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SPATIAL ANALYSIS OF PRIMARY HEALTHCARE SERVICES UTILIZATION AMONG WOMEN IN CROSS RIVER STATE, NIGERIA

***Peter-Kio, O.B., & Okem, F.O.**
Department of Human Kinetics, Health and Safety Education. Ignatius Ajuru University of Education, Port Harcourt

***Corresponding author email:** opirite.peter-kio@iaue.edu.ng

Abstract
This study carried out a spatial analysis of primary healthcare services utilization among women of childbearing age in Cross Rivers State. A comparative research design was adopted with a population which consisted of 1,015,300 women in the Northern Senatorial District of Cross Rivers State. A sample size of 880 was selected using the multi-stage sampling procedure. Data was collected using a structured questionnaire with a reliability coefficient of 0.76. Analysis was done using mean and t-test at 0.05 level of significance. The result showed that, primary healthcare services which included: health education concerning prevailing health problems (3.29±0.86 vs 2.64±1.14), prevention and control of common diseases services (3.02±0.99 vs 2.57±1.19), essential drugs (3.04±1.03 vs 2.42±1.18), and adequate supply of safe water and basic sanitation (3.31±0.93 vs 2.43±1.24) were utilized more in urban areas than in rural areas. Based on the findings of the study, it was concluded that women in urban areas are more concerned about their health than those in rural areas. It was recommended among others that stakeholders should adopt a multidimensional approach for more effective coordination and supervision of PHC services particularly disease prevention and adequate provision of essential drugs.

Keywords: Analysis, Healthcare, Primary, Utilization, Women

Introduction

Primary healthcare services utilization among women is one useful strategy to alleviate the rate of morbidity and mortality. Globally, about 930 million people worldwide are at risk of falling into poverty due to out-of-pocket health spending of 10% or more of their household budget. The morbidity and mortality rate in developing regions was 19 times higher than in developed regions. Adefalu and Ayodele (2019) reported that as high as 87.8% of women in Nigeria had a low level of utilization while 63.4% had never visited a health facility in their locality for any primary healthcare services. The concept of primary health care (PHC) has been repeatedly reinterpreted and redefined over the years since 1978, leading to confusion about the term and its practice. However, a clear and simple definition has been developed to facilitate the coordination of future PHC efforts at the global, national, and local levels and to guide implementation; Hence, primary health care is seen as a holistic approach to health incorporating society to ensure the highest possible level of health and well-being and their equitable distribution by focusing on people's needs and as early as possible along the continuum from health promotion and disease prevention to treatment, rehabilitation and palliative care, and as close as feasible to people's everyday environment (WHO 2021).

Primary health care is the most basic, and essential care based on practical, scientifically sound, socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation, at a cost they and the country can afford to maintain in the spirit of self-reliance and self-determination. It refers to essential health care that is based on scientifically sound and socially acceptable methods and technology. This makes universal health care accessible to all individuals and families in a community (Packard, 2016). Hence, the World Health Organization defines PHC as a societal approach to health that aims at ensuring the highest possible level of health and well-being and their equitable distribution by focusing on people's needs as early as possible along the continuum from health promotion and disease prevention to treatment, rehabilitation, palliative care, and as close as feasible to people's everyday environment (WHO, 2021). Primary healthcare service ranges

from general practice, community pharmacy, dental, and optometry (eye health) services it is the first point of contact in the healthcare system, acting as the front door (WHO, 2021; UK National Health Service, 2020). Primary health care is a part of the three-tier system of health care in Nigeria. These are the tertiary health care, in which the federal government is in charge; the secondary health care, under the auspices of the state government and the primary health care, controlled by the local governments. In the late 1980s, there was a national initiative to overhaul the primary healthcare system through the adoption of a new national health policy, in the context of which the federal and state governments issued directives giving local government areas full jurisdiction over the delivery of primary healthcare services. The local Government, the State Government and the Federal Government respectively are responsible for all financial aspects, including personnel costs, consumables, running costs and capital investment. The Federal government through the federal Ministry achieves overall policy goals, co-ordinates activities, ensures quality, and training and implements sector programmes (Aregbeshola & Khan, 2017).

Primary healthcare initiatives allow for the full participation of community members in implementation and decision-making reflects, and evolves from the economic conditions, sociocultural, and political characteristics of the country and its communities. PHC addresses the main health problems in the community providing promotive, preventive, curative and rehabilitative services as well as community mobilization. It includes health education concerning prevailing health problems and the methods of preventing and controlling them, in addition to the health sector, all related sectors and aspects of national and community development such as Agriculture, education, housing, maternal and child health, family planning services, immunization, provision of food supplies and nutritional services, environmental health, prevention and control of diseases, provision of essential drugs, provision of mosquitoes treated nets, portable water supplies, affordability of health care, reduction of mortality and morbidity (Asut et al., 2018; Shah et al., 2018; WHO, 2018; WHO 2019; Bhatt et al., 2021; WHO 2021; WHO, 2022). However, contextually this study examines the provision of food supplies and nutritional services, environmental health, prevention and control of diseases, and provision of essential drugs, as this study would limit itself to the health education and community mobilization on primary health care service.

Provision of food supply and nutritional services are elements of PHC, it is a major determinant of health and growth. Nutrition is a foundation for health and well-being for all, leaving no one behind, and a key element of primary health care, and plays an essential role in prevention. One 2019 report released by the World Health Organization (WHO) called for health services to integrate a stronger focus on ensuring optimum nutrition at each stage of a person's life, explaining that appropriate investment in nutrition could save 3.7 million lives by 2025. The publication stresses the role of primary health care as the foundation of universal health coverage (WHO, 2019). Nutrition and health are not synonymous, but without good nutrition, health cannot be optimum. Child undernutrition is estimated to underlie 3.1 million deaths annually, equivalent to 45% of all child mortality in low and middle-income countries (Billah et al., 2017). In South Asia, estimates show that 37% of children younger than five years of age (under five) are stunted and 46% are underweight (Billah et al., 2017). Nevertheless, the rates of stunting and underweight remain high and nutrition-specific indicators are poor. For example, only 55% of infants younger than five months were exclusively breastfed and key infant and young child feeding (IYCF) practices were implemented in less than one in four infants aged 6–23 months (National Institute of Population Research and Training (NIPORT) (2016). Nutrition-specific interventions during the antenatal period and in the first two years of life can prevent maternal and child undernutrition in high-risk populations (Billah et al., 2017).

Cross River State is not an exemption in this respect. There has however been low utilization of health services in the rural areas of Cross River State, these points of services, defeat the fundamental aim of decentralization, consequently, leading to high mortality and morbidity rates and, an increase in common illnesses; evidence of low utilization has been demonstrated by some studies in other parts of the country as in the case of (Adie, 2014). Most people residing in the rural areas, especially in the Northern Senatorial District, have a poor understanding of their national health systems and programmes and therefore the tendency to put the health facilities into non-proper utilization. The major problem identified here may not be unconnected to lack of education. Low level of community involvement, general misuse and abuse of scarce resources by some political and administrative leadership and high leadership turnover at LGAs (Adie, 2014). This study therefore sought to investigate the spatial analysis of primary healthcare services utilization among women in Cross River State. The study provided answers to the following research questions:

1. what is the extent of health education concerning prevailing health problem utilization among women in rural and urban areas of cross river state?
2. what is the extent of prevention and control of common disease services utilization among women in rural and urban areas of cross river state?
3. what is the extent of essential drug utilization among women in rural and urban areas of Cross River State?

Hypotheses

The following hypotheses were stated to guide the study and were tested at a 0.05 level of significance:

1. There is no significant difference in health education concerning prevailing health problem utilization among women in rural and urban areas of Cross River State.
2. There is no significant difference in prevention and control of common disease services utilization among women in rural and urban areas of Cross River State.
3. There is no significant difference in essential drug utilization among women in rural and urban areas of Cross River State.

Methodology

A comparative research design was adopted with a population which consisted of 1,015,300 women in the Northern Senatorial District of Cross Rivers State (National Population Commission of Nigeria, 2018). A sample size of 811 was selected using the multi-stage sampling procedure. First, a simple random sampling technique was used to select four LGAs out of the five LGAs in the Northern Senatorial District. Secondly, proportionate stratified sampling was used to determine the number of persons to be selected from each Local Government Area. In the fourth stage, the simple random sampling technique was used to select the respondents. Data was collected using a structured questionnaire with a reliability coefficient of 0.76. The instrument has three sections A, B, and C. Section A focuses on health education concerning prevailing health problems, section B focuses on the prevention and control of common diseases section C focuses on the utilization of essential drugs on a modified four-point Likert Scale of very high extent, high extent, low extent and very low extent. The validity of the instrument was measured by three experts in the Department of Human Kinetics, Health and Safety Studies, Ignatius Ajuru University of Education, Rivers State, Nigeria. Data was collected by a face-to-face delivery of the instrument to the respondents. Analysis was done using mean and t-test at 0.05 level of significance.

Results

The results of the study are shown below:

Table 1: Mean and standard deviation showing the extent of health education concerning prevailing health problems among women in rural and urban areas of Cross River State

SN	Utilization of health education concerning prevailing health problems	Rural (N = 420)			Urban (N = 411)		
		M	SD	Decision	M	SD	Decision
1	Healthcare personnel educate women on how to prevent prevailing health problems	2.62	1.18	HE	3.31	0.87	HE
2	Health talks on personal hygiene are given in the PHC	2.63	1.15	HE	3.41	0.87	HE
3	I learnt how to prevent my child from having diarrhoea in the PHC	2.57	1.18	HE	3.28	0.87	HE
4	I learnt how to breastfeed my baby adequately from the PHC	2.69	1.12	HE	3.25	0.87	HE
5	Most health personnel help to educate me on personal hygiene	2.71	1.07	HE	3.23	0.82	HE
	Grand mean	**2.64**	**1.14**	**HE**	**3.29**	**0.86**	**HE**

Criterion mean = 2.50. Key: HE = high extent; LE = low extent

Table 1 shows the mean and standard deviation of the extent of health education concerning prevailing health problems among women in rural and urban areas. The result revealed that utilization of health education concerning prevailing health problems was high in both areas but slightly higher in the urban areas (3.29±0.86) compared to the

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rural areas (2.64±1.14). Thus, the extent of utilization of health education prevailing health problems was higher among women in urban areas of Cross River state.

Table 2: Mean and standard deviation showing the extent of prevention and control of common diseases services utilization among women in rural and urban areas of Cross River State

SN	Prevention and control of common diseases services	Rural (N = 420)			Urban (N = 411)		
		M	SD	Decision	M	SD	Decision
1	I received prompt treatment in the PHC when I was sick	2.58	1.29	HE	2.96	0.99	HE
2	I was satisfied with the treatment given to me	2.51	1.19	HE	3.04	1.08	HE
3	The Doctors, Nurses and other health workers are readily available in the PHC	2.64	1.11	HE	3.05	0.94	HE
4	The first source of treatment during illness is done in the PHC	2.47	1.17	LE	3.04	1.07	HE
5	Postnatal drugs are available in the PHC	2.54	1.16	HE	3.09	0.91	HE
6	The treatment of disease and injuries is done fast in the PHC	2.65	1.20	HE	2.93	0.97	HE
	Grand mean	**2.57**	**1.19**	**HE**	**3.02**	**0.99**	**HE**

Criterion mean = 2.50. Key: HE = high extent; LE = low extent

Table 2 shows the mean and standard deviation of the extent of prevention and control of common disease services utilization among women in rural and urban areas. The result revealed that prevention and control of common diseases services was high in both areas but slightly higher in the urban areas (3.02±0.99) than in rural areas (2.57±1.19). Thus, the extent of prevention and control of common diseases services utilization was higher among women in urban areas of Cross River state.

Table 3: Mean and standard deviation showing the extent of essential drug utilization among women in rural and urban areas of Cross River State.

SN	Utilization of essential drugs	Rural (N = 420)			Urban (N = 411)		
		M	SD	Decision	M	SD	Decision
1	The essential drugs needed for the treatment of common ailments are available and administered in the PHC	2.70	1.20	HE	3.04	0.99	HE
2	There is availability of antenatal care drugs in Primary health care	2.66	1.25	HE	3.32	0.93	HE
3	Adequate drug supply encourages the good functioning of primary healthcare	2.20	1.14	LE	3.12	1.11	HE
4	Essential drugs that are required for common ailments treatment are expensive in the PHC	2.12	1.16	LE	2.67	1.12	HE
10	**Grand mean**	**2.42**	**1.18**	**LE**	**3.04**	**1.03**	**HE**

Criterion mean = 2.50. Key: HE = high extent; LE = low extent

Table 3 shows the mean and standard deviation of the extent of essential drug utilization among women in rural and urban areas. The result revealed that essential drugs were utilized more in the urban areas (3.04±1.03) than in rural

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areas (2.42±1.18). Thus, the extent of essential drug utilization was higher among women in urban areas of Cross River state.

Hypothesis 1: There is no significant difference in health education concerning prevailing health problem services utilization among women in rural and urban areas of Cross River State.

Table 4: T-test summary showing the significant difference in health education concerning prevailing health problems services utilization among women in rural and urban areas of Cross River State

Group	N	Mean	SD	df	t-cal	p-value	Decision
Rural	420	2.65	1.04	829	-10.6	0.00*	H_o Rejected
Urban	411	3.29	.696				

*Significant; $p<0.05$

Table 4 shows the T-test summary of the significant difference in health education concerning prevailing health problems services utilization. The result of the study showed that there was a significant difference at (t-cal = -10.6, df = 829, p = 0.00) as the $p<0.05$. Therefore, the null hypothesis which stated that there is no significant difference in health education concerning prevailing health problems services utilization among women in rural and urban areas of Cross River State was rejected.

Hypothesis 2: There is no significant difference in prevention and control of common diseases services utilization among women in rural and urban areas of Cross River State

Table 5: T-test summary showing the significant difference in prevention and control of common diseases services utilization among women in rural and urban areas of Cross River State

Group	N	Mean	SD	df	t-cal	p-value	Decision
Rural	420	3.08	1.23	829	-7.18	0.00*	H_o Rejected
Urban	411	3.62	.920				

*Significant; $p<0.05$

Table 5 shows the T-test summary of the significant difference in prevention and control of common disease services utilization. The result of the study showed that there was a significant difference at (t-cal = -7.18, df = 829, p = 0.00) as the $p<0.05$. Therefore, the null hypothesis which stated that there is no significant difference in prevention and control of common diseases services utilization among women in rural and urban areas of Cross River State was rejected.

Hypothesis 3: There is no significant difference in essential drug utilization among women in rural and urban areas of Cross River State.

Table 6: T-test summary showing the significant difference in essential drug utilization among women in rural and urban areas of Cross River State.

Group	N	Mean	SD	df	t-cal	p-value	Decision
Rural	420	2.42	0.96	829	-10.3	0.00*	H_o Rejected
Urban	411	3.04	0.76				

*Significant; $p<0.05$

Table 6 shows the T-test summary of the significant difference in essential drug utilization. The result of the study showed that there was a significant difference at (t-cal = -10.3, df = 829, p = 0.00) as the $p<0.05$. Therefore, the null hypothesis which stated that there is no significant difference in essential drug utilization among women in rural and urban areas of Cross River State was rejected.

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Discussion

The result in Table 1 revealed that the utilization of health education concerning prevailing health problems was high. This finding is expected as before any service is given at the primary healthcare facilities, public health educators carry out health education on various health issues and practically demonstrate prevention. The finding of this study gives credence to that of Fasoranti and Adeyeye (2015) whose study in Lagos, Nigeria revealed a higher level of effectiveness of health education in urban areas than in rural areas. The finding of this study is in keeping with that of Agofure and Sarki (2017) in the Jaba Local Government Area of Kaduna State Nigeria revealed a lower level of utilization of health education concerning prevailing health problems in rural areas. The finding of this study is also in line with that of Khairkar (2015) who showed that research conducted on utilization and accessibility to education showed a high level of utilization for urban as far as utilization of health services is concerned. The finding of this study is in keeping with that of Yaya (2017) whose study on urban-rural differences in primary healthcare services in Ghana including education concerning prevailing diseases revealed a higher level of utilization of immunization services in urban areas than in the rural areas. This similarity could be due to the homogeneity of the study populations. The findings of the study are at variance with that study of Alfageeh et al. (2017) on the utilization of primary health care services, comparing urban and rural areas of Riyadh Providence, the kingdom of Saudi Arabia which revealed that the utilization of such services was higher in the rural areas than in the urban areas. This variation could be attributed to the fact that the locations and features of the environment and government in the two study locations differ.

The result revealed that prevention and control of common diseases services were utilized more in the urban areas (3.02±0.99) than in rural areas (2.57±1.19). This finding is expected because appropriate treatment of common diseases and injuries is one major function of the primary health care facilities such must be provided for the utilization of women who mainly visit the primary health facilities. The finding of this study is in keeping with that of Yaya (2017) whose study on urban-rural differences in primary healthcare services including utilization of prevention and control of common diseases services in Ghana revealed a higher level of utilization in urban areas than in the rural areas. The finding of this study is in keeping with that of Agofure and Sarki (2017) in the Jaba Local Government Area of Kaduna State Nigeria revealed a lower level of utilization of prevention and control of common diseases services in rural areas. This similarity could be due to the homogeneity of the study populations. The finding of the study is at variance with that of Osanyin et al. (2020) whose study in Lagos State revealed a lower level of utilization of prevention and control of common diseases services. This variation could be attributed to the fact that the locations and features of the environment and government in the two study locations differ.

The result in Table 3 revealed that utilization of essential drugs was utilized more in the urban areas (3.04±1.03) than in rural areas (2.42±1.18). This finding may not be surprising because the provision of essential drugs and supplies in primary healthcare facilities is an essential aspect of PHC delivery. The finding of this study is in keeping with that of Yaya (2017) whose study on urban-rural differences in primary healthcare services including utilization of essential drugs in Ghana revealed a higher level of utilization in urban areas than in the rural areas. The finding of this study is in keeping with that of Agofure and Sarki (2017) in the Jaba Local Government Area of Kaduna State Nigeria revealed a lower level of utilization of essential drugs in rural areas. The finding of this study is similar to that of Oyekale (2017) whose study on the Assessment of primary healthcare facilities' service readiness in Nigeria showed that drugs such as paracetamol and folic acid had high availability with 74.31%. This similarity could be due to the homogeneity of the study populations. The findings of the study are at variance with that study of Alfageeh et al. (2017) on the utilization of primary health care services, comparing urban and rural areas of Riyadh Providence, the kingdom of Saudi Arabia which revealed that the utilization of such services was higher in the rural areas than in the rural area. This variation could be attributed to the fact that the locations and features of the environment and government in the two study locations differ. The finding of this study is also not in agreement with that of Obiechina and Ekenedo (2013) whose study on factors affecting the utilization of university health services in a tertiary institution in south-west Nigeria showed that the high cost of drugs (72.0%) and non-availability of essential drugs (54.8%) were considered as factors affecting the utilization of university health services. This variation found between the present study and the previous ones might be explained by the fact that they were all carried out in different settings and different locations; while the present study was focused on primary healthcare facilities, the previous ones were focused on tertiary health institutions, pharmacies and medicine stores.

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Conclusion

Based on the findings of the study, it was concluded that women in urban areas are more concerned about their health and thus higher primary healthcare services utilization in the urban areas than in rural areas which necessitates that any intervention focused on increasing availability and women access to primary healthcare services be focused more on women in rural areas than in urban areas.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Stakeholders should adopt a multidimensional approach for more effective coordination and supervision of PHC services particularly disease prevention and adequate provision of essential drugs.
2. The PHC staff should not relent in their effort to provide health education for the community members to enable them to make informed health decisions and inculcate better ways of preventing communicable diseases.
3. The Primary Health Care Management Board should create a functional counselling unit in all the PHC facilities to sustain and improve the good level of utilization of PHC services provided in the State.

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