

Utilization of Immunization Services against Infant Killer Disease among Women of Childbearing Age in Kano State

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Abstract

The purpose of this study was to assess the utilization of Immunization Services against infant killer diseases among women of childbearing age in Kano State Nigeria. The study employed a descriptive survey design. The population of the study was 1,367,916 women of childbearing age. The study was guided by one research question and one null hypothesis. Multi-stage sampling technique was used in selecting 420 women of childbearing age as the sample. A researchers-developed questionnaire titled “Questionnaire on assessment of knowledge, acceptability and utilization of immunization services against infant killer diseases” was used in data collection from the sample in the selected hospitals in the three (3) senatorial zones of Kano state. Descriptive statistics of frequencies and percentage, mean and standard deviation, and inferential statistics of one-sample t-test was used to analyze the gathered data at alpha level of 0.05. The findings of the study revealed that women of childbearing age have significant utilization of immunization services against infant killer diseases. In conclusion, women of childbearing age in Kano state, Nigeria utilize immunization services to guard against infant killer diseases. It was therefore recommended that utilization of immunization services against infant killer diseases should be sustained in Kano State.

Keywords: Utilization, Immunization, Infant, Killer, Disease, Child, Bearing

Introduction

Immunization is one of the most effective, safe and efficient public health interventions, as it is estimated to have saved at least three (3) million lives from vaccine-preventable diseases (Offit, 2020). Immunization is the process of providing human body with protection against killer diseases such as poliomyelitis, pertussis (whooping cough), diphtheria, tetanus, measles, tuberculosis and yellow fever. According to the WHO, UNICEF and World Bank’s State of the world’s vaccines

and immunization report (2009), these diseases are the major causes of sicknesses and subsequent deaths among children of age 0-5years. Awodele, Oreagba, Akinyede, Awodele and Dolapo (2010) reported that inducing immunity through vaccination almost guarantees protection from many major disease. According to the studies conducted by Sallusto, Lanzavecchia, Araki and Ahmed (2010) and Pulendran and Ahmed (2011), they support that protection induced by vaccinations is mediated through a complex interplay between innate, humeral, and cell-mediated immunity.

Childhood immunization prevents two (2) to three (3) million deaths per year worldwide and is widely considered to be overwhelmingly good by the scientific community (WHO, 2019). Nigeria and United Nations International Children Emergency Fund (UNICEF) have been working together since 1951 on immunization activities to improve the well-being of children and potential mothers in the country, and the early thrust of this cooperation centred on cash grants and technical support to primary education, social development and immunization activities (Gagare, 2007). Despite this support received by the Nigerian government, Nigeria still records a national average of 33% coverage (National Immunization Coverage Survey (NICS), 2016/2017); thereby emphasizing the need for improvements across the country.

There are many factors that serve as impediment to low immunization take-up and coverage. Scholarly findings from low- and middle-income countries which includes Nigeria revealed that low income (Kusuma, Kumari, Pandav & Gupta, 2010), access to health care facility, high cost of health care, level of education (Adebayo & Oladokun, 2012) as well as delivery not assisted by a professional birth attendant (Canavan, Sipsma, Kassie & Bradley, 2014) remain risk factors that result to low immunization coverage. Identifying the factors that affect childhood immunization is essential for policymakers to establish strategies to increase immunization coverage. Studies indicate that mothers who attend ante-natal care (ANC) and give birth at a health facility are more likely to fully vaccinate their children (Dixit, Dwivedi & Ram, 2013; Asrat & Mesfin, 2017; Maharani & Kuroda, 2018; McNellan, Dansereau, Wallace, Colombara, Palmisano, Johanns, ... & Iriarte, 2019). Some studies also showed that attendant at birth have an impact on the immunization status of children (Weinberg, Dietz, Potter, Swanson, Miller & McFadden, 2017; Maharani & Kuroda, 2018). While Xeuatvongsa, Hachiya, Miyano, Mizoue, and Kitamura (2017), in their study, pointed out that lack of a traditional birth attendant can also affect the vaccination status of a child.

The utilization of immunization services by women of childbearing age is tied to maternal and child health activities such as antenatal care, Tetanus toxoid (TT) status of mother and place of delivery; these are associated and linked with the immunization status of children. For example, a study done in 2001 in rural Mozambique shows that home delivered children have a 2.27 times higher risk of not completing their vaccination programme (Jani, De Schacht, Jani & Bjune, 2008). Another study by Babalola (2011) showed that poverty is likely to distract parents

from placing high premium on disease prevention as is the case in immunization. This must be due to the pressure on the family scarce resources hence giving the men and women no chance to think about essentials like immunization.

Jegede, Idemudia and Madu (2001) x-rayed the accessibility of information on immunization to Nigerian women and found out that limited access to information on immunization is more pronounced in the rural areas than the urban areas. While those who receive information in the urban areas, revealed that their major sources of information are electronic media (television and radio), the main sources of information in the rural areas were health workers, traditional rulers, friends and neighbours. These sources differed by place of residence, age, level of education and occupation of mothers. It was further established that respondents from urban areas utilize immunization better than those in the rural areas. Thus, it was concluded that access to health information may be influenced by geographical location and social class, therefore, health education promotion and programming should take into consideration such factors.

With regards to utilization of immunization services, Adeyinka, Oladimeji, Adeyinka and Aimakhu (2009) reported in their study that immunization services are extensively utilized by both the educated and non-literate or non-educated as well as by both Christians and the Muslims generally in the country. Having established that Nigeria still records a low immunization coverage as reported by the NICS (2016/2017) as well as recorded a staggering 42,000 deaths due to vaccine-preventable diseases such as pertussis, tetanus, and measles in the country (Wonodi, Prindle, Aina, Oni, Olukowi, Pate, ... Levine, 2012), these researchers were moved to assess the utilization of immunization services against infant killer disease among women of childbearing age in Kano State, Nigeria.

Purpose of the Study

The purpose of this study was to assess the utilization of immunization services against infant killer disease among women of childbearing age in Kano State.

Research Question

1. What is the extent of utilization of immunization services against infant killer disease among women of childbearing age in Kano State?

Hypothesis

Ho1: There is no significant utilization of immunization services against infant killer diseases among women of childbearing age in Kano state.

Methodology

The research design for this study was descriptive survey. The population of this study comprised of 1,367,916 women of childbearing age attending clinics and primary healthcare centres in Kano State (Primary Health Care Management Board Kano, 2016). A sample of 420 respondents from 12 health care centres was selected

based on Krejcie and Morgan (1970), who suggested that for a population of 1,000,000 a sample of 384 will be sufficient to be used as sample.

Multi-stage sampling technique was used in this study comprising of stratified random sampling, simple random sampling, proportionate random sampling and purposive sampling techniques. At the first stage, Kano state was stratified into the three already existing senatorial zones adopted as strata (these are Kano south zone, Kano central zone and Kano north zone). Two local government areas (LGAs) were selected from each stratum using simple random sampling technique. In this technique, the researchers wrote all the names of the local government areas per senatorial zone on pieces of paper. Each of the pieces of paper was folded and dropped in a container. One of the research assistant was asked to pick from the container one piece of paper at a time, and the LGA whose name was on the paper picked was used as part of the sample, after which the picked paper was folded and dropped in the container. This procedure was repeated until the required numbers of LGAs were picked and recorded. Simple random sampling technique was used to select two political wards each from the selected LGAs. The balloting method explained earlier was carried out until a total of (12) wards were selected. To select the participants across the selected wards proportionate random sampling technique was employed. The researcher divided the population of women of childbearing age at each ward by the target population and multiplied it by the sample size. Lastly purposive sampling technique was used to select women of childbearing age in the state.

The research instrument used for data collection was a researchers-developed questionnaire titled “Questionnaire on assessment of knowledge, acceptability and utilization of immunization services against infant killer diseases”. The questionnaire was vetted for its face and content validity by three (3) experts in the Department of Human Kinetics and Health Education in Ahmadu Bello University, Zaria. The research instrument is made up of four (4) sections, A-D. Section A has 6 items on demographic characteristics of the respondents; section B-D has eight (8) items each. To score the respondents based on what they feel towards an item, a four point modified Likert scale rating was used, including strongly agree (4 points), agree (3 points), disagree (2 points) and strongly disagree (1 point). Decision on the mean scores is based on the 2.50 midpoint average. Mean of 2.50 and higher magnitude indicates adequate utilization while lower mean imply inadequate utilization. Descriptive statistics of frequencies and percentage was used to describe the demographic characteristics of the respondents while t-test statistics was used for testing the hypotheses.

Presentation of results

Research Questions One: What is the extent of utilization of immunization services against infant killer disease among women of childbearing age in Kano State?

Table 1: Mean Scores of Responses on Utilization of Immunization Services by Women of Childbearing Age in Kano State, Nigeria

S/N	Description	Mean	Std. Dev	Remarks
1	I always go for routine immunization services.	2.48	0.949	Low
2	The health care providers follow me to my house to immunize my children.	2.50	1.100	High
3	My child has missed a few schedules of routine immunization services.	2.37	0.989	Low
4	I always remember the days for the next round of routine immunization.	2.53	0.936	High
5	Vaccine is always available to provide the services at service centre for use.	3.31	0.464	High
6	I am sure that obtaining routine immunization services protects my child's health and all the children in the community.	2.50	0.653	High
7	My child is fully immunized against: Measles	2.91	0.902	High
8	My child is fully immunized against: Poliomyelitis	2.47	1.077	Low
9	My child is fully immunized against: Diphtheria	2.57	0.748	High
10	My child is fully immunized against: Hepatitis B	2.12	0.656	Low
11	My child is fully immunized against: Pertussis (whopping cough)	2.37	0.713	Low
12	I obtain routine immunization service for my child only during immunization days in the healthcare centre.	3.15	0.525	High
Aggregate mean		2.61	0.425	

The opinions of the women on their level of utilization of the immunization services are scored in mean scores and standard deviations in Table 1. The aggregate mean score for the table is 2.61 which suggests that the women adequately utilize immunization services provided in the state. Indications in the table however point out some low aspects of utilization of the provided services. The respondents, as indicated on the table, do not always go for routine immunization services but they do not skip their immunization schedules with some exceptions. For example, they do not fully utilize immunization against Poliomyelitis, Hepatitis B and Pertussis. They however agree that they obtain such immunization only during immunization days in the respective healthcare centres in the state. From observation of the expressed opinion and the aggregate mean score of 2.61, it could be concluded that the women adequately utilized immunization services in the state.

Ho1: There is no significant utilization of immunization services against infant killer diseases among women of childbearing age in Kano state.

Table 2: One Sample t-test on Utilization of Immunization Services against Infant killer Diseases among Women of Childbearing Age in Kano State

Variables	N	Mean	Std. Deviation	t-value	DF	P-value
Utilization	410	2.61	0.425	3.359	409	.001
Test mean		2.50	0.000			

The extent of utilization of immunization services provided in the state by women of childbearing age is as provided in Table 2. The mean scores in the table are compared with a fixed mean of 2.50 used as the decision mean to establish the significance of the level of utilization of the immunization services in this test. The One sample t-test procedure was used in the test. The result of the test, as summarized in Table 2, revealed that the women's level of utilization of immunization services in the state is statistically significant. This is indicated with an observed t-value of 3.359 obtained at 409 degree of freedom and P-value of 0.001 ($P < 0.05$). The critical value of t- at the corresponding degree of freedom is 1.96 at $P = 0.05$. From these observations, there is no evidence for retaining the null hypothesis. The null hypothesis that there is no significant utilization of immunization services against infant killer diseases among women of childbearing age in Kano state is therefore rejected.

Discussion of the findings

The level of utilization of immunization services by women of childbearing age in the state was significant. From the related data, it was found that the women actually utilized certain immunization services associated with some vaccines while they tended to be more restricted in some associated with other vaccines. The finding here agrees with Adeyinka, Oladimeji, Adeyinka and Aimakhu (2009), who stated that immunization services are extensively utilized by both the educated and non-literate or non-educated as well as by both Christians and the Muslims generally in the country.

Conclusion

Based on the findings of this study, it was concluded that women of child-bearing age utilize immunization services to guard against infant killer diseases in Kano State, Nigeria.

Recommendations

Based on the conclusions drawn, it was recommended that the government and non-governmental organizations should motivate women of childbearing age who utilize immunization services with various forms of incentives in order to sustain and maintain their utilization in the state.

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