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## SOCIO-DEMOGRAPHIC DETERMINANTS OF ATTITUDE TOWARDS IMMUNIZATION SERVICES AMONG NURSING MOTHERS IN BENUE STATE, NIGERIA

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### ABSTRACT

This study investigated sociodemographic determinants of attitude towards immunization services among nursing mothers in Benue state, Nigeria. Four hypotheses were employed to guide the study. Descriptive cross sectional survey design was adopted. The sample size of was estimated using Taro Yamene method for large population which was 400. A multistage sampling procedure was used to draw the sample. Self-structured questionnaire titled; attitude towards immunization Service among nursing mothers was the instrument. Demographic data indicated; secondary education was 820 (56%); location of immunization services is higher at the rural areas with 765 (52.2%). The findings indicated positive attitude of the nursing mother towards immunization. There was no significant difference in attitude towards immunization and factors such as education [F(3,1461) = 2.007, p>0.05], socio-economic status [F(2,1462) = 0.234, p>0.05] and location [F(2,1462) = 0.258, p>0.05]. But there was a significant difference with regards to religion [F(2,1462) = 6.802, p<0.05]. Conclusively, there was strong and positive knowledge and attitude regarding the utilization of immunization Service. It was recommended that issues such as location, awareness, and importance of immunization be addressed.

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### I. INTRODUCTION

The quality of health of the people of any country depends on the effectiveness of its health care services; it is the responsibility of the federal, state and local government to provide all citizens with the best health care services. In this regard, all the three tiers of government should provide immunization services at both rural and urban centers. Immunization is one of the most successful and cost effective public health interventions in the constant effort of human beings against disease. Immunization has prevented more deaths than any other health interventions globally (Awosika, 2012). According to World Health Organization (WHO) Immunization is a process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. In the word of Plotkin *et al.*, (2008) Vaccines exception of safe water, no other modality, not even antibiotics, has had such an effect on mortality. Saroja (2011) views vaccines as preparations which when given evoke immune responses, which lead to the production of antibodies that help combat infectious agent. Immunization is one of the cheapest and safest methods of primary prevention. It ensures well-being of children below five years of age and therefore remains the cornerstone for achievement of Millennium Development Goals.

Attitude refers to a demonstration of behavior resulting from way of thinking or feeling about something. Haddock (1994) view attitude as a set of emotions, beliefs, and behaviours towards a particular object, person, thing or event. Attitudes are often the result of experience or upbringing, and they can have a powerful influence over behaviour, attitude can also be seen as a learned tendency to evaluate things in a certain way. This can include evaluation of people, issue, object, or events, such evaluations are often positive or negative. Attitude enables individual to make decisions relatively quickly and effortlessly.

Socioeconomic status and attitude towards immunization, This factors includes the level of income, maternal education, number of children among others may likely preclude effective immunization utilization among nursing mothers as may be seen among the inhabitant of Benue State. Incomplete immunization is one of the major challenges of health issues in Nigeria. Studies have showed that children of low income earner are of higher risk of incomplete immunization than the children of relatively higher socioeconomic status. Studies conducted in Pakistan showed an association between type of maternal occupation for example unskilled workers and incomplete immunization. It is likely that poorly paid and poorly educated manual workers may

not find the time or resources to travel to the nearby health facility for immunization, additionally because of poor parental knowledge of immunization they may not be able to properly understand the preventive benefits of timely and complete immunization (World Health Organisation,2013).

Religion influences decisions on vaccination, and religion objection is often used by parents as an excuse to avoid the vaccination of their children. In the Netherland religion is a predictive factor of children's vaccination status. Hindus and Muslim children had greater chance of being under immunized or unimmunized compared with the immunized children. A number of immunization refusals based on religious exemption is increasing. The question is whether religion freedom is a threat to public health, in the case of immunization system (Kahn, 2016). The Federal Ministry of Health (2002) revealed that Nigeria collaborated with UNICEF in areas of child health since 1951 in order to improve the well-being of children in the country. The emphasis was mainly on the expanded programme on immunization (EPI) at the grass root level. The EPI is now converted to National Programme on Immunization. The idea of immunization was traced to Edward Jenner who in 1796 demonstrates the use of vaccine by scratching cowpox virus on the skin to produce immunity against small pox. Following this discovery immunization programme was established and accepted worldwide.

The Federal Ministry of Health FMOH (2000) adopted Expanded Programme on Immunization EPI in 1978 and launched it in 1979, with the target of achieving 60% immunization coverage by the year 1984, A national survey to determine the achievement was conducted by the end of 1984, but the result showed a very low coverage ranging from 20-29 percent at the end of the period. The low coverage was attributed to management and implementation. Medicine wise (2017) revealed that vaccine preventable diseases are those diseases that the pathogenic agent responsible are been weakened or killed which when administered help, the immune system to attack and destroy or resist their action in the body. A person develops immunity after he/she has been immunized and responded to the particular pathogenic agent his/her body is able to destroy the pathogenic agent and prevent the disease, although no vaccine have a hundred percent efficiency. Some people who have been immunized against a particular disease can still develop the disease. This is why it is important for every child to get the vaccine as it gives the community what is referred to as "herd" immunity. This means that certainly few people will develop the disease, they serve as reservoir of the disease. Vaccines deliver only tiny amounts of inactivated or weakened virus or bacteria or part of them. This allows your immune system to recognize the organism without you actually experience the disease. Some vaccines are given repeatedly to boost the immune system to overcome a real infection in the future.

William and Shiel (2018) stipulated that immunity as a state of being resistant to foreign substances such as bacteria, virus and other pathogenic micro-organisms. Immunity also depicts the capability of the body to resist harmful microbes from gaining access into it. Protection against microbial infection is enhanced by two components of the immune system, known as innate immunity and acquired immunity. The inborn resistant that is present even before the first invasion of an infective agent into the body is called innate or natural immunity, while the resistance which is absent at the time of the invasion of pathogenic micro-organism into the body of an individual, but develops after the exposure to the pathogen is referred to as acquired immunity. The resistance that occurs due to acquired immunity increases dramatically during subsequent exposures to the same pathogen. Innate immune responses do not act specifically on a particular microbe, it acts against any microbial agent for example the acquired immune responses induced against the bacteria staphylococcus aureus, but not against any other microbe. Furthermore, the innate immunity does not require the prior entry of the microbe into the body; rather it is present from birth.

According to Venugopal (2007), Acquire immunity is the resistance acquired by the administration of microorganisms or their products, which acts as antigens to induce anti- bodies to provide a protective immune response in the host. Vaccine may consist of a live attenuated form of a virus or bacteria. Live attenuated vaccines usually confer immunity with a single dose, which is of long duration. In attenuated vaccine may require several dose of the vaccine to produce adequate antibody response, the duration of immunity varies from months to many years. While passive immunity is gotten from vaccines made from preparations of plasma of immune individual with adequate levels of antibodies to the disease for which protection is sought. The WHO, (2007) pointed out that one of the important functions of the immune system is to protect the host from microbial diseases, in the absence of effective immune responses, the pathogenic micro- organism can cause

diseases and lead to death of the host. The study of the defense mechanism of the body against foreign substances including microorganisms that enter into the body constitutes the subject immunology; the subject immunology involves the study of the organs, cells and molecules responsible for the recognition and disposal of foreign molecules that enters the host.

Albasset, (2005) affirmed that despite the level of awareness created through mass media, demand and update of immunization has remained relatively below expectations in most rural and some urban communities. Location of the immunization services is another important factor in the utilization especially in the rural settlement, which forms the bulk of the population. Knowledge about immunization as well as compliance with a immunization schedule constitute a major hindrance to successful immunization coverage. Therefore there is need for proper information dissemination to the locals to help achieve the successful immunization programme.

## II. AIM OF THE STUDY

The aim of this study was to investigate sociodemographic determinants of attitude towards immunization services among nursing mothers in Benue State.

### Hypotheses

The following hypotheses were tested at 0.05 level of significance to guide the study.

1. There is no significant difference between attitude of nursing mothers based on socio-demographic characteristics such as level of education, religious affiliation, source of information, and socioeconomic status among nursing mothers in Benue State.
2. There is no significant difference between attitude of nursing mothers based on socio-demographic characteristics such as level of education, religious affiliation, source of information, and socioeconomic status among nursing mothers in Benue State.
3. There is no significant difference between attitude of nursing mothers based on socio-demographic characteristics such as level of education, religious affiliation, source of information, and socioeconomic status among nursing mothers in Benue State.
4. There is no significant difference between attitude of nursing mothers based on socio-demographic characteristics such as level of education, religious affiliation, source of information, and socioeconomic status among nursing mothers in Benue State.

## III. METHODOLOGY

Descriptive cross-sectional design was adopted for this study. The population of this study comprised all nursing mothers in Benue State. The total population of woman age 15-39 years is 935,801 according to National Bureau of Statistics (2015). The sample size for this study is 1500 nursing mothers. The sample size was estimated using Taro Yamane method for large population. A multistage sampling procedure was adopted for this study. The instrument for data collection for his study is self -structured questionnaire titled utilization of immunization services among nursing mother. The questionnaire consisted of two sections namely: section A and B, section A dealt with information on demographic characteristics of the respondents. Section B contained questionnaire items on utilization of immunization services. A reliability co-efficient at 0.72 was attained by the instrument using Cronbach Alpha. Data collected was analyzed using Statistical Product for Service Solution Version 23.0 with the use of mean and percentage score as descriptive statistical tools while analysis of variance (ANOVA), t-test, z-test were used to test hypotheses at 0.05 level of significance.

## IV. RESULTS

Research Question 1: What is the attitude of nursing mothers towards immunization in Benue State?

**Table 1:** Attitude of nursing mothers towards immunization in Benue State

SN	Items	$\bar{X}$	SD
1	There is no enough evidence that immunization prevents the occurrence of infectious diseases	2.11	1.05
2	I will immunize my child in a prescribed programme of immunization	2.87	1.05

3	If vaccines are available, I will definitely immunize my child	3.34	.87
4	If vaccines are free of charge, I will definitely immunize my child	3.64	.85
5	Immunization may not save the infant if the disease is serious	3.29	.90
6	Immunization can prevent a child from being disabled	3.41	.87
7	Immunization is very necessary for a child to be healthy	3.56	.79
8	Mothers should not complete immunization of children because of fear of complications from the vaccine	2.85	1.08
Grand mean		3.13	0.93

Table 1 shows the attitude of nursing mothers towards immunization in Benue State. The result shows that the grand mean = 3.13±0.93 is greater than the criterion mean = 2.5 indicating that the respondents had positive attitude towards immunization.

Research Question 2: What is the attitude of nursing mothers towards immunization services in Benue State based on socio-demographic characteristics (educational status, socio-economic status, location and religion)?

**Table 2:** Attitude towards immunization services among nursing mothers in Benue State based on socio-demographic factors

Socio-demographic factors	Attitude towards immunization		Total F(%)
	Positive (F(%))	Negative(F(%))	
<b>Educational status</b>			
Primary	282(68.4)	130(31.6)	412(100)
Secondary	531(64.8)	289(35.5)	820(100)
Tertiary	131(65.5)	69(34.5)	200(100)
None	16(48.5)	17(51.1)	33(100)
<b>Total</b>	<b>960(65.5)</b>	<b>505(34.5)</b>	<b>1465(100)</b>
<b>Socio-economic status</b>			
Employed	250(66.7)	125(33.3)	375(100)
Unemployed	100(66.7)	50(33.3)	150(100)
Self-employed	610(64.9)	330(35.1)	940(100)
<b>Total</b>	<b>960(65.5)</b>	<b>505(34.5)</b>	<b>1465(100)</b>
<b>Location</b>			
Urban	153(66.5)	77(33.5)	230(100)
Rural	505(66.0)	260(34.0)	765(100)
Semi-urban	302(64.3)	168(35.7)	470(100)
<b>Total</b>	<b>960(65.5)</b>	<b>505(34.5)</b>	<b>1465(100)</b>
<b>Religion</b>			
Christianity	744(67.1)	365(32.9)	1109(100)
Islam	199(63.4)	115(36.6)	314(100)
Others	17(40.5)	25(59.5)	42(100)
<b>Total</b>	<b>960(65.5)</b>	<b>505(34.5)</b>	<b>1465(100)</b>

Table 2 shows the attitude towards immunization among nursing mothers in Benue State based on socio-demographic characteristics. The result shows that positive attitude towards immunization was found more among those with primary education (68.4%) followed by those with tertiary education (65.5%) and secondary

education (64.8%). Based on socio-economic status, positive attitude was found more among those who were employed and unemployed (66.7%) each. Based on location, those at the urban areas (66.5%) had more positive attitude followed by those in rural (66.0%) and semi-urban (64.9%). Also, based on religion positive attitude was found more among the Christians (67.1%) compared to those in other religion.

**Testing of Hypotheses**

Hypothesis 1: There is no significant difference in attitude towards immunization services and socio-demographic characteristics (educational status, socio-economic status, location and religion) of nursing mothers in Benue State.

**Table 3:** Analysis of Variance (ANOVA) showing difference in attitude towards immunization and socio-demographic characteristics of nursing mothers in Benue State

Sources of variance	Sum of squares	Df	Mean sum of squares	F-value	p-value	Decision
<b>Education</b>						
Between group	1.358	3	.453	2.007	.111	Accept
Within group	329.563	1461	.226			
<b>Total</b>	<b>330.922</b>	<b>1464</b>				
<b>Socio-economic status</b>						
Between group	.106	2	.053	.234	.791	Accept
Within group	330.816	1462	.226			
<b>Total</b>	<b>330.922</b>	<b>1464</b>				
<b>Location</b>						
Between Groups	.117	2	.058	.258	.772	Accept
Within Groups	330.805	1462	.226			
<b>Total</b>	<b>330.922</b>	<b>1464</b>				
<b>Religion</b>						
Between Groups	3.051	2	1.526	6.802	.001	Reject
Within Groups	327.870	1462	.224			
<b>Total</b>	<b>330.922</b>	<b>1464</b>				

Table 3 shows the ANOVA of significant difference in attitude towards immunization and socio-demographic characteristics of nursing mothers in Benue State. The result shows that there was no significant difference in attitude towards immunization and factors such as education [F(3,1461) = 2.007, p>0.05], socio-economic status [F(2,1462) = 0.234, p>0.05] and location [F(2,1462) = 0.258, p>0.05]. But there was a significant difference with regards to religion [F(2,1462) = 6.802, p<0.05]. Therefore, the null hypothesis which states that there is no significant difference in attitude towards immunization and socio-demographic characteristics (educational status, socio-economic status, location and religion) of nursing mothers in Benue State not fully accepted.

**V. DISCUSSION OF FINDINGS**

The findings of this study provided insight into attitude towards immunization services by nursing mothers in Benue state which were discussed.

The result of this study showed that the grand mean = 3.13±0.93 was greater than the criterion mean = 2.50 indicated that the respondents had positive attitude towards immunization. Despite the positive attitudes of nursing mothers towards immunization by nursing mothers in Benue state. poor compliance due to time constraints because of work schedule, domestic work and farming activities especially during raining season due to the fact that majority of nursing mothers in Benue State are farmers, the result of this study is in line with studies of Bernsen et al (2011) that having a positive attitude towards immunizations was prevalent in 93% of mothers. Abdullabi (2012) buttressed that the overall attitude of mothers towards immunization of their children was positive. Mothers are more consistent about health of their children majorly to promote and protect them from killer’s disease which is similar the findings of other studies Streefland (2003), and Bingham et al (2012). It also concord with study of Al-Zaharani (2013) depicted mothers had positive attitude regarding

childhood immunization with parent's attitude total score ranged between 0-4 (out of 4) with a mean of 3.67 and standard deviation (SD  $\pm$  0.68). It is pertinent to note that the nursing mothers saw the positive effect of immunization on some childhood preventable disease such as polio, measles, tuberculosis and neonatal tetanus which has greater influence in their decision making towards utilization of immunization services.

The result of this study revealed that nursing mothers with a least primary, secondary, and tertiary educations had positive attitude towards immunization which accounted for 68.4%, 64.8%, and 65.5% respectively whilst employed nursing mothers had positive attitude concerning immunization (66.7%). In respect to location of nursing mothers on attitude, those who reside in and semi rural areas had more positive attitude toward immunization service with a large percentage (66.5%, 66.0% and 64.9%). Also, the result depicted that there was no statistically significant difference between attitude towards immunization based education ( $F(2,1462) = 2.007, P > 0.05$ ), socio-economic status ( $F(2,1462) = 0.234, P > 0.05$ ) and location ( $F(2,1462) = 0.208, P > 0.05$ ) respectively. That is, the positive attitude of nursing mothers seems not be affected by their level of education, socioeconomic status and location. Having good knowledge of immunization may not transform into attitudinal and behavioural change. But this study creates a synergy that good knowledge acquired by nursing mothers had brought about a significant attitudinal change because of the awareness of the benefit of immunization service. The result of this study is in consonance with studies of Rauful (2013) that there is a strong associated between low socioeconomic status of individuals strongly controls the attitude or behaviour thereby contribute health-seeking behaviour and ultimately child moral (Rauful, 2013). Study of Antau (2009) also buttressed that 38% of children from mothers living in urban areas are twice more likely to receive fully vaccination.

It also agreed with studies of Olugbera – Bello et al (2017) that lack of education of nursing mothers posed a negative influence on their attitude regarding immunization. Therefore mother's level of education, socioeconomic status and location related to their knowledge and tends to encourage positive attitude towards childhood immunization. Studies of Alfahi et al (2017) affirmed that good percentage of parents had positive attitude towards childhood immunization and comply with vaccination schedule. Studies of Becker et al (2011) confirmed that socioeconomic status had positive controls on health-seeking behaviours saving the child from killer diseases. Most of the ill-attitude concerning were developed from the observed complication a raised from vaccine administration and misconception about immunization.

In regard to religious affiliation, it was statistically revealed that religion had a significant difference concerning mothers attitude towards immunization ( $F(2,1462) = 6.802, P < 0.05$ ). Despite the positive attitude towards immunization based on religion, most people or parent put their religion into consideration before taking decision such as seeking full vaccination of their children which may or may not influence their attitude. This findings is in line with studies of Alfahi et al 2017) that large percentage (85.7%) of mothers believe that complete vaccination schedule is important whereas found disagreed that it doesn't give immunity against infection diseased. Olugbara-Bello et al (2017) affirmed that religion practice of mothers determine their attitude towards childhood immunization. The adoption of Health Belied Model (HBM) was accepted because of its utility of mothers' response towards health seeking attitude in relation to the immunization of children against childhood killer diseases. However, this does not downplay the implication of other theories. Therefore, the necessity of mother to develop and acquired unequivocal knowledge about immunization so as to build positive attitude to vaccination and contribute to immunization service. No contraindication was observed against the present finding as of time of the study but the variation was due to difference in sample size, design and area of study.

## VI. CONCLUSION

Based on the report of this study it deduced that the overall general attitude of nursing mothers towards immunization of children in Benue state was positive.

## VII. RECOMMENDATIONS

Based on the findings from this study the following recommendations were made;

1. Health workers should be retrained and encourage to take up the role of health educators, by providing information about the benefits of immunization, this can influence nursing mothers to take decision on

utilization of immunization services. This programme could be carried out through interactive workshops, compound meetings, group discussions and counseling session.

2. Also this study reiterated the need of health workers for capacity building, such as refresher training on administration of antigen. Management of adverse events following immunization and new antigen administration so as to improve the quality of service delivered.
3. Health workers should be equipped with relevant information and skilled to enhance their efficiency. Further research aimed at exploring similar knowledge and attitude toward utilization of immunization services in a large sample size from different geographical location that will investigate factors hindering the successful immunization coverage.

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