

Utilization of Routine Immunization of Children 0-11 Months in ABI Local Government Area, Cross River State

Easter Chukwudi Osuchukwu

*Department of Nursing Science, University of Calabar, Calabar,
easter.osuchukwu@yahoo.com*

Oyira, Emilia James

Department of Nursing Science, University of Calabar, Calabar, emioyira@yahoo.com

Agbor, Eshiga Otuokwa

*School of Midwifery Obudu, Cross River State, Calabar –Nigeria,
eshiga2013@gmail.com*

Joy Nelson Obeten and

School of Nursing, Calabar, joyobeten@gmail.com

Rita Amokeye Ada

*School of Basic Midwifery Momiaya, Ogoja Cross River State, Calabar-Nigeria,
akeyeada@yahoo.com*

Abstract

The main focus of this study was the immunization coverage, examine immunization status, and determine vaccine default rate and non-immunized children for effective utilization of routine immunization services. In order to successfully carry out the study, the following research questions were formulated to guide the study. What is the coverage rate of routine immunization among children 0 – 11 months in Abi Local Government Area? What is the immunizations status of children 0 – 11 months in Abi Local Government Area? What is the vaccine default rate among children 0 – 11 months in Abi Local Government Area? What are the reasons for non-immunized children 0 – 11 months in Abi Local Government Area? Literature, was reviewed based on the research variables, The research instrument used in collecting data for analysis was a questionnaire which was administered on one hundred and twenty (120) mothers in Abi local government area. Their responses were analysed using frequencies and percentage the following results were obtained. For sex 47(39.2%) of the subjects were males while 73(60.8%) were females. Also their weights revealed that 23(19.2) weighed between 2 - 3kg, 32(26%) weighted between 7 – 9kg while the weight for 30(25%) of the subjects ranged between 10 – 11kg. The Immunization coverage in Abi Local Government Area from the months of January, February and March reveals that the coverage percent for penta3 were 41%, 26% and 33% respectively. The vaccines received by children 0 – 11 months showed that 109(90.8%) subjects received BCG vaccine, 80(66.7%) had received Opvo, 51(42.5%) had received HepBo, 101(84.2%) had received Opv1, while 63(53%) received Opv2 and 76(63.3%) had been given their Opv3. Also 88(73.3%) subjects had received Penta1, 64(53.3%) subjects had received Penta2, 69(57.3%) had received Penta3, 45(37.5%) had received yellow fever while 57(47.5%) had received measles vaccines. Conclusively, the study has been able to show that utilization of routine immunization has had a positive effect on the health of children 0 – 11 months in Abi Local Government Area.

Keywords: *Utilization, Routine, Immunization, Children of 0 – 11 months, Abi local government area*

INTRODUCTION

Immunization is a major component in the Public Health Care practice which helps in the promotion of health and prevention of disease amongst children under 0 – 11 months. Strengthening routine immunization services especially in countries with low coverage is a global strategy toward the achievement of the 4th millennium development goal of reducing mortality among children under five (5) by 2030, due to the vaccine ability of limiting the occurrence and spread of vaccine preventable disease.

Without routine immunization, an average child born will die from measles, another two will die from whooping cough, one more will die from neonatal tetanus and out of every two hundred children, one will be disabled by polio [1]. Also in the absence of immunization, a child's chance of becoming malnourished and its consequent susceptibility to diseases is higher.

Routine immunization safeguards a child against the killer disease which include, measles, polio, hepatitis B, neonatal tetanus, yellow fever, pertusis and tuberculosis. If adhered according to schedule, a child is expected to complete the vaccine doses within the first year of life. This is the ideal practice among the developed countries whose child mortality have been kept to the barest minimum contrary to the developing countries of the world.

According to World Health Organization report, in 2011 all estimated 83% of infants worldwide received at least three (3) doses of pentavalent vaccine similar to 2009 coverage of 82% and 85% in 2010. Among rural women,

90% national pentavalent 3 coverage was achieved. In May 2012, a global vaccine action plan was endorsed by all World Health Organization member states at the World health assembly. The major plan of this was meeting routine vaccination coverage in every region, country and community worldwide.

In Nigeria, routine immunization coverage remains a matter of concern inspite of government effort of the Nigeria children born every year, more than 1 million fail to get fully vaccinated by their first birth day [2].

Although pentavalent 3 coverage rose from a 3 year roll out plan for pentavalent vaccine was introduced in 2012, polio remains a problem among Nigerian children. The significant cases of polio reported especially among the North West and North East of the country has drawn undue attention on the country's immunization performance.

These and other factors which makes the reduction in child mortality among Nigerian children a big challenge which necessitated the researcher's interest to investigate the utilization of routine immunization of children 0 – 11 months in Abi local government area, Cross River State

Statement of the Problem

Each year, about 21 million people die from vaccine preventable disease [3]. Routine immunization services are generally noted to be underutilized in most of the developing countries including Nigeria. More than half of all the unvaccinated children (Pentas 3) lived in one of these three (3) countries – India (32%), Nigeria(14%) and Indonesia (7%) [4].

Some of the reasons attributed to not receiving the needed immunization include non-availability, personal beliefs, vaccine safety concerns or circumstance of their control. Lack of supply, failure of healthcare system and social barrier (hard to reach group) resulting from cultural circumstances account for non-availability most of the times.

Immunization to children in Cross River State attracts no cost. This is part of government's effort towards reduction in child mortality. However, most mothers find it difficult to present their children for vaccination as at when due. Few mothers commence and complete the child's immunization according to schedule.

In spite of the effort to promote maternal and child health services in Cross River State and Nigeria at large, it is disappointing to note that National Programme on Immunization (NPI) services in most areas are underutilized. Though the services are free, many children and babies who needed these services seem not to be brought out for immunization. Based on these, the researchers wish to assess the rural women level of utilization of routine immunization by children 0 – 11 months in Abi Local Government Area of Cross River State.

LITERATURE REVIEW

The finding of the literature indicates that, many mothers have heard about immunization and understand its importance. In spite of these, they may not come to the health centre to have their children immunized or returned to complete the immunization schedule. It is known that if a child is not fully immunized, the child will not be protected from diseases like diphtheria, whooping cough, tetanus, tuberculosis, polio and measles. Moreover, the more children are immunized in the community (the higher the coverage), the lesser chance that these diseases will spread to other children.

Current scenario depicts that immunization coverage has been steadily increasing but the average levels remain far less than desired. This implies that more intensive education and awareness should be carried out to remind mothers about the importance of immunizing their children against the six killer diseases.

The result of the findings of literature shows that immunization status of children within a well-established health maintenance organization as compared by data from 1973 and 1977 national survey reveals that vaccination have made a major contribution to public health including the eradication of one deadly disease – small pox and the near eradication of another poliomyelitis, through the introduction of new vaccines such as those against Rota virus and pneumococcal disease with further improvement in coverage. This implies that the immunization against the six killer diseases is working; therefore more education should be put in place.

The finding of the literature REVEALS that, the commonest reasons given by mother for defaulting immunization clinic appointment were the child is ill, lack of money, fear that child will develop problems after immunization; Health workers are rude to mothers, long waiting time at the health centres, (37.5% of most cases). Immunization default rate is still high in Nigeria with measles vaccine being the frequently defaulted. This implies that, health workers should change their attitude to mothers of child bearing age, this will improve the patronage of the hospital and they will be a good turnover on the part of the patients improving the utilization of immunization services especially in Cross River State, Nigeria.

Theoretical Framework

The framework used is the Health Belief Model (HBM) as developed by Rosenstock, Kelgels and Beckers in 1974.

This model explains why people more significantly do not use medical services. The model posits that individuals will not take appropriate health actions unless they believe that they are susceptible to a given disease. They consider the disease to be severe, they accept that the recommended preventive measures will actually be effective and understanding the recommended action will not incur excessive cost which is spelt out using three (3) constructs namely; perceived severity, perceived benefits and perceived barriers.

Application to the Study:-

This is a psychological model that predicts health behaviour of an individual which focuses on the attitude and belief of the person. That by taking a recommended action will avoid a negative health condition, which is the perceived severity, immunization protect the individual against killer diseases, so there is a condition to be prevented from occurring in the individual. And one's belief in the efficacy of the advised action to reduce risk or seriousness of impact which is the perceived benefit of immunization to the child or individual, that defines the action to take, how, where, when and clarify the positive effects to be expected.

That one's opinion of the tangible and psychological costs of the advised action which is the perceived barrier which identify and reduces barrier through reassurance, which vaccines act as a blockage to disease to the individual by providing immunity to the child or individual at a cost the individual can afford.

MATERIAL AND METHODS

Research Design

The research design adopted for this study is descriptive survey. One that explains present issues and ways they were observed.

Study Setting

This research work was carried out in Abi which is one of the Local Government Areas in Cross River State. Abi Local Government Area was created in 1991 and is bounded to the East by Ebonyi State, North and South by Yakurr Local Government Area. It occupies a land mass of about 334.52 square kilometers with a population of about 134, 773 (2006 census) and has ten (10) wards namely: Adadama, Ekurreku, Imabana, Itigidi, Ediba, Annong, Ebom, Usumutong, Igoni-goni and Afafanyi. Each of these wards has a health centre and there is a general hospital – Eja Memorial joint hospital located at the headquarters, Itigidi.

The inhabitants who are predominantly Agbos, Bahumunos and Igbo–Imabana, they engage mostly in farming, fishing and petty trading.

Sample Size and Sampling Techniques

The sample size of this study was made up of one hundred and twenty (120) subjects; four (4) Health Centres namely, Primary Health Centre Adadama, Primary Health Centre Ekurreku, Primary Health Centre Itigidi and Primary Health Centre Ediba were selected for the study. The Health Centres were selected through balloting method out of the 10 council wards. The Health centres have staff strength of 25 staff from Primary Health centre Itigidi, 22 from Primary Health centre Ekurreku, 18 from Primary health centre Adadama and 20 from Primary Health Centre Ediba. All the Health centres have Heads of units.

Then the simple random sampling technique was used to select thirty (30) mothers each attending clinic in the 4 health centre earlier mentioned making a sample size of 120 subjects.

Validation of Instrument

Check list was compiled and submitted to the superior for face and content validation before it was used to obtain information needed. The check list was made as simple as possible taking into consideration that the same questionnaires were administered to all categories of mothers irrespective of their

educational qualification, and a secondary data from immunization register.

Reliability of the instrument

In order to test the reliability of the instrument a pilot study was carried out on ten women in Calabar municipality cross river states Calabar. A test re-test reliability method was used in determining the reliability of the instrument. Here the questionnaire was administered on the respondents and after one week it was again administered on the same respondents and Pearson product moment correlation coefficient was calculated as presented in table 1.

Table 1: Test re-test reliability of immunization coverage, examine immunization status, determine vaccine default rate and non-immunized children for effective utilization of routine immunization services (n=10)

Variable	No. of items	Testing	X	SD	r
immunization coverage	11	1 st	19.72	1.98	0.98
		2 nd	20.90	2.48	
immunization status	111	1 st	20.42	3.10	0.85
		2 nd	22.81	3.78	
vaccine default rate	11	1 st	21.68	3.14	0.74
		2 nd	18.78	1.90	
non-immunized children for effective utilization of routine	-	1 st 2 nd	-	-	-

Ethical Consideration

A letter, of introduction was obtained from the Cross River State Ethical Committee Boards and was presented to the DNS of the various healthcare centres used, permission was obtained and the researchers were endorsed to carryout research in the four health centres. The privacy of the women that were used in this study was maintained and they were allowed to fill the questionnaire at their convenience but within a stipulated time.

Procedure for Data Collection

Check list was used for Data collection. It was also administered on mothers attending clinic in the four selected health centres. The respondents were informed of the essence of the exercise and the need to give objective response to the items. The researchers were assisted to administer and retrieve check list and secondary data from the immunization register.

Procedure for Data Analysis

The field data obtained was presented and analyzed using tables and simple percentages.

Data Presentation and Analysis

This section focuses on the presentation of data collected based on information gathered from immunization records (register) and responses from subjects. Analysis was done using simple percentage.

Presentation of Frequency Distribution

Table 2: Child's information

AGE	FREQUENCY	PERCENTAGE
0 – 3 WEEKS	31	25%
4 – 10 WEEKS	23	19.2%
11 – 14 WEEKS	34	28.2%
15 – 44 WEEKS	32	26.7%
TOTAL	120	100%

The data presented in table 4.2.1 which is representing child's information indicates 32(25.8%) of the subject (children) were within the age brackets of 0 – 3 weeks, 23 (19.2%)

Table 5: Immunization coverage among children 0–11 months

MONTHS	VACCINE	FREQUENCY	PERCENTAGE
JANUARY	Penta3	96	41%
FEBRUARY	Penta3	62	26.3%
MARCH	Penta3	77	32.7%
TOTAL		235	100%

Table 5 which represents the Immunization coverage in Abi Local Government Area from the months of January, February and March reveals that the coverage percent for penta3 were 41%, 26% and 33% respectively

Table 6: Immunization status of children 0 – 11months

VACCINE RECEIVED	FREQUENCY	PERCENTAGE
BCG	109	90.8%
OPVO	80	66.7%
HEP B.	51	42%
OPV1	101	84.2%
OPV2	65	54.2%

subjects were within the ages of 4 – 10weeks 34(28.2%) subjects were within the ages of 11 – 14 weeks while 32(26.7%) 44 weeks.

Table 3: Sex of the children

SEX	FREQUENCY	PERCENTAGE
MALES	47	39.2%
FEMALES	73	60.8%
TOTAL	120	100%

For sex 47(39.2%) of the subjects were males while 73(60.8%) were females.

Table 4: Weight of the children

WEIGHT	FREQUENCY	PERCENTAGE
2 – 3 KG	23	20.0%
4 – 6 KG	32	26%
7 – 9 KG	35	29.0%
10 – 11KG	30	25. %
TOTAL	120	100%

Also their weights revealed that 23(19.2) weighed between 2 - 3kg, 32(26%) weighted between 7 – 9kg while the weight for 30(25%) of the subjects ranged between 10 – 11kg.

OPV3	76	63.3%
PENTA1	88	73.3%
PENTA2	64	55.3%
PENTA3	69	57.5%
YELLOW FEVER	45	37.5%
MEASLES	57	47.5%

Table 6 which represents the vaccines received by children 0 – 11 months showed that 109(90.8%) subjects received BCG vaccine, 80(66.7%) had received Opvo, 51(42.5%) had received HepBo, 101(84.2%) had received Opv1, while 63(53%) received Opv2 and 76(63.3%) had been given their Opv3. Also 88(73.3%) subjects had received Penta1,

64(53.3%) subjects had received Penta2, 69(57.3%) had received Penta3, 45(37.5%) had received yellow fever while 57(47.5%) had received measles vaccines.

Table 7: Immunization default rate of children 0 – 11 months

VACCINE DEFAULTED	FREQUENCY	PERCENTAGE
DPT3	34	28.3%
MEASLES	46	38.3%
YELLOW FEVER	40	33.4%
TOTAL	120	100%

Table 7 indicate that 37(30.8%) had defaulted in Penta3, 43(35.8%) had defaulted in measles while 40(33.4%) had defaulted in yellow fever vaccines.

Table 8: Reasons for default

REASONS	FREQUENCY	PERCENTAGE
Child was ill.	42	35%
Lack of money	32	27%
Child fever after last immunization	30	25%
Mother travelled	6	5%
Lack of vaccines	10	8%
Total	120	100%

Table 8 which states reasons for vaccines default revealed that 42(35%) of the default was due to child's ill health, 32(27%) attributed it to lack of money for transportation, 30(25%) indicated that default was because their children had fever after last immunization, only 6(5%) respondents was due to mothers change in location, while 10(8%) respondents indicated lack of vaccine as the reason for default.

Table 9: Reason for non –immunized children 0–11 months

REASONS	AGREED FREQUENCY (%)	DISAGREED FREQUENCY (%)
Lack of vaccine	81(67.5%)	39(32.5%)
Time wastage	37(30.8%)	83(69.2%)
Negative attitude of Health workers	75(62.5%)	45(37.5%)
Non-availability of health workers.	44(36.6%)	76(63.4%)
Fear of complication following immunization	67(55.8%)	53(44.2%)
Mother from different catchment area.	68(56.7%)	52(43.3%)

Table 9 which showed responses for non-immunized children indicates that 81 (67.5%) respondents agreed to the fact that lack of vaccine is the reason for non-immunized children, while 39(32.5%) disagreed, 37(30.8%) respondents agreed that time wastage as one of the reasons for non-immunized child, while 83(68.2%) disagreed. 75(62.5%) respondents agreed with the negative attitudes of health workers being reasons for non-immunized while 46(37.5%) disagreed.

For non-availability of health workers 44(36.6%) respondents agreed while 76(63.4%) disagreed, 67(55.8%) agreed that fear of complication following immunization is the reason for non-immunized children, while 53(44.2%) disagreed. As for mother from different catchment area, 68(56.7%) respondents agreed to being reason for non-immunized children while 52(43.3%) disagreed.

DISCUSSION

The discussion of findings was made with the aim of providing answers to the research questions to the data as presented and analyzed.

On the question of the coverage rate of routine Immunization among children 0 – 11 months, the records reveals 41%, 26.3% and 32.7% respectively for the months of January, February and March which indicated a fair compliance by mothers in the utilization of routine Immunization. The coverage of 41% for the month of January is a little impressive, compared to the dwindling percentage in subsequent months. This goes to confirm the assertion of [5] that a coverage of 74%, 85% and 90% and that in 2010, a total of 149 countries had attained 90% coverage including Nigeria. So if a community in Nigeria can have a 41% coverage which shows that this study is on track.

The drop in the utilization in the months of February and March could possibly be attributed to vaccine lack or mothers not returning to complete the Immunization schedule due to the farming season within the community. And from the record of Immunization register indicates a maximum of 15 children should be immunized of Penta3 every month.

On the immunization status of children 0 – 11 months, the record revealed that their children had received various vaccines namely BCG, OPV0-3, HepB, Penta 1-3, Measles and Yellow fever administered in the various Health Centres, which according to [6] stated that, for a child to be fully immunized, they should be 70 – 80% of their target to assess the status of immunization which measles and penta3 are used as pointer for the status rate, but the study revealed a low compliance to the status because from the study, measles and penta3 which are

used to assess the status, is far from reaching the target with a percentage of 47.5% and 57.5% which would be due to mothers not paying attention to their children health and lack of knowledge.

As regards the vaccine default rate, finding from table 4.1.4 indicated that most of the respondents had defaulted in bringing their children for various vaccination at their Health Centres citing reasons as child's ill-health, lack of money, child develop fever after Immunization, mother travelled and lack of vaccines among others.

The study show that measles is the most defaulted by mothers with 46(38.3%) as confirmed by [4] and [7] which is due to non-compliance with immunization schedule, thereby contributing to low immunization coverage in Nigeria as a whole as posited by [8]

Regarding the reason for non-immunized children 0 – 11 months. It was found in table 4.1.6 which indicated that most of the respondents agreed that the following reasons as being chiefly responsible for non-immunized children such as lack of vaccine, negative attitude of Health workers, fear of complication following immunization and mother from different catchment area, while 83(69.2%) and 76(63.4%) disagreed to time wastage and non-availability of Health Workers which goes to say there is some element of commitment from the Health Workers but little from the part of the mothers using such reason as not to complete their children immunization schedule which can be due to lack of knowledge and information according to [9]

CONCLUSION

The study has been able to show that utilization of routine immunization has had a positive

effect on the health of children 0 – 11 months in Abi Local Government Area.

Though its impact has been reduced due to reasons like child's ill-health, lack of money, child had fever, mother travelled, Health workers' attitude, time wastage, non-availability of vaccine. It is therefore necessary to conclude that utilization of routine immunization would have had a greater effect on the health of children if the mentioned lapses are given the necessary attention and address.

RECOMMENDATIONS

Based on the finding of this study, the following recommendations are made:

- There should be continuous education, information sharing and public awareness campaign with messages like immunization is free and compulsory for all children.
- There should be continuous all stakeholders consultation and partnership between government/ Health Workers, youth leaders, traditional rulers, Non-Governmental Organizations in the implementation of immunization programme.
- The government should introduce door to door immunization services to cater for those who cannot afford money for transportation.
- Health workers need to be reoriented and informed on the need to be professional and cautious when dealing with mothers more so the vaccines should always be available when needed.
- Mothers need to be encouraged to visit hospitals and doctors on issues bordering on the Health of their children and not to patronize quack, do self-medication or based on their belief and superstition.

- Authorities concerned should arrange for a gift to mothers whose children completed their immunization schedule without defaulting.

Implication of the Study

- The result shows that utilization of routine immunization has had a positive effect amongst children 0 – 11 months in Abi Local Government Area. In spite of the effort to promote child health services in Cross River State and Nigeria at large, it is disappointing to note that national programme on Immunization services in most areas are underutilized.

- Although its impact has been reduced due to reasons like child's ill-health, Health Worker attitudes, non-availability of vaccine among others, it is therefore necessary for the government to address mentioned lapses and give adequate attention.

References

- World Health Organization Report. Expanded Programme on Immunization. <http://nhmi.whonet>. 2009
- Akinkigbe, O. O. A compendium of clinical medicine. 2005.
- OBIONU, C. N. Primary Health Care for Developing Countries. Delta publication Ltd. Enugu, Nigeria. 2007
- CHUKWUEMEKA, E. Z. Immunization Schedule in Children and Adult. 2nd Edition: Enugu. Computer Edge publisher. 2006
- MACDOWALD, F. & Nomi. Routine Immunization in Young Children. University Press, Dalhousie, Canada. 2004
- PARK, K. Preventive and Social

Medicine.19th Edition. C. India Bhauirt.
2007

OLISA, P. Primary Health Care for Sustainable
Development. 1st Edition, Abuja: Ozege
publication. 2009

GONZOLES R. &Kutner J Current
Practice.Guidelines in Child Health
Care.New York Large Medical Book.
2005

GOLD, R Your Child's Best Slot: A parent
guide to vaccination: 2nd Edition. Ottawa
Ontario. 2002