

## Assessing Utilisation of Primary Health Care Services in Essien Udim, Nigeria: Pinpointing Determinants and Implications

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### Original Research Article

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**Abstract:** Good health is a key inalienable right of all Nigerian citizens but, guaranteeing this right often comes short. This is underscored by Nigeria's health indices that have remained below global standards. The level of utilisation of Primary Health Care (PHC) services, particularly in rural areas is increasingly being suggested could be partly responsible. This study was aimed to assess determinants of utilisation of PHC services in Essien Udim, Nigeria. A descriptive cross-sectional study design was used to elicit information from 460 adult respondents in the community and 35 health workers. A semi-structured questionnaire and review of patient/client records were used to obtain information on utilisation of PHC services. Findings showed that only 23.3% of respondents utilized PHC services in the last one year with more females 83 (77.6%) utilizing these services compared to males 24 (22.4%). Respondents that did not utilize 353 (76.7%), first contact for health needs was patent medicine vendors (58.9%), followed by traditional healers (25.8%). There was marginal but progressive increase in trend of PHC services utilisation from 2010-2013 with antenatal care (ANC) and preventive health most sought PHC services as indicated in reviewed patient/client records. Fees charged 241 (52.4%) and waiting time 307 (66.7%) were the predominant factors limiting PHC services utilisation from community perspective; whereas low staff strength (94.3%), ignorance of available services (80%) and cost of services (77.1%) were factors for Healthcare providers. Gender ( $p=0.035$ ) was statistically significantly associated with utilisation but age ( $p=0.905$ ) and educational level ( $p=0.209$ ) were not. Results suggest that health needs of majority of the people are delivered by unskilled personnel with implications on quality of care provided. Intricately related to this with the high demand for ANC services, is probable effects on infectious diseases control as ANC is entry point for prevention of mother-to-child transmission of HIV/AIDS. Improving the staffing needs for health services will reduce the client-staff ratio and waiting-time for services. Subsidizing services may impact positively on PHC services utilisation.

**Keywords:** HIV, Essien Udim, Nigeria, PHC services.

### INTRODUCTION

The fundamental idea of primary health care (PHC) services is to perk up the health condition of the rural populace. There is disparity in the scope of primary health care services among countries and is linked to the constantly varying national, state and local health challenges, needs and attitudes. This is known also to be affected by the quantity of existing resources to make available these services [1]. WHO argues that PHC symbolizes people centered health system in the context of the new European Health 2020 policy framework and remains the core avenue for interaction between the patient and the doctor at the grassroots [2]. The basic objective of the PHC plan as launched by the Nigerian government in August 1987 is to ensure universal access to available resources in order to

achieve the most important health desires of individuals and entire community [3].

Sepehri *et al.*, [4] stated that an amplified utilisation of health services is a foremost goal in several developing nations. Geographical and economic accessibility, educational level and perceived derivable benefits are important contributing factors to utilisation of health care services [5]. Emerging setbacks in the uptake of PHC services involve the following: a non-functional or ineffective referral system between the lowest level of health care and other levels of health care; high proportion of the available facilities serving only about 5-10 % of potential patients/clients; distribution of health care providers more in the urban areas against the rural areas; loss of confidence by patients, and our maternal mortality system rated among

the highest in the world including other health status indices [6]. For instance, is the increasing rate of adult mortality and under-five mortality which is gradually going beyond the average for Sub-Saharan Africa.

Moreso, there has been a significant low uptake of these services particularly at the rural areas when compared to urban dwellers [6]. An example is the study reported by Adindu & Osuchukwu [7], where 73.1% of women had their babies at home. Similar observation is the case in the long variance of health indices in the NDHS 2014; women in urban settlements compared to those at the rural areas were more probable to have their first ANC visit in the first trimester of pregnancy (23% versus 15%) respectively [8]. Also reported was that only 36% (23% in public sector facilities while 13% in private facilities) of delivery in the country are carried-out in a health facility and 38% of deliveries are done by trained birth attendants [9, 10]. Furthermore, women in rural settlements are more likely to deliver at home (77%) than those in the urban settlements (37%). Hypothetically, gender, age and educational level might be linked to the low utilisation of PHC services.

Access to PHC facilities in rural areas and providing preventive and curative health services is a global right of all citizens of every country. This inalienable right and goal of achieving the health-for-all initiative has been hindered by a number of factors; low utilisation of PHC services. Another huge challenge is the inequitable distribution of health workers. In Africa, one of the best stocks of Human Resources for Health (HRH) can be found in Nigeria, but like other developing countries, there exist high migration of nurses, midwives, CHEWs, to urban areas which have affected effective health care delivery leading to an increase in the number of avoidable deaths in the rural communities [5]. However, poor utilisation of these services by the populace in the rural community is evidenced in the increasing lack of confidence in the PHC system. Expanding coverage, strengthening and increasing access and utilisation of PHC services are key components of Nigeria's Health System Strategic Plans (HSSP) of 2010-2015 [11].

The Federal Ministry of Health Safe Motherhood Survey states that up to 9% of mothers from Akwa Ibom state deliver in faith-based maternity homes [12]. Considering the national policy on health cum local imperatives, the system of health care in Akwa Ibom state has to be rooted on PHC which is preventive, restorative, and rehabilitative, with indepth focus on high risk groups such as infants, young mothers, the aged and handicapped [13, 14]. In order to ascertain the impact of PHC in such a rural environment as Essien Udim, it is necessary to examine the trend and level of utilisation of primary health care services. Hence, the main objective of the study was to assess utilisation of primary health care services in Essien

Udim Local Government Area of Akwa Ibom state. Nigeria: Pinpointing determinants and implications.

## **METHODOLOGY**

### **Study setting and design**

The study setting is Essien Udim local government area (LGA). The people of Essien Udim are among the Annang speaking (LGAs) in Akwa Ibom State, in the South-South region of Nigeria. The Essien Udim LGA has a general hospital, a cottage hospital and 17 primary health care (PHC) facilities distributed within the 11 political wards. The design for the study was a cross-sectional descriptive survey to assess determinants of utilisation of PHC services in Essien Udim, Nigeria. The study was limited to health care providers of PHC facilities and respondents in the catchment area of these facilities in Essien Udim. The study determined the level of utilisation of PHC services among adult residents, it also described primary healthcare services available to individuals within the unit of households and examined the trends in the utilisation of PHC services and factors that affect utilisation of these services from the perspective of the community and health care providers and its concurrent implications.

### **Study population and sample size**

The population included adult ( $\geq 18$  years) residents in Essien Udim and 17 PHC centres distributed within the 11 political wards and health care providers at these PHC facilities. The sample for the community survey was 460 and was determined using the formula  $n = Z^2pq/d^2$ ; where  $n$  is desired sample size,  $Z$  is alpha level of confidence interval at 95%,  $p$  is proportion of occurrence,  $q$  is proportion of non-occurrence, and  $d$  is precision required [15]. However, the desired sample size was increased to account for non-response bias. For health care providers, the sample size was determined purposively. All the available health professionals at the selected health facility who were on duty at the time of visit formed the sample size for health care providers. Thirty-five (35) health workers were selected as the sample size for health care providers.

### **Sampling procedure and data collection instruments**

For the community survey, a multistage random sampling technique was used to select six health facilities; PHC centre, Ukana East; Health centre, Ukana Ikot Ideh; Health centre, Ikot Akpan Efiya; PHC centre, Ikpe Annang; Health centre, Adiasm; and PHC centre, Afaha Ikot Ebak. Four hundred and sixty (460) respondents in the community within the catchment area of the selected PHC centres were selected. The respondents were selected from households. In selecting the households, the researcher started at an anticlockwise direction from the first PHC facility selected. In the health care provider survey, all health

workers present from each of the randomly selected primary health care centres were administered questionnaires. These include Nurses, Community Health Extension Workers (CHEW), Community Health Officers (CHO), Pharmacy technicians and Laboratory technicians. Also, patient health records were retrospectively reviewed from 2010 to 2013 on the level of utilisation of PHC services in the selected health facilities.

A semi-structured questionnaire was administered to respondents in the community survey. The 36-item questionnaire comprised of three different sections. The modified two-scale Likert model [16] was adopted to measure the level of satisfaction with the factors affecting utilisation of PHC services, i.e. "Agree and Disagree". On the other hand, a semi-structured questionnaire based on closed ended and open-ended options was administered to health care providers. A set of 15 questions was developed as questionnaire and comprised of three sections. A structured client/patients' medical record checklist was used to review four-year health records of patients from 2010 to 2013.

#### **Data analysis methods**

Data collected were entered and analysed using Statistical Package for the Social Sciences (SPSS) Version 20.0. Descriptive statistics; percentages, frequencies and means were used to present data in tabular and graphical forms. The association between variables was tested using the Pearson Chi-square tool of statistical analysis. P-value of  $p < 0.05$  was considered statistically significant at 95% confidence interval.

#### **Ethical considerations**

Ethical approval for conduct of this study was obtained from the Ministry of Health, Uyo, Akwa Ibom state, Nigeria; where a letter of ethical approval for this study was issued to carry out the study. At the LGA and community levels, permission was sought from the local government chairman and community leaders which were granted respectively. Respondents' verbal informed consent was also sought prior to issuance of questionnaire. All questionnaires were issued after the study aims was well understood by participants. Voluntary participation was emphasized, respondents were told that they may withdraw at any point in time and the identity of all respondents would remain confidential.

#### **RESULTS**

##### **Level of utilisation of PHC services in the community**

Results show that within the last one year, only 107 (23.3%) respondents visited the PHC centre while a greater proportion 353 (76.7%) had not visited the facility for any service within this period. In determining the gender differential in the utilisation of PHC services in the community; statistically analysed results show that, of the 141 males and 319 females randomly sampled, only 24(17.0%) males made use of the available services at the health centre as compared to 83(26.0%) females (Figure 1). More findings on the community survey revealed that in the last one year, when sick, out of the 353 respondents that do not visit the PHC centre, majority of them 208 (58.9%) first facility of contact is the Patent Medicine Vendors (PMV), a good number 91 (25.8%) still patronize the traditional healers, 19 (5.4%) of them visits the General hospital and only a few 8 (2.3%) visits the Private clinics (Table-1).

**Table-1: Social and demographic characteristics of community respondents**

Characteristics		Frequency(N)	Percentage (%)
<b>Age (Years)</b>	18-27	32	7.0
	28-37	71	15.4
	38-47	187	40.7
	48-57	115	25.0
	> 57	55	12.0
	<b>Total</b>	<b>460</b>	<b>100.0</b>
<b>Gender</b>	Female	319	69.3
	Male	141	30.7
	<b>Total</b>	<b>460</b>	<b>100.0</b>
<b>Marital Status</b>	Married	291	63.2
	Single	95	20.7
	Separated	53	11.5
	Widow/Widower	21	4.6
	<b>Total</b>	<b>460</b>	<b>100.0</b>
<b>Religion</b>	Christian	454	98.7
	Traditional worshipper	6	1.3
	<b>Total</b>	<b>460</b>	<b>100.0</b>
<b>Occupation</b>	Farmer	169	36.7
	Trader	80	17.0
	Artisan	68	14.8
	Civil Servant	54	11.7
	Teacher	52	11.3
	Student	27	5.9
	House wife	2	0.4
	Others	8	1.7
	<b>Total</b>	<b>460</b>	<b>100.0</b>
	<b>Family size</b>	< 6	55
6 - 10		364	79.1
11-15		41	8.9
<b>Total</b>		<b>460</b>	<b>100.0</b>
<b>Educational level</b>	Tertiary	132	28.7
	Secondary	222	48.3
	Primary	87	18.9
	No formal education	19	4.1
	<b>Total</b>	<b>460</b>	<b>100.0</b>
<b>Perceived income level</b>	Lower	84	18.3
	Mid	366	79.6
	Upper	10	2.2
	<b>Total</b>	<b>460</b>	<b>100.0</b>

\*Utilisation with reference to the past one year at the time of survey

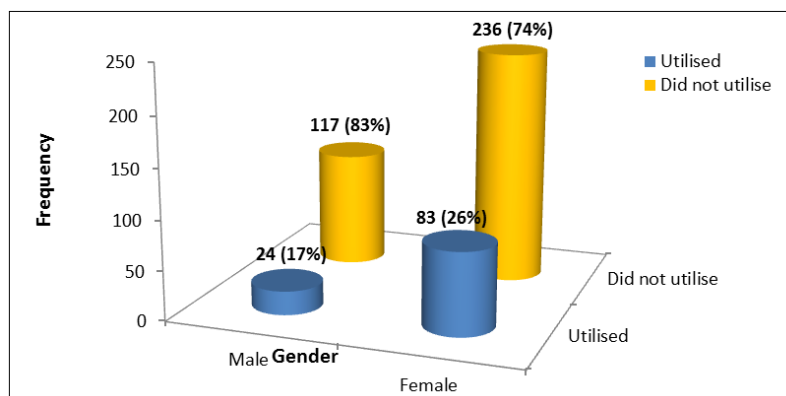


Fig-1: Level of utilisation of PHC services among males and females in the community

Table-2: Facility visited in the last one year for health needs order than PHCs

Facility	Frequency (N)	Percent (%)
Patent medicine vendor	208	58.9
Traditional healers	91	25.8
Faith-based	32	9.1
Private clinic	22	6.2
Total	353	100.0

**Factors that affect utilisation of PHC services from the community perspective**

Based on the community perspective, a summary of the factors which include; location of PHC centre, transport to health centre, physical environment of the health centre, waiting room, fees charged, drug availability, medical follow up; were all pooled into a level of satisfaction (i.e. Agree or Disagree) in Table 3 and Table 4. Results show that 38 (8.3%) had agreed that the location of PHC centre is a major factor while 422 (91.7%) disagreed; 111 (24.1%) agreed on

transport paid to health centre and 349 (75.9%) disagreed; 343 (74.6%) agreed on the physical environment of the health centre and 117 (25.4%) disagreed; 284 (61.7%) agreed that the waiting time and 176 (38.3%) disagreed; 241 (52.4%) agreed on the fees charged and 219 (47.6%) disagreed which indicates a high cost of service charged at these facilities; 109 (23.7%) agreed on drug availability at the health centre and 351 (76.3%) disagreed; 136 (29.6%) agreed on the medical follow-up and 324 (70.4%) disagreed (Table-2).

Table-3: Factors that affect utilisation of PHC services from the perspective of the community

Factors		Frequency (N)	Percent (%)
Location of PHC centre	Agree	38	8.3
	Disagree	422	91.7
	<b>Total</b>	<b>460</b>	<b>100.0</b>
Transport to health centre	Agree	111	24.1
	Disagree	349	75.9
	<b>Total</b>	<b>460</b>	<b>100.0</b>
Physical environment	Agree	343	74.6
	Disagree	117	25.4
	<b>Total</b>	<b>460</b>	<b>100.0</b>
Waiting time	Agree	307	66.7
	Disagree	153	33.3
	<b>Total</b>	<b>460</b>	<b>100.0</b>
Fees charged	Agree	241	52.4
	Disagree	219	47.6
	<b>Total</b>	<b>460</b>	<b>100.0</b>
Drug availability	Agree	109	23.7
	Disagree	351	76.3
	<b>Total</b>	<b>460</b>	<b>100.0</b>
Medical follow-up	Agree	136	29.6
	Disagree	324	70.4
	<b>Total</b>	<b>460</b>	<b>100.0</b>

**Factors that affect utilisation of PHC services from the perspective of the health workers**

Results of the factors affecting utilisation of PHC services from the perspective of the health workers show that; 33 (94.3%) listed non-availability of staff as a factor; 28 (80.0%) said Ignorance is a factor; 27 (77.1%) considered cost of service/low income to be a factor; 26 (74.3%) opined crude equipment/facilities as a factor, 25 (71.4%) considered language difference

to be a factor; 25 (71.4%) said lateness to duty by health workers; 25 (71.4%) said insufficient drugs; 24(68.6%) considered corruption/poor management of facilities; 24 (68.6%) said inadequate power supply; 23 (65.7%) said poor attitude of staff; 22 (62.9%) said absence from duty; 21 (60.0%) considered lack of motivation for workers; 19 (54.3%) said traditional practices/belief; and 15 (42.9%) said there is no vehicle to aid transportation in difficult terrain (Table-4).

**Table-4: Factors that affect utilisation of PHC services from the perspective of health workers**

Factors	Frequency (N)*	Percent (%)
Low staff strength	33	94.3
Ignorance	28	80.0
Cost of service	27	77.1
Crude equipments/facilities	26	74.3
Language differences	25	71.4
Lateness to duty	25	71.4
Insufficient drugs	25	71.4
Corruption/poor management	24	68.6
Inadequate power supply	24	68.6
Poor work behavior/ethics of staff	23	65.7
Absence from duty	22	62.9
Lack of motivation for workers	21	60.0
Traditional belief/practices	19	54.3
No vehicle to aid transportation to difficult terrain	15	42.9

\* Multiple responses

**The association of gender, educational level and age with utilisation of PHC services**

In testing the association of utilisation with the independent variables (gender, age and educational level), Pearson chi-square analysis was carried out at 0.05 level of significance and 95% confidence interval. The level of utilisation was then determined in association with the independent variable, hence, from

the analysis, the Pearson chi-square value ( $\chi^2$ ), degree of freedom (df) and probability value (p-value) was tabulated accordingly. Results indicated that only gender (p=0.035) was statistically significant with utilisation in favour of females unlike age (p=0.905) and educational level (p=0.209) which were not (Table-5).

**Table-5: Association of gender, educational level and age with utilisation of PHC services**

Independent variables	Degree of freedom (df)	Chi-square ( $\chi^2$ )	p-value
Gender	1	4.435	0.035*
Educational level	3	4.536	0.209
Age	4	1.034	0.905

\* P-value statistically significant at p<0.05

**Trend in utilisation of PHC services from 2010-2013**

Results of review of the health records of the six PHC facilities indicated that differences were observed in the services obtained from the health facilities within this period with an increase as the year

progresses from 2010 to 2013. Records showed that majority of services received by patients were antenatal care, health education and preventive health services (Figure-2).

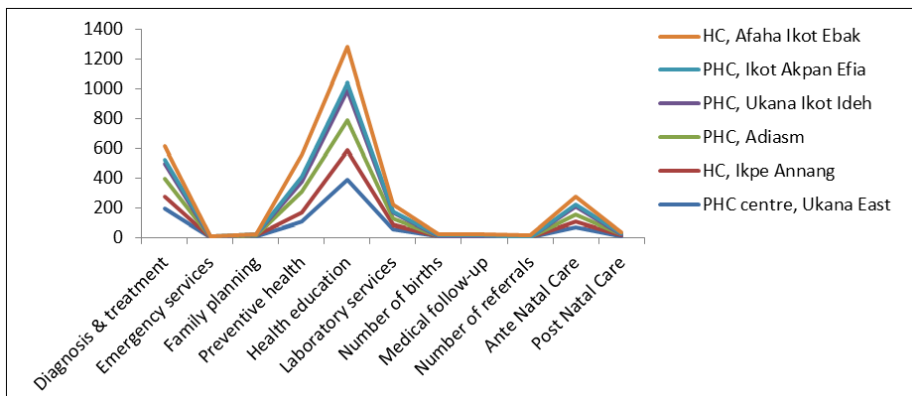


Fig-2b: Trend of PHC utilisation in Year 2011

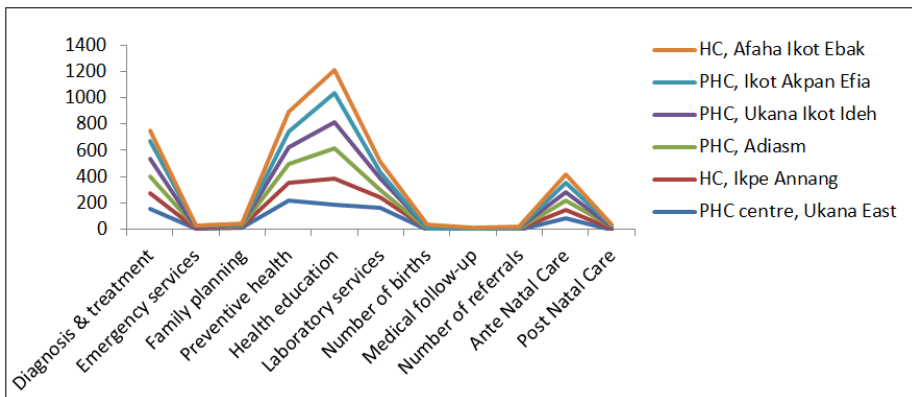


Fig-2c: Trend of PHC utilisation in Year 2012

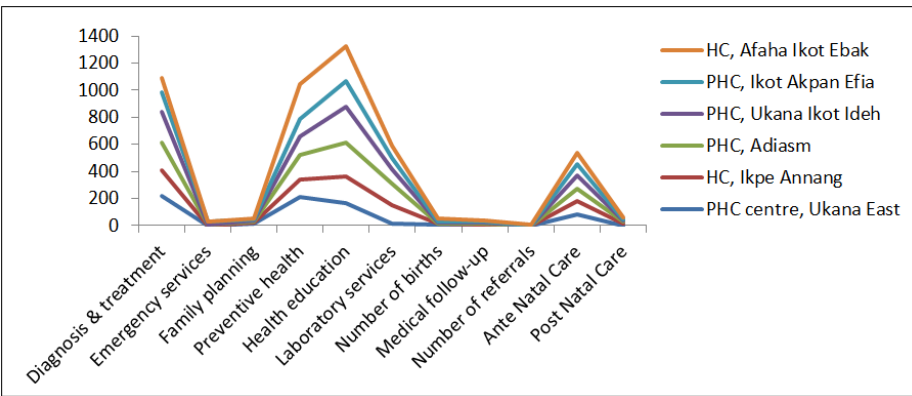


Fig-2d: Trend of PHC utilisation in Year 2013

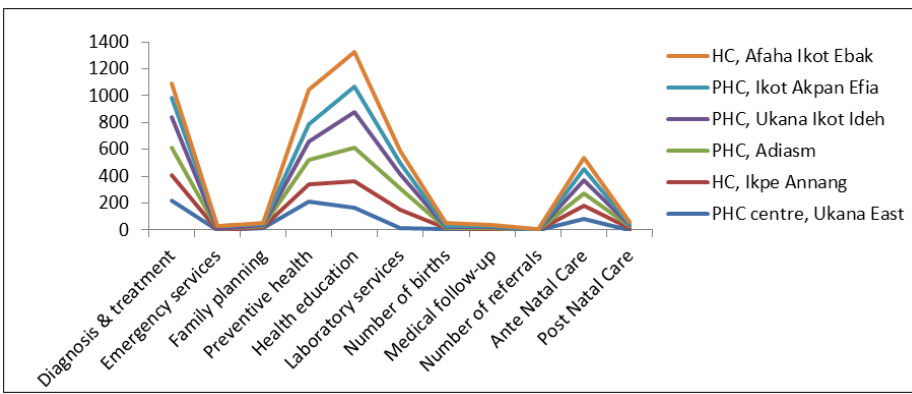


Fig-2d: Trend of PHC utilisation in Year 2013

## **DISCUSSION**

Understanding why persons within the community choose not to utilise healthcare is important in addressing the issues associated with the health status of rural communities. The survey revealed that aside the low patronage of PHC facilities (23.3%), greater part of the respondents choose to patronize the patent medicine vendors (PMVs) (58.9%) followed by the traditional healers (25.8%), as the first line of contact during ailment. The high patronage of the PMVs is an indication that the people utilise healthcare more for curative reasons than preventive purposes. The results also suggest that health needs of the communities are provided by unskilled persons exposing them to high risks inherent in such practice with inevitable increased morbidity and mortality [17, 18, 10, 19]. This may be due to the individual's knowledge and cultural perception of illness as reported in the general theory of help [20, 7, 21].

The findings of this study revealed that there is statistically significant association between gender ( $p=0.035$ ) positively skewed to females and the utilisation of PHC services. This may not be unconnected with the observation that the ANC was one of the most demanded PHC services as indicated in the trend of PHC services used within the periods in review in this study. This is also in agreement with the findings of Nwosu & Eke [17] on PHC services utilisation. In reality, this could be traced to the perceived notion by men that PHC facilities are women clinics and delivery centres for women [7, 22]. In contrast, level of education ( $p=0.209$ ) and age ( $p=0.905$ ) were observed not to be statistically significant. These findings in consonance with the Mechanic's theory and further affirms the assertion that if there is a primary influence of age and educational level on utilisation, it could occur only by chance.

Health is seen as a vital part of nation building. It is understood from societal and individual perceptions which form key components in the definition of primary health care [22]. The results of this study that showed that waiting time (66.7%) and fees charged (52.4%) were the major factors that deter utilisation of PHC services from the respondent perspective. Also, the 23.7% dissatisfaction in drug availability in the PHC centres calls to question the impact of the Drug Revolving Fund (DRF) in the LGA in relation to accessibility and cost of essential/routine drugs despite efforts by several stakeholders.

Low staff strength (94.3%) as agreed by of the respondents in the health provider survey at these health centres together with the cost of services (77.1%) at the PHC facilities for an entire perceived population of 248, 915 persons [12] is a huge constraint for utilising the PHC services. This is absolutely poor when compared to the WHO established standard for low income populations kept at 1:5000 [23-25]. Not only is this

proportion lower than the worldwide agreed standard but it is also a pointer to the human resource hurdles disturbing the PHC system in rural communities [3]. With this outcome, there is a possibility of stressing already existing low staff and demoralizing the few staff hence the continuous limitation to PHC service utilisation. In addition, Piane *et al.*, [10] opined that low staff strength contributes greatly to poor services in Nigerian health systems. This could also be the evident cause of the near non-existence of a 24-hour PHC services and the low trend of emergency services, number of births and number of referrals observed in the selected facilities from 2010-2013. This could be linked to the lingering national issue of epileptic power supply and partly to the style of governance including social goods that constitute everyday reality of the rural people. This was probably reflected in the marginal but progressive increase in trend of PHC services utilisation in these facilities from 2010-2013. These are in consonance with Chinawa [3], reported issues affecting PHC implementation in Nigeria.

## **CONCLUSION**

Over the last decade, Nigeria's health system has faced growing challenges, due mainly to the inaccessibility of the growing population to PHC facilities despite huge global efforts in this regard. About a quarter utilisation rate observed in females further reaffirms the need to improve on maternal and child care as a basic component of PHC and in achieving the Sustainable Development Goals in 2030. The low utilisation rate observed by males demonstrates a great need for an extensive health education in order to improve optimal utilisation as well as health outcomes.

In addition, the overall low rate of utilisation of PHC services (23.3%) especially at this level of healthcare does not only call into question where communities go to meet their health needs but also the quality of health care they receive. Since utilisation of PHC services is a strong predictor of good health, thus, safeguarding the health of rural communities should address the challenges to utilisation of PHC through improving the staffing needs for health services which will reduce the client-staff ratio and waiting-time for services. Moreso, subsidizing services and providing drugs at affordable rate will equally perk-up the level of PHC service utilisation and overall health conditions of the rural communities.

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REFERENCES

1. Park K. Park's textbook of preventive and social medicine; 2007.
2. World Health Organization. World report on ageing and health. World Health Organization; 2015 Oct 22.
3. Chinawa JM. Factors militating against effective implementation of primary health care (PHC) system in Nigeria. *Annals of Tropical Medicine and Public Health*. 2015 Jan 1;8(1):5.
4. Sepehri A, Moshiri S, Simpson W, Sarma S. Taking account of context: how important are household characteristics in explaining adult health-seeking behaviour? The case of Vietnam. *Health policy and planning*. 2008 Sep 5;23(6):397-407.
5. Abuja N. National Population Commission and ICF Macro; 2009. National Population Commission (NPC)[Nigeria] and ICF Macro Nigeria Demographic and Health Survey. 2008.
6. Federal Ministry of Health (FMOH). Healthcare in Nigeria. *Annual Bulletin of the Federal Ministry of Health*, Abuja, Nigeria; 2004.
7. Adindu A, Osuchukwu N. Primary health care and the peoples' perspective in defining health and illness. *Continental Journal of Tropical Medicine*. 2010 Jan 1;4:27.
8. Demographic N. Health Survey. 2013. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International. National Population Commission (NPC)[Nigeria] and ICF International. 2014 Jun:127-54.
9. Bassey PE, Ejemot-Nwadiaro RI, Esu EB, Ndep AO. Determinants and differentials of Maternal reproductive health outcomes in Nigeria: A Review of National Demographic Health Survey Data from 1999 to 2013. *Research on Humanities and Social Sciences*; 2016; 6 (22): 141 – 145.
10. Piane G, Ndep AO, Ejemot-Nwadiaro RI. Death in Childbirth: A qualitative study of the Delay Model; *Public Health*; (Under Peer Review for publication); 2017.
11. National Strategic Health and Development Plan Framework. Federal Ministry of Health, National Strategic Health and Development Plan Framework 2010-2015; 2009.
12. National Population Commission (NPC) [Nigeria] and ICF Macro; 2007.
13. Ekpo AH, Umoh OJ. Akwa Ibom State Millennium Development Goals 2005 Report. Uyo: Sleymas Ventures. 2007.
14. Udoh NB. "Reforming primary health care in Akwa Ibom State." *Ibom Medical Journal*, 2013; 1: 21.
15. Ejemot-Nwadiaro RI. A Guide to Biostatistics and Health Research methods. Calabar: Data Pro. 2009.
16. Lozano LM, García-Cueto E, Muñiz J. Effect of the number of response categories on the reliability and validity of rating scales. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences*. 2008;4(2):73.
17. Nwosu UM, Eke RA. Utilisation of government primary health care facilities in Aba, Nigeria. *Journal of Public Health*; 2007: 1 (1): 16-23.
18. Mandara MU, Renne EP. Where Women Deliver: Rivalry in obstetric care in Zaria, Nigeria. *Archives of Ibadan Medicine*. 2001;2(1):8-11.
19. Piane G, Ndep AO, Ejemot-Nwadiaro RI. Maternal mortality in Nigeria: A Literature review; *Health Education & Behavior* (Under Peer Review for publication); 2017.
20. Rebhan DP. Health Care Utilization: Understanding and applying theories and models of health care seeking behavior. Case Western Reserve University. 2011 May:1-9.
21. Piane G, Ndep AO, Ejemot-Nwadiaro RI. Childbirth in Nigeria: Applying the Theory of Planned Behavior; *Health Promotion International*; (Under Peer Review for publication); 2017.
22. Abdulraheem BI, Olapipo AR, Amodu MO. Primary health care services in Nigeria: Critical issues and strategies for enhancing the use by the rural communities. *Journal of public health and epidemiology*. 2012 Jan 31;4(1):5-13.
23. Braveman P, Krieger N, Lynch J. Health inequalities and social inequalities in health. *Bulletin of the World Health Organization*. 2000 Jan;78(2):232-5.
24. Federal Republic of Nigeria. National Population Census figures; 2006.
25. World Health Organisation. Human resource for health country profile: Nigeria. *Global Health Workforce Alliance*; 2008.