

ORIGINAL ARTICLE



MATERNAL KNOWLEDGE, PERCEPTION AND PRACTICE OF CHILDHOOD IMMUNIZATION IN CALABAR SOUTH, NIGERIA.



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ABSTRACT

BACKGROUND: Immunization of children against serious infectious diseases is among the most successful and cost-effective interventions in preventive healthcare. Factors influencing demand for immunization varies greatly by region and context. This study was aimed at determining the knowledge, perception and practice of childhood immunization among mothers' utilizing healthcare centres in Calabar South Local Government Area, Cross River State, Nigeria.

MATERIALS AND METHODS: This is a cross-sectional descriptive study. A pretested semi-structured interviewer administered questionnaire was used to collect data from 250 mothers of children aged 0-59 months. Respondents were drawn from four randomly selected healthcare centres in the study area. Data was analysed using SPSS version 20.0 with p-value < 0.05 taken as significant.

RESULTS: Majority of the mothers 248 (99.2%) had heard about immunization with 142 (56.8%) indicating that their source of information was from healthcare workers. Most of the mothers (97.2%) agreed that immunization prevents the killer diseases of children. Older and literate mothers were more likely to immunize their children at the right age. Mother's marital status had no significant relationship with immunization at the right age. Most mothers (76.4%) gave immunization at the right age while 90% accepted immunization during campaigns. All mothers had positive perception of childhood immunization.

CONCLUSION: Most mothers in this study had knowledge of immunization. Age and educational status were significantly related to immunization at the right age. They had positive perception towards immunization which is commendable and should be encouraged.

KEY WORDS: Maternal, Knowledge, Perception, Practice, Childhood, Immunization.

INTRODUCTION:

Vaccine preventable diseases (VPDs) are major causes of childhood morbidity and mortality. Globally, about two to three million deaths occur yearly due to VPDs with approximately 1.5 million occurring among under-five children.¹ In Africa, they account for more than 500,000 under-five deaths yearly.² VPDs were responsible for 22% of child mortality in Nigeria amounting to over 200,000 deaths per year.³

Immunization is one of the most cost-effective, safest and most successful public health interventions, and currently prevents about 2-3 million deaths due to VPD yearly.^{4,5}

The percentage of Children receiving the diphtheria, pertussis and tetanus 3rd dose vaccine (**DPT3**) is often used as an indicator of how well countries are providing routine immunization. According to the World Health Organization (WHO),⁵ in 2019 about 85% of infants worldwide (116 million infants) received 3 doses of DPT. Despite this improvement in global vaccine coverage, about 19.7 million infants did not receive basic vaccines in 2019.

In Nigeria, as in some other low and middle income countries, immunization coverage is low.^{6,7} The country recorded national routine immunization coverage of 36% in 2006,³ 48.8% in 2015 and 67% in 2019.⁸ This is well below the 90% level of immunization coverage recommended by the WHO needed to achieve sustained control of VPDs.⁹ This low immunization coverage could be due to operational factors relating to policies, vaccine funding, vaccine availability, poor management of the health system, armed conflicts and health workers related factors.^{2,10}

Furthermore, some authors,¹¹⁻¹⁴ have identified awareness, attitude and perception of parents (especially mothers)/caregivers as major draw backs to immunization coverage. Much of the policy discussion and research addressing vaccination coverage in

Nigeria has focused on issues of supply and access (vaccine funding, availability and health workers related factors), ignoring the demand issue involving parents/caregivers actions and inactions. It is important to study parent/caregiver related issues involved in immunization coverage. Hence, this study aimed at determining maternal knowledge, perception and practice of childhood immunization in Calabar, Nigeria.

MATERIALS AND METHODS:

The study was carried out in Calabar South Local Government Area (LGA) located in the Southern Senatorial District, Cross River State, Nigeria from January to June, 2014. It has a population of 191,515 from the 2006 National Population Census. The land mass of the area is 269.99 square kilometres.¹⁵⁻¹⁷ It is bound to the North by Calabar Municipality, East by the great Qua River, West by Calabar River and South by the creeks of the Atlantic ocean.¹⁸

This was a cross-sectional descriptive study. Four primary healthcare centres were selected by simple random sampling without replacement from the 26 primary healthcare centres in the LGA. Semi-structured questionnaires (pretested in a healthcare centre in Calabar Municipality, a neighbouring LGA) were used for data collection. It contains questions that focused on knowledge, practice and perception of immunization. The right age of immunization was in keeping with the National Programme on Immunization (NPI) schedule (Birth, 6weeks, 10 weeks, 14weeks and 9 months). Ethical clearance for the study was obtained from the Health Research Ethics Committee, Ministry of Health, Cross River State, Nigeria.

This study population comprises of mothers with at least one child 0 to 59 months of age who consented to participate while those whose child/ children were older than 59 months were excluded. Sample size was 250 obtained using Cochran's formula.¹⁹ Two field

assistants were trained to assist the lead researchers to collect data. The respondents filled the questionnaire but where there was limited ability in reading and/or writing English Language, the researchers and the field assistants explained the challenging terms/sections in consistent “Pidgin” English and respondent was assisted to tick the appropriate response. Data was analysed using SPSS version 20.0 and p-value < 0.05 was significant.

RESULTS: Out of the two hundred and fifty mothers, 117 (46.8%) were aged 26 to 35 years, 152 (60.8%) had secondary education, 111 (44.4%) were traders, 245 (98%) Christians and 227 (90.8%) were married (Table I)

TABLE I: DISTRIBUTION OF RESPONDENTS BY AGE, HIGHEST LEVEL OF EDUCATION, OCCUPATION, RELIGION AND MARITAL STATUS

AGE	FREQUENCY	PERCENT
Less than 18 years	24	9.6
19-25 years	96	38.4
26 – 35 years	117	46.8
Above 35 years	13	5.2
TOTAL	250	100.0
HIGHEST LEVEL OF EDUCATION		
Primary Education	27	10.8
Secondary Education	152	60.8
Tertiary Education	70	28.0
No Formal Education	1	0.4
TOTAL	250	100.0
OCCUPATION		
House Wife	87	34.8
Trader	111	44.4
Government Employee	50	20.0
Farmer	2	0.8
TOTAL	250	100.0
RELIGION		
Christian	245	98.0

Muslim	3	1.2
Traditional worshipper	2	0.8
TOTAL	250	100.0
MARITAL STATUS		
Married	227	90.8
Single	18	7.2
Divorced	2	0.8
Widow	3	1.2
TOTAL	250	100.0

Two hundred and forty-eight mothers (99.2%) had heard about immunization while 2 (0.8%) had never heard. The sources of their information were mainly health workers 142 (56.8%), Mass media 26 (10.4%) and friends 26 (10.4%). Other sources were family and church members. Most Mothers 234 (97.2%) knew that immunization prevented killer diseases while only 4 (1.6%) said immunization does not prevent killer diseases of Children. Three mothers (1.2%) had no idea.

Most mothers (76.4%) gave immunization at the right age (Table II) while 90% accepted immunization during campaigns. All the mothers in this study had 100% perception towards childhood immunization.

TABLE II: MATERNAL DEMOGRAPHIC CHARACTERISTICS (AGE, LEVEL OF EDUCATION AND MARITAL STATUS) IN RELATION TO CHILDHOOD IMMUNIZATION.

Maternal Characteristics	Demographic	Child Immunization			X ² , df	P Value
		Given at Age (%)	Right Not given at Right Age (%)	Total (%)		
AGE (YEARS)						
< 18		21 (8.4)	3 (1.2)	24 (9.6)		
18 – 25		64 (25.6)	32 (12.8)	96 (38.4)		
26 – 35		95 (38.0)	22 (8.8)	117 (46.8)	8.66, 3	0.034*
> 35		11 (4.4)	2 (0.8)	13 (5.2)		
Total		191 (76.4)	59 (23.6)	250 (100.0)		
LEVEL OF EDUCATION						
No Formal Education		1 (0.4)	0 (0.0)	1 (0.4)		
Primary		20 (8.0)	7 (2.8)	27 (10.8)		
Secondary		108 (43.2)	44 (17.6)	152 (60.8)	8.552, 3	0.036*
Tertiary		62 (24.8)	8 (3.2)	70 (28.0)		
Total		191 (76.4)	59 (23.6)	250 (100.0)		
MARITAL STATUS						
Married		176 (70.4)	51 (20.4)	227 (90.8)		
Single		12 (4.8)	6 (2.4)	18 (7.2)	2.038, 3	0.565
Divorced		1 (0.4)	1 (0.4)	2 (0.8)		
Widow		2 (0.8)	1 (0.4)	3 (1.2)		
Total		191 (76.4)	59 (23.6)	250 (100.0)		

Statistically Significant

TABLE III: REASONS GIVEN BY MOTHERS FOR MISSING IMMUNIZATION AS SCHEDULED (N = 250)

Reason for Missing Immunization	No. of Mothers	Percentage (%)
You were not told when to return for next visit	3	1.2
You believe that partial immunization conveys full protection	8	3.2
You feared side effects of immunization	2	0.8
Child took ill	2	0.8
Mother was sick	6	2.4
Public holiday	3	1.2
I did not know about immunization before then	1	0.4
Not missed immunization	225	90.0
Total	250	100.0

DISCUSSION

Majority of the mothers in this study were aware of childhood immunization. Similar observations have been made in studies in United Arab Emirates,²⁰ Enugu,¹² and Osogbo¹³. The main sources of information concerning immunization in this study were from healthcare workers (56.8%) and mass media (10.4%).

Most of the mothers in this study have secondary and tertiary education (88.8%) (Table I). This shows that the population studied was literate. Maternal education in relation to giving childhood immunization at the right age was statistically significant ($p = 0.036$, Table II). Many took their children for immunization at the right age and did not reject immunization campaigns. This significant impact of maternal education on knowledge, perception and practice of immunization has been observed by some authors.^{12,20,21} Our study showed that mothers with formal education were more likely to be aware of childhood immunization than those who had no formal education. Hence, it could be stated that the more educated a woman is, the more likely she will immunize her children, thus, resulting in higher immunization coverage. However, this finding was at variance with findings from studies in Lagos²² and India,¹¹ where the literacy rate did not significantly influence immunization coverage rate.

Also, maternal age was statistically significant ($p = 0.034$) in relation to childhood immunization (Table II). Mothers above 18 years of age were more likely to immunize their children at the right age compared with teenage mothers. This could be due to lack of experience in child care by the teenage mothers. Similar observations were made in the western pacific region by Maekawa et al.²³

Marital status was not statistically significant ($p = 0.565$) in relation to childhood immunization was given at the right age. However, married mothers had a higher percentage of immunization at the right age (70.4%)

compared to their single, divorced or widowed counterparts. This may be due the support (financial, emotional and psychological) from spouses. Adenike et al²⁴ had reported similar finding in North Central Nigeria.

The study showed that more mothers accepted immunization campaigns (90%) than routine immunization (76.4%). This may be explained by increase in public awareness and mobilization in the area during immunization campaign programmes. Also, most of the mothers are Christians and childhood immunization is encouraged in most churches in the study area. This is in contrast to the study by Tagbo et al¹² where the rejection of immunization campaign was significant. However, some mothers in this study, rejected routine/campaign immunization on the grounds that: partial immunization conveys full protection, fear of side effects of immunization, child took ill, mother was sick or lack of information about immunization before then (Table III). This shows that there is still need to strength health education and public awareness on routine/campaign immunization in the study area.

There was positive perception towards childhood immunization among the mothers. They all agreed that adherence to and completion of childhood immunization is important. Similar findings have been reported by other authors.^{12,13}

CONCLUSION

Most mothers in this study had knowledge of immunization and their source of knowledge was mainly from healthcare workers. Age and educational status were significantly related to immunization at the right age but marital status was not significant. They had positive perception towards immunization which is commendable and should be encouraged.

LIMITATION/ RECOMMENDATION:

Data was collected over six year ago. Hence, a more recent study is recommended to ascertain current knowledge, practice and perception of childhood immunization among mothers in the study area.

ACKNOWLEDGMENTS

We thank all the heads and staff of the primary healthcare centres used for this study for their cooperation. We sincerely appreciate all the mothers in these PHCs who participated in the study.

CONFLICT OF INTEREST: None

SOURCE OF FUNDING: Self

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