

## Determinants and Effects of Missed Opportunity on Routine Immunization Among Children Under 2 Years in Bonny LGA

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### Abstract

Immunization is an important process during child rearing and this process must commence from birth to about 2 years of age. Preventable diseases are prevented by proper immunization and to keep the child physically and medically fit to carry out their future task. Immunizing the child means that you are securing the child's future. Missed opportunity on routine immunization is a threat that must be tackle and eradicate it to give the child a future. The aim of this study is to evaluate effect of missed opportunity on routine immunization among children under 2 years in Bonny Local Government Area. This was a cross-sectional study involving children under 2 years of age A well-structured questionnaire was administered to participants (parents/guidance). Each participant had one questionnaire to fill appropriately and independently after instructions were given to them by the Research Assistants. The study lasted for a period of 2 months. The results showed that 79.00% of the participants affirmed that, there wards missed the opportunities of vaccination. The research also revealed the reasons while the under 2 children missed their vaccination and these shows that 9.00% of the respondents complained of lack of finance, 9.00% reneged on lack of proper information from healthcare provider, 3.00% complained about the attitude of healthcare providers, 36.50% talk about inefficient scheduling of immunization, and 10.50% blamed it on fear of wasting multi-dose vaccine on few children. The result shows that 77.50% of the participants said that they have not been enlightened on missed opportunity. Also, 77.00%, said they are not aware of the consequences of missed opportunity.

**Keywords:** Effect; Missed Opportunity; Routine Immunization; Children; Under 2 Years

### Introduction

Immunisation is an important process that every new born must undergo to prevent the occurrence of preventable disease. Immunization is a safe, effective and cost-effective health intervention across different life stages, including childhood [1-3]. Immunization is considered one of the most cost-effective health interventions, reducing under-five mortality (WHO, UNICEF, World Bank, 2009). Global immunization coverage from 2010 to 2015 shows that at least 85% of children received three doses of Diphtheria-Pertussis Tetanus (DPT) vaccine (WHO, 2016). However, in 2015, the number of children without Routine Immunization (RI) was 19.4 million globally

(WHO, 2016). The majority (75%) of non-immunized children live in 10 countries, including Nigeria [4,5]. Nigeria is the most densely populated country in Africa with an annual population growth rate of 2.83% (National Population Commission, 2006) and is the second largest contributor to under-five mortalities in the world (UNICEF Nigeria, 2019). Childhood immunization is a key strategy for the reduction of child morbidity and mortality: over the period from 2000 to 2015, the greatest decline in child mortality was attributable to reductions in vaccine-preventable diseases [6]. Immunization is considered an essential health service, and its coverage is monitored as part of Sustainable Development Goal 3: to ensure healthy lives

and promote well-being for all at all ages [7]. Immunizations should be offered at every contact point, including preventive and curative health services. Countries should review national immunization policy and remove excessive contraindications. Missed Opportunities for Vaccination (MOV) can occur when an individual, who is eligible for vaccination, makes contact with health services but does not receive all eligible vaccinations [3,4]. An opportunity for immunization is missed when a person who is eligible for immunization and who has no contraindication to immunization visits a health service and does not receive all the needed vaccines. A MOV was defined as any contact with healthcare services by a child or women of child bearing age who was eligible for vaccination (i.e., unvaccinated, partially vaccinated, or not up-to-date, and free of contraindications to vaccination), which did not result in the individual receiving all the vaccine doses for which he or she was eligible [3,4]. Reducing MOV can improve the quality of coverage and timeliness of vaccination, increase operational efficiency and satisfaction and minimize unnecessary costs to caregivers and households, particularly the disadvantaged [3,4].

**Materials and Method**

This was a cross-sectional study involving children under 2 years of age A well-structured questionnaire was administered to participants(parents/guidance). Each participant had one questionnaire to fill appropriately and independently after instructions were given to them by the Research Assistants. The study lasted for a period of 2 months The children were recruited from Bonny Local Government Area. A well-structured questionnaire was administered to participants. Each participant had one questionnaire to fill appropriately and independently after a well-informed consent was granted. The study lasted for a period of 2 months (May to June, 2023). Statistical analysis of data was done using SPSS Version 25 and P value < 0.05 was considered significant for data.

**Exclusion criteria:** Any child who was above 2 years of age was excluded from the study.

**Inclusion criteria:** Any child who has missed opportunity for vaccination is eligible for the study.

**Research Design:** The research design adopted for this study was cross sectional research design that utilizes both research questions to arrive at the results. The cross-sectional research design is considered appropriate for this study because it investigates missed opportunity to immunization service in under 2 years in Bonny Local Government of Rivers State.

**Population of the Study:** The population of the study comprised of 200 parents of children from Bonny LGA., Rivers State.

**Sample and Sampling Techniques:** Samples were collected using a simple random sampling technique. Sample calculation formula was done using Taro Yamene formula. It therefore means that a sample of two hundred respondents was used for this study.

Although the calculated sample size is 200 a total of 400 participants were recruited for this study. The mathematical illustration for the Taro Yamane method is stated as follows:

$$n = N / (1 + N(e)^2)$$

Where: n signifies the sample size N signifies the population under study e signifies the margin error (it could be 0.10, 0.05 or 0.01)

$$\text{So, } n = 400 / (1 + 400(0.05)^2)$$

$$n = 400 / (1 + 400(0.0025))$$

$$n = 400 / (1 + 1)$$

$$n = 400 / 2 = 200$$

Therefore, sample size=200

**Results**

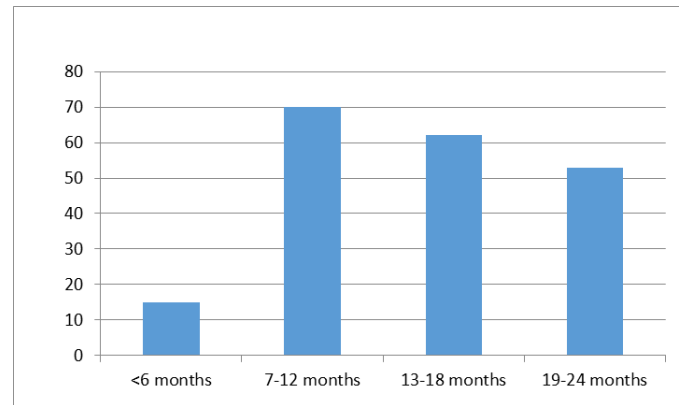


Figure 1: Age Distribution of Respondents.

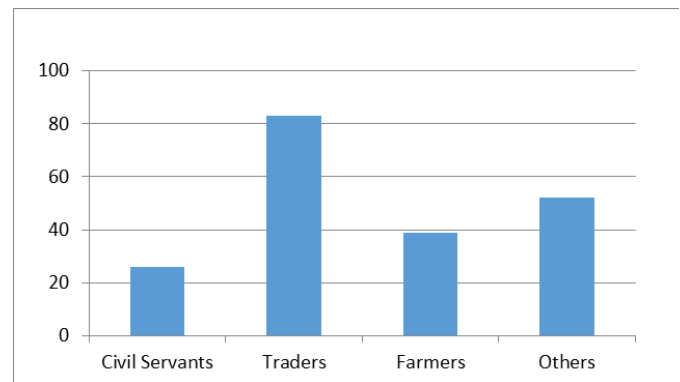


Figure 2: Maternal Occupation.

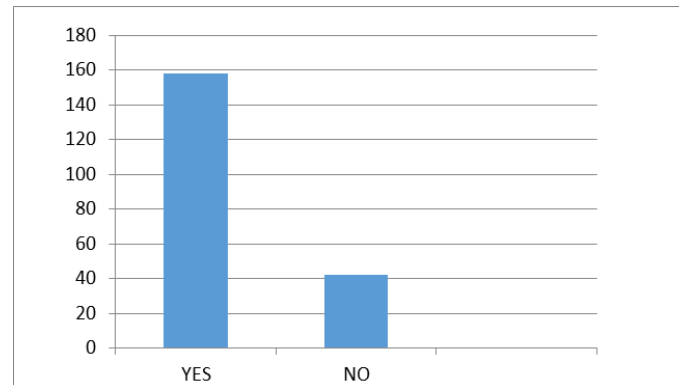


Figure 3: Missed opportunity of immunization.

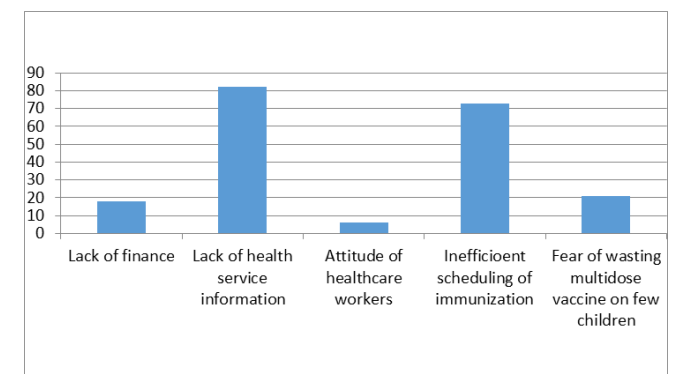


Figure 4: Causes of missed opportunity.

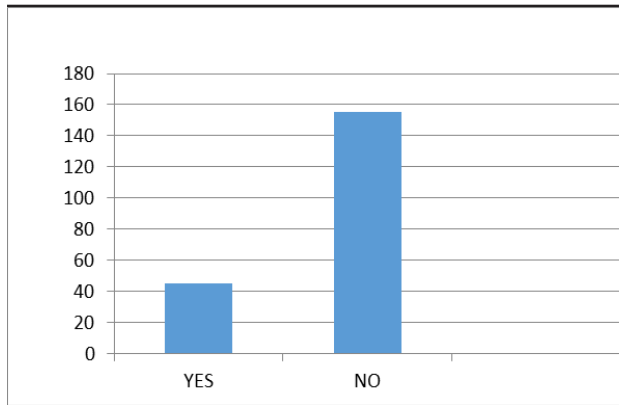


Figure 5: Enlightenment campaign by the leadership of your community, NGOs, or government agencies about missed opportunity.

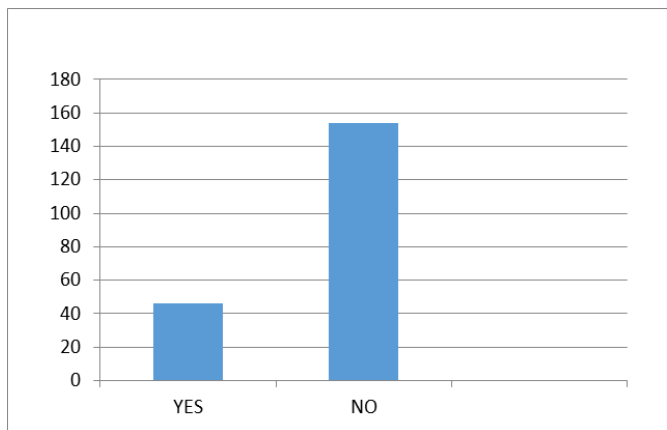


Figure 6: Awareness about the consequence of missed opportunity of immunization.

**Discussion**

Immunization is an efficient and cost-effective health intervention program. Immunization is an important process during child upbringing and this process must commence from birth to about 2 years of age. Preventable diseases are prevented by proper immunization and to keep the child physically and medically fit to carry out their future task. Immunizing the child means that you are securing the child’s future. Missed opportunity on routine immunization is on the increase and constitute a threat that must be tackle and eradicate it to give the child a future. Missed opportunity on routine immunization is rampant in rural areas and in some of the LGAs were there are no supervising health personnel. The study revealed that the children whose missed this important immunization were under 2 years and the information about the missed opportunity were provided by the parents/guidance during the study under review. The study also showed that majority of the parents/guidance were traders and this could be the reason why missed opportunity for immunization is on the increase. Many of them are petty traders and this could not get them enough transport to the facility where immunization is given.

The study revealed that 158(79.00%) respondents agreed that their children missed the opportunities of vaccination and this is on the increase. The results of this study showed that missed opportunity affects the health condition of children under 2 years in Bonny LGA., Rivers State. When children missed important vaccination due to certain reasons, this could expose the children to several conditions that may even bring permanent disability to the child. The results of educational status of mothers shows that 18(9.00%) had informal education, 35(17.50%) had primary education, 117(58.50%) had second-

ary education while 30(15.00%) had tertiary education. However, maternal education was the most common reported parental socio-demographic factor found to influence childhood immunisation. This could be due to their level of education as well as inappropriate information or contact with health workers. However, this study agreed with previous study by Duru et al., (2016) that reported that mothers with at least a primary or secondary school education were found to be approximately eight times more likely to have their children fully immunised compared to mothers with no formal education. This could be attributed to the fact that the higher the level of parents’ education, the higher the health seeking behaviour of the parents which in turn, have positive impacts towards childhood immunisation uptake (Duru et al., 2016).

The study revealed certain factors that necessitate this missed opportunity for routine immunization among the children and such factors include: lack of finance 18(9.00%), lack of health service information 82(41.00%), attitude of healthcare workers 6(3.00%), inefficient scheduling of immunization 73(36.50%), and fear of wasting multi-dose vaccine on few children 21(10.50%). These factors are critical and need intervention. The factor, fear of wasting multi-dose vaccine on few children is rampant among healthcare providers. In most health centres the healthcare providers do not carry out immunization on daily basis rather they carry out immunization only twice per week, mostly Mondays and Fridays and so if you do not have transport fair on any of those two days, you will miss immunization for your child. These factors are caused by the government, healthcare providers and parent/guidance.

**Conclusion**

Immunization is an efficient and cost-effective health intervention program. Immunization is an important process during child upbringing and this process must commence from birth to about 2 years of age. Preventable diseases are prevented by proper immunization and to keep the child physically and medically fit to carry out their future task. Immunizing the child means that you are securing the child’s future. Missed opportunity on routine immunization is on the increase and constitute a threat that must be tackle and eradicate it to give the child a future. Missed opportunity on routine immunization is rampant in rural areas and in some of the LGAs were there are no supervising health personnel. The study revealed that 158(79.00%) respondents agreed that their children missed the opportunities of vaccination and this is on the increase. The results of this study showed that missed opportunity affects the health condition of children under 2 years in Bonny LGA., Rivers State.

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