Knowledge access and satisfaction of pregnant women on the use of the National Health Insurance Scheme in accessing health care in the Bia East District of Ghana

Livingstone Asem[1*†], Geoffrey Adebayo Asalu[2], Shaibu Seidu[2], Blessing Yayra Amable[3†], Gifty Emefa Kpordze[3], Wisdom Kwami Takramah[3], Emmanuel Amaglo[4] and Senanu Kwesi Dzokoto[5]

Abstract

Introduction In Ghana, access to health care is impeded mostly by financial capital. The National Health Insurance (NHIS) rolled out in 2003 was an attempt to remove cost as a barrier and help bridge this gap in health access. Despite the benefits, enrolment and use have been low. Hence a need to assess the knowledge, access and satisfaction of pregnant women on the use of NHIS to access healthcare.

Materials and methods The study employed a facility-based descriptive cross-sectional study. A structured questionnaire was used to collect data from a total of 387 pregnant women using a simple random sampling technique. Data was collected to gain an insight into the knowledge, accessibility and satisfaction level of pregnant women on the usage of NHIS. Data was analyzed using Stata version 17.0 and results were presented in frequency tables.

Results Overall, most of the pregnant women had a good knowledge of 228 (67.5%) and a high accessibility of 279 (82.5%) to using NHIS use it in accessing healthcare. Whilst for satisfaction, 311 (92.01%) said they were satisfied with the services and would prefer the use of NHIS to out-of-pocket payment.

Conclusion In the current study the level of knowledge, accessibility, and satisfaction of NHIS is high. However, to sustain this gain, a multidimensional approach to community education should be intensified.

Keywords Pregnant women, Knowledge, Access, Satisfaction, National Health Insurance.

†Livingstone Asem and Blessing Yayra Amable contributed equally to this work.

*Correspondence:
Livingstone Asem
lasem@uhas.edu.gh
[1]Department of Health Policy Planning and Management, Fred N. Binka School of Public Health, University of Health and Allied Sciences, Ho, Volta Region, Ghana

[2]Department of Family and Community Health, Fred N. Binka School of Public Health, University of Health and Allied Sciences, Ho, Volta Region, Ghana
[3]Department of Epidemiology and Biostatistics, Fred N. Binka School of Public Health, University of Health and Allied Sciences, Ho, Volta Region, Ghana
[4]Ghana Police Clinic Ho, Ghana Police Service, Volta Region, Ghana
[5]Volta Regional Health Directorate, Ghana Health Service, Ho, Volta Region, Ghana

Background

National Health Insurance Schemes (NHIS) have been implemented globally to enhance access to healthcare services and to achieve universal health [1–3]. The National Health Insurance Scheme (NHIS) of Ghana was introduced in 2003 to provide equitable and accessible healthcare to all Ghanaians, particularly the vulnerable populations including pregnant women [4–6] since out-of-pocket payment for health services is likely to result in problems such as late presentation to hospitals, using substandard health services or even not seeking healthcare when ill [7–9]. The NHIS is a critical policy tool to improve healthcare access for pregnant women, particularly in developing countries like Ghana [6, 8, 10–14]. Knowledge about the National Health Insurance Scheme (NHIS) refers to being well-informed about what it is, the medical conditions and procedures that are covered, along with any exclusions from the scheme. Knowledge about NHIS is essential for its effective utilization. Studies indicate varying levels of knowledge among enrollees in different regions of the globe [15, 16]. Access to NHIS services involves the physical availability of healthcare facilities, financial affordability, and the administrative ease of using the insurance at health facilities [13, 17–20]. However other factors such as distance to health facilities and administrative challenges at service points remained a barrier [3, 21]. Report from the 2014 Ghana Demographic and Health Survey indicate 67% coverage National Health Insurance for pregnant women [13]. For pregnant women, timely access to antenatal, delivery, and postnatal care is crucial, and any impediments in accessing these services can have adverse health outcomes [22–24]. Satisfaction with NHIS services among pregnant women can be evaluated based on their experiences with the quality of care, ease of accessing NHIS benefits, and the attitude of healthcare providers. Satisfaction is a key indicator of the scheme's effectiveness and its impact on maternal health outcomes [25–27]. Earlier studies have found that satisfaction levels vary, with some women expressing contentment due to reduced out-of-pocket expenses and others reporting dissatisfaction due to long waiting times, perceived low quality of care, and occasional unavailability of essential drugs [28–30]. These factors can affect the overall perception and trust in the NHIS among pregnant women. Various studies have been conducted on NHIS in Ghana. Some of these have focused on subscribers' perceptions [31–33]. Others have also investigated the retention of subscribers [11, 34, 35]. Despite the efforts over the years, only a few studies explore knowledge, access, and satisfaction with the NHIS. It is against this background that this study was conducted to describe the level of knowledge, accessibility, and satisfaction of pregnant women on using national health insurance in assessing health care in Bia East District.

Materials and methods

Study design

The study employed a cross-sectional and institutional-based study design among pregnant women in the Bia East District using a structured questionnaire.

Study site description

The district is situated in the northern part of the Western North Region, between latitude 6.83104 and longitude −3.0250. It covers a total land area of 874.1 sq. km. The major economic activity is farming, mainly cocoa. The district has a population of 54,188, a projection from the 2021 population census [36]. Out of this, about 48.8% are males and 51.2% are females. The expected pregnancies and children less than one year of age are 2,168 (4% of the population). Children between the ages of 0–5 years are 9,819 and 12,993 are women in their fertility age. The most commonly spoken languages are Sefwi and Twi. The natives are mainly Sefwi with few other tribes who migrated there due to the perineal farming activities, (Kusadasi, Nzemas, Fantes, Bonos, Gurma to mention but a few). The district has a total of 20 functioning health facilities. This district was selected because of because of non-availability of data on knowledge, access and satisfaction of National Health Insurance.

Study population

The study was interested in pregnant women within the Bia East District attending the antenatal clinic. This includes all pregnant women within the fertility age group (15–49 years) irrespective of gestational age or parity or health insurance status who were residing, attending antenatal in the Bia East District, and present and consented at the time of the study.

Sample size determination

According to Ghana Demography and Health Survey (2014), the proportion of expected pregnancies in a given population in the country is four per cent (4%) [36]. Applying the national proportion, the estimated number of pregnant women in the Bia East District was 11,886. In determining the sample size, a 95% confidence interval and a 5% margin of error were applied. Based on the proportion of the population of 4% the total number of respondents sampled to be part of the study per study site was estimated using Taro Yamane's (1967) formula. The Yamane's formula for sample size determination is given by:

$$n = \frac{N}{1 + N(e^2)}$$

Asem *et al. BMC Health Services Research* (2024) 24:1229

Page 3 of 7

Where:

N is the population size of (11,885)

e is the level of precision

n is the sample size (387)

Sampling method

The study participants who attended the antenatal clinic between 5th June 2023 and 30th September 2023 at the Bia East District were recruited through a simple random sampling procedure from eight facilities providing ANC services based on the proportion to the size of ANC registrants. Each study participant was determined by assigning sequential values within the population and then randomly selecting those to participate in the study until the required sample size was achieved. Two health facilities were randomly selected from each of the four sub-metropolis in Tamale.

Study variables

The data collection instrument comprises nine socio-demographic variables: age, marital status, ethnicity, number of pregnancies, children, educational level, occupation, religion, and cohabitation. Additionally, three supplementary sections were incorporated. The first section assessed the knowledge level of pregnant women on using the national health insurance scheme and consisted of eight questions [16]. The second section on access has five [22] and the third section on satisfaction has three questions [26].

Data collection tools and procedure

Data collection was conducted through face-to-face interviews with pregnant women in the Bia East District using a structured questionnaire developed for this study. Translation from English to the local language (Dagomba and Dagarti and Frafra) is mainly for those who can't speak or understand English. Kobo collect toolkit was used to design the questionnaire and for the collection of data.

Data quality

The data collection tool was pretested, and based on the feedback from the pre-tested questionnaire, adjustments were made to the data collection instrument. The research assistants also received one day of training on how to administer the research questionnaire and check for accuracy. To guarantee that the data is complete, the lead researcher monitors and gives feedback to the data collectors daily. Data entry was double-checked throughout the process. All information provided by the respondents was kept in password-protected electronic data storage only accessible to the researchers.

Data analysis

Data was extracted from the Kobo collect toolkit into MS Excel 2016 version, cross-checked for consistency of responses, and exported into Stata version 17.0 for analysis. Simple descriptive statistical analyses were performed to calculate frequencies and percentages for the categorical data; mean and standard deviation (SD) were also used to summarize the continuous variables. All the Findings were presented in the form of a table. Knowledge, accessibility and satisfaction scores were generated by assigning one (1) for a correct response and zero (0) for a wrong response for every question. The mean or average score was calculated. Respondents who performed below the average score were classified as having poor knowledge, poor accessibility, not satisfied and while those who got average or above were classified as having good knowledge, good accessibility and satisfied.

Results

Socio-demographic characteristics

The table displayed below provides an insight into the demographic characteristics of the pregnant women interviewed. The mean age of the respondents was 26 years with a standard deviation of 5.41, with 125 (36.98%) of the respondents falling within the age group of 25–29, followed by 20–24 and 30–34 having 81 (23.96%) and 67 (19.98%) respectively. 46% 157 (46.5%) of the respondents were married women. A greater number of the mothers 299 (73.67%) had at least one child with Christianity as the dominant religion 160 (47.34%). Apart from 94 (27.81%) who never attended school, 244 (72.19%) of the respondents have had some kind of education. 51% (51.5%) had some source of income. The ethnic affiliation was Dagarti 71(21%) (Table 1).

Knowledge level of pregnant women about NHIS

From Table 2 below 231 (68.3%) of the pregnant women know what NHIS is, only 164 (48.52) of the respondents knew the services covered by NHIS. The majority 213 (63.02%) and 269 (79.59%) indicated the use of NHIS to access emergency obstetric and postnatal care respectively. The majority, 316 (93.49%) indicated that NHIS used during pregnancy had some limitations. Also, more than half 217 (64.20%) of the pregnant women knew where to locate the nearest NHIS office. Overall, 228 (67.46%) pregnant women have adequate knowledge about NHIS as shown in the table below.

Accessibility to health care by pregnant women using NHIS

From Table 3 below 327 (96.75%) of the pregnant women indicated they had NHIS card and 299 (88.46%) used it to assess health service. Whilst, 297 (87.87%) received required services when using NHIS. For impact, only 157 (46.45%) said NHIS improved accessibility yet 315

Asem *et al. BMC Health Services Research*   (2024) 24:1229

Page 4 of 7

Table 1 Socio-demographic characteristics of respondents

Variable	Frequency (*N* = 338)	Percentage (%)
Age group	**Mean** = 25.95 years	**SD** (± 5.41)
10–14	5	1.48
15–19	44	13.02
20–24	81	23.96
25–29	125	36.98
30–34	67	19.98
34+	16	4.73
Marital status		
Cohabiting	95	28.11
Married	157	46.45
Separated/Divorced	49	14.50
Single	37	10.95
Children		
No children	89	26.33
Have Children	299	73.67
Religion		
Christianity	160	47.34
Muslim	106	31.36
Other	31	9.17
Traditional	41	12.13
Education		
Primary	63	18.64
JHS	73	21.60
SHS	70	20.71
Tertiary	38	11.24
None	94	27.81
Employment status		
Gainfully employed	174	51.48
Unemployed	164	48.52
Level of income		
0-500	97	45.54
500-1,500	48	22.54
1,500-3,000	34	15.96
3,000–5,000	24	11.27
5,000–10,000	10	4.69
Ethnicity		
Akan	59	17.46
Bono	56	16.57
Dagarti	71	21.01
Dagomba	43	12.72
Frafra	58	17.16
Others	51	15.09

Table 2 Knowledge level of pregnant women on using NHIS to access healthcare

Variables	Frequency (*N* = 388)	Percentage (%)
What is NHIS		
A life insurance	48	14.20
Don't know	42	12.43
A motor insurance	17	5.03
A health insurance	231	68.34
Services covered by NHIS		
OPD services only	16	4.73
ANC services only	118	34.91
Some service	164	48.52
In-patient services only	17	5.03
Others	23	6.8
Enrolment into NHIS		
By automatic	21	6.21
By expressing a desire to enroll	52	15.38
By going to the nearest registration office	214	63.31
By only a privileged few can enroll	45	13.31
Others	6	1.78
NHIS is use to access emergency obstetric care		
Yes	213	63.02
No	125	36.98
NHIS is use to access postnatal care and for newborn		
Yes	269	79.59
No	69	20.41
Exclusions or limitations on NHIS use during pregnancy		
Yes	22	6.51
No	316	93.49
Free enrollment of pregnant women into NHIS		
Yes	294	86.98
No	44	13.02
Know the nearest NHIS office		
Yes	217	64.20
No	121	35.80
Knowledge score		
Inadequate knowledge	110	32.54
Adequate knowledge	228	67.46

the majority, 311 (92.01%) of the pregnant women were satisfied with the services they received using the NHIS.

(93.20%) had no challenge using the NHIS. Overall, 279 (82.54%) of the pregnant women use NHIS to access healthcare.

Satisfactory level of using NHIS to access healthcare

Table 4 indicates that 46 (13.61%) complain of discrimination when using NHIS to assess service. A notable number of 71 (21.01%) complain about making payments while having NHIS. The majority 317 (93.79%) of pregnant women will recommend NHIS to others. Overall,

Discussion

This study assessed pregnant women's knowledge, access and satisfaction regarding their use of the National Health Insurance (NHI). The findings show the majority of respondents correctly identified NHIS as a health insurance scheme. This contrasts with findings from Ajike et al., where all respondents correctly identified NHIS as a health insurance scheme [37]. From the current study 67.5% of the pregnant women demonstrated adequate knowledge of NHIS. This finding aligns with

Table 3 Level of healthcare accessibility using NHIS

Variables	Frequency (*N* = 338)	Percentage (%)
Have NHIS		
Yes	327	96.75
No	11	3.25
Use NHIS for healthcare services		
Yes	299	88.46
No	39	11.54
Received required services when using the NHIS		
Yes	297	87.87
No	41	12.13
NHIS impact on accessibility		
Improve accessibility	157	46.45
No effect on accessibility	64	18.93
Reduced accessibility	88	26.04
Other	29	8.58
Challenges in accessing services using NHIS		
No	315	93.20
Yes	23	6.80
Level of accessibility (Accessibility Score)		
Bad access	59	17.46
Good access	279	82.54

Table 4 Satisfactory level of using NHIS to access healthcare

Variable	Frequency (*N* = 388)	Percentage (%)
Discrimination when using NHIS		
No	292	86.39
Yes	46	13.61
Made payment while using NHIS		
No	267	78.99
Yes	71	21.01
Recommend NHIS to others		
No	21	6.21
Yes	317	93.79
Level of satisfaction		
Not Satisfied	27	7.99
Satisfied	311	92.01

a study on civil servants' awareness in Abuja, which reported a 63.9% awareness rate [38]. Eyong and colleagues also found an even higher awareness rate of 92.3% among government workers in south-west Nigeria [15].

Conversely, the overall knowledge score in this study contrasts with other research like Abiola et al. and Nsiah-Boateng et al., which reported lower knowledge levels of 19.3% and 39% among NHIS enrollees [39, 40]. The higher knowledge of NHIS among pregnant women in the current study may be attributed to effective local education and outreach programs, targeted health education initiatives in prenatal clinics, and improved access to healthcare information [13, 15].

Regarding accessibility, almost all of the pregnant women in the study reported that they have subscribed to and used NHIS. This outcome compliments the high

knowledge that was reported earlier [37, 38]. Studies by Aryeetey et al., Okah et al., Okpanachi & Vambe, also revealed that NHIS has significantly increased access to healthcare services among enrollees [8, 9, 12]. Improved access to healthcare information and services in this district might explain the positive impact on accessibility reported by nearly half of the respondents [13].

Client satisfaction plays a crucial role in several areas including increasing enrollment, assessing the quality of healthcare delivery, understanding the demand for healthcare services, identifying the aspects of care that are most important to clients, and providing feedback to program managers [26, 32, 40]. In this study, despite some pregnant women reporting feelings of discrimination at the facility, copayments, and a reluctance to recommend the services to others, the overall satisfaction level remains high at 92.01%. This high satisfaction rate underscores the significant knowledge and understanding of the National Health Insurance Scheme (NHIS) among clients [41]. The findings of this study were far higher than that of earlier research, which reported a satisfaction rate as low as 52%, 58.1%, and 56%, respectively [27, 32, 40]. The differences in satisfaction levels may be attributed to variations in the geographic location of the studies and the period in which they were conducted.

Conclusions

This study sheds light on the National Health Insurance Scheme (NHIS) in the Bia East District, revealing key insights into their knowledge, accessibility, and satisfaction levels, with a significant portion of the respondents demonstrating adequate knowledge of NHIS. The majority of pregnant women reported subscribing to and using NHIS for healthcare services, indicating that NHIS effectively improves access to healthcare. Overall, the satisfaction with NHIS was high, underscoring the importance of understanding NHIS operations for better healthcare experiences. These findings highlight the effectiveness of NHIS in enhancing healthcare access and delivery for pregnant women, Hence to maintain and improve the strides made on NHIS coverage Policymakers and Healthcare Administrators should continue and expand targeted health education initiatives in prenatal clinics and community centers, increase public awareness campaigns to address misconceptions about NHIS using various media platforms and conduct reviews and consider subsidies for those who cannot afford copayments. Also, NHIS Program Managers and Quality Assurance Teams should regularly assess and improve the quality of healthcare services provided under NHIS, and explore options to expand NHIS coverage to include more comprehensive services.

Limitation of study

Possible limitations in this study included the inability to establish cause and effect as it is an observational study in nature and data was collected at a single point in time. Selection bias, recall bias could also be introduced since the study design does not capture changes in variables over time. Another limitation is that the study only captures respondents who accessed antenatal services. However, the study mitigates this by randomizing and including pregnant women regardless of whether they have health insurance.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12913-024-11732-3.

Supplementary Material 1.

Authors' contributions

LA, SS, and GAA contributed to the study design. BYA, GEF, and WKT carried out the data collection. LA, GAA, and SS analyzed the data. LA, BYA, EA, SKD, and GAA drafted the manuscript and all authors contributed to the revision of the manuscript. All authors read and approved the final manuscript.

Data availability

All relevant data is provided within the manuscript.

Declarations

Ethics approval and consent to participate

Ethical approval for the study was obtained from the University of Health and Allied Sciences Research Ethics Committee with study ID: UHAS-REC B.10 (036)22–23. The Bia East District health directorate officials were also informed of the study's goals and parameters before the beginning of work. Written informed consent was obtained from each eligible participant and for minors or teenagers, consent was sought from their parents or guardians explaining the objective of the study, methods of data collection, and anticipated benefits and risks of the study to the respondent in their language Privacy and confidentiality were maintained throughout the data collection, analysis, and results dissemination by assuring the study participants that neither their names nor any other information that could be used to identify them would be distributed with or included in the study's findings. The respondents were informed that they are not under any obligation to take part in the study and hence can freely opt-out at any stage of the study without any punishment, intimidation, or loss of any benefit whatsoever. Data obtained from respondents in this study were strictly confidential and were used for research purposes only. Names of respondents and any other identifying information were not acquired. There was no compensation for study participants.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

References

1. Van Hees SGM, O'Fallon T, Hofker M, et al. Leaving no one behind? Social inclusion of health insurance in low- and middle-income countries: A systematic review. Int J Equity Health. 2019;18. https://doi.org/10.1186/s12939-019-1040-0.
2. World Health Organization. Leave no one behind: strengthening health systems for UHC and the SDGs in Africa. 2017.
3. Christmals C Dela, Aidam K. Implementation of the national health insurance scheme (NHIS) in Ghana: Lessons for south africa and low-and middle-income countries. Risk Manag Healthc Policy. 2020;13:1879–904.
4. NHIA. National Health Insurance Scheme (NHIS) - Ghana, https://www.nhis.gov.gh/about#:~:text=TheNation; care for residents in Ghana. (2024).
5. Dalinjong PA, Laar AS. Dalinjong-2012-The-national-health-insurance-schem.pdf. Health Econ. 2018;2:1–13.
6. Singh K, Osei-Akoto I, Otchere F, et al. Ghana's national health insurance scheme and maternal and child health: A mixed methods study. BMC Health Serv Res. 2015;15:1–13.
7. Soltani S, Takian A, Akbari Sari A, et al. Financial barriers to access to health services for adult people with disability in iran: The challenges for universal health coverage. Iran J Public Health. 2019;48:508–15.
8. Aryeetey GC, Nonvignon J, Amissah C, et al. The effect of the National Health Insurance Scheme (NHIS) on health service delivery in mission facilities in Ghana : a retrospective study. Global Health. 2016; 1–9.
9. Okah PS, Okoye UO, Iyiani CC, et al. Knowledge, Accessibility and Utilization of the National Health Insurance Scheme (NHIS) Among Registered Employees of Federal Government Institutions in Ebonyi State: Lessons for Medical Social Workers. Soc Work Public Health. 2024;39:131–40.
10. Dalinjong PA, Wang AY, Homer CSE. The implementation of the free maternal health policy in rural Northern Ghana: Synthesised results and lessons learnt. BMC Res Notes. 2018;11:1–6.
11. Kotoh AM, Van Der Geest S. Why are the poor less covered in Ghana's national health insurance? A critical analysis of policy and practice. Int J Equity Health. 2016;15:1–11.
12. Okpanachi E, Vambe JT. Assessment of national health insurance scheme by Enrollees at University of Abuja Teaching hospital. Gwagwalada. 2020;3:9–19.
13. Ameyaw EK, Ahinkorah BO, Baatiema L, et al. Is the National Health Insurance Scheme helping pregnant women in accessing health services? Analysis of the 2014 Ghana demographic and Health survey. BMC Pregnancy Childbirth. 2021;21:1–8.
14. Alhassan RK, Nketiah-Amponsah E, Arhinful DK. A review of the national health insurance scheme in Ghana: What are the sustainability threats and prospects? PLoS One. 2016;11:1–16.
15. Eyong AK, Agada PO, Asukwo EO, et al. Awareness of National Health Insurance Scheme (NHIS) and Quality of Health Care Services among Civil Servants in Cross River State, Nigeria. Res Humanit Soc Sci. 2016;6:1–10.
16. Michael GC, Grema BA, Aliyu I, et al. Awareness, Knowledge, and Perception of the National Health Insurance Scheme among National Youth Service Corp Members in Kano, Nigeria. 2020;61(4):201–205.
17. Wang W, Temsah G, Mallick L. The impact of health insurance on maternal health care utilization: evidence from Ghana, Indonesia and Rwanda. Health Policy Plan. 2017;32:366–75.
18. S. Adu O. Effect of the National Health Insurance Scheme on. 2021; 1–10.
19. Kipo-sunyehzi DD. Quality healthcare services under National Health Insurance Scheme in Ghana : perspectives from health policy implementers and beneficiaries. 2021;24:320–332.
20. Kodom M. Quality Healthcare Service National Health Insurance Scheme. Epub ahead of print 2019. https://doi.org/10.1177/0021909619827331.
21. Van Der Wielen N, Channon AA, Falkingham J. Does insurance enrolment increase healthcare utilisation among rural-dwelling older adults? Evidence from the national health insurance scheme in Ghana. BMJ Glob Heal. 2018;3:1–9.
22. Count CP. Maternity Care Deserts. Where you live matters: Maternity care access in Nevada. March of Dimes. 2018.
23. Franchi JV de O, Pelloso SM, Ferrari RAP, et al. Access to care during labor and delivery and safety to maternal health. Rev Lat Am Enfermagem. 2020;28:1–9.
24. Alem AZ, Yeshaw Y, Liyew AM, et al. Timely initiation of antenatal care and its associated factors among pregnant women in sub-Saharan Africa: A multicountry analysis of Demographic and Health Surveys. PLoS One. 2022;17:1–17.
25. Nwanaji-Enwerem O, Bain P, Marks Z, et al. Patient satisfaction with the Nigerian National Health Insurance Scheme two decades since establishment: A

systematic review and recommendations for improvement. African J Prim Heal Care Fam Med. 2022;14:3003.

26. Olamuyiwa TE, Adeniji FO. Patient's Satisfaction With Quality of Care at a National Health Insurance Clinic at a Tertiary Center. South-South Nigeria J Patient Exp. 2021;8:1–7.

27. Daramola O, Adeniran A, Tm A. Satisfaction with the Quality of Services accessed under the National Health Insurance Scheme at a Tertiary Health Facility in FCT Abuja, Nigeria. J Com Med. 2017;29:11-17–17.

28. Srivastava A, Avan BI, Rajbangshi P, et al. Determinants of women's satisfaction with maternal health care: A review of literature from developing countries. BMC Pregnancy Childbirth. 2015;15:1–12.

29. Hibusu L, Sumankuuro J, Gwelo NB, et al. Pregnant women's satisfaction with the quality of antenatal care and the continued willingness to use health facility care in Lusaka district, Zambia. BMC Pregnancy Childbirth. 2024;24:1–16.

30. Adjei KK, Kikuchi K, Owusu-Agyei S, et al. Women's overall satisfaction with health facility delivery services in Ghana: A mixed-methods study. Trop Med Health. 2019;47:1–9.

31. Abuosi AA, Domfeh KA, Abor JY, et al. Health insurance and quality of care: Comparing perceptions of quality between insured and uninsured patients in Ghana's hospitals. Int J Equity Health. 2016; 1–11.

32. Ayobami DA, Adeniji FI, Adegbrioye SE, et al. Enrollees 'Knowledge and Satisfaction with National Health Insurance Scheme Service Delivery in a Tertiary Hospital, Southwest Nigeria. Niger J Med. 2020;61(1):27–31.

33. Nketiah-amponsah E, Alhassan RK, Ampaw S, et al. Subscribers 'perception of quality of services provided by Ghana 's National Health Insurance Scheme - what are the correlates ? BMC health services research. 2019;3:1–11.

34. Wal R Van Der, Nsiah-boateng E, Asante FA. Does a provider payment method affect membership retention in a health insurance scheme ? a mixed method study of Ghana 's capitation payment for primary care. 2018; 1–11.

35. Fenny AP, Kusi A, Arhinful DK, et al. Factors contributing to low uptake and renewal of health insurance : a qualitative study in Ghana. Glob Heal Res Policy. 2016; 1–10.

36. Ghana Statistical Service. Ghana 2021 population and housing census. SERVICE. 2021.

37. Ajike SO, Chinenye-julius AE, Folarin MO. Evaluating end users' knowledge and perceived benefit of the National Health Insurance Scheme post implementation in a south-west state of Nigeria. World J Adv Res Rev. 2020;7(3):085–90.

38. Odo, E., & Ukawuililu JO. Evaluation of the impacts of national health insurance scheme on the civil servants' health status in Abuja, Nigeria. International Journal of Public Administration and Management Research. 2019;5(2):50–63.

39. Abiola AO, Ladi-akinyemi TW, Oyeleye OA, et al. Knowledge and Utilisation of National Health Insur. 2019; 1–7.

40. Nsiah-Boateng E, Asenso-Boadi F, Andoh-Adjei FX, et al. Knowledge and satisfaction of health insurance clients: a cross-sectional study in a tertiary hospital in Ghana. J Public Heal. 2019;27:713–21.

41. Akintaro OA, Adewoyin OO. Knowledge and Attitude Towards National Health Insurance Scheme in Nigerian Research Institutes. Huria: Journal of the Open University of Tanzania 2015;20(1):81–9.

Publisher's Note