Original Article

Primary Health Care under One Roof: Knowledge and Predictors among Primary Health Care Workers in Enugu State, South East, Nigeria

George Onyemaechi Ugwu[1,2], Nympha Onyinye Enebe[3], Cosmas Kenan Onah[2,4], Casmir Ndubuisi Ochie[3], Thaddeus Chijioke Asogwa[2,3], Godwin Uchenna Ezema[2]

[1]Department of Obstetrics and Gynaecology, University of Nigeria, Nsukka, [2]Enugu State Primary Health Care Development Agency, Enugu, [3]Department of Community Medicine, University of Nigeria Teaching Hospital, Ituku, Enugu State, [4]Department of Community Medicine, Alex Ekwueme Federal University Teaching Hospital, Abakaliki, Ebonyi State, Nigeria

Abstract

Background: The concept of "Primary Health Care Under One Roof" (PHCUOR) is a new governance reform to improve primary health care (PHC) implementation and integration. This study aimed at assessing the level of knowledge of this concept and its predictors among PHC Workers. **Materials and Methods:** This was a cross-sectional descriptive study of PHC workers in Enugu State. Respondents were selected using systematic sampling method. Data were collected with self-administered questionnaire and analyzed using IBM-SPSS version 25. Level of statistical significance was set at 5% and confidence interval (CI) of 95%. **Results:** A total of 292 responses out of 337 questionnaires were retrieved, giving a response rate of 86.6%. Majority of the respondents were female (257, 88.0%) and greater than half were in the age range of 41–50 years (151, 51.7%). Most of the respondents had overall good knowledge of PHCUOR (210, 71.9%) but there was poor understanding of some concepts. Bivariate analysis showed that having good knowledge of PHCUOR was associated with duration of practice ($\chi^2 = 6.013$, $P = 0.018$) and age ($\chi^2 = 4.495$, $P = 0.036$) but on binary logistic regression, males were found to be 2.8 times more likely to have good knowledge of the concept compared to females (adjusted odds ratio = 2.763.; 95% CI = 1.022–7.469, $P = 0.045$). **Conclusion:** There was overall good knowledge of PHCUOR but the knowledge of rationale, gateway, and minimum service package (MSP) was poor. Males were approximately 2.8 times more likely to have good knowledge compared to females. Regular training of PHC workers on the concepts of PHCUOR especially the rationale, gateway, and MSP is needed to improve their knowledge and service delivery.

Keywords: Enugu, knowledge, predictors, primary health care under one roof

Introduction

The declaration of Alma Ata on Primary Health Care (PHC) in 1978 has been a standard for an accessible community driven and quality health care for all people and this has given rise to the health for all by the year 2000.[1] PHC connects individuals and families to their first level of contact with their national health system that can address their major health challenges. Since its establishment, there have been remarkable achievements in the major health indicators globally with life expectancy increasing by up to 10 years of what it was in 1978 and, risk of dying before age five falling by about two-thirds.[2] PHC remains a strong system and its features support the complexity and rapid transition of the world of today; its principles: health promotion, community participation, accessibility, use of appropriate technology, and inter-sectoral collaboration are appropriate to address both current and emerging challenges of health system.[2]

In spite of the palpable progress in the past 40 years of PHC, there are still unaddressed health challenges for many people of the world with wide disparity between the poor and the rich, especially for those living in vulnerable situations.[3]

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Address for correspondence: Dr. Nympha Onyinye Enebe, Department of Community Medicine, University of Nigeria Teaching Hospital, Enugu, Nigeria.
E-mail: nymphao@yahoo.com

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The progress has been threatened by epidemiological and demographic transition with corresponding changes in spectrum of diseases; disease burden of noncommunicable diseases and trauma exceeding that of infectious disease.[2] In October 2018, during the 40th anniversary of the 1978 declaration in Kazakhstan, the world leaders and other health stakeholders made the Astana declaration as an expression of their strong affirmation and support for PHC as an effective and efficient approach in achieving equitable health for all.[3]

Furthermore, in pursuance of Sustainable Development Goal 3 and Universal Health Coverage, primary health care Under One Roof (PHCUOR) was introduced by the Federal Ministry of Health of Nigeria through National Primary Health Care Development Agency (NPHCDA) in 2010 as policy.[4] As a new paradigm by the NPHCDA, the PHCUOR was approved by the National Council on Health in 2011 during its 54th session.[5] It is a government reform for the integration of all PHC services under one authority thereby reducing fragmentation in the management and delivery of PHC services.[6] PHCUOR is based on the principle of "One Management, One Plan and One Monitoring and Evaluation (M&E)," and aimed at strengthening the national health system. By this new arrangement, health resources for implementation of PHC activities across the states are repositioned from ministries, departments, and agencies where they had been previously domiciled such as Local Government Service Commission, State Ministries of Health and Ministry of Local Government Affairs to the new State PHC Development Boards or Agencies within the states.[5]

The policy is guided by a set of principles and nine pillars and every state is mandated to establish a state Primary Health Care Board (SPHCB) which maintains and coordinates all PHC activities in the State.[7] These principles include integration of all PHC services delivered under one authority, a single management body with adequate capacity to control services and resources and decentralized authority.[6] Other principles include the principle of "three ones" which means: one management, one plan, and one M&E system, an integrated supportive supervisory system managed from a single source, an effective referral system across the different levels of care and enabling legislation and regulations.[6] Fragmentation has been stated to be the greatest challenge for PHC services and consequently affects utilisation and PHC health indices.[6] The nine pillars are governance and ownership, legislation, minimum service package (MSP), repositioning, PHC systems development, operational guidelines, human resources, funding structure and sources of funds, and infrastructure establishment.[4] The assessment of PHCUOR policy in Adamawa, Nasarawa, and Ondo states revealed that integrated PHC systems through SPHCBs, as in the guideline for PHCUOR, leads to effective provision of PHC and better health outcomes.[8]

The NPHCDA designed a yearly scorecard monitoring system for assessing the level of state's performance in the implementation of PHCUOR and the extent of states' adherence to the national PHCUOR implementation guideline.[5] In the latest scorecard (scorecard 4) done in 2018, Gombe (76%), Niger (70%), Bauchi and Nasarawa (70%) in North East Nigeria were the best performing states while Kogi (25%), Edo (18%), and Akwa-Ibom (0%) performed least.[9] Enugu State (ENS) scored 45%, a significant improvement from the 10% scored in scorecard 3 assessment conducted in 2015.[10] In terms of zones, North East zone (62%) also performed best, South East got 50% while South-South performed least (39%). The assessment of the nine (9) pillars revealed that Office Setup was the best performing pillar (85%) while Repositioning, MSP and Legislation all scored below average.[9]

PHC workers are the service providers at the lowest tier of government; they are pivotal to the implementation of PHCUOR and so are supposed to be abreast with any reforms in PHC service delivery system. Furthermore, since the state is just in its journey to full implementation of PHCUOR, it is pertinent that the knowledge level of the PHCUOR strategy among the PHC workers of the state be assessed so as to know the extent of their involvement in the management of PHC. The aim of the study was therefore to assess the knowledge of PHCUOR and predictors among the PHC workers in ENS.

Materials and Methods

The study was conducted in ENS southeast region of Nigeria. Enugu is one of the five south-eastern states of the country and is made up of seventeen Local Government Areas (LGAs) of which twelve are rural and five are urban LGAs.[11] The people of the state are mainly of the Igbo ethnic group and their predominant religion is Christianity. They are mainly involved in farming, trading, civil service, and wine tapping as sources of livelihood.

PHC service delivery in the state is done through PHC facilities under Local Government Health Authorities (LGHA); secondary health services are delivered through secondary health facilities under the State Government and tertiary health services are delivered in tertiary health institutions under both the State and the Federal Governments. Several private health facilities, patent medicine, and pharmacy shops also provide primary healthcare services in the state. Unpublished information contained in MSP document obtained from ENS Primary Health Care Development Agency (PHCDA) office showed that ENS has 512 public PHC facilities with different cadres of clinical and nonclinical health workers such as Doctors, Nurses/midwives, Environmental Health Officers, Community Health Officers (CHOs), Community Health Extension Workers (CHEWs), Pharmacy Technicians and Medical Laboratory Technicians. The clinical PHC workers are dominated by CHEWs (60.4%) and Junior CHEWs (JCHEWs) (29.6%) with Nurses/midwives, CHOs, and Doctors making up only 5.5%, 3.6%, and 0.9%, respectively.

This was a cross-sectional descriptive study. The population interviewed were PHC workers in the public PHC facilities who had spent 6 months in the service. A minimum sample size

of 337 was calculated using the formula for estimating sample proportions,[12] and based on a reported, good knowledge of a PHC system of 54.5% in a study previously carried out among PHC workers in ENS.[13]

The study instrument was a semi-structured self-administered questionnaire designed by the researchers and reviewed by senior technical officers of ENS-PHCDA who had received training on PHCUOR. Data were collected on the sociodemographic characteristics, professional cadre, duration of practice, and knowledge of PHCUOR among the PHC workers in the state. The respondents were selected, using a systematic sampling technique, during training sessions of PHC workers on the introduction of measles second dose into routine immunization programme organised by ENS PHCDA at the 17 LGAs of ENS in the month of November 2019. A total of 337 out of 900 health workers who were in attendance in the 17 LGAs were selected. The selection of respondents was done in proportion to number of trainees in each LGA, using the list of attendees obtained from ENS-PHCDA as the sampling frame.

Data analysis was carried out using IBM-SPSS version 25.[14] Knowledge of PHCUOR was assessed with 24 variables and categorised arbitrarily as good for respondents who scored 50% and above and poor for those who scored less. Test of association was done using Chi-square while predictors of good knowledge were determined using binary logistic regression with level of statistical significance set at $P < 0.05$ and confidence interval (CI) of 95%. A cut off point of 0.1 was used as screening level to input variables into the logistic model.

Before the commencement of the research, ethical approval was obtained from the Research and Ethics Committee of State Ministry of Health ENS. Written informed consents of the respondents were also sought and obtained before questionnaires were administered.

Results

A total of 292 responses were obtained, giving a response rate of 86.6%. The mean age of the respondents was 46.5 ± 6.7 years and the predominant age group was 41–50 years (151, 51.7%). The majority (257, 88%) were married and had tertiary education (278, 95.2%). CHEWs constituted a majority (139, 47.6); only 1 (0.3%) doctor and 11 (3.8%) nurse/midwives were among the respondents [Table 1].

Two hundred and three (69.5%) of the respondents were aware of the role of the LGHA in PHCUOR while (267, 91.4%) knew about the pillars and principles guiding the PHCUOR policy. Majority of the respondents were aware of the funding mechanism of PHCUOR 230 (78.8%). However, only few of them knew about the rationale for PHCUOR (59, 20.2%), gateways to PHCUOR 113 (38.7%) and the MSP for PHC (48, 16.4%) [Table 2].

Over 50% of the respondents knew about all the principles of PHCUOR with knowledge of integration (233, 79.8%), integrated supportive supervision (243, 83.2%), and effective referral system (227, 77.7%) leading [Table 3]. In all, over

Table 1: Sociodemographic characteristics of respondents

Variables	Frequency ($n=292$), n (%)
Age group (years)	
<30	8 (2.7)
31-40	53 (18.2)
41-50	151 (51.7)
51-60	80 (27.4)
Gender	
Male	35 (12)
Female	257 (88.0)
Marital status	
Single	18 (6.2)
Married	257 (88.0)
Widowed	12 (4.1)
Widower	4 (1.4)
Separated	1 (0.3)
Highest educational level	
Primary	3 (1.0)
Secondary	11 (3.8)
Tertiary education	278 (95.2)
Duration of practice (years)	
≤20	127 (43.5)
21-40	164 (56.2)
>40	1 (0.3)
Professional cadre	
Doctor	1 (0.3)
Nurse/midwife	11 (3.8)
Environmental health officer	19 (6.5)
Community health worker	29 (9.9)
Community health extension worker	139 (47.6)
Junior community health extension worker	16 (5.5)
Pharmacy technician	8 (2.7)
Medical laboratory technician	7 (2.7)
Others	62 (21.2)

Table 2: Basic understanding of primary health care under one roof

Variables	Frequency ($n=292$), n (%)	
	Yes	No
Definition	232 (79.5)	60 (20.5)
Role of the LGHA in PHCUOR	203 (69.5)	89 (30.5)
The policy is based on certain principles and pillars	267 (91.4)	25 (8.6)
Rationale for PHCUOR	59 (20.2)	233 (79.98)
WDC as a basic functional health unit under PHCUOR	203 (69.5)	89 (30.5)
Funding of PHCUOR from BHCPF	230 (78.8)	62 (21.2)
Gateways to PHCUOR	113 (38.7)	179 (61.3)
MSP	48 (16.4)	244 (83.6)

WDC: Ward Development Committee, BHCPF: Basic health-care provision fund, LGHA: Local government health authorities, PHCUOR: Primary health care under one roof, MSP: Minimum service package

two-thirds of the respondents were aware of the nine pillars of PHCUOR [Table 4]. Knowledge of Human Resources for Health as a pillar was highest (238, 81.5%) while knowledge of the legislation was the least (190, 65.1%).

Two hundred and ten (71.9%) of the respondents had good knowledge of the concept [Table 5]. Table 6 contains the result of bivariate analysis which showed that age ($P = 0.036$) and duration of practice ($P = 0.018$) were associated with knowledge of PHCUOR. Table 7 shows that male sex is a predictor of good knowledge of PHCUOR (adjusted odds ratio=2.763; 95% CI: 1.022–7.469; $P = 0.045$).

Discussion

Greater than two-thirds of the respondents had good knowledge of the concept of PHCUOR. The high overall knowledge may be explained by the fact that 95.2% of the respondents had tertiary education and majority had spent over 20 years in service at the health department and were more likely to have attended trainings on the new concept of PHC management. However, the high level of knowledge was not unexpected in view of the fact that ENS scored 45% in the PHCUOR scorecard 4 implementation assessment of 2018,[7] a tool used by the NPHCDA to rate states' implementation of PHCUOR strategy. This score is high when compared to the score of other states in same southeast region of the country. Unpublished information obtained by researchers from ENS-PHCDA, the government parastatal in charge of the management of PHC system, showed that ENS had improved in implementation of PHCUOR. This improvement is marked by the establishment of new office set up; repositioning of Human Resources for Health from the State Ministry of Health, Local Government Service Commission and other relevant ministries, departments, and agencies to the ENS-PHCDA. Other improvements are in the development of MSP, Operational Guidelines and regulations documents for the state PHC system within the second half of 2019. The achievement of these milestones, which may have involved participation of PHC workers in the state, may have also contributed to the high level of knowledge of the new concept observed among our respondents.

Although the understanding of the concept among our respondents was generally good, there was poor understanding of some components of the new concept including gateways to PHCUOR, MSP and the rationale for PHCUOR. These findings suggest a need for training and re-training of PHC workers to acquaint them with all the components of the new management concept for PHC service delivery. This will help the PHC workers to understand the new order in PHC system and their roles and job descriptions for effective PHC service delivery.

Table 3: Awareness of principles of primary health care under one roof

Principle	Frequency ($n=292$), *n* (%)	
	Yes	No
Integration	233 (79.8)	59 (20.2)
A single management authority	157 (53.8)	135 (46.2)
Decentralized authority	186 (63.7)	106 (36.3)
One management one plan one monitoring and evaluation	203 (69.5)	89 (30.5)
Integrated supportive supervision	243 (83.2)	49 (16.8)
Effective referral system	227 (77.7)	65 (22.3)
Legislation and concomitant regulation	200 (68.5)	92 (31.5)

Table 4: Awareness of pillars of primary health care under one roof

Pillars	Frequency ($n=292$), *n* (%)	
	Yes	No
Governance and ownership	207 (70.9)	85 (29.1)
Legislation	190 (65.1)	102 (34.9)
MSP	227 (77.7)	65 (22.3)
Repositioning	205 (70.2)	87 (29.8)
Systems development	233 (79.6)	59 (20.2)
Operational guideline	226 (77.4)	66 (22.6)
Human resource	238 (81.5)	54 (18.5)
Sustainable funding	217 (74.3)	75 (25.7)
Office set up	204 (69.9)	88 (30.1)

MSP: Minimum service package

Table 5: Respondents composite knowledge of primary health care under one roof

Composite knowledge	Frequency ($n=292$), *n* (%)
Good knowledge	210 (71.9)
Poor knowledge	82 (28.1)

Table 6: Associated factors to knowledge of primary health care under one roof

Variables	Knowledge		χ^2	*P*
	Good ($n=210$)	Poor ($n=82$)		
Age (years)				
<45	79 (27.1)	42 (14.4)	4.495	0.036
45-60	131 (44.9)	40 (13.7)		
Sex				
Male	30 (10.3)	5 (1.7)	3.748	0.070
Female	180 (61.6)	77 (26.4)		
Marital status				
Single	25 (8.6)	3.4 (10)	0.005	1.000
Married	185 (63.4)	72 (24.7)		
Highest level of education				
Secondary or less	9 (3.1)	1.7 (5)	0.515	0.546
Tertiary	201 (68.8)	77 (26.4)		
Professional cadre				
Clinical staff	138 (47.3)	58 (19.9)	0.673	0.489
Nonclinical staff	72 (24.7)	24 (8.2)		
Duration of practice				
≤20	82 (28.1)	45 (15.4)	6.013	0.018
>20	128 (43.8)	37 (12.7)		

AOR: Adjusted odds ratio, CI: Confidence interval

Table 7: Predictors of knowledge of primary health care under one roof

Variable	Knowledge		AOR for 95% CI	CI	*P*
	Good (*n*=210)	Poor (*n*=82)			
Age category (years)					
<45	79 (27.1)	42 (14.4)	0.723	0.403-1.295	0.275
≥45	131 (44.9)	40 (13.7)	1		
Sex					
Male	30 (10.3)	5 (1.7)	2.763	1.022-7.469	0.045
Female	180 (61.6)	77 (26.4)	1		
Duration of practice (years)					
≤20	82 (28.1)	45 (15.4)	0.585	0.326-1.048	0.072
>20	128 (43.8)	37 (12.7)	1		

AOR: Adjusted odds ratio, CI: Confidence interval

The high knowledge of service integration, integrated supportive supervision, and effective referral system among the respondents showed that they were abreast with the important principles of PHC practice. This may mean that with the necessary resources put in place, the workers will deliver PHC services efficiently. This high knowledge also, may not be unconnected with the higher education and long duration of practice of the respondents aforementioned.

Age and duration of practice were significantly associated with knowledge of PHCUOR. This could be explained by the fact that the older health workers and those who had practised for longer period were more likely to have attended more trainings and acquired more education. Good knowledge was predicted by sex alone and male health workers were approximately 2.8 times as knowledgeable about PHCUOR as their female counterparts.

Limitation to the study

There was unequal distribution in the professional cadre of our respondents with CHEW dominating and only few nurses and a doctor among them. This observation, which is a reflection of substantial variation in professional cadre of PHC workers in ENS PHC system, did not permit comparison of knowledge of PHCUOR among respondents as doing so may not be reliable. This may have obscured the variation in knowledge across various cadres of PHC workers.

Conclusion

PHC workers in ENS displayed overall good knowledge of the policy of PHCUOR. They showed good knowledge of the definition, principles, funding, as well as the pillars of the concept. However, the knowledge of the gateways, rationale as well as MSP was poor. Sex was the predictor of knowledge of the concept. We therefore recommend that PHC workers should be trained on the concepts of PHCUOR especially the rationale, gateways, and MSP with poor scores to improve on their knowledge and service delivery at the first level health care.

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Conflicts of interest

There are no conflicts of interest.

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