**UPTAKE OF COMMUNITY BASED HEALTH INSURANCE IN ELEME LGA OF RIVERS STATE**

**ABSTRACT**

**Background:** The increasing cost of health care services and development is a major concern to government in developed and developing countries. Community-Based Health Insurance (CBHI) is an emerging concept for providing financial protection against the cost of illness and improving access to quality health services for households who are excluded from formal insurance.

**Aim**: The purpose of this study was to determine the uptake of community based social health insurance scheme and associated factors in Eleme LGA in Rivers state, Nigeria.

**Methodology:** This was a descriptive cross-sectional study. A multi-staged sampling technique and interviewer-administered questionnaire were used. Data was analyzed using SPSS version 21.0. The Chi-square test was used to test for statistical significance variables. Level of Confidence was set at 95%, and the level of significance was predetermined at a p-value of 0.05.

**Results:** About 126(61.8%) were enrolled in the CBHI, reasons for not enrolling were lack of awareness and failure to cover health problems. A statistically significant association was observed between age, sex, marital status, educational level, status in household, employment status and enrollment into CBHI (P≤ 0.05).

**Conclusion:** There is a need to improve awareness of the CBHI, and also increase the benefit package coverage offered.

*Keywords: social demographic factors, Enrollment, perception of impact, community based Health Insurance Scheme.*

**INTRODUCTION**

Universal healthcare coverage has been difficult to achieve in many developing countries, with large populations relying on out-of-pocket (OOP) expenses that include over-the-counter payments for medicines and fees for consultations and procedures. According to the World Health Organization (WHO) almost 2 billion people are facing financial hardship, half of which are experiencing catastrophic out-of-pocket health spending indicating that 344 million people may be going deeper into extreme poverty due to inability to meet their health costs.(1)

Households are considered to suffer financial catastrophe if they spend more than 40% of their disposable income, the income remaining after meeting basic food expenditure – on health services. (2) Before this, there had been declining levels of health care delivery, partly due to budget constraints, industrial action and the ensuing closure of all public health facilities. (3) This have often forced the populace to reduce expenditure on other essential items such as housing, clothing and the education of children to pay for health services. Households are considered impoverished if health expenses push them below the poverty line. Inability to access health services, catastrophic expenditure and impoverishment are strongly associated with the extent to which countries rely on out-of-pocket payments as a means of financing their health systems. These payments generally take the form of fees for services (levied by public and/or private sector providers), co-payments where insurance does not cover the full cost of care, or direct expenditure for self-treatment often for pharmaceuticals (2)

In 2005, the National Health Insurance Scheme (NHIS) commenced with the formal sector. Under the scheme there are different programmes to cover the population.(4) One of such is the Informal Sector Social Health Insurance Programme a social health security system for people in the informal sector or economy. It covers employees of companies employing 10 or less people, artisans, voluntary participants, rural dwellers and others not covered under the formal sector. Community-based Health Insurance Scheme (CBHIs) is under the informal sector social health insurance programme which is a non-profit health insurance programme for a cohesive group of households/individuals or occupation based groups, formed on the basis of the ethics of mutual aid and the collective pooling of health risks, in which members take part in its management. There is no waiting period for contributors to access service.(5) In 2022, an amendment was made to the national health act making insurance mandatory for all in Nigeria, and the NHIS was changed to the National Health Insurance Authority (NHIA) (6) This allows the various schemes to have a large pooling of funds and ensures risk pooling for health insurance.

This study aims to determine the uptake of community-based health insurance and associated factors in Eleme LGA of Rivers State.

 **MATERIALS & METHODS**

STUDY AREA:

The study was carried out in Eleme Local Government Area of Rivers state. Eleme has two groups of towns, Odido and Nchia, each with their own dialect., the Eleme territory has become home to both oil refineries and fertilizer industries, increasing its role to a more industrial economy. (7)

This was a descriptive cross sectional study design. The study population was made up of repondents living in the host communities of Indorama Eleme Petrochemicals. The Host communities are, Agbonchia, Aleto, Akpajo, Akpankpan, Okerewa and Wakohu .

The sample size was determined by use of the statistical formula (8)

P proportion in the target population estimated from a previous study on proportion of people enrolled in CBHIs according to a study done in Anambra, Nigeria. (9)

A simple random sampling method by balloting will be used to select three community out of the eight communities under the health scheme. A household is a group of persons who live together and eat from the same pot. Proportional allocation of the sample sizes was done to the selected communities based on the no of household in the selected community using a sampling fraction that was calculated using:

Sampling fraction = no of houses/sample size

The list of all households in each house (where there are more than one household living in a building) was generated and one of them was selected from the list by simple random sampling as the starting household for questionnaire administration. There after using a table of random numbers households were picked and numbered for the survey.

The study utilized a structured interviewer administered questionnaire as a data collection tool.

The questionnaire was used to elicit relevant information such as socio-demographics, enrolment rates, factors affecting enrolment, factors affecting enrollees from accessing care

The questionnaire consisted of four sections: Section A; which contained socio-demographic and economic characteristics of respondents Section B contained information on enrolment into CBHIs and factors affecting enrollee from accessing care; Section C contained information on factors affecting enrolment into CBHIs

This study was carried out over a 3-week duration. The researcher conducted a one-day training for two research assistants who were graduates, on how to administer questionnaires to study participant. Week one was to identify the household. For the remaining two weeks households that had been marked where visited mostly in the evening time when members of the household were met at home.

Data was first entered into the 2013 Microsoft Excel Data Sheet, after which it was transported into the Statistical Package for Social Sciences (SPSS) version 20.0 statistical software for analysis. Descriptive statistics was computed and presented using tables and charts. Level of Confidence was set at 95%, and P values less than 0.05 was considered to be statistically significant.

Ethical Consideration

Ethical approval for the study was obtained from the Research and Ethics Committee of the University of Port Harcourt. Permission to conduct this study was also obtained from the management of the CBHI. Informed consent was obtained from all participants before the commencement of the study.

**Results**

**Table 1: socio-demographic characteristics of respondents**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Frequency (N=204)** | **Percentage (%)** |
| **Age Groups (Years)** |  |  |
| <= 24 | 4 | 2.0 |
| 25 – 34 | 73 | 35.8 |
| 35 – 44 | 92 | 45.1 |
| 45 – 54 | 31 | 15.2 |
| 55 -64 | 0 | 0.0 |
| 65+ | 4 | 2.0 |
| Total | 204 | 100 |
| *Mean age ± S.D: 28.2 ± 11years; Age range:18-91 years* |
|  |  |
| Male | 134 | 65.7 |
| Female | 70 | 34.3 |
| Total | 204 | 100.0 |
| **Religion** |  |  |
| Christianity | 204 | 100 |
| Total  | 204 | 100 |
|  |  |
| Married | 184 | 90.2 |
| Single | 4 | 2.0 |
| Widowed | 16 | 7.8 |
| Total | 204 | 100 |
| **Educational Status** |  |  |
| Completed Secondary | 45 | 22.1 |
| Completed Tertiary | 159 | 77.9 |
| Total | 204 | 100 |
| **Main income earner** |  |  |
| Yes | 144 | 70.6 |
| No | 60 | 29.4 |
| **Main Decision Maker** |  |  |
| Yes | 148 | 72.5 |
| No | 56 | 27.5 |
| Total | 204 | 100 |
| **No of Children** |  |  |
|
| <= 4 | 194 | 95.1 |
| 5 – 6 | 4 | 2 |
| 7 – 8 | 6 | 2.9 |
| Total | 204 | 100 |
| **No of Household** |  |  |
| 1 – 4 | 128 | 62.8 |
| 5 – 7 | 66 | 32.4 |
| 8 – 10 | 10 | 4.9 |
| Total | 204 | 100 |
| *Mean no of households ± S.D: 4.0±2; no of households:1- 10* |  |  |
| **Occupation**Civil servants | 20 | 9.8 |
| Employed In The Private Sector | 100 | 49 |
| Self-employed | 56 | 27.5 |
| Unemployed  | 28 | 13.7 |
| Total | 204 | 100 |

Table 1 shows that out of the 204 respondents, 134(65.7%) were males and 70(34.3%) were females. Majority of the respondents 92(45.1%) were between the age of 35-44. Christianity was the predominant religion amongst the respondent. Most, 184(90.2%) were married, all the respondents had formal education and majority 159 (77.9%) had tertiary level of education. More than half of the respondents 114(55.9%) were male household heads, 144(70.6%) were the main income earner of the households while, 148(72.5%) regarded themselves as the main decision maker in their households. The mean size of households was 4.0±1.7, two-thirds, 128(62.8%) of the respondents had a household size within the range of 1-4 and majority of the respondents 194(95.1%) had between 1-4 children. About half, 100(49%) were employed in the private sector.

**Table 2: enrolment and factors limiting access to care**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Frequency (N=204)** | **Percentage (%)** |
| **Awareness of CBHIs** |  |  |
| Yes | 168 | 82.4 |
| No | 36 | 17.6 |
| Total | 204 | 100 |
| **Enrolled into CBHI** |  |  |
| Yes | 126 | 61.8 |
| No | 78 | 38.2 |
| Total | 204 | 100 |
| **Visitation to the health center**  |  |  |
| Yes | 126 | 100 |
| Total | 126 | 100 |
| **Health seeking**  |  |  |
| Private Hospital | 52 | 41.3 |
| Specialist Hospital | 74 | 58.7 |
| Total | 126 | 100 |
| **Adequacy of equipment** |  |  |
| Yes | 113 | 89.7 |
| No | 13 | 10.3 |
| Total | 126 | 100 |
| **Who attended to you** |  |  |
| Doctor | 122 | 96.8 |
| Nurse | 4 | 3.2 |
| Total | 126 | 100 |
| **Attitude of health workers** |  |  |
| Friendly | 53 | 42.1 |
| Patient understanding | 36 | 28.6 |
| Sympathetic | 33 | 26.2 |
| Harsh | 4 | 3.2 |
| Total | 126 | 100 |
| **Payment for services** |  |  |
| Consultation Fee | 13 | 10.7 |
| Lab Test | 113 | 89.3 |
| Total | 126 | 100 |
| **Referred to cases not available in the Hospital** |  |  |
| Yes | 126 | 100 |
| Total | 126 | 100 |
| **Challenge during health visit** |  |  |
| Transport to the Health Centre | 24 | 19.4 |
| Long waiting Periods | 75 | 59.7 |
| High cost of services | 27 | 21 |
| Total | 126 | 100 |
| **Satisfaction with the treatment** |  |  |
| Yes | 113 | 89.7 |
| No | 13 | 10.3 |
| Total | 126 | 100 |

Table 2 shows that 168 (82.4%) were aware of the community-based health insurance scheme but only 126(61.8%) were enrolled. For factors limiting access to care, all the respondents reported that there were no referral systems in the scheme, a large proportion 113 (89.3%) reported paying out-of-pocket for laboratory test. The main challenge reported during hospital visits was long waiting time 75(59.7%), others were high cost of services 27 (21%) and high transport cost, 24(19.4%). However, most of the respondents 113(89.7%) were satisfied with the treatment received while using CBHI.

|  |
| --- |
| **Fig1: Factors limiting enrolment into the CBHIs among respondents**Fig 1 shows that among those who did not enrol, the major reason was lack of awareness (51.3%), others were ‘does not cover all my health problems’ 21.3% and lack of cooperation in the community 15.4%.**Table 3: Association between socio-demographic characteristics with enrolment into CBHIs** |
| **Variable** | **Enrollment into CBHIs** |  | **df** | **χ2** |
| **(p-value)** |
|  | **Yes (%)** | **No (%)** | **Total (%)** |  |  |
| **Age group** |  |  |  |  |  |
| ≤24 | 0(0) | 4(5.1) | 4(2.0) | 1 | 6.591 (0.010)\* |
| >24 | 126(100) | 74(100) | 200(98.0) |  |  |
| **Sex** |  |  |  |  |  |
| Male  | 98(77.8) | 36(46.2) | 134(65.7) | 1 | 21.376 (0.000)\* |
| Female  | 28(22.3) | 42(53.8) | 70(34.3) |  |  |
| **Marital status** |  |  |  |  |  |
| Single/divorced/separated/widowed | 8(6.3) | 12(15.4) | 20(9.8) | 1 | 4.448 (0.035)\* |
| Married  | 118(93.7) | 66(84.6) | 184(90.2) |  |  |
| **Educational level** |  |  |  |  |  |
| ≤ Secondary school | 21(16.7) | 24(30.8) | 45(22.1) |  | 5.573 (0.018)\* |
| Tertiary  | 105(83.3) | 54(69.2) | 159(77.9) |   |   |

\**Statistically significant (p<0.05)*

Table 3 shows that a statistically significant association was observed between age, sex, marital status, and educational level with enrollment in CBHIs. Those who are older, above 24years of age had significant higher proportion 126 (100%) of enrolment into CBHIs compared to those who are ≤24, 0(0%). There were more male 98 (77.8%) than female 28(22.3) enrollees, those who were married 118(93.7%) were more than the unmarried 8(6.3%) and those who had tertiary education 105(83.3%) were more than those who did not 21(16.7%), all these differences were statistically significant *(p<0.05).*

**Table 4: Relationship between socio-economic characteristics with enrollment into CBHIs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Enrollment into CBHIs** |  | **df** | **χ2****(p-value)** |
| **No of children** |  |  |  |  |  |
| ≤4 | 122(96.8) | 72(92.3) | 194(95.1) | 1 | 2.109(0.186) |
| >4 | 4(3.2) | 6(7.7) | 10(4.9) |  |
| **Size of HH** |  |  |  |  |  |
| ≤4 | 83(65.9) | 45(57.7) | 128(62.7) | 1 | 1.379(0.240) |
| >4 | 43(34.1) | 33(42.3) | 76(37.3) |  |
| **Household status** |  |  |  |  |  |
| Non-head of household | 36(28.6) | 34(43.6) | 34(43.6) | 1 | 4.821(0.028)\* |
| Head of household | 90(71.4) | 44(56.4) | 44(56.4) |  |
| **Main income earner**  |  |  |  |  |  |
| Yes  | 94(74.6) | 50(64.1) | 144(70.6) | 1 | 2.559(0.110) |
| No  | 32(25.4) | 28(35.9) | 60(29.4) |  |
| **Main decision maker** |  |  |  |  |  |
| Yes  | 98(77.8) | 50(64.1) | 148(72.5) | 1 | 4.524(0.033)\* |
| No  | 28(22.2) | 28(35.9) | 56(27.5) |  |
| **Occupation**  |  |  |  |  |  |
| Unemployed  | 24(19.0) | 4(5.1) | 28(13.7) | 1 | 7.883(0.005)\* |
| Employed  | 102(81.0) | 74(94.9) | 176(86.3) |  |

\**statistically significant (p<0.05)*

Table 4 shows that a statistically significant association was observed between main decision maker, employment status and household status with enrollment into CBHI with *p<0.05*. Those who are main decision maker had significant higher proportion 98(77.8%) enrolled into CBHIs than those who are not 28(22.2%). Those who are head of household had significant higher proportion 90(71.4%) enrolled into CBHI compared to those who are not head of household 36(28.6%). Also, those who were employed had significant higher proportion 102(81.0%) enrolled into CBHI compared to those who are unemployed 24(19.0%).

**Discussion**

This study has determined the uptake of community-based health insurance as well as associated factors in Eleme LGA of Rivers State. The proportion of respondents who were enrolled in the CBHIs in this study was well above average. This shows that the scheme was well embraced by the populace though there is still room for improvement. This rate was higher than that reported among artisan populations in a study, in Benin, Nigeria where the enrollment rate was 17 (11.0%). This observed difference may be due to variations in the study populations (10). The current study had a high proportion of respondents with tertiary education while artisans are usually not that well educated. In a study in southeast Nigeria a higher proportion than this study, 92.4% indicated willingness to enroll for CBHI, however willingness does not actually translate to actual action of enrolment and may be responsible for the high value gotten (11). Another study in Western Ethiopia showed that the enrolment rate was less than that of this study (50%) (12). The observed difference may be due to differences in study design, as this study used a descriptive cross-sectional design while their study was a case-control design. Additionally, a study also reported enrolment rates of 33.3% (13), lower than index study. This may be due to geographical as well as sociocultural variations in the study populations. In Rwanda enrollment rate increased from 7% to 91% over a 7-year period, this rate is higher than that of this study. This may be due to the use of a stratification system based on socioeconomic status, known as Ubudehe. This method allowed people to pay what they could afford, ensuring equity and also provided coverage for the very poor, thereby moving Rwanda toward universal health coverage.(14)

Factors limiting enrolment in this study was similar to that of other studies. Though half of those that did not enroll gave lack of awareness as their reason for non-enrolment, this refers to awareness of what the insurance scheme offers. However, awareness of the CBHIs overall was high indicating that there are other reasons for non-enrollment in the study. This finding is similar to that reported by Osunde et al where (89.0%) were reported to be aware of the NHIS in the informal sector(10)

 Other reasons for poor enrolment of health insurance include: normative ideas regarding governments role in full funding of the citizens’ health care, wrong beliefs about health insurance attracting ill-health, poor trust in governance, amongst others.(15) While a metanalysis reported inappropriate benefits package, cultural beliefs, affordability, distance to healthcare facility, lack of adequate legal and policy frameworks to support CBHI, and stringent rules of some CBHI schemes as factors deterring respondents in their study from enrolling in CBHI.(16) Another study reported inadequate information on CBHI, limited availability of health services, poor quality of health care provided in public health facilities and the believe that illness do not frequently occur in their homes as factors responsible for poor enrolment into the CBHI(13)

Factors limiting access to health care in community-based insurance scheme in this study were similar to that described in a study, that they help in improving access to outpatient care and there is weak evidence that they improve access to inpatient care since referral system may not be present as in our study. (17)

Factors (socio-demographic and socio-economic) observed to be associated with enrollment into the CBHI in this study were age, sex, marital status, and educational level; being the main decision maker, employment status and household status.

This is similar to findings from a study among women of reproductive age where age, education, geo-political zone, socio-economic status (SES), and employment status were significant predictors of enrolment in the NHIS among women of reproductive age.(18) Similarly, studies reported education, household size, level of trust that households have in the management of the insurance programme, sex, knowledge of the CBHI programme and place of residence (urban vs rural) as drivers of enrollment into the CBHI. (19) (16) (20)(21)

**Conclusion**

The enrollment rate among respondents was above average. Reasons given for non-enrolment include lack of awareness of what the insurances scheme offers, and failure to cover health problem. Factors (socio-demographic and socio-economic) observed to be associated with enrollment into the CBHI in this study were age, sex, marital status, and educational level; being the main decision maker, employment status and household status. There is a need to increase awareness and benefit package coverage among the respondents so as to increase enrolment rate among them.

References

1. Universal health coverage (UHC) [Internet]. [cited 2025 Feb 11]. Available from: https://www.who.int/news-room/fact-sheets/detail/universal-health-coverage-(uhc)

2. Onoka CA, Onwujekwe OE, Hanson K, Uzochukwu BS. Examining catastrophic health expenditures at variable thresholds using household consumption expenditure diaries. Trop Med Int Health. 2011 Oct;16(10):1334–41.

3. Onwujekwe O, Hanson K, Uzochukwu B. Examining Inequities in Incidence of Catastrophic Health Expenditures on Different Healthcare Services and Health Facilities in Nigeria. PLoS One. 2012 Jul 16;7(7):e40811.

4. Adebiyi O, Adeniji FO. Factors Affecting Utilization of the National Health Insurance Scheme by Federal Civil Servants in Rivers State, Nigeria. Inquiry (United States). 2021;58.

5. National Health Insurance Authority. NHIS\_OPERATIONAL\_GUIDELINES\_reprint-2020. Abuja, Nigeria

6. National Health Insurance Authority. National Health Insurance Authority Act (Gazetted Copy) 2022. Lagos Nigeria.

7. Eleme, Nigeria - Wikipedia [Internet]. [cited 2025 Feb 12]. Available from: https://en.wikipedia.org/wiki/Eleme,\_Nigeria

8. Bluman AG. Elementary Statistics 7th edition McGraw-Hill company, New York 2009.

9. Uzochukwu BSC, ONWUJEKWE OE OE, P Ibe O, N EZUMAH N. Stakeholders’ Values and Power Dynamics and Relations in Community Based Health Insurance: Evidence from Anambra State Nigeria. African Journal of Health Economics. 2015;04(01):01–9.

10. Osunde NR, Olorunfemi O, Oduyemi RO. Awareness, willingness, and challenges of the informal sector toward state National Health Insurance Services in Benin City, Nigeria. MGM Journal of Medical Sciences [Internet]. 2023 Jan [cited 2025 Feb 14];10(1):30–7. Available from: https://journals.lww.com/mgmj/fulltext/2023/01000/awareness,\_willingness,\_and\_challenges\_of\_the.6.aspx

11. Oluedo E, Obikeze E, Nwankwo C, Okonronkwo I. Willingness to enroll and pay for community-based health insurance, decision motives, and associated factors among rural households in Enugu State, Southeast Nigeria. Niger J Clin Pract [Internet]. 2023 Jul 1 [cited 2025 Feb 27];26(7):908–20. Available from: https://journals.lww.com/njcp/fulltext/2023/07000/willingness\_to\_enroll\_and\_pay\_for\_community\_based.9.aspx

12. Fite MB, Roba KT, Merga BT, Tefera BN, Beha GA, Gurmessa TT. Factors associated with enrollment for community-based health insurance scheme in Western Ethiopia: Case-control study. PLoS One [Internet]. 2021 Jun 1 [cited 2025 Feb 27];16(6):e0252303. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC8191870/

13. Abdilwohab MG, Abebo ZH, Godana W, Ajema D, Yihune M, Hassen H. Factors affecting enrollment status of households for community based health insurance in a resource-limited peripheral area in Southern Ethiopia. Mixed method. PLoS One [Internet]. 2021 Jan 1 [cited 2025 Feb 27];16(1):e0245952. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC7833211/

14. nyinawankunsi\_increasing-equity-among-community-based-health-insurance-rwanda\_0.

15. Onasanya AA. Increasing health insurance enrolment in the informal economic sector. J Glob Health [Internet]. 2020 Jun 1 [cited 2025 Feb 14];10(1):010329. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC7182303/

16. Dror DM, Shahed Hossain SA, Majumdar A, Koehlmoos TLP, John D, Panda PK. What Factors Affect Voluntary Uptake of Community-Based Health Insurance Schemes in Low- and Middle-Income Countries? A Systematic Review and Meta-Analysis. PLoS One [Internet]. 2016 Aug 1 [cited 2025 Mar 14];11(8):e0160479. Available from: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0160479

17. Artignan J, Bellanger M. Does community-based health insurance improve access to care in sub-Saharan Africa? A rapid review. Health Policy Plan [Internet]. 2021 May 1 [cited 2025 Mar 14];36(4):572–84. Available from: https://pubmed.ncbi.nlm.nih.gov/33624113/

18. Aregbeshola BS, Khan SM. Predictors of enrolment in the national health insurance scheme among women of reproductive age in nigeria. Int J Health Policy Manag. 2018;7(11):1015–23.

19. Adebayo EF, Ataguba JE, Uthman OA, Okwundu CI, Lamont KT, Wiysonge CS. Factors that affect the uptake of community-based health insurance in low-income and middle-income countries: a systematic protocol. BMJ Open [Internet]. 2014 [cited 2025 Mar 14];4(2):e004167. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC3927816/

20. Bujitie SB, daud YH. Factors that affect enrollment into a community-based health insurance scheme among households in Arba Minch Zuria District, Gamo Zone, Southern Ethiopia, 2023: A community-based unmatched case-control Study [Internet]. 2024. Available from: http://medrxiv.org/lookup/doi/10.1101/2024.03.04.24303762

21. Chinelo Kenechukwu T, Harry T, Apugo U. Willingness to Enroll in Social Health Insurance and associated factors among Household Heads in Obio/Akpor Local Government Area of Rivers State [Internet]. 2022. Available from: http://medrxiv.org/lookup/doi/10.1101/2022.12.19.22283656