Benchmark Journals

INTERNATIONAL JOURNAL OF EDUCATIONAL BENCHMARK (IJEB),
eISSN: 2489-0170 pISSN:2489-4162 University of Uyo

Social and Cultural Determinants of Incomplete Routine Immunization among Nursing Mothers in Oluyole Local Government Area of Oyo State

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***Abstrac*t**
Immunization is one of the most cost-effective interventions with proven strategies to reach the vulnerable populations. It is also a proven tool for controlling and eliminating life threatening infectious diseases. It also prevents illness, disability and deaths from vaccine preventable diseases averting estimated 2-3 million deaths each year. A descriptive survey research design was adopted, one hundred 100nursing mothers were used for the study. The instruments used for the study was a self-structured questionnaire. Simple random sampling technique was used to select the sample for the study. Five hypotheses were formulated and tested at 0.05 level of significance Data collected were analyzed using frequency, counts and percentage table for demographic information of the respondents, while the hypotheses were analyzed using regression statistical tool. The findings of the study revealed that level of education and distance to health facilities were determinants of incomplete routine immunization, while life style, religion and belief were not determinants of incomplete routine immunization. However, level of education, distance to health facility, life style, religion and belief were jointly determinants of incomplete routine immunization among nursing mothers in Oluyole local Government Area of Oyo State. Based on the findings of the study; it is therefore recommended that Oyo State Government and Philanthropists should assist in building more health care facilities close to the communities for easy accessibility. Effort should be geared towards public campaign using local dialect to encourage them to complete routine immunization. In addition, community mobilization should be strengthening especially among nursing mothers to be fully informed about the merits of completing the routine immunization and to avert childhood morbidity and mortality in our society.

Keyword: Social, Cultural, Nursing mothers and incomplete routine Immunization

Introduction

Routine immunization is one of the most important public health interventions that constitute a cost effective strategy to reduce both the morbidity and mortality associated with childhood infectious diseases. Immunization is an act of preventing childhood diseases such as whooping cough, measles, diphtheria, chicken pox, poliomyelitis yellow fever and other childhood killer diseases by given chemical substance which is the causative organism of infection to reduce virulent state. It can be given by injection or through drops in the mouth. Immunization is the process whereby a person is made immuned or resistant to an infectious disease typically by the administration of vaccine (World Health Organization, 2008).

Vaccine is an immune biological substance designed to produce specific protection against a given disease. It prevents disease in the people who receive them and protect those who come into contact with unvaccinated individual (World Health Organization, 2008). Immunization improves substantially the number of children who reach their first birthdays, and help in achieving Sustainable Development Goals (SDG). It is recommended that children should receive the complete schedule of vaccinations before their first birthday, and if a child misses at least a dose out of the required vaccines recommended when he/she is under 12 months old that child has not completed the immunization schedule (Anokye, Acheapong, Budu, Kwaku, Okyere, Dogbe and Nadutey, 2018). As a result, children suffer effects such as impaired physical growth, cognitive development, emotional development, and social skills because of incomplete immunization and children who have not been fully immunized are also at greater risk of becoming infected with serious vaccine-preventable diseases (Yenit, Assigid and Abrha, 2015).

Globally, it is reported that 22.6 million infants under 1 year of age were partially protected against vaccine preventable diseases such as poliomyelitis, tuberculosis, whooping cough, diphtheria, Tetanus, Hepatitis B, measles, haemophilus, pneumonia (World Health Organization and United Nations International Children's Fund,2018). However, a child is considered fully vaccinated if he/she has received: a Bacillus Callmete Guerrin (BCG) vaccination against Tuberculosis, at least three doses of polio vaccine and also expected to receive one dose of the measles vaccine; three doses of the pentavalent vaccine (DPT-Hep B-Hi-b) to prevent diphtheria, pertussis, tetanus, haemophilus influenza type b, and hepatitis B. A child should also receive 3 (Three) doses of pneumococcal conjugate vaccine (PCV) and one dose of inactivated polio vaccine (IPV) also included in the infant routine immunization (World Health Organization and United Nations International Children's Fund,2018).

However, over 27 million children who live mainly in disadvantaged rural communities are not reached by routine immunization services and significant variations in coverage exist between and within regions and countries. In the rural communities of the developing countries, where good coverage has not been attained, reaching children not yet vaccinated has proved difficult due to several limiting factors leading to annual increase in death of children (UNICEF, 2012). Nigeria like many countries in the African region is making efforts to strengthen its health system in general and routine immunization services in particular to reduce diseases burden vaccine preventable diseases, and put routine immunization high on the agenda and its agenda is committed to revert and contribute towards achieving the millennium Development Goals (MDGs) of having child mortality reduce by 2015. In comparison with developed World, immunization coverage of antigens such as tuberculosis, poliomyelitis, hepatitis B, diphtheria, pertusis, tetanus, heamophilus influenza type B (Hib), pneumococcal, measles and yellow fever has improved significantly, while Nigeria immunization coverage experienced partial improvement due to multiple factors, such as biological, epidemiological, social, economic and logistical factors. For instance, a recent

systematic review reasons for under or non—vaccination of children from low and middle income countries revealed that social determinants have a substantial impact on routine immunization, and these determinants may be similar in Countries with poor income level while others may be unique to specific populations. Therefore, understanding the effect of these determinants in various Countries is important for the development of modalities to address them with purpose of optimizing vaccination coverage (Global Public Health, 2009).

Moreover, Babalola and Adewuyi (2005) noted that immunization coverage between urban and rural country was linked to parental awareness and lack of knowledge of nursing mothers about immunization. The misconception or lack of knowledge was reported more frequently by rural residents, while urban residents complained poor commitment to the service by some health workers, bad road network to reach rural health facilities in which all have high influence on routine immunization. Also, there are various socio-cultural factors affecting the routine immunization which include household living condition and household income that play a major role in access to health care with many indirect costs associated with childhood immunization, such as transportation to clinics where the health facility is far to mothers home. Another findings indicated that poor living conditions are associated not only with reduce immunization rates, but also with increased incidence of diseases which in turn raises the overall burden placed on an existing poor health care infrastructure (Global Public Health, 2009).

Furthermore, parental education was described to be associated with increased poor immunization rates, while, religion and cultural factors have been shown to affect immunization rate among the nursing mothers. Mothers are the primary care taker of children, fathers often made decision at home and their objections have often been identified as one of the barriers to their children participation in vaccination programmes, and education of both parents found to be important for healthy vaccination programmes (Global Public Health, 2009). However, Adeyinka, Oladimeji, Adeyinka and Aimaku, 2009) affirmed that in the Northern Nigeria, some mothers believed that vaccine is contagious, some believed that immunization was not effective while some were not allowed to go for immunization by their husbands.

Nursing mothers life style is a factor that impedes mothers/caretakers progress in the process of their child accessing and utilizing vaccine services, for instance Wiysonge, Uthman, Ndumbe and Hussey (2012) reported that low parental knowledge of immunization or lack of access to information about childhood immunization could be an important contributor to the high burden of unimmunized children in sub-Saharan Africa. Furthermore, it was noted that a child born to a mother with little or no knowledge of vaccination may not complete the required vaccine series. Yenit, Gelaw and Shiferaw (2018) found that delay on vaccine birth doses is associated with maternal education, while misconceptions about childhood immunization were recorded as major hindrance to effective utilization of immunization services. Babirye, Rutebemberwa, Kiguli, Wamani, Nuwaha and Engebretsen

(2011) reported that some parents believed that the immunity induced by vaccines is less effective than that of the natural disease, and they prefer to endure the diseases than immunization, while some parents/caregivers were reported to believe in the efficacy of traditional medicines as an alternative to immunization and concomitant treatment by traditional healers. Also, other factor that causes incomplete routine immunization includes lack of trust towards vaccines. In addition Malande, Munube, Afaayo, Annet, Bodo, Bakainaga, Ayebare, Njunwamukama, Mworozi and Musyoki (2019) noted that male partners were often cited as being against vaccinating the children. The decision for immunization was generally a joint decision between the mother and father of the child. But it was noted with strong emphasis that women were in charge of taking children for immunization and sometimes the husbands opposed immunization and stopped their wives from immunizing their children by denying them the social and financial support necessary.

Studies revealed that distance in location of health facility to families whose homes are at least an hour walk from the vaccination site were less likely to be fully vaccinated (56%) than families whose home was between 30 and 59 min walk away (67%). According to Miyahara, Jasseh, Gomez, Shimakawa, Greenwood, Keita, Ceesay, D'Alessandro and Roca (2016), the longer the distance from vaccination site, the lower the chances of vaccination by day 7 (of life) of a child. Also, poor arrangement and coordination of immunization seasons at health center level were identified as barrier to complete routine immunization. It was also revealed that some hard-to-reach areas do not have health facilities nearby to provide childhood immunization, also health workers were reported to covers long distances on outreach services due to inadequate health centers, and mothers that need to cover long distances to reach immunization centers may result to non-completion of vaccination of their children (Tefera, Wagner, Mekonen, Carlson & Boulton, 2018).

Religion and cultural factors have effect on immunization compliance among nursing mothers in Nigeria, particularly in the Northern part where the immunization coverage was 6% compared to South East with 44.6%. Also, some churches have the adherent doctrine for non-use of drugs to treat ailments except the use of prayers and fasting, therefore, mothers from this group are not always comply to the administration of vaccine for their children (Babalola and Adewuyi, 2005). Also, Cyprian, (2011) revealed that some nursing mothers from traditional religion families in rural areas believed that immunization is of no benefit to them but rather harmful, while some believed that it is a means of family planning. Also, level of income of some families plays a major role in access to health care, and such is not associated with reduced immunization rate alone, but also increase incidence of diseases among children.

Statement of Problem

Statistics revealed that children in rural communities do not receive the full series of basic immunization which results in incomplete routine immunization of children aged 0–1 year

old, and as a result, those children suffer effects such as impaired physical growth, cognitive development, emotional development, and social skills because of incomplete immunization (WHO and Dicko,2018). Also, Yenit, Assigid and Abrha, (2015) affirmed that children who have not been fully immunized are also at greater risk of becoming infected with serious vaccine-preventable diseases.

Despite the efforts of National programme on Immunization and other international agencies such as WHO and UNICEF, reasons such as long distance to health facilities, belief and perception, restricted mothers towards infant immunization, and some mothers believe that immunization is one of the methods in family planning (Adeyinka,Oladimeji, Adeyinka& Aimaku 2009). Many children living in rural communities in Nigeria are not reached by routine immunization services because of several limiting factors of which some Communities in Oluyole Local Government house similar peculiarity due to geographical and other socio-cultural factors such as transportation problem and level of awareness among others. It is also noted that some nursing mothers in these Communities do not always complete the immunization schedule of their children due to various excuses such as distance of health facilities to their home, non-encouraging attitude of some health workers and non-availability of health personnel during emergencies, especially in rural health facilities.

Purpose of the Study

The major objective of this study is to determine social and cultural factors of incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State.

Specific objectives of the Study are to:

1. Assess the social determinants of incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State.
2. Identify the cultural determinants of incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State.
3. Examine social and cultural determinants of incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State.

Research Hypotheses

1. Level of education does not significantly determine incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State.
2. Distance to health facility does not significantly determine incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State.
3. Parental life style does not significantly determine incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State.

4. Religion and belief do not significantly determine incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State.
5. Level of education, distance to health facility, parental life style and living and Religion and belief do not jointly significant determine incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State.

Methodology

The descriptive survey research design was used in this study. The population for this study comprised all nursing Mothers in Oluyole Local Government area of Oyo state respondents. The respondents were selected from five wards out of ten wards in Oluyole Local Government Area of Oyo State, Nigeria. Purposive, disproportionate stratified and simple random sampling techniques were adopted in selecting 20nursing Mothers from each selected ward with a total of 100 nursing Mothers. The instruments for data collection was a self-developed questionnaire which was pre-tested among ten (10) nursing mothers in Akinyele Local Government Area to verify the item reliability and to detect hidden communication errors for clear pattern of questionnaire items; this was repeated after two weeks to check if the corrected errors are effective among Nursing Mother questionnaire tagged; Social and Cultural Determinants of Incomplete Routine Immunization Questionnaire (SCDIRIQ). The questionnaire was divided into three sections, namely, A, B and C. Section A covered socio-demographic characteristics of the respondents, section B was on social determinants of incomplete routine immunization Scale (SDIRIS), while Section C was on cultural determinants of incomplete routine immunization Scale (CDIRIS).The responses in sections B and C were constructed in a 4-point rating scale format of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD).Cronbach Alpha method was used to test the internal consistency of social determinants of incomplete routine immunization Scale and cultural determinants of incomplete routine immunization scales among Nursing mothers in Akinyele Local Government Area which yielded reliability values of 0.78 and 0.73 respectively. On the spot administration and collection of questionnaire was adopted. The items on the questionnaire were read and interpreted to the respondents who could not read. Inferential statistics of linear regression was used to test all the hypotheses at 0.05 level of significance.

Results

Null hypothesis 1: Level of education does not significantly determine incomplete routine immunization among nursing mothers in Oluyole local Government Area of Oyo State respondents.

Table 1: Summary of regression on Level of education on incomplete routine immunization

Variable	Unstandardized coefficients		Standardized coefficients	t	Sig.	Remark
	B	Std. Error	Beta (β)			
(constant)	1.112	2.476		.449	.654	
knowledge	.406	.136	.265	2.987	.004	Sig.

Table 1 shows that the level of education, the unstandardized regression weight, the standardized error of estimate (Seβ), the standardized coefficient, the t-ratio and the level at which the t-ratio is significant. As indicated in the table, level of education was independently tested significant (β = 0.265, t = 2.987, $p< 0.05$). This implied that level of education significantly determined incomplete routine immunization among nursing mothers in Oluyole Local Government Area of Oyo State. The null hypothesis was therefore rejected.

Null hypothesis 2: Distance of health facility will not significantly determine incomplete routine immunization among the respondents.

Table 2: Summary of regression about distance to health facility on incomplete routine immunization

Variable	Unstandardized coefficients		Standardized coefficients	t	Sig.	Remark
	B	Std. Error	Beta (β)			
(constant)	1.112	2.476		.449	.654	
Distance to Health facility	.429	.161	.295	2.658	.000	Sig.

Table 2 reveals that distance of health facility, the unstandardized regression weight, the standardized error of estimate (Seβ), the standardized coefficient, the t-ratio and the level at which the t-ratio is significant. As indicated in the table, distance to Health facility was independently tested significant (β = 0.295, t = 2.658, $p< 0.05$). This implied that distance to health facility significantly determined incomplete routine immunization among Nursing mothers in Oluyole Local Government Area of Oyo State. The null hypothesis was therefore rejected.

Null hypothesis 3: Life style will not significantly determine incomplete routine immunization among the respondents.

Table 3: Regression summary on Nursing mothers life style on incomplete routine immunization

Variable	Unstandardized coefficients		Standardized coefficients			
	B	Std. Error	Beta (β)	T	Sig.	Remark
(constant) Life	1.112	2.476		.449	.654	
style	.245	.186	.132	1.314	.92	NS.

Table 3 reveals that lifestyle, the unstandardized regression weight, the standardized error of estimate (Seβ), the standardized coefficient, the t-ratio and the level at which the t-ratio is significant. As indicated in the table, parental life style and living was not independently tested significant (β = 0.132, t = 1.314, p< 0.05). This implied that lifestyle did not significantly determined incomplete routine immunization among Nursing mothers in Oluyole Local Government Area of Oyo State. Therefore, the null hypothesis was accepted.

Null Hypothesis 4: Religion and belief not significantly determine incomplete routine among nursing mothers in Oluyole local government Area of Oyo State.

Table 4: Regression summary on Religion and belief on incomplete routine immunization

Variable	Unstandardized coefficients		Standardized coefficients			
	B	Std. Error	Beta (β)	t	Sig.	Remark
(constant)	1.112	2.476		.449	.654	
Religion and belief	.061	.116	.051	.528	.598	NS.

Table 4 reveals that religion and belief, the unstandardized regression weight, the standardized error of estimate (Seβ), the standardized coefficient, the t-ratio and the level at which the t-ratio is significant. As indicated in the table, religion was not independently tested significantly (β = 0.051, t = .528, p< 0.05). This implies that religion and belief did not significantly determined incomplete routine immunization among Nursing mothers in Oluyole Local Government Area of Oyo State. Therefore, the null hypothesis was accepted.

Null Hypothesis 5: Level of education, distance of health facility, life style and religion and belief will not jointly significant determine incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State.

Table 5: Regression summary on the joint determinant of level of education, distance to health facility, life style and religion and belief on incomplete routine immunization

R = .581
R2 = .338
Adj. R2 = .303
Std.Error = 2.29328

Model	Sum of squares	Df	Mean square	F	Sig. (*p* value)	Remark
Regression	252.391	5	50.478			Sig.
Residual	494.359	94	5.259	9.598	.000	
Total	746.750	99				

Table 5 reveals that that the linear combination of the effect of Level of education, distance to health facility, life style and religion and belief was significantly and jointly determined incomplete routine immunization among respondents (F (5.94) = 9.598, $p<$ 0.05).The null hypothesis was therefore rejected.

Discussion of Findings

Incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State

The findings revealed that level of education was significantly determined incomplete routine immunization among the respondents in Oluyole Local Government Area of Oyo State. The outcome of this finding corroborates Shuaib, Kimbrough, Roofeand McGwin (2010) that education of nursing mothers has been a profound effect on mother's health seeking behaviour which includes child immunization. More so, childhood immunization is influenced by the household poverty level, the poorer a household becomes, the more the tendency of children from such households to be incompletely immunized.

Distance to health facility and incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State

The findings revealed that distance to health facility was significantly determined incomplete routine immunization among the respondents in Oluyole Local Government Area of Oyo State. The outcome of this study was in agreement with the findings of Abdulraheem , Onajole , Jimoh and Oladipo (2011) that mothers experience in getting to health facility was significantly associated with child immunization, for example, mothers who experienced difficulty in reaching health facilities are more likely to be incompletely immunized their children. Difficulty in getting to health facilities serves as a major barrier to child immunization uptake. This is typical of those living in rural areas. The likelihood of not being

fully immunized increased for children whose mothers live in socioeconomically disadvantaged communities and states.

Parental life style and incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State

The findings revealed that lifestyle was significantly determined incomplete routine immunization among the respondents in Oluyole Local Government Area of Oyo State. The outcome of this study was at variance with findings of Abdulraheem, Onajole, Jimoh and Oladipo (2011) that maternal reasons for incomplete immunization included sickness (24.5%), social engagement (30.4%), traveling (14.6%), long distance walking (11.5%), and complications from previous injections (19%).

Religion, belief and incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State

The findings revealed that religion and belief did not significantly determined incomplete routine immunization among the respondents in Oluyole Local Government Area of Oyo State. The outcome of this study was contrary to the findings of Gordana, Silvana, Galina, Olga, Frank , Michael, Naoki, Suzana and Luka (2016) that religion influences decisions on vaccination and religious objection is often used by parents as an excuse to avoid the vaccination of their children.

Level of education, distance to health facility, parental life style, Religion, belief and incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State

The findings revealed that level of education, distance to health facility, lifestyle and religion and belief was significantly and jointly determined incomplete routine immunization among the respondents. The finding of this study is in agreement with the findings of Paul, Ujunwa, Chioma, Sergius Lucky and Yubraj (2021), that multivariate factors such as Single mothers, mothers who did not receive any postnatal care and mothers with poor educational knowledge were significant factors associated with incomplete routine immunization. Also, Community level factors, low-income households and life style and walking distance from the nearest vaccination facility were significant factors associated with incomplete routine immunization.

Conclusion

Based on the findings of this study, it was concluded that level of education and distance to health facility were determinants to incomplete routine immunization, while Life style and pattern of living and religion and belief did not determined incomplete routine immunization among nursing mothers in Oluyole local Government Area of Oyo State. More so, Level of education, distance to health facility, life style and pattern of living and religion

and belief were jointly determinants to incomplete routine immunization among nursing mothers in Oluyole local government Area of Oyo State.

Recommendations

Therefore, it is recommended that:

Government and Philanthropists should build more health care facilities close to the community for quick accessibility in order to help reduce long distance traveled before reaching health care facilities for immunization.

1. Effort should be geared towards public campaign using local dialect to discourage incomplete routine immunization in the community.
2. Community mobilization should be strengthening especially among nursing mothers to be fully informed about the merits of completing the routine immunization.
3. There should be sensitization of Community and religion leaders towards adequate completion of childhood immunization, so as to avert childhood morbidity and mortality.

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