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ORIGINAL ARTICLE

Uptake of the Edo State Health Insurance Scheme by Civil Servants in Benin City, Nigeria

Mkpeme PS,[1] Mbah OB,[1] Omuemu VO.[1,2]
[1]Department of Public Health and Community Medicine, College of Medical Sciences, University of Benin, Benin City Edo State, Nigeria
[2]Department of Public Health and Community Medicine, University of Benin Teaching Hospital, Benin City, Nigeria

Keywords

Universal Health Coverage;

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ABSTRACT

Background: Financial constraints often limit the delivery of quality health services. Universal Health Coverage (UHC) ensures that all individuals can access essential health services without financial hardship. To achieve UHC for its citizens, the Edo State Government introduced the Edo State Health Insurance Scheme (EDOHIS) in 2019 and made it compulsory for state civil servants. This study assessed the uptake of EDOHIS among state civil servants in Benin City.

Methods: A descriptive cross-sectional study was conducted among 520 state civil servants in Benin City who were selected using a two-stage cluster sampling technique from 12 MDAs. Data was collected by a self-administered online questionnaire and analyzed with IBM SPSS 25.0. Ethical approval was obtained from the Ethics and Research Committee at the University of Benin Teaching Hospital.

Results: The mean age of respondents was 43.4±8.7 years, with 477 (91.9%) enrolled in EDOHIS. Non-enrollees cited reasons such as narrow policy options (47.6%) and infrequent illness (45.2%). Most enrollees (81.8%) had used the scheme, with 73.8% expressing satisfaction. Those who had not accessed care mentioned reasons like inadequate coverage (41.4%), distance to the allocated facility (34.5%), and not being sick (31.0%). The determinants of enrolment were being female (AOR=0.386, 95% CI=0.187–0.799, p=0.010); Christian (AOR=3.443, 95% CI=1.167–10.158, p=0.025) and married (AOR = 4.100, 95% CI=2.022–8.315, p=0.001).

Conclusion: There was a high uptake of EDOHIS among civil servants, with most enrollees satisfied with the services. More insurance policy options should be added to the scheme to increase its coverage.

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Correspondence to:
Vivian O. Omuemu,
Department of Public Health and Community Medicine,
College of Medical Sciences, University of Benin, Benin City Edo State, Nigeria.
Email: ossaidiom.omuemu@uniben.edu

INTRODUCTION

The provision and accessibility of high-quality healthcare face both demand-side and supply-side challenges that affect individuals, communities, and health systems.[1,2] These

barriers leave nearly half of the global population without essential health services.[3] In response, universal health coverage (UHC) was introduced to ensure access to necessary services without financial hardship, aligning with the 1948 WHO Constitution that declares health a fundamental human right.[4] UHC relies heavily on primary health care (PHC), with health financing, service delivery, and governance as key pillars.[5] Effective health financing involves raising revenue, pooling funds, and purchasing services. It is critical for improving service coverage and financial protection.[6]

Globally, health expenditure rose from 6.6% of GDP in 2016 to 10% in 2018, amounting to $8.3 trillion.[7,8] In Nigeria, the budget allocations for healthcare consistently fell short, with less than 5% allocated to health in 2019 and 2020, far below the 15% target set by the 2001 Abuja Declaration.[9,10] Private sources, especially out-of-pocket (OOP) payments, dominate health financing, covering 75% of health funds in Nigeria. [11] This heavy reliance on OOP is inequitable and drives around 100 million people globally into poverty annually. Studies indicate that 17% of Nigerian households face catastrophic health payments, with wealthier households more likely to incur these expenses due to bypassing low-quality public care.[12]

Health insurance continues to be a promising avenue for achieving universal health coverage (UHC) in Nigeria. Despite the National Health Insurance Scheme (NHIS) being in place for 17 years and its decentralization in 2014, health insurance coverage in Nigeria remains low.[13] The NHIS currently covers less than 5% of the population, and private insurance coverage is even lower, at under 1%.[9,14] Studies in Enugu and Lagos reveal low registration rates for health insurance; in these cities, only 13% and 12.3% of respondents, respectively, reported being registered for health insurance.[15,16] This low uptake leaves most Nigerians reliant on out-of-pocket payments, exposing them to the risk of catastrophic health expenditures.

The Edo State Health Insurance Scheme (EDOHIS), established in 2019, is one of the state-level schemes aimed at improving health insurance coverage.[16] The Edo State Health Insurance Commission, through EDOHIS, offers five health Insurance plans, namely, the Equity Health Plan, the Formal Health Plan, the Informal Health Plan, the Student Health Plan, and the Enhanced Private Health Plan. The Formal Health Plan is meant for employees in the public sector and the privately organized sector in Edo state. The public sector covers all employees of the State Government (state civil servants).[17]

There is a dearth of documented information on the uptake of EDOHIS among civil servants in the study area, making this study essential for providing baseline data. Understanding the determinants of EDOHIS uptake will help identify barriers or facilitators, aiding in planning appropriate interventions.

Table 1: Socio–demographic characteristics of the respondents

Variables	Frequency (n = 519)	Percent
Age (years)		
21 – 30	60	11.6
31 – 40	118	22.7
41 – 50	225	43.4
51 – 60	116	22.4
Mean age = 43.4 ± 8.7		
Sex		
Male	293	56.5
Female	226	43.5
Tribe		
Edo Indigenes	496	95.6
Non-Edo Indigenes	23	4.4
Religion		
Christianity	482	92.9
Non–Christian Religion	37	7.1
Current Marital Status		
Married	404	77.8
Not married	115	22.2
Level of education		
Secondary	77	14.8
Tertiary	442	85.2
Staff Category		
Junior Staff (1–6)	85	16.4
Senior Staff (7–12)	323	62.2
Management Staff (13–17)	111	21.4
Level of education		
Secondary	77	14.8
Tertiary	442	85.2
Monthly Income in Naira		
≤ 124500	260	50.1
> 124500	259	49.9
Household Size		
1—5	386	74.4
6—10	133	25.6
Range = 1 – 9		

METHODOLOGY

This descriptive cross-sectional study was conducted between December 2022 and December 2023 among civil servants working in the Edo State civil service secretariat in Benin City which serves as the capital of Edo State and is located in the South-South geopolitical zone of Nigeria. Edo State has an estimated population of about 8 million and is divided into 18 Local Government Areas. The predominant ethnic groups in the state include the Benin, Esan, Afemai and Akoko Edo.[18,19]

Benin City is a metropolitan city comprised of three main Local Government Areas namely; Oredo, Egor, and Ikpoba–Okha Local Government Areas.[18] It has a projected

population of 1,841,000 for 2022.[20] The State Civil Service Secretariat serves as the workplace of the state civil servants and there are about 2805 state civil servants in Edo State. The civil service comprises of 28 Ministries, Departments and Agencies (MDAs), including 21 are ministries and seven are departments agencies.[21,22]

The participants in the study consisted of state civil servants from Benin City. All state civil servants employed at the state civil service secretariat in Benin City who agreed to participate were included in the study.

The minimum sample size (n) was calculated using the Cochrane formula ($n=Z^2pq/d^2$),[23] taking into consideration an error margin of 5%, standard normal deviate of 1.96 (Z), a 10% non-response rate, a prevalence of 26.8%,[24] and a design effect of 1.5. A final sample size of 520 was used for the study.

A two-stage cluster sampling technique was used to select 520 respondents. First, 12 MDAs were selected by simple random sampling (balloting) from the 28 MDAs: nine (9) from the 21 Ministries and three (3) from the seven (7) departments and agencies. The number of respondents per MDA was determined using proportion allocation to size. Finally, participants were recruited from each of the selected MDAs using simple random sampling (balloting).

A structured self-administered questionnaire (online Google form) adapted from previous studies was used to collect data from the respondents.[24,25,26] The questionnaire has three sections; A, B and C. Section A contains questions on the sociodemographic characteristics of the respondents, section B contains questions on the uptake of EDOHIS among the respondents and section C is on the factors influencing the uptake of EDOHIS. The questionnaire was pretested among state civil servants working or residing in Ekpoma, a town in another LGA in Edo State.

The data collected from the study was screened for completeness, coded and then analyzed using the Statistical Package for the Social Sciences (SPSS) version 25.0. Univariate analysis was done and presented in frequency tables. Categorical variables were analysed using the Pearson Chi-square and Fisher's Exact tests. Multivariate logistic analysis was done to determine the predictors of uptake of EDOHIS. The level of statistical significance was set at $p < 0.05$.

Ethical approval for this study was obtained from the Ethics and Research Committee, University of Benin Teaching Hospital (UBTH), with Protocol Number ADM/E 22/A/VOL.VII/48301139. Informed consent was obtained from respondents when administering the questionnaire, and confidentiality was maintained as no names or addresses were requested. Participation in the study was purely voluntary, as the participants were told they could withdraw from participating in the study at any time.

Table 2: Respondents' level of uptake of EDOHIS

Variables	Frequency	Percent
Had enrolled for EDOHIS (n = 519)		
Yes	477	91.9
No	42	8.1
Preferred Installment Plan (n = 477)		
Monthly	290	60.8
Quarterly	13	2.7
Bi–annually	35	7.4
Yearly	139	29.1
Had used EDOHIS to access healthcare since enrollment (n = 477)		
Yes	390	81.8
No	87	18.2
Number times EDOHIS had been used to access healthcare (n = 390)		
1–2	57	14.6
3–4	60	15.4
5–6	85	21.8
7–8	77	19.8
9–10	66	16.9
>10	45	11.5
Range = 1 – 43		

RESULTS

Five hundred and twenty questionnaires were administered out of which 519 were retrieved and analysed, giving a response rate of 99.8%. The mean age of the respondents was 43.4 ± 8.7 years and there were more males, 293 (56.5%). Four hundred and eighty-two (92.9%) of the respondents were Christians, 404 (77.8%) were married and 442 (85.2%) had obtained tertiary education. Three hundred and eighty-six (74.4%) of the respondents came from households consisting of 1 to 5 individuals. (Table 1).

Most of the respondents, 477 (91.9%), were enrolled in EDOHIS. Majority 290 (60.8%) of those enrolled preferred monthly installment plans for the payment of their premium. Three hundred and ninety (81.8%) of the enrollees have used EDOHIS to access healthcare since enrolment. (Table 2).

There was a significantly higher proportion of female 215 (95.1%) than male 262 (89.4%) enrollees, p = 0.018. The proportion of enrollees was significantly higher among those who were married (p = 0.001; Table 3).

Table 4 shows that male respondents were less likely than their female counterparts to enroll in EDOHIS with an odd of 0.386; the association was statistically significant (AOR = 0.386, 95% CI= 0.187–0.799, p = 0.010). Christian respondents were more likely to enroll in EDOHIS than their non–Christian counterparts, which was statistically significant (AOR = 3.443, 95% CI= 0.334–9.831, p = 0.025). Respondents who were married were 4.100 times more likely

than those who were not married to enroll in EDOHIS; this was statistically significant (AOR = 4.100, 95% CI = 2.022–8.315, p = 0.001). Age group, tribe level of education, staff category, monthly income, and household size were not significant determinants of uptake of EDOHIS among the respondents (p > 0.05).

The reasons given by non-enrollees were narrow policy options 20 (47.6%), do not fall ill often 19 (45.2%), religious reasons 4 (9.5%), no benefits 4 (9.5%) and already enrolled with NHIS 2 (4.8%). While the reasons given by those who have not accessed care since enrolment were the inability of the scheme to cover all their health needs 36 (41.4%), allocated health facility is far 30 (34.5%), not being sick 27 (31.0%), and poor quality of allocated health facility 13 (14.9%). (Table 5).

Table 3: Association between respondents' socio–demographic characteristics and uptake of EDOHIS

Variable	Enrollment into EDOHIS		Test statistic	p–value
	No (n = 42) n (%)	Yes (n = 477) n (%)		
Age group (years)				
≤ 40	17 (9.6)	161 (90.4)	0.774[a]	0.379
> 40	25 (7.3)	316 (92.7)		
Sex				
Male	31 (10.6)	262 (89.4)	5.599[a]	0.018*
Female	11 (4.9)	215 (95.1)		
Tribe				
Edo Indigenes	38 (7.7)	458 (92.3)	2.798[a]	0.094
Non–Edo Indigenes	4 (17.4)	19 (82.6)		
Religion				
Christianity	36 (7.5)	446 (92.5)	3.535[a]	0.060
Non–Christian Religion	6 (16.2)	31 (83.8)		
Current Marital Status				
Married	22 (5.4)	382 (94.6)	17.175[a]	0.001*
Not married	20 (17.4)	95 (82.6)		
Level of Education				
Secondary	8 (10.4)	69 (89.6)	0.641[a]	0.423
Tertiary	34 (7.7)	408 (92.3)		
Staff Category				
Junior Staff (1–6)	6 (7.1)	79 (92.9)	2.487[a]	0.288
Senior Staff (7–12)	23 (7.1)	300 (92.9)		
Management Staff (13–17)	13 (11.7)	98 (88.3)		
Monthly Income in Naira				
≤ 124500	25 (9.6)	235 (90.4)	1.625[a]	0.202
> 124500	17 (6.6)	242 (93.4)		
Household Size				
1—5	34 (8.8)	352 (91.2)	1.038[a]	0.308
6—10	8 (6.0)	125 (94.0)		

***= statistically significant** **[a] = Chi–square (χ^2)**

Table 6 shows the respondent's level of satisfaction with EDOHIS services. Most of the respondents, 288 (73.8%), were satisfied with services rendered by EDOHIS. The majority, 200 (69.4%) of those satisfied with EDOHIS' services, indicated that access to quality and affordable healthcare services was the reason for their satisfaction. Fifty–four (13.8%) of users of the service were indecisive about their level of satisfaction, while 48 (12.3%) were dissatisfied. Over half, 27 (56.3%) of those dissatisfied, indicated poor treatment of their sickness by the engaged health facilities as the reason for their dissatisfaction. In comparison, 18 (37.5%) of the dissatisfied users indicated payment for expensive drugs, and 16 (33.3%) indicated difficulty in accessing services in hospitals as their reason for being dissatisfied. Three hundred and thirty-seven (86.4%) respondents said they would like to recommend EDOHIS. (Table 6).

Table 4: Determinants of respondents' uptake of EDOHIS

Variable	Enrollment into EDOHIS		AOR (95% CI)	p-value
	No (n = 42) n (%)	Yes (n = 477) n (%)		
Age group (years)				
≤ 40	17 (9.6)	161 (90.4)	0.681 (0.490–1.347)	0.613
> 40 **	25 (7.3)	316 (92.7)	1	
Sex				
Male	31 (10.6)	262 (89.4)	0.386 (0.187–0.799)	0.010*
Female **	11 (4.9)	215 (95.1)	1	
Tribe				
Edo Indigenes	38 (7.7)	458 (92.3)	2.540 (0.653–9.871)	0.178
Non–Edo Indigenes **	4 (17.4)	19 (82.6)	1	
Religion				
Christianity	36 (7.5)	446 (92.5)	3.443 (1.167–10.158)	0.025*
Non–Christian Religion **	6 (16.2)	31 (83.8)	1	
Current Marital Status				
Married	22 (5.4)	382 (94.6)	4.100 (2.022–8.315)	0.001*
Not married **	20 (17.4)	95 (82.6)	1	
Level of Education				
Tertiary	34 (7.7)	408 (92.3)	2.104 (0.570–7.767)	0.264
Secondary **	8 (10.4)	69 (89.6)	1	
Staff Category				
Management Staff (13–17)	13 (11.7)	98 (88.3)	2.306 (0.216–24.654)	0.489
Senior Staff (7–12)	23 (7.1)	300 (92.9)	0.742 (0.108 –5.108)	0.761
Junior Staff (1–6) **	6 (7.1)	79 (92.9)	1	
Monthly Income in Naira				
≤ 124500	25 (9.6)	235 (90.4)	0.690 (0.341–1.394)	0.301
> 124500 **	17 (6.6)	242 (93.4)	1	
Household Size				
1—5	34 (8.8)	352 (91.2)	0.704 (0.292–1.701)	0.436
6—10 **	8 (6.0)	125 (94.0)	1	

***= statistically significant; **= Reference category; R^2 = 21.1– 38.4; AOR = Adjusted Odd Ratio; CI = Confidence Interval.**

Table 5: Reasons for non–enrollment and non–usage of EDOHIS since enrollment

Variables	Frequency	Percent
Reasons for non–enrollment in EDOHIS (n = 42) *		
Narrow policy options	20	47.6
Do not fall ill often	19	45.2
Contradicts with my religious beliefs	4	9.5
Not aware of its benefits	4	9.5
Not interested	2	4.8
Facility or scheme not favorable	1	2.4
God is the giver of divine health	1	2.4
have another health insurance coverage	1	2.4
I am under NHIS	1	2.4
I have NHIS coverage via my spouse	1	2.4
Too much paper–work is involved	1	2.4
Reasons for not using EDOHIS since enrollment (n = 87) *		
The scheme does not cover all my health needs	36	41.4
The allocated health facility is far	30	34.5
I have not been sick	27	31.0
The allocated health facility did not meet my standard	13	14.9
Don't want to change my doctor.	2	2.3
My hospital is not included in the list	2	2.3
Poor standard health care centres	1	1.1

***Multiple response**

DISCUSSION

This study showed that most respondents had enrolled in EDOHIS, and most of the enrollees had utilized the scheme to access health services. This may be because contributory payment for the scheme is made compulsory for all state civil servants, which facilitated their enrollment and subsequent utilization of the services of the scheme. This is not in keeping with a study conducted in 2019 in the Ajeromi–Ifelodun community, Lagos State, which showed that most respondents were not enrolled in health insurance and most of the enrollees had not utilized health insurance schemes to access health services.[27] This finding in our study also contrasts with a study conducted in 2019 in Mumbai, India, where most respondents had neither enrolled nor utilized any health insurance scheme.[28]

Respondents' sex, religious affiliation, and marital status were the significant determinants of enrollment into EDOHIS. Females, Christians, and married respondents were more likely to have enrolled. This is not surprising because females are usually the primary caregivers of their children or wards and generally have better health-seeking behaviour than males. [29, 30] Thus, they are more likely to enroll in the health insurance they have already paid for to facilitate their utilization of the services. Unsurprisingly, the married respondents had a higher likelihood of enrollment into EDOHIS because they usually faced greater financial health burdens than those unmarried. As a result, they are likely to seek financial health security in health insurance schemes. This finding is in contrast with a study conducted in 2018 in Awutu Senya West District

of Ghana, which revealed that males were more likely to take up health insurance than females and that health insurance uptake increased with the level of education and decreased with household size.[31] This finding is at variance with a study conducted in 2018 in Pakistan, where the determinants of enrollment into the health insurance scheme were age and income.[32] Adequate health insurance coverage is essential for achieving universal health coverage in a nation.[5]

Table 6: Respondents' level of Satisfaction with EDOHIS' Services

Variables	Frequency	Percent
Level of satisfaction with EDOHIS services (n = 390)		
Very Satisfied	93	23.9
Satisfied	195	50.0
Undecided	54	13.8
Dissatisfied	38	9.7
Very Dissatisfied	10	2.6
Reasons for being satisfied with EDOHIS' services (n = 288) *		
Quality and affordable healthcare services	200	69.4
Prompt access to healthcare	94	32.6
Good and caring attitude of the healthcare and insurance staff	77	26.7
Offers easy access to emergency services	26	9.0
Reasons for being dissatisfied with EDOHIS' services (n = 48) *		
Poor treatment of illness	27	56.3
Expensive drugs	18	37.5
Difficulty in accessing services in hospitals	16	33.3
Unclean environment	15	31.3
Long queues	9	18.8
Unfriendly healthcare and insurance staff	5	10.4
Poor reception	3	6.3
Poor quality drugs	2	4.2
Delay in dispensing drugs to patients	2	4.2
Do not cover for all tests and surgeries	1	2.1
Drugs not enough.	1	2.1
High premium	1	2.1
Would like to recommend EDOHIS to others (n = 390)		
Yes	337	86.4
No	42	10.8
None Response	11	2.8

***Multiple response**

Most respondents who had not enrolled in EDOHIS indicated narrow policy options of the scheme and not falling ill often as the reasons for not enrolling. This contrasts with the findings of the study done in 2019 in Mumbai, India, where most of the non-enrollees indicated that they had

not given it thought. Inadequate funds was the reason for non-enrollment.[28] The finding is also at variance with a study conducted in 2017 in Rivers State, which revealed that the most prevalent reason for not enrolling in NHIS was poor understanding of the scheme.[33]

The study also found that the non-use of EDOHIS services among enrollees was attributed to limited coverage and distant facilities. The exclusion of some medical services and coverage restriction to the enrollees, their spouses and their four biological children under 18 years[17] may have discouraged some enrollees from utilizing the EDOHIS services. Also, enrollees are likely to forgo their distant allocated facilities and use any nearby health facility, especially during emergencies. Some enrollees would have changed their residential addresses over time, necessitating frequent updates of allocated facilities based on proximity to enrollees. These findings differ from those of a study conducted in Oyo State, Nigeria (2021), where issues like unavailable identification numbers and reluctance to change clinics were prevalent reasons for not using NHIS.[34] Also, the findings are not in tandem with those of a study conducted in Rivers State, where the commonly stated reasons for non-utilization of NHIS services by enrollees were lack of possession of NHIS cards and the attitude of health workers.[35]

Most EDOHIS users were satisfied with the scheme, which is consistent with findings from Lagos State University Teaching Hospital (2019).[36] About seven out of ten respondents who were satisfied with EDOHIS' services indicated that access to quality and affordable healthcare services was the reason for their satisfaction with EDOHIS' services. This is in congruent with the findings of the study conducted in 2019 at Lagos State University Teaching Hospital, which showed that the most reported reason for satisfaction with NHIS was easy access to quality health services.[36] This finding is not in keeping with the study conducted in 2019 in Mumbai, India which showed that the most common reasons for satisfaction with the health insurance scheme were good scheme and cashless transactions.[28]

The most commonly reported reasons for dissatisfaction with EDOHIS' services were poor treatment of illness and out-of-pocket payment for expensive drugs. This finding is not in tandem with the study conducted in 2019 at Lagos State University Teaching Hospital, where the most prevalent reason for dissatisfaction with NHIS was the inability of NHIS to cover some surgical procedures.[36] The finding is also in contrast with a study conducted in 2017 in Abuja, where the most reported reasons for dissatisfaction were long waiting hours and staff attitude.[37]

Limitations and strengths of the study

This study, being a cross-sectional study, assessed the uptake of EDOHIS and its determinants simultaneously; thus, the cause-effect relationship cannot be ascertained.

Using a self-administered, online Google form questionnaire sent directly to the respondents helps to improve the confidentiality and privacy

of the respondents, which promotes honest and reliable responses in an official setting. This study used a probability sampling technique, which helps reduce selection bias and ensures a more accurate representation of the civil servants in the sample.

Policy Implications of the Study: A list of all essential medicines covered by the scheme will promote transparency and improve the beneficiaries' confidence in the scheme and the engaged facilities.

CONCLUSION

There was a high level of uptake of the scheme among the respondents. The significant determinants of uptake were being female, Christian and married. The majority of the enrollees have made use of EDOHIS to access healthcare, and most of the users are satisfied with the services. The main reasons for their satisfaction with EDOHIS' services were access to quality and affordable healthcare services, prompt access to healthcare, and a good and caring attitude of the healthcare and insurance staff. Most enrollees who had not utilized the EDOHIS services reported that the scheme's inability to cover all their health needs was the reason they had not used it. Similarly, the reported reasons for non-enrolment were narrow policy options of the scheme, perceived good health status, religious reasons and no benefits.

The insurance policy options of EDOHIS should be increased to cover more of the healthcare needs of the people. Regular monitoring of the engaged healthcare facilities is important to ensure enrollees and their beneficiaries receive quality drugs and treatment.

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