

Childhood immunization perception and uptake among mothers of under-five children attending immunization clinics in Osogbo, South Western, Nigeria

Adisa OP.¹, *Akinleye CA.², Obafisile CI.¹, Oke OS.³

Abstract

Objective: Immunization is one of the most cost-effective public health intervention as it saves millions of lives annually from vaccine preventable deaths. About 20 per cent of under-five children; die from a vaccine-preventable disease annually hence, the need to determine the perception and the factors militating against the uptake of immunization among mothers of under-five children. The study aimed at determining the perception and uptake of childhood immunization among mothers of under-five children attending post-natal Clinics in Osogbo, South Western, Nigeria.

Methods: The study was a descriptive cross-sectional study with a sample size of 320 mothers selected using a systematic sampling technique. Data was collected using a pre-tested semi-structured interviewer administered questionnaire. SPSS Version 17 was used for analysis. The level of statistical significance was set at P -values ≤ 0.05 , at the confidence interval of 95%.

Results: A significant proportion of the respondents (43.8%) were within the ages 21-30 years and 76.3% of the mothers were educated up to tertiary level. Majority of the respondents, 98.8% had good perception of immunization. About 85.7% of the children were fully immunized according to national immunization schedule. However long waiting time and inability to leave the workplace have a negative effect on uptake of immunization as 41.1 % and 31.9% of the respondents attributed the reason for missing immunization clinic days to these two factors respectively.

Conclusion: Reduction of the amount of time spent in the immunization clinic and enactment of enabling policy to ensure nursing mothers are permitted to take their children for immunization during working hours would go a long way to improve rate of immunization uptake of children.

Keywords: Perception, Uptake, Under-five, Postnatal clinic and Immunization.

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Enfance perception de la vaccination et de l'absorption chez les mères de moins de cinq ans qui fréquentent les cliniques de vaccination à Osogbo, Sud-Ouest, le Nigeria

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Resume

Objectif: La vaccination est l'une des interventions de santé publique les plus rentables car il sauve des millions de vies chaque année de vaccins décès évitables. Environ 20 pour cent des sous-cinq enfants; mourir d'une maladie évitable par la vaccination chaque année par conséquent, la nécessité de déterminer la perception et les facteurs qui militent contre le taux de vaccination chez les mères de moins de cinq ans. L'étude visait à déterminer la perception et l'adoption de la vaccination des enfants chez les mères de moins de cinq ans qui fréquentent les cliniques post-natal à Osogbo, Sud-Ouest, le Nigeria.

Méthode: L'étude était une étude transversale descriptive avec une taille d'échantillon de 320 mères sélectionnées à l'aide d'une technique d'échantillonnage systématique. Les données ont été recueillies à l'aide d'un intervieweur questionnaire pré-testé semi-structuré. SPSS version 17 a été utilisé pour analyse. Système niveau de signification statistique a été fixé à P-valeurs <0,05, à l'intervalle de confiance de 95%.

Résultats: Une proportion importante des répondants (43,8%) étaient dans les âges 21-30 ans et 76,3% des mères ont été formés jusqu'au niveau tertiaire. La majorité des répondants, 98,8% avaient une bonne perception de la vaccination. A propos de 85,7% des enfants étaient complètement vaccinés conformément au calendrier national de vaccination. le temps et l'incapacité de quitter le lieu de travail ont un effet négatif sur l'absorption de la vaccination que 41,1% et 31,9% des répondants ont attribué la raison de manque jours vaccination à la clinique à ces deux facteurs respectivement Cependant longues files d'attente.

Conclusion: la réduction de la quantité de temps passé dans la clinique de vaccination et l'adoption de politiques favorables pour assurer les mères allaitantes sont autorisés à emmener leurs enfants pour la vaccination pendant les heures de travail serait aller un long chemin pour améliorer le taux de vaccination des enfants absorption.

Mots-clés: Perception, Uptake, moins de cinq ans, postnatale clinique et la vaccination.

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INTRODUCTION

Immunization is one of the most effective, safest and efficient public health interventions and it is estimated to save at least 3 million lives yearly from vaccine preventable diseases globally (1). It is estimated that 10.8 million children die worldwide each year, of which 41% occur in sub-Saharan Africa and 34% in south Asia (2). The introduction of appropriate vaccines for routine use among children has resulted in drastic reductions in vaccine-preventable diseases (3). The Expanded Program on immunization (EPI) in middle- and low-income countries has prevented more than 2 million child deaths from Tuberculosis, Diphtheria, Tetanus, Pertussis, Poliomyelitis and Measles each year since its initiation in 1974 (4). With the establishment of the Global Polio Eradication Initiative in 1988, immunization has resulted in a 99 per cent reduction in the worldwide incidence of Poliomyelitis (5). Immunization averts an estimated 2 to 3 million deaths every year from Diphtheria, Tetanus, Pertussis (whooping cough), and measles.

Global vaccination coverage, which is the proportion of the world's children who receive recommended vaccines, has remained steady for the past few years (6). Worldwide in 2014, about 86% (115 million) of infants worldwide received 3 doses of diphtheria-tetanus-pertussis (DTP3) vaccine, protecting them against infectious diseases that can cause serious illness and disability or be fatal. By the end of 2014, 129 countries had reached at least 90% coverage of DTP3 vaccine (6). Despite the improvements in global vaccine coverage during the past decade, there continues to be regional and local disparities resulting from limited resources; competing health priorities; poor management of health systems; inadequate monitoring and supervision and lack of immunization uptake among mothers of under five children, accounting for an estimated 22 millions infants not fully immunized with routine vaccine globally (7). Studies have shown that majority of the countries in sub-Saharan Africa usually recorded low immunization coverage because of poor knowledge and low uptake of immunization for their children (8,9).

Study have demonstrated that children exempted from routine immunization were twenty-two times more likely to acquire measles and almost six times more likely to acquire pertussis than vaccinated children with the primary site for acquiring infections usually, being their schools (10). Nigeria in particular

recorded an abysmal national routine immunization coverage of 12% in 2003 and 36% in 2006.(8) In 2009, Nigeria accounted for about 3.5 millions (14%) of the 23.2 million children worldwide who did not receive 3 doses of Diphtheria Pertussis Tetanus (DPT) vaccine during the first year of life (11). This does not only impedes disease control, but may consequently diminish international support for vaccination, which may lead to resurgence of vaccine preventable diseases

Vaccine preventable diseases are a major contributor to child morbidity and mortality especially in the Sub-Saharan Africa. It accounts for 17% of global total under-five mortality per year (12). In 2014, an estimated 18.7 million infants worldwide were not reached with routine immunization services such as DTP3 vaccine. More than 60% of these children live in 10 countries: the Democratic Republic of the Congo, Ethiopia, India, Indonesia, Iraq, Nigeria and Pakistan, the Philippines, Uganda and South Africa (7). Vaccines preventable diseases are known to account for approximately 22% of child deaths in Nigeria, amounting to over 200,000 deaths per year. In 2009, Nigeria accounted for about 3.5 million (14%) of the 23.2 million children worldwide who did not receive 3 doses of DTP vaccine during the first year of life (13). It is observed that some postnatal women have developed bad habit towards immunization for their children when born. Despite the fact that it is free for children between 0-5 years, despite policy on immunization and success of expanded programme on immunization (EPI), many vaccine preventable diseases remains prevalent especially in developing countries like Nigeria because the choice of some parent not to immunize their children significantly increases the risk of infection for other children who are immunized. There is an urgent need to better communicate the health benefit of vaccination and the dangers of not immunizing children to parents.

It is crucial for mothers, particularly the postnatal women, to know the importance of immunization for their children and ways of compliance to the regimen. Also, it is important to ascertain those factors affecting the uptake of immunization. Thus there is a need to find out the level of knowledge on immunization and the factors that affect its uptake so as to know how to address them. Though, child mortality has fallen significantly in many low-income countries; however, sub-Saharan Africa continues to

experience the slowest fall in mortality rate among the children. This can be attributed to the low uptake of immunization among under-five children. Although level of immunization have improved in Nigeria since 2003 it has not yet reached the required level,(14,15). Hence the need to assess the knowledge and level of uptake of immunization among mothers of under-five in Osogbo South Western Nigeria.

MATERIALS AND METHODS

Description of the study Area - The research study was carried out in LAUTECH Teaching Hospital, Osogbo, Osun State. The hospital is the only teaching hospital in Osogbo, located in Olorunda Local Government. It was established in 1997 by Military administrator Lt. Col. Anthony Obi as the teaching hospital complex for the college of health sciences, LAUTECH, Osogbo, and it had since been accredited for the training of both undergraduates and postgraduates. It is a 280-bedded hospital, which serves Osun state and its neighboring states. It offers routine immunization once a week in its infant welfare clinic.¹⁶The average number of children immunized weekly was 60 in this hospital.

Study Population – The study population were mothers who brought their children to infant welfare clinic in LAUTECH Teaching Hospital, Osogbo.

Inclusion criteria- All mothers of under-five children assessing immunization in the hospital that are not staff of the hospital. Other care givers staying with the child since birth and has been bringing the child for immunization before were included.

Exclusion criteria- All mothers of under-five children that are staff in the hospital were excluded because they may not face the same barriers faced by non-staff of the hospital when assessing immunization for their under-five children. All care givers not staying with the child since birth were excluded.

Study design- This was a descriptive cross-sectional study.

Sample size determination – Using the national prevalence of DPT₃ uptake in Nigeria of 67.7% in 2011(16). Leslie Fischer's formula was used to calculate the minimum sample size for the study. The minimum sample size calculated was

316.

Instrument for data collection - The instrument for this study was a designed questionnaire which consists of three sections. The questionnaire was administered to clients in the infant welfare clinic of LAUTECH Teaching Hospital, Osogbo. The questionnaire was pre-tested in the Infant Welfare Clinic of LAUTECH Teaching Hospital; Ogbomoso

Method of Data Collection and Analysis

The self -designed questionnaires were interviewer administered by the researchers. Data collection was carried out from January to June, 2015. Statistical package for social sciences (SPSS) version 17 was used to analyse them. Variables were presented in frequency tables, graphs and charts.

Ethical Consideration: Ethical approval to conduct this study was obtained from the Research Ethics Committee of Ladok Akintola University of Technology (LAUTECH) Teaching Hospital, Osogbo.

Respondents were adequately informed before they filled the questionnaire with verbal consent given by each of the respondents before administration of the questionnaire. No incentives was given to the respondents.

RESULTS

The highest proportion of the respondents 140(43.8%) were within the age of 21-30 years and were mostly educated up to tertiary education level 244(76.3%). In terms of occupation 140(43.8%) of the respondents were trader, 140(43.8%) were civil servant, 24(7.5%) were house wife 40(12.4%). In terms of religion almost two-third 204(63.8%) of the respondents were Christians, 116(36.3%). Majority of the respondents 316(98.8%) were married and most 304(95%) were Yoruba with only 16(5%) being Igbo. 132 (41.3%) of the respondents had one child, 100(31.3%) had two children, 40(12.5%) had three children, and 48(15%) had four children and above.

Almost half of the respondents 132(41.1%) said long waiting time is one of the reason why they have not been taking their child for immunization. Only 25(7.8%) gave reason of lack of money for transportation as the main reason why they cannot take their child for immunization last appointment. Also about one-third of the respondents 102(31.9%) said that inability to get permission from work place is the

reason why they missed some of the immunization appointment. Majority of the respondent do not see lack of vaccine as the reason why they cannot assess immunization for their children. In terms of safety only 45(14.1%) of the respondents gave safety of the vaccine as a reason why they have not been assessing immunization

Also, majority of the respondents 292(91.3%) believed that immunization can prevent all the childhood killer diseases while only 28(8.7%) did not believe. Also, almost all the respondents 308(96.3%) said that they have heard about child immunization before. Also, most of the respondents 316(98.8%) said that immunization is best for children while 4(1.2%) said it is not the best. Almost all the respondents 316(98.8%) were in support of the immunization programme while 4(1.2%) were not in support. Almost all of them 316(98.8%) said that all their children were immunized while 4(1.2%) said not all their children were immunized. Almost all of them 312(97.5%) said that their children complete their immunization while 8(2.5%) they did not. Majority of the children 275(85.9%) were fully immunized up to date according to national immunization schedule while 45(14.1%) were partially immunized in that they are not up to date based on the age according to the national immunization scheduled.

DISCUSSION

This study is similar to other studies conducted in Ibadan, Malaysia, Ethiopia and Bangladesh which shows that poverty is a major factor that can influence the level of immunization uptake of mothers of under-five children (17,18, 20,21). Another factor responsible for level of immunization uptake in this study was long waiting time in the health facility this is corroborated by another study conducted in Nigeria which shows that long waiting time is an important factor that affect immunization uptake by mothers (22,23). Nevertheless, this study show a high level of fully immunized children which is similar to previous studies around the world in Kenya (24), Ethiopia (25)and in Nigeria (26).

CONCLUSION

Improving immunization access across all part of a Nigeria could have a multifaceted effect on the total eradication of childhood killer diseases and this can only be achieved by minimizing the impact of the factors that have been found to reduce the level of immunization

uptake among mothers of under-five children. It is therefore recommended that effort should be put in place to reduce the long waiting time in our various facilities by ensuring immunization are given to children more than once in a week to reduce the load of clients seeing on the immunization day. Also, government should ensure that policy are enacted that will permit mothers of under-five children are permitted to take their children for immunization during working hours would go a long way to improve uptake of immunization for their children.

Conflicts of interest: None declared.

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Table 1 Socio-demographic characteristics of the respondents (N = 320)

VARIABLE	FREQUENCY	PERCENTAGE
Age		
< 20	12	3.8
21-30	140	43.8
31-40	124	38.8
41-50	44	13.6
Educational qualification		
Secondary	72	22.5
Tertiary	244	76.2
Primary	4	1.3
Occupation		
Trading	140	43.8
Civil servant	140	43.8
House wife	40	12.4
Religion		
Christianity	204	63.8
Muslim	116	36.2
Marital Status		
Married	316	98.8
Separated	4	1.2
Ethnicity		
Yoruba	304	95
Igbo	16	5
Number of children		
One	132	41.3
Two	100	31.3
Three	40	12.4
>Three	48	15.0

Table 2 Factors influencing the uptake of immunization among mothers

Reasons	Frequency	Percentages
Lack of money for transportation		
Yes	25	7.8
No	295	92.2
Long waiting time		
Yes	132	41.1
No	188	58.9
Not sure of the safety		
Yes	45	14.1
No	275	85.9
Lack of vaccine		
Yes	2	0.6
No	318	99.4
Lack of information about the day of immunization		
Yes	5	1.6
No	315	98.4
Forgetting the day of immunization		
Yes	65	20.3
No	255	79.7
Inability to go because of work		
Yes	102	31.9
No	218	69.1

Table 3 assessing the perception of the respondents on the importance of immunization

Variable	Frequency	Percentage
Do you believe that immunization can prevent all the childhood killer diseases		
Yes	292	91.3
No	28	8.7
Have you heard about child immunization before		
Yes	308	96.3
No	12	3.7
Do you think immunization is best for your children		
Yes	316	98.8
No	4	1.2
Do you support immunization programme		
Yes		
No	316	98.8
Are all your children immunized		
Yes	4	1.2
No	316	98.8
Is there anything preventing you from bringing your child/children for immunization		
Yes	4	1.2
No	20	6.2
Immunization Status	300	93.8

Table 4. Immunization status of children

Immunization status	Frequency	Percentages
Fully immunized	275	85.9
Partially immunized	45	14.1