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Determinants of the Patronage of Available Primary Health Care Services by Rural Women in Osun State, Nigeria

By Olalekan Odefadehan¹ and Oladoyin Adereti²

Abstract

This study examined the determinants of the patronage of available primary health care services by rural women in Osun State, Nigeria. The aim of this study is to provide service delivery authorities with information on the barriers to the patronage of health services. Data for the study were collected from both primary and secondary sources. Descriptive statistics like frequencies, percentage, and mean values were used for analysis. Multiple regression was used to identify determinants, and the double-log functional form had the best fit. 45 health workers and 270 rural women were selected through multi-stage sampling. The study revealed that the pattern of patronage of primary health centres in the study area had a progressive increase over a period of five years (2014-2018) and that most of the respondents (rural women) on average reside 1.85 kilometres away from the health centres. The study concluded that age of respondents ($\alpha = 0.928$), monthly income ($\alpha = 0.018$), shortage of well-trained health professionals ($\alpha = -0.393$), a conducive environment ($\alpha = 0.454$), cleanliness of the environment ($\alpha = 0.320$), interpersonal relationship of staff and patients ($\alpha = 0.325$), timely diagnosis and treatment of health problems by PHC staff ($\alpha = 0.395$), ability of staff to prescribe effective drugs for treating diseases ($\alpha = 0.756$), cultural beliefs ($\alpha = -0.289$), and nature of the illness ($\alpha = -0.510$) were major determinants of patronage of PHC services in the study area. These factors, taken together, accounted for 73.6% variation in the level of PHC patronage by rural women. The most popular health services regarded as 'always available' to the women were immunization (100%) and general treatment of illness (95.6%). Some of the recommendations of the study are that health facilities should be renovated regularly, and facilities that will make health visits a comfortable experience should be provided. As income was found to be a determinant of patronage, it is also recommended that rural women should be helped to increase their disposable income through private-public partnership support of enterprises.

Keywords: Agriculture, Health services, Immunization, Patronage, Primary health care, Regression, Rural women

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Introduction

The primary health care (PHC) delivery system is the bedrock of Nigeria's national healthcare system. It builds on the lessons learnt from the efforts to actualise the Millennium Development Goals (MDGs) to ensure better outcomes in achieving the Sustainable Development Goals (SDGs). The SDGs are intended to assure prosperity and well-being for all women and men, while protecting our planet and strengthening the foundations for peace.

The extent to which the health-related goals can be realized is through unhindered access to primary health care. The World Health Organization (WHO) has developed a cohesive definition of primary health care based on three components (WHO, 2019):

1. Meeting people's health needs through comprehensive, promotive, protective, preventive, curative, rehabilitative, and palliative care throughout the life course. Strategically prioritizing key health care services aimed at individuals and families through having primary care and public health functions as the central elements of integrated health services;
2. Systematically addressing the broader determinants of health (including social, economic, environmental, as well as people's characteristics and behaviours) through evidence-informed public policies and actions across all sectors; and
3. Empowering individuals, families, and communities to optimize their health as advocates for policies that promote and protect health and well-being, as co-developers of health and social services, and as self-carers and caregivers to others.

WHO's outline of the objectives of primary health care can be summarised thus: making health services accessible and available to everyone wherever they live or work, tackling affordably the health problems causing the highest mortality and morbidity, ensuring that communities are provided with appropriate, effective, and sustainable health-maintaining technology, and ensuring community participation in healthcare planning, delivery, and evaluation (Adebisi *et al.*, 2017). Health, according to the WHO, is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Health is a major determinant of socio-economic development because all human endeavours require sound minds in sound bodies for full realization of aspirations (Enemuoh, 2013; Musah & Kayode, 2014). The health status of rural dwellers determines their productivity; this makes it a crucial factor in the optimal utilization of human resources for agricultural development.

Agricultural development cannot be achieved without active participation of women because of their important roles in agriculture, especially in food production, processing, and marketing (Adefalu *et al.*, 2017). Rural women play a vital role in food production and food security and many of them are responsible for meeting the daily needs of their families (Emeya, 2014). Improving health throughout the world is a huge task that requires global cooperation. At a WHO conference held in Alma-Ata in 1978, the concept of primary health care (PHC) was defined as a way of promoting the overall health of people by supporting the individual, the family, and the community. It requires the active participation of the community to define their needs and ways to meet them. The government has intensified efforts to decentralize health care services to the PHC centres to ensure that health services are located closer to the people and are also more affordable. This is expected to eventually lead to the improvement of a wide range of health indices

that affect the quantity and quality of lives of citizens. Empirical evidence suggests that health inequalities have been persistent over time and in many cases have been growing (Amanda, 2015; Omonona *et al.*, 2015; Sadiq *et al.*, 2017). Despite the efforts by governments all over the world and all concerned stakeholders to make healthcare services accessible to the masses and to achieve their goal of “Health for All”, many low-income countries have not been able to meet the basic healthcare needs of their people, the rural populace.

A lot of research (Olajide, 2013; Adebisi *et al.*, 2017; Olugbamila *et al.*, 2017; Azuh *et al.*, 2017) has been conducted on accessibility of PHC facilities and their distribution patterns. However, only a few have focused on the factors influencing the patronage of PHC services, especially by rural women. There is a need to bridge the gap between rural people and health services as their health has an effect on agricultural productivity. Most agricultural activities take place in rural areas; rural people, particularly rural women, are an important labour force (Emeya, 2014). They encounter numerous constraints in accessing affordable, adequate health services. This study therefore seeks to explore the factors that may determine the patronage of primary healthcare services in Osun State. The aim is to enhance the health status of rural women by encouraging patronage of the available health care services within and outside rural communities.

The broad objective of the study is to identify the determinants of the patronage of available PHC services by rural women in Osun State. Specifically, it seeks to ascertain the socio-economic characteristics of the rural women in the study area; identify the type of PHC services available in the study area; ascertain the pattern and frequency of patronage of the available PHC services in the study area for the five-year period (2014-2018), and identify the factors determining the patronage of available PHC services. A hypothesis on the relationship between selected respondents’ socioeconomic characteristics and the pattern of patronage of PHC services in the study area was also tested. Although the health of the rural people may not be the primary concern of agricultural extension, prevalent ill-health in a rural community will limit the effectiveness of agricultural extension work in such communities. Hence, the study would help change agents in designing sustainable intervention programmes.

Theoretical Framework

Health Belief Model

The Health Belief Model (HBM) is a research apparatus for anticipating or predicting health behaviours. It is a mental model for clarifying and anticipating someone’s health behaviours by focusing on their attitudes and beliefs. Initially used by American social psychologists in the 1950s, HBM was revived in the 1980s. The model is used to comprehend health behaviours and why some people resist suggested health action (Becker & Rosenstock, 1984, cited in Charles & Paschal, 2015). It hypothesizes that an individual's eagerness to change his/her wellbeing practices is due to certain factors: perceived seriousness, perceived susceptibility, perceived benefits, and perceived barriers. These factors, separately or taken together, can be utilized to explain health behaviour. Other constructs have recently been added to the model; accordingly, the model has been extended to incorporate three other factors: cues to action, motivating factors, and self-efficacy.

1. **Perceived Seriousness:** This refers to the likelihood that an individual will change his/her health behaviours in order to avoid a serious unpleasant

- outcome. The construct of perceived seriousness addresses a person's conviction about the reality or seriousness of an illness.
2. **Perceived Susceptibility:** This refers to the likelihood that someone will modify their health behaviour in certain ways if they believe that they are at significant risk. In other words, people won't change their health behaviours unless they believe that they are in danger. The more prominent the apparent danger, the more likely it is that they will engage in behaviour to diminish the danger.
 3. **Perceived Benefits:** This refers to the likelihood of people engaging in health seeking behaviour if that behaviour is perceived to produce the benefit of reducing the risk of illness. It is hard to persuade individuals to change their behaviour if they perceive no benefit to them.
 4. **Perceived Barriers:** People may not change their health behaviours if making the change is too hard or is perceived to be so. Changing one's health behaviour can be stressful, cost money, and be time-consuming. Since making changes does not come naturally to most people, this HBM construct addresses the issue of the boundary to change. This is someone's assessment of the personal cost in adopting a new behaviour.

Altogether, for new behaviour to be embraced, the perceived advantages of the new behaviour must outweigh the benefits of proceeding with the old behaviour. This empowers the person concerned to make the critical leap to embrace the new behaviour. HBM has great explanatory value. Further, it incorporates three additional components that describe what it really takes to get a person to take the initial step towards behaviour modification. These three elements are motivating factors, cues to action, and self-efficacy.

1. **Motivating factors:** The four constructs of perceptions are modified by factors such as culture, level of education, past experiences, skills, and innovation.
2. **Cues to action:** This is the stimulus needed to trigger the decision-making process to accept a recommended health action. It is something that helps move somebody from needing to make a health change to actively proceeding with the improvement. Cues to action may be occasions, individuals, or things that move individuals to change their behaviour.
3. **Self-efficacy:** In 1988, self-efficacy was added to the first four benefits of HBM (Rosestock *et al.*, 1988). Self-efficacy is the level of a person's confidence in one's capacity to successfully perform a behaviour. A person's confidence in their capacity to accomplish something affects their desire to do it. On the off chance that somebody accepts that a change of behaviour is helpful (perceived benefit), if they don't think they can do it (perceived barrier), the odds are that the change won't be attempted. Indeed, self-efficacy has been discovered to be quite possibly the most significant element in a person's capacity to effectively utilize available health information.

Methodology

The research is a survey. The study was carried out in Osun State in South-western Nigeria. The state was selected because primary healthcare centres in the state have recently been revitalized. In addition, useful statistics were easily available from the State Ministry of Health. This facilitated sampling. Osun State, with Osogbo as the capital, emerged from the old Oyo State in 1991 by the General Babangida regime. The State's name is derived from the River Osun, the venerated natural spring that is the manifestation of the Yoruba goddess of the same name. Osun, lying 7°30'N and 4°30'E, is a landlocked state occupying 9,251 square kilometres and sharing borders with Kwara State to the north, Oyo State to the west, Ogun State to the south, and Ondo and Ekiti States to the east. The population is about 3,423,535 persons according to the 2006 census estimate. The major Yoruba sub-ethnic groups in Osun are, Ife, Ijesha, Oyo, Ibolo, and Igbomina, although there are also residents from other parts of Nigeria (Ayila *et al.*, 2016). The state has more rural communities than urban centres. Osun is divided into three federal senatorial districts, each of which has two administrative zones. The State has 30 local government areas (LGAs) and one area office.

The population for the study was rural women and the members of staff of PHC services in Osun State. Rural women constituted the population for the study because the rural-urban disparity in terms of accessibility and utilization of health facilities is a matter of interest. The members of staff of PHC services are in the best position to give reliable information about patronage and functionality of equipment in the centres. A multi-stage sampling procedure was used to select respondents for this study because of its flexibility and cost effectiveness in handling large populations. In addition, this sampling procedure significantly precludes bias and ensures representation of the population of rural women across different strata.

The first stage involved the random selection of three LGAs in each senatorial district (Osun West, Osun Central, and Osun East) making nine LGAs for the study. In the second stage, proportionate random sampling (20%) was used to select rural communities from the earlier selected LGAs based on the number of existing PHC centres (using the list of health centres from Osun State Ministry of Health) in each LGA. This formed the basis for the selection of PHC staff from the health centres in the selected communities. One staff was selected per PHC centre. In the third stage, six rural women in each community were purposively selected; the basis for selection was a previous visit to a PHC centre.

Data were collected through a structured questionnaire and interview schedule using the local language, Yoruba. The data collection was done between 16 September and 25 October 2019. The instrument was subjected to content validity and was pretested in Ondo State, with the reliability determined using split half (Spearman Brown coefficient) reliability statistics. The Research and Ethics Committee of the Federal University of Technology, Akure's Centre for Research and Development (CERAD) validated the questionnaire to ensure the questions did not invade the privacy of the respondents. All respondents provided information voluntarily without coercion. The coefficient of split-half for the sections of the instrument that utilized scales had an alpha coefficient of 0.859 for factors influencing the patronage of PHC services. This implies that each section of the instrument tested was reliable because the values were close to one. Data were collected on socio-economic characteristics of the respondents, the pattern and frequency of their patronage of PHC services, as well as the factors influencing their patronage of PHC services. Data were analysed with SPSS version 21 using descriptive and inferential statistics such as frequency, means, standard deviation, chi-square, and regression.

Multiple regression analysis was used to predict the factors influencing PHC services patronage and percentage of influence using thirty-three (33) variables. The best functional form was determined and used in interpretation of the result. The models are as follow:

$$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 \dots b_{33} X_{33} + e \dots \text{eqn. 1}$$

$$\text{Log } Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 \dots b_{33} X_{33} + e \dots \text{eqn. 2}$$

$$\text{Log } Y = a + b_1 \log X_1 + b_2 \log X_2 + b_3 \log X_3 + b_4 \log X_4 + b_5 \log X_5 + b_6 \log X_6 \dots b_{33} \log X_{33} + e \dots \text{eqn. 3}$$

where
Y= level of patronage of PHC services

a= constant

b= regression coefficient

X_1 = religion

X_2 = marital status

X_3 = age of respondent

X_{33} = transport fare to PHC centres and

e= error term

Table 1: Proportionate Sampling of Respondents and the Selected Communities

Senatorial Districts	Names of selected Local Government Areas	Number of existing PHC centres	Sampling proportion (20%/number of selected communities)	Number of PHC	Number of rural women selected	Names of communities selected
Osun East	Ife North	25	$\frac{20}{100} \times 25 = 5.0$ $\cong 5$	5	30	Okoko, Ilupeju, Yakoyo, Moro, Soko
	Ife South	34	$\frac{20}{100} \times 34 = 6.8$ $\cong 7$	7	42	Okero, Egbejoda, Ifetedo, Ayeoba, Olode, Ilu-Oni, Oosi
	Atakumosa West	29	$\frac{20}{100} \times 29 = 5.8$ $\cong 6$	6	36	Elemosho-Osu, Iyere, Kajola, Oke-Bode, Ijana, Ibodi
Osun Central	Ifelodun	17	$\frac{20}{100} \times 17 = 3.4$ $\cong 3$	3	18	Eweta, Moboreje, Owode Idi-ose
	Boripe	23	$\frac{20}{100} \times 23 = 4.6$ $\cong 5$	5	30	Oke-Iragbiji, Ayekale, Isale-Oyo, Popo, Idi-Isakagba
	Odo-otin	27	$\frac{20}{100} \times 27 = 5.4$ $\cong 5$	5	30	Akolegbaro, Baale, Inisa, Iyeku, Okuku
Osun West	Aiyedire	22	$\frac{20}{100} \times 22 = 4.4$ $\cong 4$	4	24	Ile-Ogbo, Aiyetedo, Araromi-Oluponna, Kuta Isale-Oba

Ede North	22	$\frac{20}{100} \times 22 = 4.4$ $\cong 4$	4	24	Sabo-Agboge, Buchi-Isigbo, Olusokun, Oloba-Atapara Ago-Owu, Odeomu, Kayejo- Ayetoro, Oke- Odo, Akiriboto, Gbogan
Aiyedaade	31	$\frac{20}{100} \times 31 = 6.2$ $\cong 6$	6	36	
Total number of Respondents			45	270	

Source: *Computed by authors, 2019*

In all, 45 health professionals (one from each community) and 270 rural women (six from each community) in the study area (making a total of 315 respondents) constituted the sample size for the study.

Results

Socio-Economic Characteristics of the Respondents (Rural Women)

The findings on religion showed that 53% of the respondents were Christians, 43.3% were Muslims, and 3.7% were traditionalists. Most of the respondents (80%) were married, 10.7% were single, and 4.1% were widowed, while 2.6% were divorced or separated. 50.4% of the respondents were aged between 28 and 47 while 49.6% were 48 or older. The average age was 45, indicating that most of the respondents were adults. Findings on educational qualification revealed that 24.4% of the respondents had no formal education, 5.2% had attempted primary school, 13.7% had completed primary school, 13.0% had attempted secondary school, 28.9% had completed secondary school, and 14.8% had tertiary education.

When it came to family size, 28.2% of the respondents had a family size between one and four, 61.5% had a family size between five and eight persons, while 10.3% had a family size of nine persons and above. The average family size in the study area was 6 persons. 21.1% of the respondents were farmers, 9.6% were civil servants, 35.6% were traders, 20.4% of the respondents were artisans, and 2.6% were casual labourers. 10% were involved in other occupations. Findings on monthly income showed that 44.4% of the respondents earned ₦20,000.00 per month or below, 37.8% earned between ₦ 20,001 and ₦ 40,000, 17.0% earned between ₦40,001 and ₦60,000, while only 0.7% earned between ₦80,001 and ₦100,000. The average monthly income was ₦29,397. 31.1% of the respondents had been living in the study area for nine years or less, 31.9 % between 10 and 19 years, 22.2% between 20 and 29 years, and 14.8% for 30 years or more. As for the number of biological children, the findings showed that 33% of the respondents had between zero and two children, 63.7% had three to five children, while only 3.3% had more than five children. The average number of children of respondents was three.

Table 2: Socio-Economic Characteristics of the Respondents (n=270)

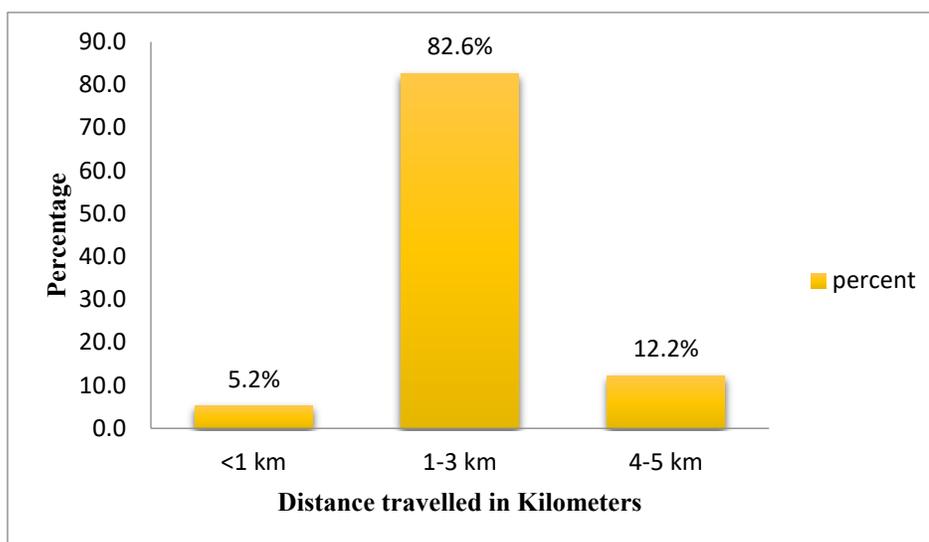
Variable	Category	Frequency	Percentage	Mean score
Religion	Christianity	143	53.0	
	Islam	117	43.3	
	Traditional	10	3.7	
Marital Status	Single	29	10.7	
	Married	216	80.0	
	Widowed	11	4.1	
	Divorced	7	2.6	
	Separated	7	2.6	
Age (years)	28-37	67	24.8	45 years
	38-47	69	25.6	
	48-57	107	39.6	
	58 and above	27	10.0	
Educational Qualification	No formal Education	66	24.4	
	Primary school attempted	14	5.2	
	Primary school completed	37	13.7	
	Secondary school attempted	35	13.0	
	Secondary school completed	78	28.9	
	Tertiary Education	40	14.8	
Family Size	1-4	76	28.2	6 persons
	5-8	166	61.5	
	9 and above	22	10.3	
Occupation	Farming	57	21.1	
	Civil Servant	26	9.6	
	Trading	96	35.6	
	Artisan	55	20.4	
	Casual labour	7	2.6	
	Others	29	10.7	
Monthly Income (₦)	< 20,000	120	44.4	₦ 29,397.41k
	20001-40000	102	37.8	
	40001-60000	46	17.0	
	60001-80000	-	-	
	80001-100000	2	0.7	
Length of stay (years)	0-9	84	31.1	15 years
	10-19	86	31.9	
	20-29	60	22.2	
	30 and above	40	14.8	
No of Biological Children	0-2	89	33.0	3 children
	3-5	172	63.7	
	6 and above	9	3.3	

Source: *Field Survey, 2019*

Distance Travelled from Home to PHC Centres

Findings on the distance travelled from home to PHC centres revealed that the average distance travelled by respondents before they could access healthcare facilities was 1.85 kilometres. 5.2% of the respondents lived very close to PHC centres, travelling less than a kilometre, 82.6% lived close, between one and three kilometres away from the closest PHC centre, while 12.2% lived far from the health facilities, travelling four to five kilometres before they could access healthcare facilities.

Fig 1: Distribution of Respondents According to Distance Travelled to PHC Centres



Source: Field Survey, 2019

Primary Health Care Services in the Study Area

PHC services available in the PHC facilities in the study area range from maternal and childcare to basic treatment of health problems and injury as shown in Table 3. As the table shows, maternal and childcare and health education are almost always available (91% and 93% respectively); local disease control and provision of essential drugs are usually available at 71% and 73% respectively. Basic treatment of health problems and injury was almost always available at 96%. Immunization services were 100% available.

Table 3: Availability of Primary Health Care Services (n= 45)

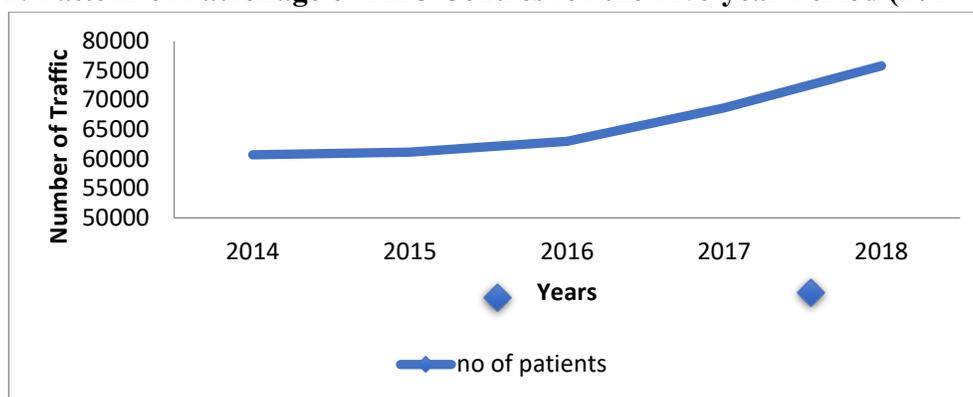
PHC Services	Always Available F (%)	Sometimes Available F (%)	Never Available F (%)
Maternal and Childcare	41 (91.1)	4 (8.9)	
Provision of essential drugs	33 (73.3)	12 (26.7)	
Health education (proper nutrition)	42 (93.3)	3 (6.7)	
Local disease control	32 (71.1)	12 (26.7)	1 (2.2)
Immunization	45 (100)		
Basic treatment of health challenge (sickness and injury)	43 (95.6)	2 (4.4)	

Source: *Field Survey, 2019*

Pattern of Patronage

In order to determine the patronage pattern of healthcare services in the study area, the number of times the respondents patronised healthcare services in the study area in the previous five years (2014, 2015, 2016, 2017 and 2018) was obtained. The outcome of this is presented in Figure 2. As the figure shows, 60,713 visits were made to PHC centres in 2014, while in 2015, 61,152 visits were made to primary health care services in the study area. By 2016, the number of visits increased to 63,013 (68,701 in 2017 and 75,817 in 2018). The percentage difference in the number of times the healthcare services were patronised in the five-year period is shown in Table 4. In 2015, there was a 0.72% increase over the 2014 figures, a 3.00% increase in 2016, 8.64% increase in 2017, and a 9.85% increase in 2018. There was a significant increase (22.13%) in patronage between 2014 and 2018.

Fig 2: Pattern of Patronage of PHC Centres for the Five-year Period (2014-2018)



Source: *Field Survey, 2019*

Table 4: Percentage Difference in the Traffic at PHC Centres for the Five-year Period (2014-2018)

Years (Y)	Number of patrons	Difference between number of patrons $\Delta y = (Y_2 - Y_1)$	Percentage difference (%) $\frac{\Delta y}{\frac{(Y_2 + Y_1)}{2}} \times \frac{100}{1}$
2014	60,713	-	-
2015	61,152	439	0.72
2016	63,013	1,861	3.00
2017	68,701	5,688	8.64
2018	75,817	5,688	9.85
2018 and 2014		15,104	22.13

Source: *Field Survey, 2019*

Patronage of Available PHC Services by Rural Women

Table 5 shows how often rural women utilized the available PHC services in the study area when there was a need. The table shows that the respondents accessed immunization services ($X =$

1.63) more than any other service. Maternal and childcare services ($\bar{X} = 1.54$) and basic treatment of illness and injury ($\bar{X} = 1.32$) were also highly patronised by the respondents as needed. Health education services ($\bar{X} = 1.03$) were minimally patronised while local diseases control services ($\bar{X} = 0.95$) were the least patronised.

Table 5: Frequency of Patronage of Primary Health Care Services by Rural Women (n=270)

Variables	Always F (%)	Sometimes F (%)	Never F (%)	Mean	Standard deviation	Rank
Immunization	190 (70.4)	59 (21.9)	21 (7.8)	1.63	0.625	1 st
Maternal and Childcare	173 (64.1)	71 (26.3)	26 (9.6)	1.54	0.665	2 nd
Basic treatment of illness and injury	111(41.1)	134 (49.6)	25 (9.3)	1.32	0.635	3 rd
Health education (proper nutrition)	102 (37.8)	74 (27.4)	94 (34.8)	1.03	0.853	4 th
Local diseases control	98 (36.3)	61 (22.6)	111 (41.1)	0.95	0.880	5 th

Source: *Field Survey, 2019*

Factors Influencing Patronage of Primary Health Care Services

The result of the multiple regression analysis of factors that determines the patronage of PHC services is presented in Table 6. The double-log functional form has the best fit, based on the values of R^2 (0.736), meaning that 73.6% of the independent variables jointly explain the dependent variable, level of patronage of PHC services. The independent variables that are socioeconomic characteristics include religion, marital status, age, educational qualification, family size, monthly income, occupation, and length of stay. Independent variables related to the PHC centres include working experience of staff, availability of well-trained health professionals, and availability of basic equipment. Others are conduciveness of the PHC environment, availability of the basic services required, availability of vaccines, cleanliness of the PHC environment, doctors' consulting hours, waiting time, and availability of prescribed drugs in the PHC centre. Variables related to staff include stigmatization of patients by PHC staff, competence of PHC staff, interpersonal relationship of staff and patients, attitude of PHC staff to work, timely diagnosis and treatment of health problems by PHC staff, and ability of staff to prescribe effective drugs. Independent variables related to finance include cost of drugs prescribed by the staff, distance from PHC centre, consultation fee, and transport fare. Independent variables related to the sociocultural context include decision making in the home (husband's permission), cultural beliefs, and religious beliefs. The nature of illness was also an important independent variable.

The F-value of (2.091, $p = 0.03 < 0.05$) indicated that the overall equation was highly significant at a 5% confidence level while Durbin Watson statistic value of 2.052 showed the absence of autocorrelation. Out of the 33 explanatory variables specified in the model, 11 variables were statistically significant at a 90% significance level. These include age of respondents, educational qualification, monthly income, availability of well-trained health professionals, conduciveness of the PHC environment, and cleanliness of PHC environment. Others are interpersonal relationship of staff and patients, timely diagnosis and treatment of health problems by PHC staff, ability of medical staff to prescribe effective drugs, cultural beliefs, and the nature of the illness. 10 variables were statistically significant at 95% significance level: age of respondents, monthly income, availability of well-trained health professionals, conduciveness of

the PHC environment, cleanliness of PHC environment, interpersonal relationship of staff and patients, timely diagnosis and treatment of illness, ability of staff to prescribe effective drugs, cultural beliefs, and nature of the illness. Educational qualification was significant at a 90% significance level but not significant at 95% and 99% level of significance.

The model for the significant variable was:

Log (level of patronage) = -1.097+0.928log (age of respondents) + -0.756log (ability of staff to prescribe drugs) +0.454log (conduciveness of the environment) +0.395log (timely diagnosis and treatment of health problems) +0.325log (interpersonal relationship of staff and patients) +0.320log (ability of staff to prescribe drugs for treatment) + -0.289log (cultural beliefs) +0.018log (monthly income) + -0.393log (shortage of well-trained health professionals) + - 0.510log (nature of illness) eqn. 4

Table 6: Regression Analysis of Factors Influencing Patronage of Available PHC Services

Variables	Linear	Semi-log	Double log (a)
Religion	0.137 (0.235)	0.007 (0.038)	0.070 (0.178)
Marital status	0.065 (0.209)	0.009 (0.034)	-0.162 (0.142)
Age of respondents	-0.018 (0.017)	-0.002 (0.003)	0.928 (0.369) **
Educational Qualification	0.036 (0.076)	0.000 (0.013)	0.285 (0.144) ***
Family size	0.063 (0.066)	0.013 (0.011)	-0.041 (0.193)
Monthly income	-9.976 (0.000)	-1.855 (0.000)	0.018 (0.146) **
Occupation	-0.046 (0.077)	0.009 (0.016)	0.076 (0.099)
Length of stay	-0.011 (0.020)	0.000 (0.003)	-0.066 (0.119)
Working experience	0.016 (0.024)	-0.002 (0.004)	0.109 (0.115)
Availability of well-trained health professionals	-0.347 (0.193)	-0.055 (0.031)	-0.393 (0.174) **
Availability of basic equipment	-0.027 (0.209)	0.025 (0.034)	0.172 (0.266)
Conduciveness of the environment	-0.307 (0.186)	-0.054 (0.030)	0.454 (0.176) **
Availability of the basic services	0.556 (0.237) *	0.096 (0.890) *	-0.370 (0.248)
Availability of vaccines	-0.057 (0.177)	0.006 (0.029)	-0.165 (0.190)
Cleanliness of PHC environment	-0.097 (0.168)	-0.022 (0.027)	0.320 (0.107) **
Doctors' Consulting hours	0.287 (0.155)	0.060 (0.025) *	-0.121 (0.120)
Waiting time	-0.448 (0.161) *	-0.074 (0.026) *	0.010 (0.142)
Availability of prescribed drugs in the centre	0.110 (0.182)	0.007 (0.029)	-0.184 (0.175)

Friendliness of PHC Staff	-0.165 (0.163)	-0.038 (0.026)	0.112 (0.141)
Stigmatization of patients by PHC staff	-0.105 (0.155)	-0.025 (0.025)	0.152 (0.191)
Competence of PHC staff	-0.020 (0.174)	0.006 (0.028)	-0.131 (0.188)
Interpersonal relationship between staff and patients	-0.015 (0.165)	0.026 (0.027)	0.325 (0.150) **
Attitude of PHC staff to work	-0.051 (0.176)	0.000 (0.028)	0.219 (0.151)
Timely diagnosis / treatment of health problems by PHC staff	-0.052 (0.171)	-0.002 (0.028)	0.395 (0.123) **
Staff's ability to prescribe effective drugs	-0.203 (0.165)	-0.043 (0.027)	0.756 (0.221) **
Cost of drugs prescribed by the staff	0.129 (0.164)	0.030 (0.027)	-0.151 (0.137)
Decision making in the home (husband's permission)	0.138 (0.186)	0.023 (0.030)	-0.042 (0.151)
Cultural beliefs	0.454 (0.211) *	0.069 (0.034) *	-0.289 (0.127) **
Religious beliefs	0.755 (0.221) *	0.104 (0.036) *	0.120 (0.142)
Nature of illness	0.064 (0.148)	-0.005 (0.024)	-0.510 (0.149) **
Distance to PHC centres	0.074 (0.110)	-0.001 (0.018)	-0.067 (0.083)
Consultation fee	-0.001 (0.001)	-5.531 (0.000)	-0.022 (0.121)
Transport fare to the centre	-0.001 (0.002)	-2.134 (0.000)	0.200 (0.154)
Constant	7.326 (1.477)	1.827 (0.239)	-1.097 (2.339)
R^2	0.468	0.443	0.736
Adjusted R^2	0.394	0.366	0.348
Durbin Watson	1.637	1.690	2.052
Error term	1.972	0.319	0.241
F-value	6.291	5.699	2.091 (p=0.03<0.05)

Source: Field survey, 2019.

Dependent Variable: Level of PHC patronage

(Note: Figures in Parenthesis are standard errors, (a) is the lead equation based on fitness.)

(*** denotes t-stat sig @ 10%, ** denotes t-stat sig @ 5%, * denotes t-stat sig @ 1%)

Hypothesis

HO₁: There is no significant relationship between respondents' socio-economic characteristics and the pattern of patronage of primary health care services.

The results in Table 7 show that six of the respondents' socio-economic characteristics had a significant relationship with the pattern of patronage of PHC services. These are marital status ($\chi^2 = 2.154$; $p = 0.005 < 0.05$), educational qualification of the respondents ($\chi^2 = 14.741$; $p = 0.012 < 0.05$), age of respondents ($\chi^2 = 9.523$; $p = 0.023 > 0.05$), length of stay in the study area ($\chi^2 = 9.726$; $p = 0.021 < 0.05$), income ($\chi^2 = 30.659$; $p = 0.000 > 0.05$), and distance from home to PHC centres ($\chi^2 = 17.724$; $p = 0.000 < 0.05$). The table also shows that religion ($\chi^2 = 1.329$; $p = 0.515 > 0.05$), family size ($\chi^2 = 4.063$; $p = 0.131 > 0.05$), working experience ($\chi^2 = 2.453$; $p = 0.484 > 0.05$), and number of biological children ($\chi^2 = 0.035$; $p = 0.983 > 0$) had no significant association with the pattern of patronage of PHC services in the study area.

Table 7: Association between Respondents' Socio-Economic Characteristics and the Pattern of Patronage of Primary Health Care Services

Variables	χ^2	Df	P-value	Decision
Religion	1.329	2	0.515	Not Significant
Marital Status	2.154	4	0.005	Significant
Educational Qualification	14.741	5	0.012	Significant
Age of Respondents	9.523	3	0.023	Significant
Family Size	4.063	3	0.131	Not Significant
Length of Stay	9.726	3	0.021	Significant
Working Experience	2.453	3	0.484	Not Significant
Number of Biological Children	0.035	2	0.983	Not Significant
Income	30.659	3	0.000	Significant
Distance	17.724	2	0.000	Significant

Source: Field Survey, 2019.

Significant at $p < 0.05$

Discussion

Socio-Economic Characteristics of the Respondents

The finding on religion is that more than half of the respondents in the study area were Christians. The results agree with findings from Adebisi *et al.* (2017) which found more than half of the respondents (66%) to be Christians, reasserting the fact that Christianity is widely practised in Oyo State where their study was carried out. Osun State was carved out of the old Oyo State.

The study finds that married people with the support of their spouse may patronise healthcare facilities more than any other category. The influence of spouses seems to be crucial in the patronage of PHC services. In addition, married women may also have additional health-seeking responsibilities such as seeking antenatal care in pregnancy, taking healthy children for immunisation, taking ill children for treatment, or availing themselves of some other health services in their area. The result agrees with Olugbamila *et al.* (2016) findings which hold that the influence of the spouse in the utilization of health facilities is extremely important.

The average age was 45; that is, most of the respondents were adults. This is similar to the findings of Adefalu *et al.* (2017). In the study carried out in Ilorin, Kwara State, the mean age of

rural women was found to be 45 years. This age and the stress involved in their occupations may make women prone to weakness and therefore willing to visit healthcare facilities.

Findings on educational qualification show that 75.6% of the respondents had one form of formal education or the other. This is in tandem with Odetola (2015), who reported that the majority of respondents have their choice of health institution influenced by their level of education and that education has implications for health. It indicates that increasing literacy among people is a viable strategy for improving all major health indices. Furthermore, the average family size in the study area was 6 persons. This was attributed to the fact that most of them had dependents in their families. The result corroborates the findings of Adefalu *et al.* (2017) which stated that the respondent's average household size in a study carried out in Ilorin was higher than the value recommended by the National Bureau of Statistics (NBS) which is 5 persons in a rural household (NBS 2006).

Findings on occupation show that most of the respondents were traders. The result differs from the findings of earlier studies (Ifeakor *et al.*, 2013; Adefalu *et al.*, 2017) that showed that most rural women were actively involved in farming in Nigeria.

The average monthly income was found to be ₦29,397. This means that respondents are likely to patronise healthcare facilities because the mean average income in the study area was above the minimum wage of ₦18,000 in Nigeria at the time of conducting this study. It is also above the poverty line of a dollar per day. According to Olugbamila (2016), income of a resident is a measure of wealth and will reflect the ability of a household/resident to make decisions on type of facility visited, duration of visit, and action taken after sickness is a function of their income. Where the household income is not sufficient, it will leave the household with no other option than self-medication. Some early studies show a positive correlation between income and patronage of available healthcare facilities (Adetunji, 2013; Olugbamila, 2016). These studies established that the income level of household dictates their ability to patronise and pay for available healthcare services.

Findings on respondents' length of stay show the mean average years of residence to be 15 years. In other words, most of the respondents have stayed in the localities for several years and will be familiar with available PHC facilities there. Olugbamila (2016) also established that the longer the years of stay in a particular locality, the better the knowledge about the competence, cost of treatment, and hospitality of workers in healthcare facilities within and outside the community. The average number of children per mother in the study area was three children. This can be attributed to family planning campaigns by local and international organizations for the advantages of small family sizes. It may also be that the respondents may not have foreclosed the possibility of having more children. This supports the findings of Olajide (2013) who reported that the respondents' average number of children was three in a similar study carried out in Oyo State.

Distance Travelled from Home to Primary Health Care Centres

Findings on the distance travelled from home to PHC centres revealed that the average distance travelled by respondents before they could access healthcare facilities was 1.85 kilometres. In other words, most of the respondents lived close to health services. It has been established in the literature that proximity to healthcare facilities determines, to a large extent, the degree of patronage by residents of a particular locality. The shorter the distance travelled to get to a healthcare facility, the better the level of patronage of such a healthcare facility. The findings agree with Sanni (2010) who found a relationship between distance and the utilization of health

care facilities. According to Sanni (2010, cited by Adefalu *et al.* (2017)), fewer people are willing to patronise a particular health facility as distance they have to travel to get there increases.

Primary Health Care Services Available in the Facilities

PHC services available in the health facilities in the study area range from maternal and childcare to basic treatment of health problems and injury as shown in Table 3. Several recommended PHC services by WHO were readily available in the health facilities in the study area for the respondents to patronise. It was evident that the respondents valued immunization because it protects people from infectious diseases. This result is not in tandem with Olajide's (2013) finding that most health services are not available in rural areas. This disparity could be a result of improvement in service provision and infrastructural development between 2013 when Olajide's study was conducted and 2019 when data for this study was gathered. Programmes like the Basic Healthcare Provision Fund (BHCPF) and the revitalization and rehabilitation of 332 local PHC centres by the Osun State government served to provide infrastructure and improve the services rendered in the PHCs across the state. The benefit of immunization to the rural children can be a factor that strengthens the continuous availability of this service. According to Odefadehan *et al.* (2015), immunization has really helped the farm children to stay alive from preventable killer diseases and as such has become an invaluable service to the rural mothers.

Pattern of Patronage

Figure 2 shows a progressive increase in the traffic of patrons of PHC services in the five-year period of 2014-2018. 2018 had the highest number of patrons (75,817). This could be because when the patrons were in need of one form of the health services or the other in 2018, they felt that primary health care centres in the study area had reached an acceptable standard because the government intervened in the health system to rehabilitate facilities and provide basic equipment. It could also be because the patients could not afford to patronise private hospitals or secondary or tertiary health providers. Some services in PHC centres are free. Olugbamila *et al.* (2017) reported a progressive pattern of patronage of PHC in a study carried out in Saki, Oyo State between 2011 and 2016.

The percentage difference in the number of times the PHC services were patronised in the five-year period is shown in Table 4. It shows a significant difference (22.13%) in the number of times PHC services were patronised between 2014 and 2018. This could be as a result of the revitalization and rehabilitation of PHC centres in the study area, with improved supply of essential drugs, free consultation, provision of mosquito nets, etc. The increase could also be as a result of greater awareness or public enlightenment on the benefits of patronizing PHC services (family planning, free drugs etc.) than in previous years. There was a steady increase every year during the five-year period, 2014-2018.

Frequency of Patronage of Different PHC Services

Table 5 shows that immunization service was more patronised by respondents than any other service. This could be due to sensitization or public enlightenment on the importance and health benefits of vaccination/immunization which protects one against diseases. Maternal and childcare services as well as basic treatment of illness and injury services were also highly patronised by the respondents as needed. This could be due to the closeness of PHC centres to the respondents, so that women in labour could easily access health care services. First aid treatment

could also be given to respondents in the centre if need be. However, health education service was minimally accessed, and local diseases control services had the lowest patronage.

Factors Influencing Patronage of PHC Services

The result of the multiple regression analysis of factors influencing patronage of PHC services is presented in Table 6. Age of respondents had a regression coefficient of 0.928, meaning that a one-year increase in the age of the respondents leads to a 0.928 unit increase in the level of patronage of PHC centres and vice versa (as the age increases, the respondents have more reasons to visit PHC and to understand how PHC works). Conduciveness of the PHC centres had a positive influence on the level of patronage, such that a unit increase in comfortability of the centres leads to a 0.454 unit increase in the level of patronage of the PHC centres. A unit increase in cleanliness of the PHC environment leads to a 0.320 increase in the level of patronage of respondents. There is a positive (0.325) relationship between the interpersonal relationship of staff and patients and the level of patronage by respondents, such that an improvement in the relationship between staff and patients leads to a 0.325 unit influence on the patronage level. Increase in timely diagnosis and treatment of health problems by PHC staff, ability of staff to prescribe effective drugs, and monthly income leads to 0.395, 0.756, and 0.018 unit increases in the level of PHC patronage respectively.

Furthermore, the results showed that a shortage of well-trained staff, the nature of the illness, and cultural beliefs had a negative influence on the rural women's patronage of PHC centres to access services. Shortage of well-trained staff had a regression coefficient of -0.393 which implies that an increase in shortage of well-trained staff leads to 0.393 unit decrease in the level of patronage of PHC by respondents. The table also shows that a unit increase in the severity of illness leads to a 0.510 decrease in PHC's level of patronage. This could be because the staff might not be able to handle more severe illnesses or the PHC centre may not have the essential facilities to treat more severe illnesses. Such cases are usually referred to secondary or tertiary health centres. The culture of the respondents had a regression coefficient of -0.289, meaning that erroneous opinions and beliefs of the respondents (culture) lead to a 0.289 unit decrease in the level of patronage of PHC centres by respondents.

Relationship between Respondents' Socio-economic Characteristics and the Pattern of Patronage of PHC Services

Table 7 shows that there is a significant relationship between marital status, educational qualification of the respondents, age of respondents, length of stay in the study area, income, distance from home to PHC centres, and the pattern of patronage of PHC services. Being single or married affects how well respondents patronise healthcare services. The level of one's educational status may determine the way one patronises PHC services; the higher the level of education, the more knowledge they are expected to have about their health and importance of PHC. According to Pandeh *et al.* (2019), married respondents have a higher utilization rate of outpatient services compared to the unmarried. The length of stay also has a relationship, such that the longer the period of stay in a community, the greater the positive perception of PHC services available in their community. Olugbamila (2016) established that the longer the years of stay in a particular locality, the better the opportunity to know about the competence and hospitality of workers in healthcare facilities and the cost of treatment within and outside the community of their residence. Proximity to PHC centres may also influence patrons' perception and utilisation of health care services. Income of respondents and the distance of their homes from PHC centres also affect the

pattern of patronage of PHC services. Where the household income is not adequate, the household may have to resort to self-medication. Some early studies show a positive relationship between income and patronage of available healthcare facilities (Adetunji, 2013; Olugbamila, 2016). These studies established that household income dictates people's capacity to patronise and pay for available healthcare services. In addition, fewer people are willing to patronise health facilities that are very far from their homes.

The table also shows that religion, family size, working experience, and number of biological children had no significant association with the pattern of patronage of PHC services in the study area. This means that there is no significant difference in patronage of PHC services in women practising different religions or in women with large or small families.

Conclusion and Recommendation

Based on the findings of the study on the determinants of the patronage of the available PHC services by rural women in Osun State, Nigeria, the following conclusions can be made.

Most of the respondents were adults and were very familiar with the available PHC centres in their communities. All the healthcare services recommended by WHO for PHCs were readily available in the study area. Furthermore, the pattern of PHC centres' patronage was progressive, with significant increases each year within the five-year period covered by the study. Immunization and maternal and childcare services were the most patronised.

The major determinants of patronage of PHC services in the study area included age of respondents, monthly income, and availability of well-trained health professionals. Other determinants were conduciveness of the PHC centres, cleanliness of PHC centres, and interpersonal relationship of staff and patients. Timely diagnosis and treatment of health problems by PHC facility staff, ability of staff to prescribe effective drugs, the cultural beliefs of the women, and nature (severity) of the illness were other determinants of patronage. These, taken together, accounted for 73.6% variation in the level of PHC patronage by rural women. Respondents' marital status, educational qualification, age, length of stay in the study area, income, and home distance to PHC centres had a significant relationship with the pattern of patronage of PHC services.

Based on the major findings, the following recommendations are made:

- 1) The government should employ more qualified personnel in order to reduce the workload on the available personnel, thereby reducing the waiting time of patrons. This is because shortage of staff has been identified as a major determinant of patronage of PHC services by rural women.
- 2) Orientation and sensitization programmes promoting the strength and benefits of primary health care in local communities should be put in place to correct possible erroneous opinions on this tier of health provision. This is because the study revealed that cultural beliefs constitute a major factor influencing patronage of PHC negatively.
- 3) Financial empowerment of the rural women through private-public partnership is necessary to boost income since income was positively correlated with patronage.

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