



Awareness, Attitude and Compliance Towards childhood immunization among mothers in Bayelsa East Senatorial District

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Abstract

This study examines the awareness, attitude and compliance towards childhood immunization among mothers in Bayelsa East Senatorial District. Three objectives and research questions were established for this study. The research design adopted for this study was a descriptive, cross-sectional survey design. The population for this study consisted of all mothers in Bayelsa East Senatorial District. The district has a total population of 494,699 with a sample size of 800 mothers. The reliability coefficient was determined using Kuder-Richardson 20 and Cronbach Alpha with the overall value obtained was 0.76. The data collected were entered and analyzed using Statistical Package for Social Sciences (SPSS version 20.00). The result of this study revealed that the awareness level on childhood immunization among mothers in Bayelsa East Senatorial District was high (96.3%). The result showed that the respondents had positive attitude toward childhood immunization. The grand mean = 2.66 is greater than the criterion mean = 2.5 for a four point likert scale. The vaccines respondents complied to included: polio and DTP vaccines after the first 6th weeks of birth 702(96.3%), hemophilus influenza type B, pneumococcal vaccine between the 4-6th week after birth, Rotavirus vaccine at the 5th weeks after birth and second polio dosage on the 8th week 675(92.6%) each, Hepatitis B second dosage after 4th weeks 594(81.5%), Hepatitis B vaccine first dosage within first 24 hours after birth 378(51.9%) and BCG 324(44.4%). It was concluded that; the awareness level of mothers on childhood immunization was high with a positive attitude and good level of compliance with immunization schedule. It was recommended that public health practitioners should embark on community based interventions through proper counseling to clear every misconception about childhood immunization arising from lack of information which influences its compliance.

Keywords:

Awareness, attitude, compliance, immunization service and mothers.

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Introduction

Immunization remains one of the most important public health interventions and a cost-effective strategy to reduce childhood illness associated with infectious diseases (Awodele et al. 2010). Decades of successful immunization programs have made vaccine preventable diseases rarer and reduced the importance of their consequences. As a result, attention to vaccines safety has significantly increased. Vaccines are administered to help the body develop immunity against a disease (Ghattas 2021). Despite improvements in global and national immunization coverage rates with the advent of intensified efforts from the World Health Organization (WHO), United Nations International Children Emergency Funds (UNICEF) and global partners, inequalities still persists in immunization uptake in many parts of the developing world to the detriment of children within the lowest socio-economic groups. World Health Organization (2013) defined immunization as the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. According to Gingle & Doyle (2023) a vaccine is a pharmacologic compound that improves a person's immunity to a particular disease. These vaccines help to stimulate the body's own immune system to protect the person against subsequent infection or disease (WHO, 2015). Immunization therefore depicts the ability to develop immunity. Immunity is the state of having sufficient biological defenses to avoid infection, disease or other unwanted biological invasion (Gherardi, 2013). Immunity also depicts the capability of the body to resist harmful microbes from gaining access into it.

The preventable measure against diseases at childhood stage is through immunization which is complete course of injection that is administered to children soon after birth. Mojinyinola and Olaleye (2012) assert that immunization of children is aimed at providing primary prevention against killer diseases during childhood. Immunization decreases the burden of infectious diseases and prevents illness, disability, and death from the vaccine-preventable diseases, including diphtheria, pertussis, tetanus, measles, poliomyelitis, tuberculosis, and rubella. (Shukla & Shah 2018). These diseases have taken several precious lives to death all over the world especially in the third world, like African and Asian countries. There is a schedule for children below the ages of five by the health department for the immunization of children, and vaccines are provided by Expanded Program on Immunization (EPI) which plays a vital role in controlling childhood diseases. Globally, diphtheria, tetanus, poliomyelitis, tuberculosis, and pertussis vaccines have saved an estimated 400,000 lives (Rémy. et al, 2015). Measles vaccination resulted in a 79% reduction in worldwide measles deaths from 2000 to 2015 (Patel et al. 2019). Epidemiological study has shown that 2.5 million deaths occurred every year as a result of vaccine-preventable diseases, mainly in Africa and Asia among children less than 5 year old (Global Immunization Vision and Strategy (GIVS), 2015).

Awareness is an important factor influencing immunization. A number of studies indicate that mothers who have inadequate awareness about immunization and immunization schedules are more likely to have children who are not immunized or partially immunized. Abdulraheem et al. (2011) explained that mothers' awareness and understanding of immunization is important so that health care providers can provide support. Mothers must receive information on vaccine benefits and risks, so they can make an informed decision about immunization. Abdulraheem et al. (2011)

concluded that mother's awareness affect to a great extent towards the immunization of their children due to their level of education.

Mothers Attitude towards immunization. The negative attitudes from parents such as: mothers' fear of vaccination, adverse effects and a tendency to refrain from immunization because of mild illness, are considered to be the barriers for a child's vaccination (Lovrić et al 2018). They are communicated convincingly and rapidly to others. Attitude of mothers can be negative or positive. The attitude of most mothers towards immunization services is positive and relies on the efficacy of the vaccine to protect against disease; there was a poor attitude towards polio immunization among respondents who believe that it contains anti-fertility agents. Decision-making on immunization of a child lies predominantly on the father; and, if vaccination was rejected because of rumors and the priority accorded to mother's preference to more severe diseases (Clements & Ratzan, 2013).

Compliance is cooperative performance and adherence to prescribed therapy as recorded in the clinic record at a given period and that compliance criteria included among other things frequency of keeping clinic appointments (Andreoli, 2014). In 2014, Ajayi noted that "compliance is the client's physical presence at the health unit or hospital on the appointment day to receive the prescribed care". In the context of this study, the term compliance is defined or conceptualized as receiving the required number of doses of vaccines at the appropriate age as shown on the immunization schedule and recorded in the child's record card. Noncompliance may lead to a negative outcome on the ongoing immunization campaign in the country.

Mothers' awareness, attitude and compliance play an important role in achieving complete immunization before first birthday of the child; the previous mothers' factors are also contributing to success or failure of immunization program (WHO, 2013). Awareness attitude and compliance studies will provide information about the people's awareness of certain topics, their feelings and their practices (WHO, 2012). Hence, this study was undertaken to determine the awareness, attitude and compliance towards childhood immunization among mothers in Bayelsa East Senatorial District.

Objectives of the Study: The objective of this study is to investigate the awareness, attitude and compliance towards childhood immunization among mothers in Bayelsa East Senatorial District.

Specifically, the study seeks to achieve the following objectives:

1. To determine the level of awareness on childhood immunization among mothers in Bayelsa East Senatorial District.
2. To determine the attitude of mothers towards childhood immunization in Bayelsa East Senatorial District.
3. To examine the level of compliance of mothers towards childhood immunization in Bayelsa East Senatorial District.

Research Questions: The following research questions are formulated to guide the study.

1. What is the level of awareness on childhood immunization among mothers in Bayelsa East Senatorial District?
2. What is the attitude of mothers towards childhood immunization in Bayelsa East Senatorial District?
3. What is the level of compliance of mothers towards childhood immunization in Bayelsa East Senatorial District?

Materials and Methods

Research Design

The research design adopted for this study was a descriptive, cross-sectional survey design. According to Elendu (2010), cross-sectional survey is a type of research design that carefully selects a section of the population and generates information from a representative sample of large population at one occasion or time. This design is considered relevant as it is capable of generating data from a population describing the event based on their environment. The purpose of the design was to describe, explain and analyzing event or attitude and level of compliance as they occur at a particular period without manipulation of any variables.

Study Population: The population for this study consisted of all mothers in Bayelsa East Senatorial District. The district has a total population of 494,699 (Brass: 184,127. Nembe: 130,966 and Ogbia: 179,606). The total population of mothers in Bayelsa East Senatorial District respectively is two hundred and forty one thousand, five hundred and forty seven (241,547) in the three Local Government Areas that make up the district: Brass (89,760), Nembe (64,196), and Ogbia (87,591), National Population Commission, (NPC) (2006).

Sample Size and Sampling Technique: The sample size for the study consists of 800 mothers. Taro-Yemen’s formula for calculation of sample size for a large population was used to calculate the sample size for the study;

$$n = \frac{N}{(1 + N \alpha^2)}$$

Where S = Sample size

N = population size

α = level of significance usually 0.05

Applying Taro Yemen’s formula

Population = 241,547

$$\text{Sample size} = \frac{241,547}{1 + 241,547 (0.05)^2}$$

$$\text{Sample} = \frac{241,547}{1 + (241,547 \times 0.0025)}$$

$$\text{Sample} = \frac{241,547}{1 + 603.9} = \frac{241,547}{604.9} = \underline{\underline{398}}$$

The sample size from the calculation is multiplied by 2 to better represent the population of women in Bayelsa East Senatorial District that is $398 \times 2 = 796$. Approximating the value above $796 \approx 800$. The sample size from the calculation is multiplied by 2 to better represent the population of women in Bayelsa East Senatorial District that is $398 \times 2 = 796$. Approximating the value above $796 \approx 800$. A multi-stage sampling procedure was employed for the study. At the first stage, simple random sampling technique was used to select to select the three Local Government Areas in Bayelsa East Senatorial District; at the second stage, purposive sampling was used to select the number of women in each of the selected Local Government Areas.

Table 1.0 Stratified Distribution of Sample

L.G.A	Population	Sample
Brass LGA	89,760	296
Nembe LGA	64,196	216
Ogbia LGA	87,571	288
Total	241,527	800

Data Collection: The instrument for data collection was a questionnaire designed by the researcher titled: Awareness, Attitude and Compliance of Mothers towards Childhood Immunization Questionnaire (AACMCIQ). The reliability coefficient was determined using Kuder-Richardson 20 and Cronbach Alpha. The overall value obtained was 0.76. This indicates that the instrument is reliable.

Data Analysis: The data collected were entered and analyzed using Statistical Package for Social Sciences (SPSS version 20.00),

Ethical Consideration: No ethical consideration was required for this study

Results and Discussion

Research question 1: What is the level of awareness on childhood immunization among mothers in Bayelsa East Senatorial District?

Table 1.1: Level of awareness on childhood immunization

Items	Yes	No	Non response	Total
Ever heard about immunization	702(96.3%)	27(3.7%)		729(100%)
Awareness about type of vaccines to be given to child	216(28.6%)	405(55.6%)	108(14.8%)	729(100%)

*Multiple responses

Sources of information about immunization

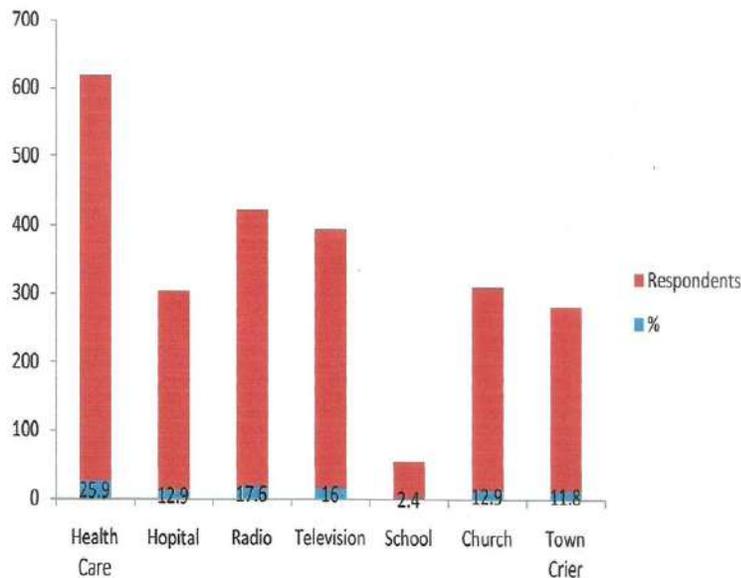


Table 1.1 showed the awareness of respondents on childhood immunization. Majority 702(96.3%) indicated that they have heard about immunization. The sources of information included: health care (25.9%) followed by radio (17.6%), television (16.5%), hospital (12.9%), church (12.9%), town crier (11.8%) and school (2.4%). Therefore the awareness level on childhood immunization among mothers in Bayelsa East Senatorial District was high (96.3%).

Research question 2: What is the attitude of mothers towards childhood immunization in Bayelsa East Senatorial District?

Table 1.2: Attitude of respondents towards childhood immunization

Items	SA	A	D	SD	X±SD
1. It is no longer necessary to immunize children because diseases are very rare?	270	81	162	216	2.44±1.26
2. Vaccines contain substances that have been proven harmful to children’s health	108(14.8)	324(44.4)	81(11.1)	216(29.6)	2.56±1.07
3. There is no enough evidence that immunization prevents the occurrence of infectious diseases	270(37.0)	162(22.2)	162(22.2)	135(18.5)	2.22±1.13
4. I would immunize my child in a prescribed programme of immunization	189(25.9)	297(40.7)	189(25.9)	54(7.4)	2.85±.89
5. If vaccines are available, I will definitely immunize my child	216(29.6)	351(48.1)	108(14.8)	54(7.4)	3.00±.86
6. If vaccines are free of charge, I will definitely immunize my child	297(40.7)	270(37.0)	54(7.4)	108(14.8)	3.03±1.04
7. Immunization save’s the life of a child	135(18.5)	243(33.3)	297(40.7)	54(7.4)	2.62±.87
8. Immunization can prevent a child from being disable	162(22.2)	432(59.3)	135(18.5)	0(0.0)	3.04±.64
9. Immunization help a child fight against disease	162(22.2)	270(37.0)	91(11.1)	216(29.6)	2.52±1.14
10. Immunization is very necessary for a child to be healthy	162(22.2)	189(25.9)	243(33.3)	135(18.5)	2.52±1.03
11. I refused to	81(11.1)	297(40.7)	216(29.6)	135(18.5)	2.44±.92

complete immunizing my child because of fear of complication	
Grand mean±S.D.	2.66±0.92

Table 1.2 showed the attitude of respondents towards childhood immunization. The result showed that the respondents had positive attitude toward childhood immunization. The grand mean = 2.66 is greater than the criterion mean = 2.5 for a four point likert scale. This indicates that, respondents had positive attitude towards childhood immunization. For example, more than half 432(59.3%) of the respondents agreed that immunization can prevent a child from being disable; 297(40.7%) agreed that they would immunize their children in a prescribed programme of immunization; and 351(48.1%) agreed that they will definitely immunize their children if vaccines are available.

Research question 3: What is the level of compliance of mothers towards childhood immunization in Bayelsa East Senatorial District?

Table 1.3: Compliance to childhood immunization

Items	Yes F(%)	No F(%)
BCG given to child at birth	324(44.4)	405(55.6)
Hepatitis B vaccine given to child within the first 24 hours of birth	378(51.9)	351(48.1)
Child given second dose/dosage after the first 4th weeks	594(81.5)	135(18.5)
Immunized child against polio after the first 6th weeks of birth	702(96.3)	27(3.7)
Baby given the second dose/dosage on the 8th week?	675(92.6)	54(7.4)
Immunized baby against DTP (Diphtheria, Tetanus, and Pertussis) on the 6th weeks	702(96.3)	27(3.7)
Child immunized against heamphilus influenza type B	675(92.6)	54(7.4)
Child immunized against pneumococcal between the 4-6th week after birth	675(92.6)	54(7.4)
Took child for immunization for measles and rubella at 9-12th months after birth	648(88.9)	81(11.1)
Took child for immunization for Rotavirus vaccine at the 6th weeks after birth	675(92.6)	54(7.4)

Table 1.3 showed the compliance of respondents to childhood immunization. The vaccines respondents complied to included: polio and DTP vaccines after the firths 6th weeks of birth 702(96.3%), heamphilus influenza type B, pneumococcal vaccine between the 4-6th week after birth, Rotavirus vaccine at the 5th weeks after birth and second polio dosage on the 8th week 675(92.6%) each, Hepatitis B second dosage after 4th weeks 594(81.5%), Hepatitis B vaccine first dosage within first 24 hours after birth 378(51.9%) and BCG 324(44.4%).

Discussion of Findings

Results of this study were discussed below:

Level of Awareness on Childhood Immunization among Mothers

The findings of this study showed in table 1.1 that the awareness level on childhood immunization among respondents was high (96.3%). This finding is not surprising because the campaign to eradicate the ten (10) childhood killer diseases by the World Health Organization (WHO) through the National Programme on Immunization (NPI) heightened the dissemination of information on childhood immunization making it almost a daily affair on television stations, radio jingles and posters in hospitals and health centers and the subsequent increase in the level of awareness on childhood immunization among the populace. The findings of this study gives credence to the study of Awodele et al. (2010) where it was shown that 93.8% the respondents were aware of immunization. The findings of this study also showed the sources of information included: health care (25.9%), radio (17.6%), television (16.5%), hospital (12.9%), church (12.9%), town crier (11.8%) and school (2.4%). The findings of this study is at variance with that of Šeškute et al. (2018) which showed that the main sources of information about children's vaccination were the doctor, the internet and mass media. The finding of this study is different from that of Gherardi et al. (2013) which showed that the study respondents reported unawareness of adverse effects and contraindications of vaccination. The result of this study revealed that 48.1% (351). Furthermore, the findings of this study is at variance with the report of Sinha et al. (2007) that in many parts of this country particularly in the rural areas, the level of awareness of mothers on childhood immunization is still low. This may be as a result of poor manpower, and health services found in most rural areas of the country.

Attitude of Mothers towards Childhood Immunization

The result of this study in table 1.2 showed that the grand mean (2.66) was relatively greater than the criterion referenced mean (2.5) in a four point likert scale which indicated that the respondents (mothers) had positive attitude regarding child immunization, however, 59.3% of mothers agreed that immunization can prevent their children from being disable. The study revealed that 85.3% of the respondents were found to have positive attitude while only 14.8% had negative attitude. In the light of this study, the increase level of awareness exhibited by respondents was led to positive attitude as an informed decision regarding childhood immunization as deduced from the findings. Overall, 85.3% were found to have positive attitude while 14.8% had negative attitude. It can be deduced from this findings that the high level of awareness shown by the respondents was translated to positive attitude toward immunization. The findings of this study is similar to that of Šeškute et al. (2018) where positive attitude towards immunization was reported as more than half of the respondents considered vaccines to be safe and thought that the benefits of vaccines were greater than the risks. The findings in consonance with the study of Yousif et al. (2013), that parents especially mothers had a positive attitude regarding immunization with a condition of fear of side effect of vaccination. Furthermore, the current is in line with studies of Birhanu et al. (2016), which reported that 53.8% of respondents had good attitude towards immunization of children. The performance in the current study is

high because much have been done since Safe Motherhood scheme was launched by the Government of Bayelsa State as a strategy for campaign for immunization of childhood. The findings of this study is concord with the study of Odusanya et al. (2008), that 99.1% of mothers had very positive attitude to immunization. The result of this study is in consonance with the study of Ramadan et al. (2016) that 70% mothers had positive attitude towards immunization. However, the finding of this study negates that of Gherardi (2014) which showed that mothers had negative attitude of mothers was one of the major barrier to childhood immunization. The findings of this study is also different from the view of Nnani and Skuku (2009) who noted that mothers exhibit negative attitude towards childhood immunization in the form of fear and uncertainty attitude, mistrust attitude and information attitude.

Level of Compliance of Mothers towards Childhood Immunization

The result of these findings in table 1.3 revealed that majorities of the respondents complied with immunization schedule. The vaccines respondents complied to included: polio and DTP vaccines after the firths 6th weeks of birth 702(96.3%), Heamophilus influenza type B, pneumococcal vaccine between the 4-6th week after birth, Rotavirus vaccine at the 5th weeks after birth and second polio dosage on the 8th week 675(92.6%) each, Hepatitis B second dosage after 4th weeks 594(81.5%), Hepatitis B vaccine first dosage within first 24 hours after birth 378(51.9%) and BCG 324(44.4%). The findings of this study are in consonance with the study of Tagbo et al. (2012) which showed that 85% of the respondents immunized their children. The findings of this study corroborate that of Vonasek et al. (2015) which showed that 88% of the respondents' children received age-appropriate and on-time childhood immunizations. In contrast, the findings of this study differs from that of Mugada et al. (2017) which showed that 30.5% children were partially immunized. The findings of this study is also at variance with that of Raji (2013) where a smaller proportion of the respondents (49.2%) had received BCG, slightly over a third had completed their DPT and OPV schedule (35.5% and 39%, respectively), while 40% had received measles vaccinations. The difference in the sample size and study area might be implicated for the variations found between the present study and the previous ones.

Conclusion

Based on the data and the findings, majority of respondent have satisfactory awareness (96.3) with a high level of compliance towards routine immunization. Compliance towards immunization service are important factors that influence mother's access to quality information which is ultimately predictor of full child immunization. It was concluded that; the awareness level of mothers on childhood immunization was high with a positive attitude and good level of compliance with immunization schedule.

Recommendations

1. Though the level of awareness found in this study was high, very few were also found to be unaware hence; health professionals should sustain their effort to promote the awareness of childhood immunization through the different mass media.

2. The Federal Ministry of Health should establish a Childhood Immunization Section Support Groups particularly for rural dwellers so that on discharge from hospitals or clinics, mothers would be referred to them for proper orientation on the need for childhood immunization. This will also help to bridge the gap in awareness among mothers with low educational qualification.
3. Public health practitioners should embark on community based interventions through proper counseling to clear every misconception about childhood immunization arising from lack of information which influences its compliance.

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