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Utilization of the Delta State contributory health scheme among teachers in government secondary schools in Delta-south senatorial district, Delta state, Nigeria

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ABSTRACT

The Delta State Contributory Health Scheme (DSCHS) was initiated so that residents of the State would have access to affordable and quality healthcare. The study aimed to determine the knowledge and utilization of the DSCHS among teachers in government secondary schools in Delta State. It was a cross-sectional study among 350 government teachers in the Delta-South Senatorial district with data analysed using SPSS v.26. Mean age of the teachers was 45.3(±3.00) years. About 99.7% were aware of DSCHS, however only 36% of respondents had a good knowledge of the scheme. The age (p=0.023) and local government area (p<0.001) of respondents was significantly associated with their knowledge of the DSCHS. A total of 243 (69.4%) government teachers had used the scheme in the past year with LGA of practice (p=0.007) significantly associated with utilization of the scheme. Challenges to enrollees include a cumbersome registration process (67.4%), poor attitude of healthcare workers (61.7%) and delay in seeing a doctor (57.4%). In conclusion, there was a high level of awareness but a poor knowledge of the DSCHS observed among respondents. Utilization of the DSCHS was high despite self-reported programme challenges. We recommend that Government improves knowledge of the scheme to enrollees using enlightenment programmes and help resolve bureaucratic bottlenecks to improve utilization of the DSCHS.

Keywords: *Awareness, DSCHS, Health insurance, Knowledge, Utilization*

Introduction

Health is crucial in boosting a country's economy since healthy individuals are more productive. Access to inexpensive, high-quality healthcare for all populations is a persistent problem in developing countries like Nigeria. Nigeria is one of the highest out-of-pocket health spending countries and has the poorest health indicators in the world (GustafssonWright & Schellekens, 2013).

Health insurance is financing healthcare through prepayment, eliminating financial challenges for beneficiaries. To meet the United Nations' Sustainable Development Goal 3 (Ensure healthy lives and promote well-being for all ages), all individuals must have universal health coverage by 2030. Universal Health Coverage is described as giving financial protection from the costs of utilizing health services to all citizens of a country and enabling them to get the health treatments they require if the services are of enough quality and effectiveness (McIntyre & Kutzin, 2016).

The Nigerian government developed the National Health Insurance Scheme (NHIS) to finance healthcare to achieve universal health coverage for all Nigerians under Act 35 of the 1999 constitution. The necessity for health insurance to offer adequate health care to Nigerians was first recognized in 1962 when the idea for a national health insurance program was suggested (Katibi *et al*, 2003).

The Delta State Contributory Health Scheme (DSCHS), under the Supervision of the Delta State Contributory Health Commission (DSCHC), was created by the Governor of Delta State on the 4th of February 2016, so that all residents of the State will have access to affordable and quality healthcare. The objectives of the DSCHS include access to healthcare, equitable health services, financial and social protection, and health for all Deltans (DSCHS, 2018). The scheme had been in operation for more than six years and had experienced both teething and operational challenges.

This study will provide empirical evidence for the improvement of Delta State Contributory Health Scheme. There hasn't been any research carried out on the Delta State Contributory Health Scheme since it has been in operation. Previous studies on the National Health Insurance Scheme in Nigeria has been conducted among different study populations such as Health workers, Traders, Pharmacists, and Pregnant women with no research been carried out among teachers in government schools, and there were among the first to start the Scheme under the formal sector.

Objective of the study

The study aims to determine the knowledge, utilization and factors affecting utilization of the Delta State Contributory Health Scheme among teachers in government secondary schools in the Delta-South Senatorial District of Delta State, South-South Nigeria.

Literature Review

Concept of Delta State Contributory Health Scheme.

The journey to achieving universal health coverage in Delta state began with the transmission of an executive bill to the Delta State House of Assembly on the 22nd of June 2015 to establish the Delta State Contributory Health Commission. The bill went through a first reading on the 24th of June 2015, a second reading on the 12th of August, 2015, and a public hearing on the 26th of August, 2015. The bill had a third hearing and was passed by the Delta State House of Assembly on the 9th of December 2015. The bill establishing the Delta State Contributory Health Scheme was signed into law by the governor of the State, Senator Dr. Ifeanyi Okowa, on the 4th of February 2016. The Delta State Contributory Health Scheme began on the 1st of January 2017, and it currently has approximately 15% of the Delta State residents as enrollees in the Scheme (DSCHS 2018).

A familiar study on health insurance by Lar *et al*. (2013) which used a descriptive cross-sectional survey with a multi-stage sampling technique to investigate participation in the National Health Insurance Scheme among Nurses at a Tertiary Teaching Hospital in North Central Nigeria. Structured, self-administered questionnaires were used to collect data. About 268 (67%) of the respondents had good Knowledge of the Scheme, with a total of 312 (78%) nurses actively participating in the Scheme. A more significant proportion of 216 (54%) respondents were not satisfied with the Scheme, with 80 (37.0%) noting that the process was cumbersome. Some difficulties encountered were also noted in this study,

which included long delays in seeing the relevant personnel at the time of service delivery and delays in getting some materials/ drugs.

A study on Perception and Satisfaction of Employees with National Health Insurance Scheme Services: A Descriptive Study at University College Hospital, Ibadan, Nigeria by Gbadamosi and Famutimi (2017) was conducted to assess the perception and satisfaction of employees with National Health Insurance Scheme (NHIS) Services. It was a descriptive cross-sectional study design. A multi-stage sampling technique was used to choose 11 departments in this study. The departments chosen are the Department of Clinical Nursing, Department of Physiotherapy, Department of Health Information Management, Department of Medicine, Department of Medical Laboratory, Department of Administration Services, Department of Accounting, Department of Engineering, Department of Public Relations, Department of Social Work and Department of Radiography. A total of 347 respondents participated in this study. A self-administered question was distributed. The result of the study indicated that 162 respondents were males (46.3%) and 188 (53.7%) females. Only 51.4% had good Knowledge, while 48.6% had poor Knowledge about the NHIS program. 62% of respondents rated NHIS services as good and excellent, respectively. Meanwhile, 48.6% of respondents were satisfied with the services of the Scheme. Some respondents also noted the challenges they encountered during the registration process: delay in registration, delay in getting an NHIS card, non-availability of expected services from healthcare providers, long- queues at NHIS offices, and unfriendly attitude of workers.

Data and Methods

It was a cross-sectional descriptive study using quantitative methods among government teachers in public secondary schools in Delta state, carried out with a pre-tested, self-administered structured questionnaire. The study was conducted in Delta South senatorial district of Delta State in four selected local government areas: Isoko North, Isoko South, Warri-South, and Warri-Southwest. With a calculated sample size of 342 using the Cochran formula, a total of 350 government teachers were sampled using a multi-stage sampling method. For the first stage, the local governments used for the study Isoko North, Isoko South, Warri-South, and Warri-Southwest were selected using a simple random sampling technique by balloting. Two government secondary schools were selected from each local government using systematic sampling for the second stage. For the third stage, the teachers were recruited using a simple random sampling technique. Data collection was done in June-July 2022.

Study variables include socio-demographic data, awareness, knowledge, utilization and factors affecting the utilization of the Delta State Contributory Health Scheme. The data was analyzed using Statistical Package for Social Sciences (SPSS, 26.0) for descriptive (frequencies and percentages) and inferential (chi-square) statistics.

The level of awareness was assessed as a percentage of those aware of the DSCHS. To determine the level of knowledge, ten selected questions were used to assess the respondent's knowledge regarding DSCHS. A score of 1 was given for every correct response, while a score of 0 was given for every incorrect response. The knowledge scores were summed and graded for each participant. A total knowledge score of less than five (less than 50% of total score) was graded as poor Knowledge, while a score of 5 and above (50% of total score and above) was graded as good Knowledge.

To assess utilization, the question "Have you used the DSCHS in the past year" was asked to assess the utilization level. It was assessed using the percentage of those who used the Scheme to access healthcare in the past year and the health service used.

Ethical approval with approval number HREC/PAN/2022/045/0500 was obtained from the Health Research Ethics Committee (HREC) Delta State University Teaching Hospital.

Results

Table 1 shows the socio demographic characteristics of respondents. Their mean age was 45.3 (±3.00) years with most teachers between the ages 41-50 years (38.0%). Two thirds of the teachers were females (66.6%), majority were married (82.6%) and majority were Christians (98.3%). In this study, Warri-South had the highest number of teachers (40.9%). The highest proportions of respondents were Isoko (38.0%), followed by Urhobo (19.1%), Itsekiri (18.6%), Ijaw (16.9%), Igbo (5.1%), Kwale (1.7%) and others (0.3%). Majority of the teachers have a bachelor's degree (81.4%), with 16-20 years (24.9%) being the modal year range of working experience. About half of the teachers (51.4%) taught in schools located in the rural area. A large number of teachers are aware of the scheme (99.7%). The various sources of information through which they found out about the health scheme (DSCHS) were Government circular paper (64.0%), seminars (22.6%), TV/radio (5.4%), social media (2.3%) while others (5.4%) include salary deductions, colleagues and friends.

Table 2 shows the analysis of knowledge of the Delta State Contributory Health Scheme. 176 (50.3%) respondents stated that the Delta State Contributory Health Scheme started in 2016, One hundred and nine respondents (31.1%) were aware that there are different health plans under DSCHS. About 138 (39.4%) respondents know of different health plans, such as Equity health plans, Formal health plans, Informal health plans & private health plans. Only 45 (12.9%) participants knew the category of people for the different health plans. A total of 149(42.6%) participants selected different health plans they use, such as Equity health plans, Formal health plans, Informal health plans & Private health plans. One hundred and eighty-six participants (53.1%) stated that accessing health care took 90 days after registration. One hundred and seventy-nine (51.1%) respondents knew that an enrollee could change to another health facility if the treatment were poor. To switch to another facility takes about six months to which 179 (51.1%) respondents answered correctly. A total of one hundred and twenty-six respondents (36.0%) had a good knowledge of the Delta State Contributory Health Scheme. In contrast, two hundred and twenty-four (64.0%) respondents had a poor knowledge of the health scheme.

Table 3 showed that 313 respondents (government teachers) were registered under the DSCHS. A total of 243 (69.4%) respondents had used the health scheme in the past one year, while 107 (30.6%) had not used the health scheme in the past one year. The most frequently used health services by the respondents under the scheme, were laboratory services 215 (61.4%) and Maternal care services 30 (8.6%). A total of 233 (66.6%) participants experienced difficulty using Delta State Contributory Health Scheme services. The challenges of enrolees ranged from cumbersome registration process which was experienced by 236 respondents (67.4%), poor attitude of healthcare workers (61.7%), delay in seeing a doctor (57.4%), poor

health services (56.6%), delay in getting a DSCHS card (55.1%), distance barrier to DSCHS health facility (25.1%) and no close DSCHS facility (22.9%). Other challenges included poor quality of drugs given (2.1%), difficulty in changing to another health facility (0.6%), not all ailments are treated under the scheme (0.3%), and poor treatment in a health facility (0.6%). (**Table 4**)

There was a significant association between the age of the respondents ($p=0.023$, $df=3$, $\chi2=9.577$), the local government areas where teachers operated ($p<0.001$) and their knowledge of Delta State Contributory Health Scheme. (**Table 5**) There was also a significant association between the local government areas where teachers were operated ($p=0.007$, $df=3$, $\chi2=12.063$) and their utilization of the Delta State Contributory Health Scheme in the last year. (**Table 6**)

Discussion

The essential goal of health insurance is to provide financing to ensure that every person has access to quality health care. This research examines the awareness, knowledge, utilization and factors influencing the utilization of the Delta State Contributory Health Scheme among government secondary school teachers in the Delta-South Senatorial District in four selected local government areas.
For this study, the theoretical framework used is the Re-aim framework which is designed to demonstrate that a health promotion program (Delta State Contributory Health Scheme) should be effective and reach many individuals. Re-aim stands for "reach," "efficacy," "adoption," "implementation," and "maintenance" (Glasgow, Vogt & Boles, 1999).

In this study, the majority of respondents were aware of the Delta State Contributory Health Scheme as seen in a related study by Obelebra and Foluke (2021) in Rivers state, Nigeria, which revealed that the federal civil officials were highly aware (334, 99.7%) of the National Health Insurance Scheme. This finding is also in agreement with another study done by Odo & Ukawuilulu (2019) which revealed a high level of awareness (63.9%) of the NHIS among civil servants. The primary means through which most respondents heard about the Delta State Contributory Health Scheme, of which majority came from government circular papers.

Although, the awareness is high, majority of respondents had a poor knowledge of the health scheme. This finding is corroborated by a previous study which revealed that nurses (64%) had better knowledge of NHIS when compared to artisans, clerical officers, and teachers (Ndie, 2013). This is because nurses play an essential role in the provision of healthcare. Most respondents are not aware that there are four health plans under DSCHS: Equity health plan, Formal health plan, informal health plan, and Private health plan, or even know what health plan they are using. However, more respondents are aware that an enrollee can change to another health facility if they are not satisfied with the health services received. The reason for the awareness of change to another health facility is due to a few teachers who had changed to another health facility for reasons such as being unsatisfied with the health services provided and changing house residence.

In this study, there was a significant association between age and the participant's Knowledge of the Delta State Contributory Health Scheme.
Majority of respondents in this study (teachers) believe this health scheme can improve healthcare in

Delta State, which is a positive response to this health program's influence (Reach). The outcome of this health scheme, (Delta State Contributory Health Scheme), helps to lower the financial load of the beneficiaries' medical costs. Most respondents prefer using the DSCHS to pay for medical expenses instead of out-of-pocket payment (Efficacy).

Adoption highlights the number of people who have signed up for this health program. A more significant number of respondents (313, 89.4%) are registered under DSCHS. The number of persons who have signed up for this health service is emphasized by adoption. Three hundred and thirteen respondents (89.4%) are registered under DSCHS (paraphrased). In contrast, those who are not registered gave reasons such as not being aware of the scheme, no need for the health scheme, having no confidence in the health facility, and personal reasons. The utilization of the Delta State Contributory Health Scheme in this study was high (243, 69.4%) among respondents and it is similar to a previous study which reported that a large proportion of respondents (203, 72.5%) were utilizing NHIS (Obelebra & Foluke, 2021). This observation is suggestive of a high acceptance of DSCHS by respondents. Some of the health services under the scheme that were utilized by the responsents include laboratory services, maternal care, radiology service, ophthalmology service, dental service, general check-ups, consultation, and pharmacy. However, only 4.3% of respondents were satisfied with services provided under DSCHS. The very low level of satisfaction observed in this study is contrary to a similar study done in Rivers state, Nigeria, where more than half of the respondents (56.4%) were satisfied with health services received under NHIS (Obelebra and Foluke, 2021). This is probably due to the fact that DSCHS has existed for a relatively shorter period of time and it's yet to scale up services when compared to NHIS.

Majority of respondents in this study preferred using private hospitals as their healthcare providers instead of public health facilities. This finding is however, not surprising because of the general negative perception of public health facilities due to long queues and longer waiting time. Some of the health facilities (service providers) used by the respondents in the study area include BU hospital Warri, Capitol Hill Hospital Warri, Central Hospital Warri, Estate clinic Warri, Fairview Hospital Warri, Central Hospital Ogbe-Ijoh, Group Medical Hospital Warri, Nascap Hospital Warri, Central Hospital Oleh, and Central Hospital Ozoro.

Implementation discusses why the program was created and why the program was established/ the supposed outcomes of the program. This health scheme was developed so all residents of Delta state, despite their background, socio-economic status, and location, have access to quality healthcare. In this study, we focused on government teachers (under the formal sector) from different local government areas with different backgrounds, with only a minor group who enjoyed quality healthcare while using the DSCHS. The supposed outcome of this health scheme is to reduce the burden of payment while seeking for health services Maintenance focuses on whether the program will still be sustainable or maintained even if there is a change in the resources. The Delta State Contributory Health Scheme is a long term intervention which requires long term availability of human and material resources so it can be maintained. In this study, the DSCHS has been operative since 2017 and is still operative although with some factors affecting its usage.

The challenges encountered by most respondents which discouraged them from using DSCHS in this study include a cumbersome registration process, delay in receiving a DSCHS card (registration factors),

poor attitude of health workers, poor health services, delay in seeing a doctor (long waiting time), lack of quality drugs (clinical factors), and distance to DSCHS accredited health facility (geographical factors). These findings are similar to what was reported about NHIS by Gbadamosi and Famutimi (2017) in which the respondents noted some challenges they encountered during the registration process such as delay in registration, delay in getting an NHIS card, non-availability of expected services from healthcare providers, long- queues at NHIS offices, and unfriendly attitude of workers. It is also similar to another study where the respondents noted, that the shortcomings of NHIS include non-dispensing of expensive drugs, non-availability of NHIS forms, poor attitude of health workers, and inadequate coverage (Akande *et al.*, 2012).

Conclusion

In conclusion, this study found that there was a high awareness of the Delta State Contributory Health Scheme among secondary school teachers in the study area, but poor knowledge of the workings of the scheme. The age of the respondents (teachers) and the local government they operated from was significantly associated with their knowledge of the scheme. The utilization of the Delta State Contributory Health Scheme among secondary school teachers in this study was high and the most frequently reported factors affecting the utilization of DSCHS were registration factors, followed by clinical factors and geographical factors. There is need for improved access to information regarding DSCHS; and the scheme has the potential to improve the quality of healthcare delivery in Delta State if it is effectively scaled up.

Recommendation

The following recommendations are hereby made in order to improve the Delta State Contributory Health Scheme. Firstly, there should be seminars or enlightenment programs to educate the teachers on the DSCHS. Secondly, banners and posters should be placed strategically to educate the public on the Delta State Contributory Health Scheme. Thirdly, the Government should make the registration process easy, so that people are encouraged to join DSCHS in both the formal and informal sectors of the economy. Finally, efforts should be made to accredit more health facilities and improve the quality of service already provided by the scheme in order to reduce the barriers to utilization of DSCHS.

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Appendix

Table 1: Socio-demographic Characteristics of Respondents (n=350)

Socio-demographic variables	Frequency	Percentage
Age group		
20-30	8	2.3
31-40	87	24.9
41-50	133	38.0
51 and above	102	29.1
Mean age	45.3(±3.00)	
Gender		
Male	117	33.4
Female	233	66.6
Religion		
Christian	344	98.3
Traditional	2	0.6
Others	4	1.1
Marital status		
Single	39	11.1
Married	289	82.6
Widow	19	5.4
Widower	2	0.6
Separated	1	0.3
Tribe		
Isoko	133	38.0
Urhobo	67	19.1
Itsekiri	65	18.6
Ijaw	59	16.9
Igbo	18	5.1
Kwale	6	1.7
Others	1	0.3
Local government		
Warri-South	143	40.9
Isoko-north	67	19.1
Isoko-south	60	17.1
Warri-southwest	80	22.9
Educational Qualification		
NCE	40	11.4
Bachelors	285	81.4
Post graduate diploma	11	3.1
Masters	13	3.7
Others	1	0.3
Years of teaching experience		
1-5	40	11.4
6-10	81	23.1
11-15	83	23.7
16-20	87	24.9
21 and above	59	16.9
Location of school		
Rural	180	51.4
Urban	154	44.0

Table 2: Knowledge of Delta State Contributory Health Scheme among respondents.

Variable	Frequency	Percentage
Year DSCHS was established		
2016 (correct response)	176	50.3
Others	174	49.7
Year DSCHS became operative		
2017 (correct answer)	73	20.9
Others	277	79.1
Aware of the different health plans under DSCHS		
Yes	109	31.1
No	241	68.9
Which health plan do you know of		
Equity, Formal, Informal &private health plans(know any plan)	138	39.4
None of the above	212	60.6
Know the category of people for the different health plans		
Yes	45	12.9
No	305	87.1
Do you know the health plan you are using		
Equity, Formal, Informal & Private health plans (know any plan)	149	42.6
I don't know	201	57.4
Do you know how long it takes to access health care after registration		
90 days (correct response)	186	53.1
Others	164	46.9
Aware that an enrollee can change to another health facility		
Yes	179	51.1
No	171	48.9
How long does it take to change to another health facility		
Six months (correct response)	179	51.1
Others	171	48.9

Table 3: Utilization of Delta State Contributory Health Scheme among respondents.

Utilization variable	Frequency	Percentage
Registered under the DSCHS		
Yes	313	89.4
No	37	10.6
Utilizing the DSCHS		
Yes	196	56.0
No	154	44.0
Utilized the health scheme in the last one year		
Yes	243	69.4
No	107	30.6
How much are you willing to pay DSCHS		
Below 5000	217	62.0
5000-10000	14	4.0
Above 10000	1	0.3
Others	9	2.6
Willing to pay more if the health services provided under DSCHS are of high quality		
Yes	91	26.0
No	248	70.9
Preferred method of payment for health services		
Out of pocket	132	37.7
DSCHS	200	57.1
Are you satisfied with the health services of DSCHS		
Yes	15	4.3
No	247	70.6
Neutral	63	18.0
Services received		
Laboratory services	215	61.4
Maternal services	30	8.6
Radiology services	7	2.0
Ophthalmology services	4	1.1
Dental services	3	0.9
Other services include		
Consultation	4	1.2
General check-up	2	0.6
Pharmacy	1	0.3
Have you changed your health service provider (n=38)		
Yes	38	10.6
No	312	89.4
Reason for the change of health service provider		
Unsatisfied with the health services	26	7.4
Change of residence	8	2.3
Others	4	1.1
Preferred health facility for DSCHS		
Private hospital	176	50.3
Government hospital	122	34.9

Table 4: Factors affecting utilization of Delta State Contributory Health Scheme among respondents

Factors	Frequency	Percentage
Registration Factors		
Cumbersome registration process		
Yes	236	67.4
No	39	11.1
Delay in receiving DSCHS card		
Yes	193	55.1
No	91	26.0
Clinical factors		
Poor attitude of healthcare workers		
Yes	216	61.7
No	43	12.3
Poor health services		
Yes	198	56.6
No	64	18.3
Delay in seeing a doctor		
Yes	201	57.4
No	59	16.9
Geographical factors		
Distance barrier to DSCHS health facility		
Yes	88	25.1
No	163	46.6
No close DSCHS accreditated health facility to residence		
Yes	80	22.9
No	162`	46.3

Table 5: Socio-demographic factors and knowledge of DSCHS.

Factors	Knowledge, n (%)		$\chi 2$	df	p-value
	Good	Poor			
Age group					
<40	43 (45.2)	52 (54.7)	9.577	3	0.023
41-50	40 (30.1)	93 (69.9)			
51 and above	37 (36.3)	65 (63.7)			
Mean age	45.3 (±3.00)				
Gender					
Male	41 (35)	76 (65)	0.070	1	0.791
Female	85 (36.5)	148 (63.5)			
Marital status					
Unmarried	18 (29.5)	43 (70.5)	7.842	4	0.098
Married	108 (37.4)	181 (62.6)			
Local Government					
Warri-south	69 (48.3)	74 (51.7)	18.869	3	<0.001
Isoko-north	24 (35.8)	43 (64.2)			
Isoko-south	13 (21.7)	47 (78.3)			
Warri-southwest	20 (25)	60 (75)			
Educational Qualification					
NCE	19 (47.5)	21 (52.5)	6.575	4	0.160
Bachelors	100 (35.1)	185 (64.9)			
Postgraduate	7 (28)	18 (72)			

Table 6: Socio-demographic factors and utilization of DSCHS.

Factors	Utilization, n (%)		χ^2	df	p-value
Age group	**Yes**	**No**			
<40	75 (78.9)	20 (26.7)	6.412	3	0.093
41-50	85 (63.9)	48 (36.1)			
51 and above	73 (71.6)	29 (28.4)			
Gender					
Male	85 (72.6)	32 (27.4)	0.859	1	0.354
Female	158 (67.8)	75 (32.2)			
Marital status					
Unmarried	38 (62.3)	23 (37.7)	8.313	4	0.081
Married	205 (70.9)	84 (29.1)			
Local Government					
Warri-south	106 (74.1)	37 (25.9)	12.063	3	0.007
Isoko-north	49 (73.1)	18 (26.9)			
Isoko-south	45 (75)	15 (25)			
Warri-southwest	43(53.4)	37 (46.3)			
Educational Qualification					
NCE	27 (67.5)	13 (32.5)	3.908	4	0.419
Bachelors	200 (70.2)	85 (29.8)			
Postgraduate	16 (36)	9 (64)			