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Utilization of Health Care Facilities/Services and the Control of Infant Morbidity and Mortability in Obio/Akpor Local Government Area of Rivers State, Nigeria

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Abstract
The study examined the effect of utilization of health care facilities/services and the control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State. Correlational survey design was adopted. A sample size of 284 subjects was used for the study. The utilization of healthcare facilities Inventory (UHFI) and Control of Infant Morbidity and Mortality Inventory (CIMMI) instruments were used. The instruments were validated by experts in Education and Public Health. The reliability of the instruments was established using the Cronback Alpha Method to obtain indices of 0.86 and 0.73 for UHFI and CIMMI respectively. Data obtained was analyzed using regression/ANOVA statistical techniques for analysis of the data. The result revealed that: out of the three independent variables correlated and regressed with the criterion measure of control of infant morbidity and mortality, income was the best predictor. It had the strongest predictive power than education and distance. Capacity building of health workers for the improvement in their skills of maternal and child health interventions, alongside government developing a workable framework for the incorporation of the private sector into the financially demanding task of healthcare delivery were among the proffered recommendations.
Keywords: Health Facility/Service, Utilization, Infant morbidity and mortality.

INTRODUCTION

Health delivery services in Nigeria as a concurrent responsibility of the three tiers of government including the private providers cover a wide range of services in health promotion, illness prevention, and early detection of diseases and management of health problems within the community offered by health and medical professionals (Audu, 2009 and Parks, 2005). Its beneficial utilization as the universal coverage of the population and people's access of health services according to Moronkola and Obiechina (2010) is dependent on education, income, cost of health services, distance of health facilities, time spent in waiting for treatment, easy accessibility to medical centre, patients-medical staff relationship and availability of essential drugs, which constitutes some of the cardinal principles in the planning of Primary Health Care (PHC) and Health Policies in Nigeria.

In developing countries, physical access and particularly road distances and travel time are recognized as primary constraints in the delivery of Public Health Care services. Distance from the health services are strongly linked and associated with utilization of family planning services and vaccination of children (Alakija, 2000). Today, the underutilization of health services mainly attributed to the rural dwellers has permeated into the urban centres and across the classifications or characteristics of its residence. This implied that there is a need to strengthen and target children who live far away from health facilities, reduce accessible distance for seeking healthcare by establishing more sub-healthcare centres that are closer to the people. However, the 5 kilometre distance accepted by the World Health Organization as a satisfactory distance may no longer be tenable as social and economic conditions worsen (WHO, 2005).

Moronkola, (2003) see education as holding the key to other conditions capable of affecting the economic, health and social conditions of individuals. Good and quality education in various stages is driven by deliberate government policy that is needed for knowledge, skill acquisition, advancement and human development. Abimbola (2012) argued that education aids in the acquisition of essential Primary Health Care knowledge that can strengthen interest in key strategies involved in the procurement and distribution of adequate equipment and supplies reposition for the reduction or control of maternal mortality in Primary Health Facilities in Nigeria.

Poverty is a multi-dimensional phenomenon, which can be measured in terms of income and expenditure levels but can also be perceived in terms of individual's social interactions and state of mental well-being (Park, 2005). Insufficient money to pay for medical expenses serve as a barrier for treatment. Poverty limits accessibility to basic services like health; it influence negatively the ability to utilize modern health facilities, such limitation tend to cause high mortality especially among the poor (Audu, 2009). Problems of poverty limit access to food and balanced diet, thereby causing hunger and malnutrition with its attendant consequences of increased

vulnerability in serious and chronic illness, mental retardation, early health, affecting the immune system's response to infection and interfere with the body's ability to sanitize food, particularly among children and women of reproductive age (Audu, 2009).

Maternal mortality means female deaths associated with pregnancy, labour and the period immediately following child-birth (Park, 2005). Similarly, Abimbola (2012) divided maternal death into two groups namely: Direct and Indirect Obstetric Death.

Direct Obstetric death are those resulting from obstetric complications of the pregnant state from interventions, omission, incorrect treatment, or from a chain of events resulting from any of the above while Indirect Obstetric death are those resulting from previous existing disease or diseases that developed during pregnancy and which was not due to direct obstetric causes, but was aggravated by the physiological effects of pregnancy like taboos, inefficient infrastructure and other social and cultural factors (WHO, 2005).

Alakija (2000) frowned at the unavailability of emergency obstetric equipment like non-pneumatic anti-shock garment across most Health centres in Nigeria. Evidence abounds that the use of the garment reduces blood loss in pregnant women, mortality and morbidity by stabilizing the women since majority of maternal deaths are from haemorrhage or bleeding. As a direct measure, Maimuna (2014) emphasized that government harnesses or explores its abundant private sector resources in the production of public enlightenment materials on maternal mortality reduction through radio jingles, documentary and mobile bill board street campaigns aimed at increasing the awareness of members of the community on the issues associated with maternal health, immunization, maternal mortality reduction, and cost effective interventions such as routine immunizations, the administration of oral re-hydration therapy, appropriate antibiotic use, nutrients supplementation, the use of insecticide-treated bed nets and improved breast feeding practices.

Problem Specification

The utilization of health care facilities for Ante-natal or Post-natal services affords both expectant and nursing mothers with the skills, nutritional and health tips, and education targeted at erasing erroneous notions, accessing unskilled birth attendants, accurate prediction and prevention of malnutrition, infection, obstructed labour, malaria or other treatable illnesses, and pregnancy related complications that could significantly result to death among women of reproductive age.

However, poor utilization of health facilities propelled by poverty, distance to health facilities, and education during and after delivery by pregnant and nursing mothers is still a major cause of disease burden in children under the age of five years, indirect reduction in the quality of life of infants and women's, malnutrition, and emotional depression. Pregnancy mothers continued patronage of unorthodox means and religious centres during and after delivery and childhood morbidity and mortality in Nigeria.

Previous studies have been centred on the level of utilization of health care services by pregnant women during delivery, factors accounting for the utilization of health care services, and strategies for the reduction of maternal mortality. It is based on the foregoing that this study examined the effect of utilization of health care facilities/services and the control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State with a view to determining the level of utilization of health care services in the area, in terms of distance, service distribution and effective utilization.

Specifically, the purposes of the study were to:

1. Determine the relative contribution of utilization of health care facilities/services variables to the control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State
2. Determine the joint contribution of utilization of health care facilities/services variables to the control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State

The following research questions guided the study:

1. What is the relative contribution of utilization of health care facilities/services variables to the control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State
2. What is the joint contribution of utilization of health care facilities/services variables to the control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State

Scope of the Study

The scope of the study is on the utilization of health care facilities/services in the control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State. Further, the utilization of health care facilities/services (income, distance, and education) is the independent variable while control of infant morbidity and mortality is the dependent variable.

Significance of the Study

This study would be beneficial to nursing mothers, individuals, community, health professionals, government and the society at large.

Pregnant and nursing mothers would come to see the need to eliminate all educational, economic, cultural and other barriers that hampers their utilization of health care facilities, which will save cost and enhance mortal and infant morbidity.

Individuals would be empowered with a deeper level of knowledge that translates into passion and commitment to act and change their attitude towards health care delivery.

The community would learn to include influential members in the promotion and demand for quality services. The problem here is that people can only demand what they are really passionate about.

Information from this study will assist health professionals in utilizing best practices in carrying out health care delivery.

The government will see the need to incorporate the private sector in the financially demanding task of health care delivery.

The society would benefit from a quality health care system that is professionally oriented and devoid of complaints or negligence, poor quality and malpractice that may lead to litigation.

Methodology

The study adopted the correlational survey design. The population of the study consists of all the expectant and nursing mothers attending ante-natal and post-natal clinics in all the Health Centres in Obio/Akpor Local Government Area of Rivers State. A multistage cluster sampling technique was used in the selection of six Health Centres in Obio/Akpor Local Government Area of Rivers State. The Health centres are located at Rumuolumeni, Rumuepirikom, Rumueme, Ozuoba, Ignatius Ajuru University of Education (IAUE) and School of Health Technology. Further, random sampling technique was also used in the selection of Fifty (50) subjects or expectant and nursing mothers of various demographic characteristics attending ante-natal and post-natal clinics at the Health Centres located in each of the six (6) strata classification. This constituted a sample of two hundred and eighty four (284) participants used for the study.

The instruments for data collection were Utilization of Healthcare Facilities Inventory (UHFI) and Control of Infant Morbidity and Mortality Inventory (CIMMI) made up of 16 items each. The instruments were validated by expects in Education and Public Health. The instruments were modified Likert scale as follows: Strongly Agree, Agree, Disagree and Strongly Disagree. The reliability of the instruments was established with the administration on 40 subjects who are expectant and nursing mothers attending ante-natal and post-natal clinics in the Rumuigbo Community Health Centre in Obio/Akpor Local Government Area of Rivers State. The subjects used for purposes of establishing the reliability of the instruments were not involved in the main study. A simple random sampling technique was used in drawing the sample subjects.

UHFI and CIMMI instruments were retrieved, coded and analyzed using the Cronback Alpha (r_a) method to obtain a reliability coefficients of $r_a = 0.86$ and $r_a = 0.73$ for UHFI and CIMMI, respectively.

In carrying out the study, the two instruments were administered on 284 subject samples.

Table 1: Relative contributions of utilization of health care facilities/services variables to the control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State

Step	Variable	R	R^2	SE	F-Vaue	Sig.	Remarks
1	Education	.158	.036	8.03052	7.408	.003	*
2	Income	.321	.078	6.74807	10.580	.000	*
3	distance	.235	.102	5.35202	21.020	.001	*

* Significant at $P < .05$

Table 1 shows the relative contributions of Education, Income and Distance to the observed variance in the criterion variable (control of infant morbidity and mortality) as indicated by the R and R^2 values at the various steps of the regression analysis. As found in Table 1 that education had R and R^2 value of .158 and .036 respectively. Income entered the equation at step 2; and the cumulative R was .321 and R^2 was .078 and the last step, Distance had R and R^2 value of .233 and .102 respectively. The values corresponding to the three steps involved in the multiple regressions were significant at $P < .05$ level. The results in Table 1 show that Income was the best predictor of control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State when compared with Education and Distance.

Table 2: Mean, Standard Deviations and Inter-correlations among predictor and control of Infant Morbidity and Mortality in Obio/Akpor Local Government Area of Rivers State for total sample (N = 284)

		1	2	3
1	Education	1		
2	Income	.120*	1	
3	Distance	-.109*	-.013	1
4	Infant Morbidity and Mortality	.158**	.219**	.381**

The correlation matrix of the measured variables is presented in Table 2. Results on Table 2 shows that

Education, Income and Distance are significantly correlated with control of infant morbidity and mortality (R = .158, P < .01), (R = .219, P < .01) and (R = .381, P < .01), respectively. This indicates that Education, Income and Distance are predictors of controlling infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State.

Table 3: Summary of Regression analysis/ANOVA between the predictor variables and controlling infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State

Regression analysis		**Analysis of Variance (ANOVA)**				
	Source	**SS**	**Df**	**MS**	**F**	**Sig**
R = .537	Regression	6205.137	3	1419.537	37.092	.001
R2 = .258	Residual	13213.322	280	33.078		
SE = 6.27691	**Total**	**16254.607**	**283**			

* Significant at P < .05

Table 2 shows the values of the parameters of the regression analysis between the predictor variables and control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State. The results of the analysis showed that predictor variables predicted control of infant morbidity and mortality. The predictor variables taken against the criterion variable yielded a coefficient of multiple correlations (R) of .537 and multiple correlation square (R^2) of .258. The R^2 value translated into 25.8% of the observed variance in the control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State. The analysis also gave a Standard Error (SE) of 6.27691 and F-Value of 37.092 significant at an alpha level of .05.

Discussion

The result contained in Table 1 is quite enlightening and useful. All the predictor variables investigated were found to contribute differently to the prediction of control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State. However, Distance, Income and Education contributed significantly to the observed variance in the criterion variable in that order. Distance to health care facility accounted for 10.2% of the variance in the control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State while Distance combined with Income and Education played a role for 21.6% in sustainable development in Port Harcourt. These are implied percentages.

These findings suggest that a few other latent and observable variable that lie outside the scope of the present study should be included in a similar study to provide a more comprehensive conceptualization for the other variables that determine the utilization of health facilities in controlling infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State. Furthermore, this finding is in agreement with the views of Moronkolo and Obiechina (2010) who posits that the beneficial utilization of health services is dependent on education, income, cost of health services, distance of health facilities, time spent in waiting for treatment, easy accessibility to medical centre, patients-medical staff relationship available of essential drugs.

The results in table 3 indicated that 25.8% of the variance in the control of infant morbidity and mortality was accounted for by the predictor variables taken together. The relationship between controlling infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State and the joint contributions of the predictor variables. When translated to percentage it shows that 51.3%. Utilization of Health Care Facilities/Services) were high as shown by the coefficient of multiple correlation (R = .537). Thus, the predictor variables investigated when taken together could, to some extent predict the control of infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State. The F-Value (37.092) as revealed in the ANOVA which was significant at alpha level of .05 lend credence to the fact that the predictive capacity of the predictor variables in this study did not occur by chance even through a large proportion of the variance in controlling infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State was unexplained by the current data. This finding aligns with the position of Abimbola (2012) that education aids in the acquisition of essential primary health care knowledge that can strengthen interest in key strategies involved in the procurement and distribution of adequate equipment and supplies reposition for the reduction or control of maternal mortality in Primary Health Facilities in Nigeria.

Conclusion

The results of this study have revealed that out of the three independent variables correlated and regressed with the criterion measure of controlling infant morbidity and mortality in Obio/Akpor Local Government Area of Rivers State, Income was the best predictor of the non-utilization of health care facilities which resulted in infant morbidity and mortality. It had the strongest predictive power than Education and Distance.

Recommendations

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

1. Provision of basic obstetric drugs (like misorprostol and magnesium sulphate) required for essential obstetric

care in Primary Health facilities free

2. Advocacy/sensitization campaigns and community dialogue on health promotion activities in the electronic and print media through television or radio jingles, documentaries, bill boards, hand bills containing information, education and communication materials on maternal and child health interventions
3. Construction of more maternal and child centres at strategic areas in the Local Government Areas that will be closer to people in terms of distance
4. Government should develop a workable framework for the incorporation of the private sector into the financially demanding task of health care delivery so that all concerned can afford the cost of health care

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