome&ie=UTF-8](https://www.google.com/search?q=Institute+of+Medicine+(US)+Committee+on+the+Consequences+of+Uninsurance.+Washington+(DC)%3A+National+Academies+Press+(US)%3B+2002.&oq=Institute+of+Medicine+(U+S)+Committee+on+the+Consequences+of+Uninsurance.+Washington+(DC)%3A+National+Academies+Press+(US)%3B+2002.&aqs=chrome..69i57j69i60.423j0j7&sourceid=chrome&ie=UTF-8)
  18. Aderibigbe SA, Wit FW, van Hensbroek MB, Osagbemi GK, Akande TM. The effect of health insurance on maternal and child health: a systematic review. *Journal of Medicine in the Tropics*. 2018;20(2):83.
  19. Dzakpasu S, Powell-Jackson T, Campbell OM. Impact of user fees on maternal health service utilization and related health outcomes: a systematic review. *Health policy and planning*. 2014;29(2):137-150.
  20. Hatt LE, Makinen M, Madhavan S, Conlon CM. Effects of user fee exemptions on the provision and use of maternal health services: a review of literature. *Journal of health, population, and nutrition*. 2013;31(4 Suppl 2):S67.
  21. Baldwin LM, Larson EH, Connell FA, Nordlund D, Cain KC, Cawthon ML, *et al*. The effect of expanding Medicaid prenatal services on birth outcomes. *American Journal of Public Health*. 1998;88(11):1623-1629.
  22. Ensor T, Cooper S. Overcoming barriers to health service access: influencing the demand side. *Health policy and planning*. 2004;19(2):69-79.
  23. Afsana K. The tremendous cost of seeking hospital obstetric care in Bangladesh. *Reproductive health matters*. 2004;12(24):171-180.
  24. Lawani LO, Iyoke CA, Onoh RC, Nkwo PO, Ibrahim IA, Ekwedigwe KC, *et al*. Obstetric benefits of health insurance: A comparative analysis of obstetric indices and outcome of enrollees and non-enrollees in southeast Nigeria. *Journal of Obstetrics and Gynaecology*. 2016;36(7):946-949.
  25. Apgar V. A proposal for a new method of evaluation of

the newborn. *Classic Papers in Critical Care*. 1952;32(449):97.

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