

**KNOWLEDGE OF IMMUNISATION SERVICES PROVIDED TO  
INFANTS IN ONICHA LOCAL GOVERNMENT AREA, EBONYI  
STATE, NIGERIA**

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## **ABSTRACT**

This study examined the level of knowledge possessed by residents of Onicha Local Government Area Ebonyi state, Nigeria on immunisation services provided to infants in the area. Survey research design was adopted for this study because of widespread variables that were needed to be captured for the study. Symbolic interactionism was adopted as the frame for the study. The Yaro Yamane formula was used to determine the sample size of 339 respondents from the research population. The questionnaire and the structured interview schedule were used to collect data from respondents. From the study, it is revealed that the female respondents had more knowledge of the functions of immunisation services provided to infants than the male respondents. Heads of health facilities had more knowledge of functions of immunisation services provided to infants than heads of households among other findings. Based on these findings, it was recommended that the gap between health facility and household knowledge of immunisation services should be bridged. Also, immunisology should be introduced as a general studies course in institutions of higher learning among other recommendations.

**KEY WORDS:** Household, Immunisation, Immunisology, Interactionism, Knowledge

## **Introduction**

Immunisation services are often provided to infants. Across the globe, the adequate application of measures including immunisation services for infant well-being was less than 50 per cent. Vulnerable populations as a result need to be provided with information, education and protected from risks and damages (World Bank, 2004) which would emanate from the former. More worrisome also could be the less inclusion of the “non-formal system of education (UNESCO, 1997) for providing information on immunisation with the use of the mother tongue for parents, care givers and other stakeholders in immunisation activities. Often times, immunisation sessions were not carried out at the parent and care givers’ convenience (Reaching Every Ward Field Guide, 2007).

Fifty-five per cent more Nigerian infants were not vaccinated with DPT-3 in 2011 compared with 2010 (WHO, 2012). In 2012, Borno, Kano, Sokoto and Yobe states received the 62, 64, 65 and 63 per cent of oral polio vaccines respectively. In Borno state, the 11 per cent of children were still 0-dose (WHO, 2012). Immunisation coverage in the country was only accessible to only 28.5% of infants in the rural settings, and 52% in the urban settings of the country (WHO, 2007). Immunisation coverage in parts of the country was therefore not optimal and unsatisfactory (Antai, 2009; UNDP, 2011).

The research examined the level of knowledge the residents of Onicha Local Government Area had on the provision of immunisation services to infants in the area. These include gender, educational attainment and income level factors on knowledge of immunisation services in the local government area. Recommendations were given based on the findings of the study.

## **Provision of Immunisation Services in Nigeria**

Immunisation entails the administration of vaccines to infants in order to prevent the occurrence of certain diseases like polio and pertussis etc. In Nigeria the Expanded Programme on Immunisation (EPI) is facilitated through the efforts of many government bodies and various stakeholders. Active immunisation involves the administration of live attenuated organism or its proteins to the body of infants (Panda, Behera & Mohanty, 1996). Immunisation services to infants in Nigeria, appears to be free. In practice it may not be so. This is because most at times the service providers collect some money from parents before their infants are given such immunisation services.

In 2003, global immunisation vision and strategy was set up to improve infant health (Arevshahana, Clements, Lwanga, Misore, Ndumbe, Sewardf & Taylor, 2007). A high vaccination coverage was encouraged upon in Africa (Arevshahana et al, 2007). The introduction of appropriate vaccines such as BCG, HBV, and OPV etc. for routine use on infants has led to less incidences of vaccine preventable diseases in the African continent (Antai, 2009:3).

Women play a bigger part in immunisation of their children. A target of 95% immunisation coverage and reduction in partial immunisation are encouraged upon in Nigeria (Arevshahana et al, 2007). This may be evident in Unwana, Amoha, Amasiri and Mgbowo communities etc. These communities are rural settings.

As at March 2012, polio cases nearly double the numbers of cases that have been reported and states infected compared with the same period in 2011 (WHO, 2012). In the poor performing areas, non-compliance and absence of vaccination team accounted for 45% and 32% respectively of missed children much higher proportion than typically reported (WHO, 2012). Since polio prevalence is still rampant in the country after several promises made to

eradicate it, then something may be wrong somewhere. It all borders on political leaders' sincerity towards eradicating the disease in the country. That notwithstanding, one may not really exclude the impact of cultural factors from the above. For instance, some people in Northern Nigeria believe that the vaccines could lead to impotency. However, the claim has not attracted any scientific proof.

Antai (2009) in his own line of thought believes that, Nigeria has high incidences of measles-related deaths. Nigeria also has high incidences of polio. She also has low immunisation coverage rates. This is usually less than 50%. This is quite pathetic. It is doubtful where the country is heading for. Meanwhile, ethnicity, mother's occupation and mother's household wealth were related to full immunisation of infants (Antai, 2009).

In 1988 global polio eradication initiative was established. This led to 99 per cent reduction in global occurrences of poliomyelitis (Antai, 2009). However, this contradicts the above report by the World Health Organisation that polio cases are on the increase in the country. "Democratic countries often have lower immunisation coverage rates than autocratic countries owing to the fact that in autocracies bureaucratic elites may have an affinity for immunisation programmes and often enjoying more autonomy and resources" (Gauri, Khaleghian, Baya & Santiago, 2006). Nigeria being a democratic nation may have the above applicable to her immunisation coverage rates. High immunisation coverage rates are correlated with education and literacy (Gauri et al, 2006).

Antai (2009) in support to the above attributed inequitable access to routine immunisation in Nigeria to low socio-economic status, less education and settlement in rural settings. Other factors include fear and confusion (Antai, 2009). This is because, some parents may feel that if their infants take the

vaccines it may likely have some adverse effects on their bodies. Even though some of these vaccines have some adverse effects on the bodies of some infants, its positive effects seem to outweigh their negative effects on the bodies of infants. It is therefore, on the onus of the parents especially the mothers to make the right choices.

In Ekiti state also, “Christians had 24.2% immunisation coverage rate. There was 8.81% immunisation coverage rate for Muslims. Money was usually paid for immunisation in health centres. In some health centres there was free immunisation. Women take decisions over immunisation in South West Nigeria” (Oluwadare, 2009:54). This is a gender issue in health seeking behaviour (Erinosho, 2006).

Even though the Nigerian government promised to totally eradicate polio in the country by 2012 (Radio Nigeria Network News, 29 -05 -12) its achievability was not realised. This may be moreso because of the nonchalant attitudes paid by some parents towards their children receiving the vaccines. Some others live in difficult terrains where the health workers could not easily reach them. There was a DPT-3 coverage rate of 24.8% in 2003. This varied from 8.8% in the North Western Nigeria to 45.1% in the South Eastern Nigeria. This dismal performance has increased the burden of vaccine preventable diseases in Nigeria (Reaching Every Ward Field Guide, 2007:7). The above do not clearly indicate the level of knowledge possessed by people on immunisation services based on their sex, educational attainment and religious affiliation etc.

### **Knowledge of Immunisation Services Provided to Infants in Nigeria**

Authors have made some notable contributions on knowledge of immunisation services provided to infants in Nigeria. Notable among them are Ngwu, Ezech and Iyiani (2014). Ngwu et al (2014) therefore identified the need

for education on infant health issues. This emanates from one of their findings that mothers in Enugu state Nigeria had a very low perception on ways of improving children's health. This includes that of immunisation services and nutrition provided to infants in the country. Agreeing with the above view points, Libwea, Kobela and Ollgreen (2014) believed that only 19% of the parents/guardians were aware of the availability of the pneumococcal conjugate vaccine (PCV-13) in two health districts in Cameroon. This Libwea et al (2014) also noted to have emanated from an association which was identified to exist between parental socio-economic/demographic factors and good knowledge of pneumonia disease burden and prevention. However, Ekure et al (2013) identified knowledge gaps and negative attitudes towards childhood immunisation in their study. This could be a barrier towards effective immunisation of infants in Nigeria.

The above could be linked to knowledge of other immunisation services. As a result, out of the mothers interviewed in a study in Kosofe L. G. A. Lagos state, Nigeria by Abidoye and Odeyemi (2013), those who know about Bacille Calmette Guerin (BCG), oral polio vaccine (OPV), diphtheria, pertussis and tetanus (DPT) vaccine, Hepatitis B vaccine (HBV) and meningococcal vaccinations varied dramatically. These variations were 89.5%, 85.5%, 78.5%, 71.0%, 73.5%, 42.0% and 6.5% respectively. In a like manner, over 54.5% of them did not know actually the diseases that these vaccines prevent. This could be a barrier towards improving the health of the infants in the country. However, the 95.5% of these people showed good attitudes towards immunisation due to its perceived benefits to child survival. Health of infants is a prime for socio-economic status determinant of the country. This could be one of the reasons why most mothers studied in Enugu state had good knowledge and positive perception of immunisation services (Tagbo, Uleanya, Nwokoye, Eze & Omotowo: 2013). Positive perception of immunisation services by

parents could encourage the effective provision and utilisation of immunisation services by infants.

## **Theoretical Framework**

The symbolic interactionist perspective (S.I.) was applied to the work. Interactionism is a sociological framework for viewing human beings as living in a world of meaningful objects. The proponents of symbolic interactionism include George Herbert Mead, William James and Charles Horton Cooley (Nnonyelu, 1997). The theory centres its unit of analysis on the self especially as it is formed and changed in the process of social interaction. No wonder Egbue and Edokobi (2002) observed that almost all interactions between human individuals involve an exchange of symbols such as ideas, signs and languages. “Cooley used the phrase looking-glass-self to emphasise that the self is the product of our social interactions with other people” (Schaefer, 2001:94).

The immunisation ad hoc workers and health staff often provide immunisation services to infants. The health workers usually move from one house to another during immunisation plus days or house to house immunisation. The health workers often provide counselling services to parents on how to ensure that their infants get adequately immunised. This is in a bid to avert pertussis, tuberculosis, measles and other medically preventable diseases (MPDs) from attacking the bodies of the infants. Routine immunisation services are often provided to infants in the various health facilities across Nigeria by the health workers. In cases where any immunisation vaccine (e.g. DPT vaccine, OPV and measles vaccine etc.) is not available in a health facility where an infant is registered for immunisation services, the mother could be referred to another health facility where the vaccine is available. The provision of immunisation services to infants therefore involves a form of interaction. The mode of interaction embarked upon would make or mar the level of knowledge possessed by individuals on immunisation issues In Nigeria. For instance,

positive interactive mechanism could facilitate high level of knowledge on immunisation issues. On the other hand, poor interactive mechanism could lead to poor knowledge on immunisation issues.

### **Methods of Data Collection**

The survey research design was used in this research work because the study focused on people's knowledge, of the provision of immunisation services. Onicha Local Government Area is one of the 774 local government areas in Nigeria. It is also one of the 13 local government areas in Ebonyi state. Majority of the inhabitants of Onicha L.G.A. are farmers. Onicha L.G.A. was chosen for the study because there are no available data on awareness level of residents on immunisation services in the area. This made it imperative for the study to be conducted in the area. As a result, it may help attract concerned agencies and organisations to Onicha L.G.A., in order to offer necessary assistance to the people in the area.

The population of infants in Onicha L.G.A. was 2,228. This was obtained from the Vital Registration Department of the National Population Commission (NPC) Abakaliki. The systematic sampling technique was used in the administration of questionnaire on respondents. Systematic sampling involves the picking of members of sample at a predetermined regular space/time interval. Consequently, the first element was picked randomly and others were picked at regular intervals predetermined by the researcher. For instance, when the house number five was randomly picked at first, the house numbers 10, 15, 20, 25 were picked and so on until the whole households were covered to obtain a truly representative sample. Questionnaire was then administered to respondents from the selected households for their responses. This way, every household had an equal chance of being selected. Ten key informants from the

four wards (Agbabor, Ebia, Ebiaoma and Ogudu-Okwor wards) that were purposively selected were interviewed.

The questionnaire method and the structured interview schedule were used in the study because a combination of the quantitative and qualitative instruments helped the researcher to arrive at more reliable findings. The questionnaire consisted two sections namely sections A and B. Section A contains the personal data of respondents. These include the respondent's sex, age, marital status, educational attainment, religious affiliation, occupation, the area of residence and income level. The section A of the questionnaire contained items one to eight. Section B asked questions on the substantive areas of the research. This part asked such questions that helped the researcher to ascertain the level of relationship between gender, educational level and income level factors on knowledge of immunisation services in Onicha L.G.A. The section B of the questionnaire contained items nine to 17. The closed ended and open ended questions were used.

The structured interview schedule asked such questions as awareness of immunisation vaccines and its provision to infants among others. This helped to ascertain the respondent's knowledge level on immunisation services in Onicha Local Government Area.

The sample size obtained using the Yaro Yamane formular was 339 respondents. Ten key informants from Onicha Local Government Area were also closely interviewed. The first five informants were health staff that were interviewed. The remaining five informants were heads of households that were closely interviewed. The questionnaire was administered to respondents by the researcher and two trained research assistants.

## Results

Two hundred and forty one respondents (82.8%) were males. Fifty respondents (17.2%) were females. However, 21.6% (52) male respondents had high level of knowledge of functions of immunisation services to infants. Twenty four female respondents (50.90%) had high level of knowledge of functions of immunisation services to infants. One hundred and eighty nine male respondents (78.4%) had low level of knowledge of functions of immunisation services to infants. Twenty four female respondents (50.0%) had low level of knowledge of functions of immunisation services to infants. These are contained in tables 1 and 2.

Twenty three respondents (37.1%) with no formal education had high level of knowledge of functions of immunisation services to infants. Thirty nine respondents (62.9%) with no formal education had low level of knowledge of functions of immunisation services to infants. Twelve respondents (25.0%) with primary education had high level of knowledge of functions of immunisation services to infants.

Thirty six respondents (75.0%) with primary education had low level of knowledge of functions of immunisation services to infants. Thirty four respondents (19.9%) with secondary education had high level of knowledge of functions of immunisation services to infants. One hundred and thirty seven respondents (80.1%) with secondary education had low level of knowledge of functions of immunisation services to infants. Six respondents (85.7%) with tertiary education had high level of knowledge of functions of immunisation services to infants. One respondent (14.3%) with tertiary education had low level of knowledge of functions of immunisation services to infants. See tables 3 and 4 for more details.

Ten respondents (27.8%) with 500 Naira to 1000 Naira daily had high level of knowledge of functions of immunisation services to infants. One respondent (20.0%) with 1000 Naira to 5000 Naira daily had high level of knowledge of functions of immunisation services to infants. One hundred and eighty three respondents (74.1%) with less than 500 Naira daily had low level of knowledge of functions of immunisation services to infants. Twenty six respondents (72.2%) with 500 Naira to 1000 Naira daily had low level of knowledge of functions of immunisation services to infants. Four respondents (80.0%) with 1000 Naira to 5000 Naira daily had low level of knowledge of functions of immunisation services to infants. Seventy six respondents (26.1%) had a high level of knowledge of functions of immunisation services to infants. Heads of health facilities had more knowledge of immunisation vaccines than heads of households. Tables 5 and 6 contain more details of the above findings on income level and knowledge of immunisation services.

**TABLE 1****Sex of respondents in sampled households in Onicha L.G.A.**

Sex	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Male	241	82.8	82.8	82.8
Female	50	17.2	17.2	100.0
Total	291	100.0	100.0	

**Source: Fieldwork (2013)**

**TABLE 2****Sex of respondents and knowledge of functions of immunisation services in sampled households in Onicha L.G.A.**

Level of Knowledge of Functions of Immunisation Services	of	Sex of Respondent		Total	X <sup>2</sup>	Degree of Freedom	Probability Value
		Male	Female				
High Level of Knowledge	of	52	24	76	16.684	1	.000
		21.6 per cent	50.0 per cent	26.3 per cent			
Low Level of Knowledge	of	189	24	213			
		78.4 per cent	50.0 per cent	73.7 per cent			
Total		241	48	289			
		100.0 per cent	100.0 per cent	100.0 per cent			

**Source: Fieldwork (2013)**

**TABLE 3****Educational qualification of respondents in sampled households in Onicha L.G.A.**

Educational Qualification	Frequency	Percentage	Valid Percentage	Cumulative Percentage
No Formal Education	62	21.3	21.4	21.4
Primary Education	50	17.2	17.2	38.6
Secondary Education	171	58.8	59.0	97.6
Tertiary Education	7	2.4	2.4	100.0
Total	290	99.7	100.0	
Invalid	1	.3		
Total	291	100.0		

**Source: Fieldwork (2013)**

**TABLE 4**

Educational qualification of respondents and knowledge of functions of immunisation services

of Knowledge of Functions of Immunisation Services	No Formal Education	Primary Education	Secondary Education	Tertiary Education	Total	X <sup>2</sup>	Degree of Freedom	Probability Value
High Level of Knowledge	23	12	34	6	75	20.271	3	.000
	37.1	25.0	19.9	85.7	26.0			
	per cent	per cent	per cent	per cent	per cent			
Low Level of Knowledge	39	36	137	1	213			
	62.9	75.0	80.1	14.3	74.0			
	per cent	per cent	per cent	per cent	per cent			
Total	62	48	171	7	288			
	100.0	100.0	100.0	100.0	100.0			
	per cent	per cent	per cent	per cent	per cent			

**Source: Fieldwork (2013)**

**TABLE 5****Income level of respondents in sampled households in Onicha L.G.A.**

Income Level of Respondent	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Less than 500 Naira Daily	249	85.6	85.9	85.9
500 Naira - 1000 Naira Daily	36	12.4	12.4	98.3
1000 Naira – 5000 Naira Daily	5	1.7	1.7	100.0
Total	290	99.7	100.0	
Invalid	1	.3		
Total	291	100.0		

**Source: Fieldwork (2013)**

TABLE 6

Income Level of respondents and knowledge of functions of immunisation services in sampled households in Onicha L.G.A

Level of Knowledge of Functions of Immunisation Services	Income Level of Respondent			Total
	Less than 500 Naira Daily	500 Naira - 1000 Naira Daily	1000 Naira - 5000 Naira Daily	
	64	10	1	75
High Level of Knowledge	25.9 per cent	27.8 per cent	20.0 per cent	26.0 per cent
Low Level of Knowledge	183	26	4	213
	74.1 per cent	72.2 per cent	80.0 per cent	74.0 per cent
Total	247	36	5	288
	100.0 per cent	100.0 per cent	100.0 per cent	100.0 per cent
Statistical Tool	Value	Degree of Freedom		Probability Value
X <sup>2</sup>	.153	2		.926

**Source: Fieldwork (2013)**



**TABLE 7****Respondents' reasons for having high level of knowledge of the functions of immunisation services in sampled households in Onicha L.G.A.**

Reason for having High Level Frequency of Knowledge of Functions of Immunisation Services	Percentage	Valid Percentage	Cumulative Percentage
There is an Adequate Immunisation Education in My Community	27	9.3	25.2
I hear of the Vaccines in Health Facilities and can Name and Explain Three of Them	29	10.0	27.1
I Read through the Immunisation Card Regularly	12	4.1	24.3
Others	8	2.7	23.4
Total	76	26.1	100.0
Invalid	215	74.0	
Total	291	100.0	

**Source: Fieldwork (2013)**

**TABLE 8****Respondents' reasons for having low level of knowledge of the functions of immunisation services in sampled households in Onicha L.G.A.**

Reason for having Low Level of Knowledge of Functions of Immunisation Services	Frequency	Percentage	Valid Percentage	Cumulative Percentage
There is no Immunisation Education in My Community	29	10.0	14.6	14.6
The Vaccines are only Known to Health Staff	40	13.7	20.2	34.8
I have not heard of the Vaccines and can not Name and Explain Them	49	16.8	24.7	59.6
The Health Staff Mark the Cards but don't Explain to Me	38	13.1	19.2	78.8
I Hear of Polio Campaign and Measles Campaign in Radio but can't Explain Them	24	8.2	12.1	90.9
I do not have any Interest in knowing the Names of the Vaccines nor Explaining Them	17	5.8	8.6	99.5
Others	1	.3	.5	100.0
Total	198	68.0	100.0	
Invalid	93	32.0		
Total	291	100.0		

**Source: Fieldwork (2013)**

## **Discussion**

Twenty respondents (9.3%) had high level of knowledge of the functions of immunisation services to infants, because there is an adequate immunisation education in their community. Twenty nine respondents (10.0%) had high level of knowledge of the functions of immunisation services to infants, because they hear of the vaccines in health facilities and could name and explain three of the vaccines. Twelve respondents (4.1%) had high level of knowledge of the functions of immunisation services to infants, because they read through the immunisation card regularly. Eight respondents (2.7%) attributed such high level of knowledge of functions of immunisation services to other issues. Two hundred and thirteen respondents (73.2%) had low level of knowledge of functions of immunisation services to infants. See table 7 for more details.

Twenty nine respondents (10.0%) had low level of knowledge of functions of immunisation services to infants, because there is no immunisation education in their community. Forty respondents (13.7%) had low level of knowledge of functions of immunisation services to infants, because the vaccines are only known to health staff. Forty nine respondents (16.8%) had low level of knowledge of functions of immunisation services to infants, because they have not heard of the vaccines and could not name and explain them. Thirty eight respondents (13.1%) had low level of knowledge of functions of immunisation services to infants, because the health staff mark the immunisation cards but don't explain to them. Twenty four respondents (8.2%) had low level of knowledge of functions of immunisation services to infants, because they hear of polio campaign and measles campaign in radio but could not explain them. Seventeen respondents (5.8%) do not have any interest in knowing the names of the vaccines nor explaining them. One respondent (.3%) had other reasons for that. These informations are contained in table 8.

The symbolic interactionist perspective applied to the work suits its findings. This is because a cordial interactive mechanism facilitated a good knowledge of immunisation services. On the other hand, a poor interactive mechanism led to poor knowledge of immunisation services. High and low knowledge of immunisation services is a function of the level of interaction between the health workers and the members of households.

## **Conclusion**

Knowledge of immunisation services provided to infants in Onicha L.G.A. varied across sexual lines of respondents. Knowledge of immunisation services provided to infants in Onicha L.G.A. varied across educational lines of respondents. Knowledge of immunisation services provided to infants in Onicha L.G.A. varied across income level of respondents among others.

## **Recommendations**

All village squares in the Local Government Area should be utilised for immunisation awareness campaigns (IAC) to all elders during their village meetings. This would help to adequately keep them informed of the current state of immunisation services in Nigeria. All the churches in the Local Government Area should help in sensitising their members on the positive effects of immunisation services on infant health. Immunisation studies should be made a compulsory subject from the primary to the tertiary levels in the country. In the primary school level this subject should be called immunisation studies. At the secondary school level it should be called immunisation awareness studies (IAS). At the tertiary level immunisology should be introduced as a general studies course. Immunisology is the scientific study of all issues relating to immunisation services.

Heads of health facilities/heads of households disparities in knowledge of immunisation services should be checked. This could be done through the

health facilities-households continuum. This is an interactive approach between the health staff and the members of different households. The health staff should always embark on household visits in order to sensitise them on immunisation issues in Nigeria. This would help to bridge the gap between the high awareness on immunisation issues possessed by the former and the low awareness on immunisation issues possessed by the latter. Immunisation specific sensitisation approach (ISSA) should also be embarked on. This would help to sensitise people on the essence of immunisation services. It would be specific as to whether it is for adequate sensitisation on vaccination, health education, sanitation education, home visits or nutrition education. ISSA should also be age specific.

The Igbo language should be employed in sensitising the rural dwellers on immunisation issues. This would enable them to understand the issues involved in immunisation services and vaccine preventable diseases. Use of local dialects would also help in bridging the knowledge gap between heads of households and health staff's knowledge of immunisation services. This would make the people to feel more relaxed and assimilate what they are being taught.

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