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Quality Improvement in Osun State Healthcare Delivery: A Cross-sectional Study on Perceived Operational Challenges with the Osun Health Insurance Scheme (OHIS) by Accredited Providers

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Abstract

Background: Access to quality healthcare is still a challenge for most Nigerians due to poor healthcare financing. Osun Health Insurance Scheme (OHIS), established to bridge the healthcare gap of the citizens, has been faced with operational challenges which require continuous efforts to mitigate. This study aimed to identify factors affecting the operation of OHIS across accredited health facilities.

Methods: This cross-sectional study was conducted in July to September 2024, among medical directors, physicians, and OHIS desk officers at OHIS-accredited healthcare facilities in Osun State. A self-administered questionnaire was used for data collection while analysis was done using the Statistical Package for Social Sciences, Version 23.0. The level of statistical significance was set as p-value < 0.05.

Results: Findings showed that although 84% of respondents reported good knowledge of OHIS, gaps existed across various domains in understanding its goals, operations, and clinical and laboratory services. Predictors of knowledge included facilities being privately owned. The common operational challenges identified were poor enrollees' understanding of insurance plans and expectations (77.6%), low reimbursement fees (70.4%), delay in claims processing and payment (57.6%), low patient volume (57.6%), improper distribution and allocation of enrollees (52.8%), misconduct by enrollees (52.8%), inadequate funding of the scheme (48%) and inadequate power supply (44.8%).

Conclusion: The findings show limited awareness of OHIS goals, processes, and services among workers in accredited facilities, suggesting an even worse situation in the general population. Operational challenges were also identified, highlighting the need for coordinated actions by stakeholders.

Keywords: Accredited health facilities, enrollee awareness, healthcare quality improvement, health insurance, healthcare financing, Osun Health Insurance Scheme, OHIS, operational challenges.

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Introduction

Quality of healthcare delivery is a critical component and determinant of a nation's health outcomes, economic stability, and social well-being especially in low and middle-income countries where health systems are often burdened by limited resources and infrastructure.[1-3] In Nigeria for example, inaccessibility to quality healthcare services, inequities in supplies, human resources issues, and inadequate infrastructures are major challenges to healthcare delivery [4–6]. Additionally, access to affordable healthcare continues to be a challenge for most Nigerians due to high levels of poverty and significant reliance on out-of-pocket payments.[7] As found in previous studies, state health insurance remarkably has an impact on the healthcare quality of low and middle-income countries, some of which include increased accessibility and utilization of healthcare services, improved financial protection, and improved health outcomes 8,[9].

Osun Health Insurance Scheme (OHIS) was established in 2018 to enhance accessibility, affordability, equity, and quality of healthcare services delivered to Osun State residents. The strategy adopted by this scheme is to reduce out-of-pocket expenses, one of the major challenges to healthcare utilization. This opportunity therefore influences patients' decisions and ability to obtain medical services.[10] Despite the remarkable impact of the scheme, only 213,900 individuals are currently enrolled in the 468 accredited health facilities(11). This is very minute considering the 4.2 million population of the state (according to the National Bureau of Statistics, 2020)(12). Similarly, current statistics indicate that less than 5% of Nigerians are enrolled in NHIS, while 70% still finance their healthcare independently(13). This low coverage will affect the achievement of the scheme's objectives and its sustainability. Factors responsible include inefficient service delivery, inadequate healthcare infrastructure, and poor resource management, leading to substandard care quality.[13]). Further studies identified challenges like operational efficiency, resource allocation, weak administrative, and supervisory capacity, and the quality of care provided under the scheme(12,14). Other factors that may affect the smooth operation of health insurance schemes include non-payment or delay in payment to healthcare facilities, inadequate medical equipment and personnel, poor enrolment because of public apathy/ lack of awareness and exclusion of rural dwellers, poor services more often due to lack of drugs and hospital supplies. [14]

Nigeria, like many countries in sub-Saharan Africa, is confronted with issues bordering on the quality of healthcare with consequences such as prolonged patient hospital waiting time, high rates of treatment complications, morbidities and mortalities which impact negatively on health indices of the country.[15] In Osun State, there have been concerns about the quality of care received by OHIS enrollees and there have been a dearth of studies on the state's insurance scheme. Medical Directors attending Medical Practitioners and other frontline health workers as well as OHIS desk officers, who serve as the primary interface between the scheme and its beneficiaries, play a crucial role not only in determining but also in assessing how well the scheme operates. As such, understanding their perspectives on the factors influencing the scheme's operation provides valuable insights for policymakers and healthcare administrators to improve the operation of health insurance and service delivery to the populace. Therefore, this study aims to identify factors affecting OHIS operations and evaluate the knowledge of OHIS desk officers about the scheme. Results from this study will serve as a foundation for developing evidence-based strategies to enhance the quality and sustainability of the Health Insurance Scheme in Osun State and other states in the country.

Methodology

Study Design and Population

This was a cross-sectional study carried out among medical directors or their representative medical practitioners, and OHIS desk officers at OHIS-accredited healthcare facilities in Osun State. The study was carried out between July and September 2024.

Study Area

This study was carried out in Osun State, located in the southwestern region of Nigeria. The state is bounded by Kwara, Ekiti, Ondo, and Ogun states, with a population of approximately over 4.2 million residents and an area of 9,251 km². The state's capital, Osogbo, serves as its administrative and economic hub. Osun is divided into 30 local government areas, with a mix of urban and rural communities that contribute to diverse healthcare needs and challenges.

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Sample size determination and sampling approach
This study deployed a total sampling method and included all facilities in the Osun Health Insurance Scheme (OHIS) who were willing and consented to be part of the study. Medical director (or its representative) or OHIS desk officer representative of each of the facility completed the questionnaire.

Instruments and Methods for Data Collection
This study used a self-administered questionnaire as the data collection instrument. It was developed based on a comprehensive review of existing literature. To ensure validity, the instrument was assessed by a panel of research experts, and necessary modifications were made based on their feedback. The questionnaire was semi-structured and divided into four sections, including socio-demographic information of the respondents, characteristics of healthcare facilities, knowledge about Osun Health Insurance Scheme/Agency (OHIS/OSHIA), and factors militating against proper OHIS operation in your healthcare facility. Scores of 1 or 2 was assigned to each correct answer to questions which assessed respondents' knowledge, while 0 was assigned to wrong answers. The ratio of respondent score and maximum possible score was used to calculate the percentage score for each respondent. The cut-off point delineating good scores was 72% (≥72% is good, and <72% is bad), being the mean knowledge score of the respondents, i.e. average respondent correctly answered 72% of the knowledge questions(16).

Data Analysis
Data collected from the study were cleaned, entered, and analyzed using the Statistical Package for the Social Sciences (SPSS, IBM Version 23.0)(17). Univariate analyses were done, and the results were presented in frequency tables and charts. Also, bivariate analyses were conducted using Chi-square statistics to determine relationships between categorical variables, and logistic regression was carried out to identify predictors. Furthermore, statistical significance was set at $p < 0.05$, 95% Confidence Interval.

Ethical Considerations
Ethical approval for this study was obtained from the Ethical clearance for the study was obtained from Ethics and Research Committee of the Osun State Ministry of Health. Additionally, the voluntariness of the respondents to participate in the study was communicated. To uphold the respondents' trust, all information provided was handled with strict confidentiality, ensuring their privacy was respected throughout the research process.

Results
The majority (74.4%) of the 125 respondents were female, 33.6% had a Bachelor of Medicine, and close to half 43.2% were medical officers. Moreover, 56.8% stated that they are medical director in their organization with the same percentage reporting that they have just spent three years or less working as an OSHIA desk official while 45.6% have spent above 9 years working in their organization. The staff strengths of the facilities showed that over half of the facilities, 53.6%, have more than five medical doctors, only 13.6% have more than five registered nurses, 37.6% have 3-5 pharmacists and 62.4% do not have pharmacy technicians. Furthermore, 60% have more than three laboratory scientists, but 50.4% do not have laboratory technicians. Ninety-seven facilities (77.6%) have administrators while 72.8% have less than 3 cleaners (Table 1). Furthermore, the professional status and period of working as an OSHIA desk official were statistically associated with their knowledge of OSHIA with p values of 0.029 and 0.039 respectively (Table 2). In addition, the predictor of respondents' good knowledge about OHIS was the hospitals being privately owned, p=0.043 (OR= 3.5, 95% CI: 0.92 – 13.33).

Table 3 shows the characteristics of respondents' healthcare facilities and the association between the facility's characteristics and respondents' knowledge about OHIS. One-third of the participants (34.4%) responded that their facility type is a general hospital, 84% mentioned that their hospital is privately owned, with 62.4% of these facilities located in urban areas. Furthermore, 61.6% responded that their organization had a bed size ≤20, nearly two-thirds (65.6%) of the facilities belong to the secondary category, and the period that their organization has been operating is 7 or more for the majority of the respondents. Moreover, a statistically significant association was found between facility categories (i.e. primary, secondary or tertiary), and number of years of operation are the factors that are associated with the knowledge of respondents about OHIS (p=0.034 and p=0.048 respectively).

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A high proportion of the respondents (84%) claimed to have good knowledge about OHIS. As shown in Table 4, one-third (34.4%) of the respondents said they knew about the scheme from their place of work, and more than half of respondents (55.2%) qualified OHIS as social health insurance. While the majority (90, 72%) responded and claimed knowledge of when OHIS was inaugurated. Only 60.1% of them gave correct responses about the date the scheme was launched. The knowledge about what OHIS stands to achieve is not common among respondents; the best is that OHIS is aimed to provide comprehensive and qualitative healthcare at a very affordable rate (36.8%), and the worst is equitable access to healthcare for all citizens (8.8%). Moreover, over half (52.8%) of the respondents have known OHIS for 4-6 years. The waiting period before a new enrollee can start obtaining care was correctly said to be 45 days by 52.0% of the respondents, and only 26.4% of respondents were correct that the employers contribute 10% to the scheme for their employees. Most respondents (92.0%) were correct that the enrollees can register their Spouse with 4 biological children below the age of 18 as dependents while only 12.8% of respondents knew about the Tertiary Institution Social Health Insurance Scheme which covers children above 18 years of age. Furthermore, the majority (74.4%) knew that there are some healthcare services that the enrollee will pay for, but up to half of the respondents did not know key services the patient should not pay for (like cesarean section, hospital admission and treatment of complicated malaria), as well as services that require payment such as CT-scan. The respondents' knowledge of the requirement to pay for specialized tests like echocardiography is good (90.1%), but 20-30% of respondents also had poor knowledge of some basic tests (packed cell volume, blood grouping, fasting blood sugar) patients should not pay for (Table 4).

The leading factors militating against proper ohis operation in the respondent's healthcare facility are poor understanding of insurance plans and expectations by enrollees (77.6%) low reimbursement fees (70.4%), delay in claims processing and payment (57.6%), low volume of patients (57.6%), improper distribution and allocation of enrollees (52.8%), improper conduct of enrollees (52.8%), inadequate funding of the scheme (48%) and inadequate power supply (44.8%) (Table 5).

Table 1: Socio-demographic characteristics of respondents and facilities staff strength (N=125)

Variables	Category	Frequency	Percentage
Age as at last birth (years)	<30	10	8.0
	21-40	26	20.8
	41-50	30	24.0
	51-60	42	33.6
	>60	17	13.6
Mean Age	48.3±11.9 years		
Sex	Male	32	25.6
	Female	93	74.4
Highest qualification	Diploma	4	3.2
	Bachelor of Medicine	42	33.6
	Other Bachelor	31	24.8
	Masters	25	20.0
	PhD	3	2.4
	Medical Fellowship	4	3.2
	Technician	14	12.8
***Professional status**	Nursing officer	14	11.2
	Administrative officer	24	19.2
	Medical officer	54	43.2
	Consultant	17	13.6
	Laboratory scientist	16	12.8

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Variables	Category	Frequency	Percentage
Position in organization	Administrators	71	56.8
	Medical director	16	12.8
	Head of department/unit	13	10.4
	Nursing Superintendent	10	8.0
	Desk officer	9	7.2
	Record officer	6	4.8
Period of working as OSHIA desk official (in years)	<3	71	56.8
	4-6	46	36.8
	>6	8	6.4
Period of working in an organization (in years)	0 – 3	22	17.6
	3 – 6	23	18.4
	6 – 9	23	18.4
	Above 9	57	45.6
Staff Strength of facilities:	<3	11	8.8
Medical doctors	3-5	47	37.6
	>5	67	53.6
Nurses	<3	51	40.8
	3-5	57	45.6
	>5	17	13.6
Pharmacists	<3	34	27.2
	3-5	47	37.6
	>5	44	35
Pharmacist technicians	0	78	62.4
	<3	46	36.8
	3-5	1	0.8
Auxiliary nurses	0	25	20.0
	<3	90	72.0
	3-5	9	7.2
	>5	1	0.8
Laboratory scientists	0	39	31.2
	<3	11	8.8
	3-5	34	27.2
	>5	41	32.8
Laboratory technicians	0	63	50.4
	<3	59	47.2
	3-5	3	2.4
Administrators	0	28	22.4
	<3	84	67.2
	3-5	12	9.6
	>5	1	0.8
Health attendants	0	23	18.4
	<3	91	72.8
	3-5	7	5.6
	>5	7	5.6
Cleaners	0	10	8.0
	<3	81	64.8
	3-5	22	17.6
	>5	11	8.8

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Table4 2: Association between sociodemographic characteristics of respondents and their knowledge about OSHIA (N=125)

Variables	Knowledge about OSHIA		X^2	df	p-value
	Good knowledge	Poor knowledge			
Age as at last birth (years)					
<30	9(90.0)	1(10.0)	1.811	4	0.771
21-40	23(88.5)	3(11.5)			
41-50	25(83.3)	5(16.7)			
51-60	33(78.6)	9(21.4)			
>60	15(88.2)	2(11.8)			
Sex					
Male	80(86.0)	13(14.0)	1.105	1	0.217
Female	25(78.1)	7(21.9)			
Highest qualification					
Diploma	4(100.0)	0(0.0)	7.329	5	0.197
Bachelor of Medicine	37(88.1)	5(11.9)			
Other Bachelor	26(83.9)	5(16.1)			
Masters	20(80.0)	5(20.0)			
PhD	1(33.3)	2(66.7)			
Medical Fellowship	3(75.0)	1(25.0)			
Technician	11(78.6)	3(21.4)			
Professional status					
Nursing officer	11(78.6)	3(21.4)	19.024	4	0.029*
Administrative officer	21(87.5)	3(12.5)			
Medical officer	46(85.2)	8(14.8)			
Consultant	15(88.2)	2(11.8)			
Laboratory scientist	12(75.0)	4(25.0)			
Position in organization					
Administrators	15(93.7)	1(6.3)			
Medical director	62(87.3)	9(12.7)	15.881	5	0.328
Head of department/unit	10(76.9)	3(23.1)			
Nursing Superintendent	5(50.0)	5(50.0)			
Desk officer	6(66.7)	3(33.3)			
Record officer	5(71.4)	2(28.6)			
Period of working as OSHIA desk official (in years)					
<3	60(84.5)	11(15.5)	6.346	2	0.039*
4-6	39(84.7)	7(15.3)			
>6	6(75.0)	2(25.0)			
Period of working in an organization (in years)					
0 – 3	17(77.3)	5(22.7)	1.087	3	0.480
3 – 6	19(82.6)	4(17.4)			
6 – 9	20(86.9)	3(13.1)			
Above 9	49(85.9)	8(14.1)			

***Statistically significant <0.05**

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Table 3: Characteristics of respondents' healthcare facilities (n=125)

Variable	Category	Frequency	Percentage
What type is your facility?	Maternity centre	7	5.6
	Clinic	30	24.0
	Specialist hospital	31	24.8
	General Hospital	43	34.4
	Teaching hospital	1	0.8
Ownership of your hospital	Private	105	84.0
	Public	11	8.8
	Church/mosque (i.e faith-based)	9	7.2
Location of your organization	Urban	78	62.4
	Rural	18	14.4
	Semi-urban	29	23.2
What is the bed size of your organization	≤20	77	61.6
	21-40	33	26.4
	41-60	9	7.2
	61-80	1	0.8
	81-100	3	2.4
	>100	2	1.6
Which category of health facility does your facility belong to	Primary	34	27.2
	Secondary	82	65.6
	Tertiary	9	7.2
Period of operating in your organization (in years)	3	6	4.8
	4	2	1.6
	5	7	5.6
	6	9	7.2
	7 or more	101	80.8

Table 4: knowledge about the Osun Health Insurance Scheme (OHIS) and its operation (N=125)

Variables	Category	Frequency	Percentage
Means of getting to know about the Osun Health Insurance Scheme	Place of Work	43	34.4
	Colleagues/fellows health worker	41	32.8
	Radio/Television	28	22.4
	Social Media	7	5.6
	Friend	4	3.2
	Other (Please Specify)	2	1.6
Which is most accurate about the Osun Health Insurance Scheme	Medical aid	5	4.0
	Community health insurance	13	10.4
	Government-owned insurance	38	30.4
	Social health insurance	69	55.2
Do you know when OHIS was launched	Yes	90	72.0
	No	35	28.0
If yes, when was it launched (n=90)	2016	2	2.2
	2017	7	7.8
	2018	54	60.1
	2019	11	12.2
	2020	7	7.8

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Variables	Category	Frequency	Percentage
	2021	8	8.9
What Does the Osun Health Insurance Scheme stand to achieve?	Equitable access to healthcare for all citizens of Osun state	11	8.8
	To reduce out-of-pocket payments and improve access to quality healthcare services	15	12.0
	Adequate health coverage for the citizens of Osun State	15	12.0
	Affordable healthcare for all	38	30.4
	Comprehensive and qualitative healthcare at a very affordable rate	46	36.8
When did you know about OHIS (years)	1-3	32	25.6
	4-6	66	52.8
	7-9	19	15.2
	10	4	3.2
	I don't know	4	3.2
Waiting period for a new enrollee to wait before care can be obtained.	20 days	12	9.6
	45days	65	52.0
	60 days	15	12.0
	Others	24	19.2
	I don't know	9	7.2
Percentage that employer contributes to the scheme for their employee	3%	18	14.4
	1.5%	14	11.2
	I don't know	28	22.4
	5%	32	25.6
	10%	33	26.4
Number of enrollees' dependents that can be registered under OHIS	Spouse +2 biological children below the age of 18	1	0.8
	Spouse + 3 biological children below the age of 18	4	3.2
	Spouse + 4 biological children below the age of 18	115	92.0
	Spouse + 5 biological children below the age of 18	3	2.4
	I don't know	2	1.6
Beneficiary with children above 18 years are expected to know which of the following	the child should cater for him/herself	1	0.8
	The child cannot be covered by parental insurance	15	12.0
	to be covered under the tertiary institution social health insurance scheme	16	12.8
	undertake extra contribution for additional cover to the benefit package	38	30.4
	The child must be an independent enrollee	55	44.0
Any healthcare services that the enrollee will pay for	Yes	93	74.4
	No	24	19.2
	Not Sure	8	6.4
*If yes, healthcare services that the enrollee will pay for (**n=**93)	Ear, nose, and throat treatment	23	24.7
	Treatment of complicated malaria	46	49.5
	Cesarean Section (CS)	39	41.9
	A unit of screened Rh-negative blood	40	43.0
	Tooth extraction	23	24.7
	Hospital admission	51	54.8
	CT-Scan	49	52.6

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Variables	Category	Frequency	Percentage
Any tests the enrollee will need to pay some percentage for	Yes	81	64.8
	No	17	13.6
	Not Sure	24	19.2
*If yes, what are the tests (**n=**81)	A unit of screened Rh-negative blood	49	60.5
	Fasting blood sugar	16	19.7
	Abdominal-pelvic scan	33	40.7
	Echocardiography	73	90.1
	Ultrasound scan	23	28.4
	Genotype	24	29.6
	Blood grouping	19	23.5
	Full blood count and PCV	25	30.8

*Multiple responses

Table 5: factors militating against proper OHIS operation in your healthcare facility (N=125)

Statements	Yes	No	I don't know
Poor understanding of insurance plans and expectations by enrollees	97(77.6)	21(16.8)	7(5.6)
Low reimbursement fees	88(70.4)	24(19.2)	13(10.4)
Delay in claims processing and payment	72(57.6)	41(32.8)	12(9.6)
Low volume of patients	72(57.6)	49(39.2)	4(3.2)
Improper distribution and allocation of enrollees	66(52.8)	48(38.4)	11(8.8)
Improper conduct of enrollees	66(52.8)	53(42.4)	6(4.8)
Inadequate funding of the scheme	60(48.0)	46(36.8)	19(15.2)
Unwillingness to participate in the scheme	58(46.4)	53(42.4)	14(11.2)
Lack of opportunity to participate in decision-making with the agency	56(44.8)	59(47.2)	10(8.0)
Inadequate power supply	56(44.8)	65(52.0)	4(3.2)
Inadequate workforce including training	53(42.4)	64(51.2)	8(6.4)
Political support at the local government level	52(41.6)	43(34.4)	30(24.0)
Inadequate training of workforce	52(41.6)	60(48.0)	13(10.4)
Unwillingness to participate in the scheme	49(39.2)	54(43.2)	22(17.6)
Lack of adequate hospital equipment	43(34.4)	79(63.2)	3(2.4)
Cumbersome paperwork	42(33.6)	73(58.4)	10(8.0)
Lack of drugs/Haphazard supply of drugs	40(32.0)	79(63.2)	6(4.8)
Poor understanding of insurance plans and expectations by hospital	36(28.8)	83(66.4)	6(4.8)
Lack/ inadequacy of hospital consumables and supplies	33(26.4)	87(69.6)	5(4.0)
Unfavorable government politics with the scheme	32(25.6)	64(51.2)	29(23.2)
Unfavorable government politics with the scheme	30(24.0)	66(52.8)	29(23.2)
Lack of infrastructure and space	31(24.8)	81(64.8)	13(10.4)
Lack of regulation and transparency in the handling of funds	25(20.0)	74(59.2)	26(20.8)
Inadequate regulations from the agency	25(20.0)	83(66.4)	17(13.6)
Lack/ inadequacy of laboratory service	24(19.2)	100(80.0)	1(0.8)
Availability of other health insurance packages in the hospital	22(17.6)	93(74.4)	10(8.0)
Lack of regulation and transparency in the handling of funds	21(16.8)	75(60.0)	29(23.2)
Improper conduct of OSHIA officer(s)	12(9.6)	97(77.6)	16(12.8)

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Discussion

This study examines knowledge and factors influencing the operation of the Osun Health Insurance Scheme (OHIS) among OHIS representatives and healthcare providers in Osun State. Findings from this study reveals several knowledge gaps among respondents concerning OHIS, especially regarding its objectives, operations and service coverage. The knowledge on the scheme's goal was very limited with very few of the respondents understanding its aim to provide comprehensive and affordable health care and fewer recognizing OHIS's goal of ensuring equitable healthcare access for all citizens. Although, the awareness of OHIS existence was high which is expected and consistent to a related study conducted in the University of Nigeria teaching hospital where the health worker's awareness about NHIS was relatively high.[18] The source of information being from colleagues and place of work is also similar between both studies. However, similar studies conducted among community members in Plateau and Lagos states found a lower level of awareness and knowledge with the major source of information being family and friends. [17,18] This is not surprising as the majority of this study's respondents are medical officers and hold an administrator position in their organization, signifying that their professional status and role might have influenced their knowledge as opposed to that of community members. However, the discrepancy in awareness and knowledge of the respondents shows that while healthcare providers may be aware of OHIS, there is insufficient depth of understanding about its core mission and operation. Moreover, the respondents showed limited knowledge regarding waiting periods for enrollee care access and employer's contribution rate. Another knowledge gap was also identified on the knowledge about OHIS service coverage. While majority knew that some services require enrollees to pay out-of-pocket, there was notable uncertainty about which services were covered by the scheme with half of the respondents unaware of the coverage of essential services like CS, complex malaria treatments and hospital admission, and services that require payment such as CT-scan. Similarly, there was a gap in respondents' knowledge of some basic tests like packed cell volume, blood grouping, and fasting blood sugar that patients should not pay for. These knowledge deficits can hinder healthcare providers' ability to effectively administer and communicate the scheme's processes to enrollees, result in misunderstandings, reduced patient trust, and potential out-of-pocket expenditures for services meant to be covered, ultimately impacting the quality of care delivered under the scheme. These findings is similar to a related study conducted among healthcare providers in Ghana and Kenya where healthcare providers had relatively low knowledge on National Health Insurance Fund (NHIF) and its operation. [21] Interestingly, there were statistically significant associations identified between respondents' knowledge and their professional status and tenure as OSHIA desk officials, emphasizing the importance of roles and experience in the knowledge about health policy.

As regards healthcare facility characteristics, the study found that most surveyed facilities were privately owned and located in urban areas, and a significant proportion belonged to the secondary care category. This can be an indication of uneven distribution of the health insurance scheme resources in Osun State resulting in inequitable access to available health services, a major issue in achieving the objectives of the health insurance schemes found in similar studies. [22–24] Notably, our results reveal a significant association between facility type and duration of operation with respondents' knowledge of OHIS. However, the operational challenges facing the effective implementation of OHIS are multifaceted, with respondents citing low reimbursement fees, delayed claims processing, and poor understanding of insurance plans by enrollees as major hindrances to the quality operation of the scheme. These barriers may reduce provider's motivation and willingness to actively participate in OHIS, consistent with findings from similar studies on NHIS. [13,22,23] This prevalent poor understanding of the insurance plans by enrollees underscores a need for comprehensive and continuous community outreach and education to clarify health insurance packages, expectations, benefits, and limitations of the scheme. Improved understanding of health insurance principles among enrollees may also reduce improper conduct, which was also reported as a factor affecting OHIS operations.

Moreover, further analysis identifies specific predictors of OHIS knowledge among respondents. Increased knowledge was observed among those working in primary healthcare facilities, those employed in private settings, and those with shorter tenures as OSHIA desk officials. The increased in knowledge among privately owned facilities was identified in a study conducted in northern Nigeria state [26)] which may be driven by the

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enhanced competition in private healthcare services which encourage which is a important attracting and retaining patients who prefer insured healthcare options [27,28]. Therefore, corporate collaborations between public and private facilities can promote the equitable distribution of health resources, address the existing disparities and enhance the long-term sustainability of OHIS. Furthermore, there was increased knowledge among officials with shorter length of employment period, which may be suggestive of onboarding training received by newer staff. Therefore, continuous professional development, in form of training and retraining, for OSHIA desk officials, may further strengthen the operation of the scheme and improves treatment outcomes of patients.

There is a need for a study on the universal factors impacting health insurance operations in Nigeria and sub-Saharan Africa at large for a more scalable and generalizable findings to inform recommendations for policymakers for overarching achievement of health insurance goals.

While this study offers valuable insights into many context-specific factors affecting the operation of the Osun state health insurance scheme, the study population was primarily healthcare providers and OSHIA desk officials, limiting the generalizability of findings to broader populations.

Strengths and Limitations of the Study

This study provides valuable insights focusing on frontline healthcare providers and OHIS desk officers directly involved in the scheme implementation. The first-hand information about operational challenges and gaps in knowledge within scheme will provide a workable template for designing a impact-oriented interventions for improvement. Also, the inclusivity of the study incorporating wide spectrum of facility types across rural and urban geographical location in Osun State makes the findings to be broad based and all-encompassing reflecting the true picture of the reality Osun healthcare facilities. Although not reducing the validity and representativeness of findings in this study, up to half of the eligible healthcare facilities chose not to participate in this study, and their which was well respected.

Implications of the Findings

The findings highlight key areas for improvement in the OHIS, particularly around provider knowledge, claim processing, and enrollee awareness. Addressing these gaps is essential to improving service delivery and strengthening trust in the scheme. Enhanced training for providers, better communication strategies, and more efficient administrative processes could lead to improved enrolment, reduced complaints, and better health outcomes. The study also suggests the need for regular evaluations to inform policy and guide the long-term sustainability of health insurance in the state.

Conclusion

This study highlights that while awareness of the Osun Health Insurance Scheme (OHIS) among healthcare providers (representatives of OSHIA) is generally high, there are gaps in knowledge in specific domains, including their understanding of the scheme's goals, operations and service coverage. The identified challenges, such as low reimbursement rates, delayed claims processing, and limited enrollee understanding can impact the effectiveness of OHIS. Providers working in privately owned facilities and those with longer years of operation appeared to have better knowledge of OHIS. To enhance the quality of care at OHIS-accredited facilities, it is important to address the identified operational challenges systematically, beginning with the most immediate issues. Strengthening awareness efforts, especially around areas of poor provider knowledge, will likely improve service delivery and ultimately benefit enrollees and the wider population in Osun State.

Competing Interests

There was no financial or personal relationship with other people or organizations that could have inappropriately influence this article. Therefore, all authors of this study declare no conflict of interest.

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