

Socio-Cultural Factors Associated with Utilization of Routine Immunization Services by Childbearing Mothers in Gombe State

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Abstract

This study investigated the socio-cultural factors associated with utilization of Routine Immunization Services (RIS) among child-bearing mothers in Gombe State. The study adopted descriptive cross-sectional survey research design. The population for the study comprised all 517,853 child-bearing mothers (CBMs) attending general hospitals and primary health facilities in Gombe State. The sample size for the study was 400 child-bearing mothers. The instrument for data collection was a questionnaire titled ‘Socio-Cultural Factors Associated with Utilization of Routine Immunization Services (RIS) (SOFAURIS)’. The instrument was validated by five experts. The reliability index of the instrument was 0.80. The research questions were answered using frequencies, percentages and Phi correlation coefficient, while, the null hypotheses were tested at 0.05 significance level using Chi-square statistic. The findings showed that the proportion of the mothers that utilized RISs (68%) in Gombe State was higher than the proportion that did not (32%). Tangale mothers (71.2%) utilized RIS most among the ethnic groups, Christian mothers (77.3%) utilized RIS most among the religious groups in the State with a significant association ($\phi = 0.154$; $\chi^2 = 9.489$; $S = 0.009$) between religion and utilization of RISs in Gombe State. The authors recommended among others that government, traditional and religious leaders and NGOs should sensitize child bearing mothers to immunize their children in order to increase the proportion of mothers that utilize RIS.

Keywords: Socio-Cultural; Routine immunization; Childbearing mothers; Utilization

Introduction

Immunization is one of the public health interventions that protect children against vaccine preventable diseases (VPD). It is an affordable and a proven tool for controlling and eradicating diseases. Immunization helps to prevent bodily suffering, disability and avoid death by reducing contagious diseases, less strain is put on health care system and money is saved for other health care services (Center for Disease Control and prevention [CDC], 2014). Globally, about 22.6 million infants are still missing out basic vaccine preventable diseases, especially in developing countries, and this can be attributed to some socio-cultural factors such as inadequate resources, poor management of health system and surveillance (World Health Organization [WHO], 2014).

Observations have shown that a lot of children are not immunized, as they are subjected to avoidable diseases in their later years in life. The World Health Organization and the United Nations Children Fund (UNICEF) (2014) estimated that about 1.5 million children die each year globally due to diseases that could be preventable through vaccination. Twenty per cent of deaths in under one-year-old children in 2020 were vaccine preventable diseases. However, in Nigeria, there seems to be an appreciable high (though not satisfactory) vaccination rate; as an

estimated coverage of vaccines among children aged 12-23 months, showed that 51 per cent had received BCG vaccine, 42 per cent had received the measles vaccine, 51 per cent received the first dose of the pent valence (PENTA) vaccine, only 38 per cent went to receive the third doses reflecting a dropout rate of 25 per cent, and 47 per cent of children received the recommended polio dose at birth, 77 per cent received the first dose, 70 per cent received the second dose, and 54 per cent received the third doses (National Demographic Health Survey [NDHS], 2013). The NDHS further disclosed that the trend of immunization coverage across the States has not been encouraging. In Gombe State, only half of the children aged 12–23 months had received all recommended vaccines such as BCG and OPV3 and 38 per cent and 42 per cent of the same age group received pentavalent and measles vaccination respectively; only 22.4 per cent of children received all the recommended immunization.

The utilization of the recommended vaccinations for immunization against preventable diseases, most often than not serve as life-saving measures for the immunized. Immunization is a deliberate stimulation of the body defenses against a specific harmful germs or bacteria. According to UNICEF (2012), immunization has saved millions of lives in the last decades, it is the most effective measure of public health in helping children attain better lives without any disabilities through the administration of vaccines. Also, the CDC (2014) opined that immunization is the most powerful cost-effective means of preventing some deadly diseases of childhood, and the best practical community-based health measure known today for protecting children against the major killer diseases. In their own view, the WHO (2015) stated that immunization is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. Immunization is a process of administering vaccine(s) into a person's body to make the body resist certain vaccine-preventable diseases. When childhood immunization is given at scheduled times or periods, it is called routine immunization.

Routine Immunization Services (RISs) is the single most important way parents can protect their children against serious diseases. The routine immunization services are the primary ways to reach every generation of children as early in life as possible, preventing diseases and protecting individuals and communities from premature death (Alan et al., 2011). The RIS is the sustainable, reliable and timely interaction between the vaccine, those who deliver it and those who receive it to ensure every person is fully immunized against vaccine preventable diseases (WHO, 2015). The WHO revealed that routine immunization programmes protect most of the world's children from a number of infectious diseases that previously claimed millions of lives each year. In this study, the RIS are those immunization services that are given to children at birth and at various stages of their childhood, to protect them from

having serious disabilities or possible death from the eight killer diseases. Routine immunizations of children are carried out in Nigeria using the routine immunization schedule provided by the Federal Ministry of Health. Child bearing mothers utilize the immunization services to get their children vaccinated against preventable childhood diseases.

Utilization is to make use of something for its benefit. Utilization refers to the extent to which people are making use of whatever services that is available in their community or at one's organization (Federal Ministry of Health 2010). In the context of this study, utilization refers to the use of Routine Immunization Services by Child-Bearing Mothers in vaccinating their children. In order to reduce maternal and infant mortality rates, utilization of RISs has to be instituted or reinforced, which can only be achieved through identifying factors causing poor utilization of routine immunization services. Fosu (2011) divided utilization into two: low utilization and effective utilization. Low utilization is when less than fifty per cent of people use a given service, whereas effective utilization is when more than fifty per cent of people use a particular service. The author further reported that various types of immunization services are given at different stages of a person's life and for different purposes. Utilization of RIS by child-bearing mothers is one of the important factors lowering the rate of infant morbidity and mortality. Utilization of RIS may be associated with some socio-cultural factors.

Socio-cultural factors encourage groups of people to create and share a collective identity, which in turn serves to shape individual identities. Socio-cultural factors are used to describe attitudes, customs, and beliefs that distinguish one group of people from another culture and transmitted through language, material, objects from one generation to the next generation (Taylor, 2013). Socio-cultural factors reflect the cumulative deposit of knowledge, experience, beliefs, values, attitudes, religion, roles and concepts by a group of people in the course of generation through individual and population (Koskei et al., 2014). Socio-cultural factors are important because they transmit shared values, stories and goals from one generation to the next generation of a particular group's worldview and help people in that group mark significant occasions or life transition (UNESCO, 2014). Socio-cultural factor involves both cultural and social aspects of the people; their attitudes, beliefs, norms, religion and their family background in the communities. The cultural factors are ethnicity, religion and occupation; and the social factors are level of education, age, parity, location, and marital status, while some are both social and cultural factors. In a previous study, Lorenz and Khalid (2012) showed that there was a relationship between socio-cultural factors and the utilization of RIS. Specifically, the current study intends to investigate both social and cultural factors such as ethnicity, religion, level of education, occupation, age, parity, location and marital status associated with utilization of RISs by child-bearing mothers in Gombe State.

Child-bearing mothers are the best suited for the study being they are the main users of the RISs for their newborns. Child bearing mothers are women in their reproductive age, between puberty and menopause (WHO, 2011). Child bearing age has been described as the period in a woman life time between puberty and menopauses (Adokiya et al., 2017). Expert as reported by Farzad, et al. (2017) advice that the best age for childbearing remains twenty to twenty-five years. The authors further stated that age-related fertility problems increase after thirty to thirty-five years and dramatically after forty years. Under-age mothers are at higher risk of pregnancy related complication. WHO (2012) Reported that young adolescents face a higher risk of complications and death as a result of pregnancy than older woman. It also reported that in Africa, one in five adolescent women would have a birth in a given year, adolescent pregnancy is an exploding problem in sub-Saharan Africa. Fosu (2011) stated that in order to reduce life-threatening risk, morbidity and mortality among child bearing mothers and good quality maternal health services by trained health workers must be available and must be used by child bearing mothers

Mothers' ethnicity is a factor that can be associated with utilization of RIS by child-bearing mothers in Gombe State. Marlow (2011) opined that ethnicity relates to a group of people living together, sharing certain characteristics, including geographical features, ancestral origin, cultural practices, and traditions. Ethnicity is something which may be relevant in some situations but not in others, and mothers may choose to be regarded as members of an ethnic group if they find it to their advantage (Wagner et al., 2014). Ethnicity relates to different type of people and their attitudes, which is capable of influencing mothers' perceptions and utilization of routine immunization services; their beliefs about susceptibility to diseases and vaccine side effects (Bates & Wolinsky 2014).

Religion can also affect whether parent believed their children were at risk of acquiring vaccine preventable disease. Religion can influence the attitude of women towards modern health care, and have an influence on their utilization of RISs. Religious status could be a reason for a mother to have or not have access to health facility. Adokiya et al. (2017) stated that religious belief is a unified system of beliefs and practices related to sacred things, that is to say, things set apart and forbidden, beliefs and practices which unite into one single moral community called a church, mosque or shrine, and is binding to all those who adhere to them. The authors further postulated that religious misconceptions about immunization could be a barrier to utilization of immunization services. Religion and spirituality are integral factors that can influence utilization of RISs and perceived vulnerability to infection (Thomas and Silverman, 2010). The authors stated that some mothers need permission by their husbands to visit a health facility with their child. Also certain religions restrict women to see a male health

worker. Jefede (2017) noted that in 2013, some religious leaders in Nigeria claimed that the vaccines were contaminated with the virus that causes AIDS, sterilization and cancer-causing agents, despite, tests confirming the vaccine's safety. Kio et al. (2016) found out that religion had significant association with utilization of RISs by mothers. Religious influence could be a barrier to utilization of immunization services by mothers.

The Nigerian government in response to the need to have every child immunized makes effort and provides immunization services at no cost to all citizens. The primary aim of immunization is to reduce morbidity and mortality rate from vaccine preventable diseases. It is the right of every child to be immunized routinely until he or she grows up to adolescent stage. Immunization has been found to be most effective in helping children attain a better living with little or no diseases at all. It is very important for mothers to ensure that their new-born babies are immunized very often, so they could grow healthier and stronger without any harmful diseases. The child-bearing mothers should bring their children to immunization centers, in order to protect them from the childhood killer diseases. The benefits of immunization include: complete protection against the consequences of infection for the immunized person, as well as, overall benefits to the society as a whole, through reduction in maternal and newborn mortality (leaving behind a healthy workforce).

Unfortunately, most women are not utilizing RIS effectively. In spite of the benefits of immunization, the percentage of children fully immunized, especially, in developing countries is low and declining. Several factors could lead to under-utilization of RISs in the study area, such as: cultural belief and religious beliefs. This has also made inhabitants in the Northern part of the country to be more at risk to vaccine preventable diseases. This implies that many children are yet to benefit from the protection of immunization.

The researchers observed cases of rejection and non-compliance with the immunization regimen of children by caregivers in spite of social mobilization efforts in the study area. Therefore, it becomes necessary to investigate the socio-cultural factors associated with utilization of RIS by child-bearing mothers in Gombe State. This is the crux of the study.

Purpose of the Study

The purpose of this study was to determine the socio-cultural factors associated with utilization of RIS by child-bearing mothers in Gombe State. Specifically, the study sought to determine the:

1. proportion of child-bearing mothers that utilize RIS in Gombe State;
2. association between ethnicity of mothers and utilization of RIS in Gombe State; and
3. association between mothers' religion and utilization of RIS in Gombe State;

Research Questions

The following research questions were posed to guide the study:

1. What is the proportion of child-bearing mothers that utilize RIS in Gombe State?
2. What is the association between ethnicity of mothers and utilization of RIS in Gombe State?
3. What is the association between mothers' religion and utilization of RIS in Gombe State?

Hypothesis

The following null hypotheses were postulated and tested at .05 level of significance to guide this study:

1. There is no significant association between mothers' religion and utilization of RIS.

Materials and Methods

Research design

The research adopted a cross-sectional survey design. This design permits investigation of the current status of a phenomenon from a population who would supply the required information and to whom the information is generalized (Gemson & Kyamru, 2013).

Population for the study

The population for the study consists of all child-bearing mothers in Gombe State, North East Nigeria. The estimated target population of (CBM) in Gombe State is 517,853 women (Record and Statistics Unit, Gombe State Ministry of Health State, 2016). The sample size for this study was 400 child-bearing mothers attending general hospitals and primary health facilities in Gombe State.

Instrument for data collection

The instrument used for data collection was a questionnaire titled 'Socio-cultural Factors Associated with Utilization of RIS by child-bearing Mothers' Questionnaire' (SOFAURISMQ). The questionnaire consisted of two sections: A and B. Section A contained eight items that elicited Bio-data of the respondents. Section B contained 18 items on utilization of routine immunization services. The instrument used dichotomous response options of Yes and No. The respondents were requested to place a check (✓) as it applied to them in sections A and B. The face validity of the instrument was established by giving draft copies of the questionnaire accompanied with the specific purposes of the study, the research questions and hypotheses to five experts, from the Department of Human Kinetics and Health Education, University of Nigeria, Nsukka. In order to ascertain the reliability of the instrument, the instrument was administered to 20 mothers available at specialist hospitals Bauchi State which was not within the study area but shares common characteristics with the study area. Split half method was

used to separate the questionnaire items into even and odd numbers. Thereafter, Spearman Brown Correction formula was used to compute the reliability coefficient of the instrument which gave a reliability coefficient of 0.80. Four hundred (400) copies of the questionnaire were administered to the respondents by the researcher with the help of one female research assistant, in each of the hospitals.

Method of data analysis

Research question one was answered using frequencies and percentages. Research questions two and three were answered using Phi correlation coefficient to determine any association between Socio-cultural factors and utilization of RIS. A correlation value of -0.1 or 0.1 was interpreted as no or very weak/low relationship; a correlation value within the range of -0.3 to -0.1 or 0.1 to 0.3 was interpreted as a weak relationship; a correlation value within the range of -0.5 to -0.3 or 0.3 to 0.5 was interpreted as a moderate relationship; and a correlation value of within the range of -1.0 to -0.5 or 0.5 to 1.0 was interpreted as a strong relationship. The null hypothesis was tested using chi-square at 0.05 level of significance at appropriate degree of freedom.

Results

Table 1: Proportion of mothers on utilization of RIS (n = 400)

| S/N | Items | Yes f (%) | No f (%) |
|-----|---|----------------|----------------|
| 1 | Bacilli Chalmette Guerin Vaccine (BCGV) | 231(57.8) | 169(42.2) |
| 2 | Hepatitis B Virus (HBV) | 241(60.25) | 159(39.75) |
| 3 | Oral Polio Vaccine (OPV - 0) | 262(65.5) | 138(34.5) |
| 4 | Oral Polio Vaccine (OPV – 1) | 257(64.25) | 143(35.75) |
| 5 | Oral Polio Vaccine(OPV – 2) | 265(66.25) | 135(33.75) |
| 6 | Oral Polio Vaccine(OPV – 3) | 244(61.0) | 156(39.0) |
| 7 | Diphtheria Pertussis Tetanus Haemophilus Influenza type B and Hepatitis , Pentavalent Vaccine (PENTA-1) | 259(64.25) | 141(35.75) |
| 8 | Diphtheria Pertussis Tetanus Haemophilus Influenza type B and Hepatitis , Pentavalent Vaccine (PENTA-2) | 244(61.0) | 156(39.0) |
| 9 | Diphtheria Pertussis Tetanus Haemophilus Influenza type B and Hepatitis , Pentavalent Vaccine (PENTA-3) | 236(59.0) | 164(41.0) |
| 10 | Pneumococcal Conjugate Vaccine (PCV- 1) | 258(64.5) | 142(35.5) |
| 11 | Pneumococcal Conjugate Vaccine (PCV- 2) | 261(65.25) | 139(34.75) |
| 12 | Pneumococcal Conjugate Vaccine (PCV- 3) | 289(72.25) | 111(27.75) |
| 13 | Inactivated Polio Vaccine (IPV-9 months) | 291(72.75) | 109(27.25) |
| 14 | Inactivated Polio Vaccine (IPV-12 months) | 284(71.0) | 116(29.0) |
| 15 | Measles vaccine at 9 months | 359(89.8) | 41(10.3) |
| 16 | Yellow fever vaccine at 9 months | 251(62.7) | 149(37.3) |
| 17 | Vitamin A vaccine at 9 and 15 months | 369(92.25) | 31(7.75) |
| | Overall % | 272(68) | 128(32) |

From table one, it can be observed that the highest Routine Immunization Service utilized by mothers in Gombe State was Vitamin A vaccine at 9 and 15 months as 369

respondents representing 92.25 percent of the respondents answered ‘yes’ to the service while only 31 (7.75%) answered ‘no’. On the other hand, the lowest RI service utilized was Bacilli Chalmette Guerin Vaccine (BCGV) as 231 respondents representing 57.8 percent of the respondents answered yes to it while 169 (42.2%) answered no. On the overall, 272 respondents representing 68 percent of the respondents utilized RIS, while, 128 (32%) did not.

Table 2: Association Between Mothers’ Ethnicity and Utilization of RIS (n = 400)

| Ethnicity | Yes(%) | No(%) | Phi | Decision |
|------------------|---------------|--------------|------------|-----------------|
| Hausa(n = 57) | 38(66.7) | 19(33.3) | 0.06 | No association |
| Fulani(n = 92) | 63(68.5) | 29(31.5) | | |
| Tangale(n = 39) | 99(71.2) | 40(28.8) | | |
| Tera(n = 112) | 72(64.3) | 40(35.7) | | |

Phi Correlation Coefficient = 0.060 (No association)

From table 2. Shows that 66.7 percent of the Hausa respondents answered ‘yes’ to the Utilization of RISs in Gombe State while 33.3 percent answered ‘no’. 68.5 percent of Fulani respondents utilized RIS while 31.5 percent did not. 71.2 percent of Tangale respondents utilized RIS, while, 28.8 percent did not. 64.3 percent of the Tera respondents utilized RIS but 35.7 did not. The Phi Correlation Coefficient was 0.060 showing that there was no association between ethnicity of mothers and utilization of RIS in Gombe State.

Table 3: Association Between Mothers’ Religion and Utilization of RIS in Gombe State (n = 400)

| Religion | Yes (%) | No (%) | Phi | Decision |
|-----------------------|----------------|---------------|------------|-----------------|
| Islam(n = 132) | 102(77.3) | 30(22.7) | 0.154 | low association |
| Christianity(n = 257) | 165(64.2) | 92(35.8) | | |
| Traditional(n = 11) | 5(45.5) | 6(54.5) | | |

Phi Correlation Coefficient = 0.154 (Low association)

From table 3, shows that 64.2 percent of the Islamic respondents answered ‘yes’ to the Utilization of RIS in Gombe State, while, 35.8 percent answered ‘no’. 77.3 percent of Christian respondents utilized RIS, while, 22.7 percent. 45.5 of the respondents that practice traditional religion utilized RIS while 54.5 did not. The Phi Correlation Coefficient of 0.154 showed that there was low association between mothers’ religion and utilization of RIS in Gombe State.

Table 4: Summary of Chi-Square Test of Association Between Mothers' Religion and Utilization of RIS

| Religion | N | Yes(%) | No(%) | χ^2 | Df | p-value |
|--------------|-----|-----------|----------|----------|----|---------|
| Islam | 132 | 102(77.3) | 30(22.7) | | | |
| Christianity | 257 | 165(64.2) | 92(35.8) | 9.489 | 2 | 0.009* |
| Traditional | 11 | 5(45.5) | 6(54.5) | | | |

* = Significant ($p < 0.05$)

Table 4 shows χ^2 value of 9.489 had a probability value of 0.009. Since this p value is less than the 0.05 level of significance the hypothesis was tested, the null hypothesis of no significant association between mothers' religion and utilization of RIS is, therefore, rejected. This means that there is significant association between mothers' religion and utilization of RISs

Discussion

The findings of this study show that 68 percent of the respondents utilized RISs as against the 32 percent that did not. Vitamin A had the highest level of utilization followed by measles vaccine. Although the percentage of respondents in Gombe State that utilize RIS is greater than the percentage of those that do not, the figure is relatively small compared to the benefits of these vaccines and the long lasting effects of not utilizing them. One expects at least 80-100% utilization. This situation may be due to some socio-cultural factors like mothers religion which has been shown in this study to be significantly associated with utilization of RIS. This finding is in line with that of Alfred et al. (2014) who found out that the proportion of fully immunized children in Kenya was far below the WHO's target of 80 per cent.

Another finding of this study reveals that there is no association between mothers' ethnicity and utilization of RIS in Gombe State. This observation can be explained by the fact that mothers would like their children to survive irrespective of their ethnic group. No mother on account of ethnicity would let her child develop preventable health challenges through RIS. In contrast to this finding, Adokiya, Baguune, and Ndago (2017) found out that ethnicity was significantly associated with the likelihood of children being not fully vaccinated. It is also in disagreement with that of Mill et al. (2005) who found out that ethnicity influenced mothers' perception about utilization of RISs.

The findings show that there is significant low association between mothers' religion and utilization of RIS. This finding may be due to religious beliefs and practices. Members of some religious groups are sometimes erroneously indoctrinated into believing that immunization is against God's natural plan or order. Some other religion may see RIS as God's given wisdom to men and then advice their members to utilize the services. This finding is in

congruence with that of Kio, Agbede and Mkpuruoma (2016) who found out that religion significantly affects parents' belief about immunization and their willingness to present their children for routine immunization. On the other hand, this finding contradicts that of Ojinnaka (2004) who found out that the relationship between religion and immunization was not significant.

Conclusion

Based on the findings of this study, the researchers conclude that religion is a significant factor on utilization of RISs in Gombe State. Therefore, health care workers should endeavour to get religious leaders to align with the goal of RIS so that they will assist their members in accepting and utilizing RISs in the area of study.

Recommendations

1. Government and NGOs should encourage more mothers to immunize their children in order to increase the proportion of mothers that utilize RIS. Awareness and sensitization activities should be created to widely publicize the benefits of utilizing RIS.
2. Government, NGOs and religious leaders should sensitize their subjects and members especially non-Christians on utilizing RIS.

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