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SOCIO-CULTURAL AND BEHAVIORAL FACTORS INFLUENCING CHILDHOOD IMMUNIZATION PRACTICES AMONG NURSING MOTHERS IN JERICHO SPECIALIST HOSPITAL, IBADAN

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Abstract: **Background: 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.**

Method: A descriptive survey research design was adopted, one hundred 100 nursing 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. Data collected were analysed using frequency, counts and percentage table for demographic information.

Result: The findings of the study revealed that behaviour/attitude of healthcare workers and lack of enough information 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 Jericho specialist hospital.

Conclusion: Based on the findings of the study; it is therefore recommended that 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.

Keywords: **Immunization, sociocultural, Nursing Mother's, Childhood, Behavior.**

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1. INTRODUCTION

Immunization is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine[1]. Vaccines stimulate the body own immune system to protect the person against subsequent infection or disease. Immunization prevents diseases, disabilities, and deaths from vaccine-preventable diseases (VPDs), such as cervical cancer, diphtheria, hepatitis B, measles, mumps, whooping cough, pneumonia, poliomyelitis, diarrhea diseases by rotavirus, rubella, and tetanus. Immunization is a key component of primary health care and an indisputable human right. It is also one of the best health investments money can buy. Vaccines are also critical to the prevention and control of infectious disease outbreaks. They underpin global health security and will be a vital tool in the battle against antimicrobial resistance.

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[2].

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[3]. 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 BHi-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[3].

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[4]. 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.

Immunization remains one of the most important public health interventions and cost-effective strategies to reduce child mortality and morbidity associated with childhood infectious diseases, but despite amazing progress in reaching more children over the years, many children are still not getting to complete their schedules of routine immunization before their first year of life[5].

The Andersen behavioral model for utilization of health care was the theory of choice for this study; this theory was designed to test the hypothesis of inequality of access to health care services in the United States. According to Andersen and Newman[6], the model addresses concerns of some groups, especially minority ethnic groups and other groups that live in inner cities and rural communities, who receive inadequate health care compared to the rest of the population. This model has become one of the most widely used theories in predicting the use of health care services worldwide and is based on three characteristics: predisposing factors, enabling factors, and need factors.

The enabling factors are bio-socio-demographic characteristics of individuals that exist prior to their illness. In the context of the current study, social structures (education, occupation, ethnicity, social networks, social interactions, and culture), health beliefs (attitudes, values, and knowledge) that people have about and toward the health care system, and demographic factors (age and gender) may predispose parental/caregivers to use or not use health care services, including RI services,

which will affect the completion of the RI schedule positively or negatively. The Andersen model provides for predisposing factors at the community level that are acknowledged to affect the use of health services[6]. These factors, linked to the community level, consist of the demographic profile of the community, their collective values, and their cultural beliefs and political perspectives. The cultural characteristics of men and women in a society include stereotypical behavior of each gender in that community, tribe, or religion that shapes a parent's attitude to RI and the use of health services generally. Parents or caregivers who have an appropriate understanding, including positive attitudes and behaviors regarding the usefulness and efficacy of health care services or RI, would be predicted to be more likely to use these services[6].

Enabling factors relate to the individuals and community's ability to afford services, either in the form of health insurance, personal income earning such as periodic income from salary or other sources, the extent and quality of social relationships, and the availability of the health resources within geographical regions[6]. Need factors are based on either perceived or evaluated need. Perceived need is based on the how individuals view their general health and functional state and their personal experiences from previous illnesses. Perceived need is the basis on which a decision will be made whether the symptoms are of sufficient magnitude to warrant seeking professional help. Evaluated need is based on medical investigations including laboratory and clinical judgments of the examining physician to decide the health need of the individual patient. For the purpose of this study, perceived need was used because the data source did not collect data on evaluated need[6].

The Andersen model is particularly suitable for this study because it takes into account the factors and characteristics of society at different levels and how these factors influence the way individuals and communities seek health care services, including RI services. These factors impact parents/caregiver's behavior towards completion or noncompeting of immunization schedules[6]. The 2013 NDHS[7] included questions regarding culturally sensitive factors that influence the use of immunization and other health services. The survey results provided valuable insight into the cultural dimensions that impact caregivers parents ability to access and utilize immunization and other health services across diverse socioeconomic, religious, and tribal groups in a multi-ethnic and multi-religious country like Nigeria[7].

The Andersen model's theoretical framework is based on how both socioeconomic and demographic variables influence access and utilization of immunization and other health services, either positively or negatively. The Andersen model was a highly suitable choice to explore the research questions posed in this study.

The Health Belief Model (HBM) by Rosenstock, Strecher, and Becker[9] and Rational Choice Theory (RCT) by Coleman (as cited by Ritzer[10]), have been adopted in analyzing immunization of children in rural Nigeria.

The Health Belief Model focuses on six constructs to predict the behavior of actors in regard to health care, namely: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy. Rosenstock, Strecher, and Becker[8] noted that people are likely to take a particular health-related action if they (a) feel that it is possible to avoid the negative health condition; (b) have an expectation that by taking the recommended action, the condition can be avoided; and (c) believe that they can successfully take the recommended health-related action. The model explicitly recognizes that individuals are motivated to act on the basis of their understanding of the situation as it relates to the constructs[9,11].

The World Health Organization (WHO)[13] started the global effort to use vaccination as a public health intervention in 1974 when it launched the EPI. Since then, immunization has remained one of the most cost-effective public health interventions for reducing global child morbidity and mortality[13]. There have been several efforts over the years to increase EPI coverage globally, such as the Global Alliance for Vaccines and Immunization, universal childhood immunization; millennium development goals (MDGs); Global Immunization Vision and Strategy; and most recently, the Global Vaccine Action Plan[13].

These efforts, combined with specific regional efforts, such as the WHO African regional office EPI strategic plans of action, implemented in the periods 2001-2005 and 2006-2009, and the Reaching Every District approach, plus individual national EPI efforts, have raised global immunization coverage. For example, three doses of the diphtheria tetanus-pertussis (DTP3) vaccine at 12 months of age rose from 5% coverage in 1974 to 85% in 2010. Despite this global progress, sub-Saharan Africa attained only 77% DTP3 coverage by 2010[13,14].

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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[15]. 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 Ibadan 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.

2. METHOD

Study design: A descriptive survey design was used in this study to ascertain the socio cultural and behavioural factors affecting childhood immunization practices among nursing mothers.

Study setting: This research was carried out in Jericho specialist hospital, it was formally called general hospital, Jericho before it was changed to Jericho specialist hospital in the year 2007. It is a public healthcare organization which is located at Jericho, Ibadan South West Local Government, Oyo State. It was established on 1/1/1976. It is licensed by the Nigerian Ministry of Health. It is registered as a Secondary Health Care Centre. The hospital is open on Monday to Sunday on a 24/7-hour basis.

Population study: The population of this study consisted of all nursing mothers, totalling 253 in Jericho specialist hospital, Ibadan. They are all from Out-patients Department. All questionnaire was shared and filled. Mothers who were not nursing at the time of this study were excluded.

Sample size: A sample of 100 respondents were drawn randomly to represent the entire population study.The formula used to determine sample size was

$$Z^2 \text{ X } P(1\text{-}P) \,/\, e^2 \div 1 + (Z^2 \text{ X } P(1P)/e^2N$$

Study Instrument: The self-design questionnaire was used to collect information from nursing mothers in Jericho specialist hospital, Ibadan. The question was in four (4) sections which encompassed variables such as Demographic characteristics, Knowledge of mothers on immunization, Attitude of mothers towards immunization and Behaviour of health workers. The questionnaire was comprised of close ended questions formulated by the researcher based on the objective of the study.

Validity of the research Instruments: The validity of the research instrument (questionnaires) was established through face and content validity criteria. The questionnaire was presented to the supervisor, who made the necessary corrections. This process was to ensure the reliability and validity of the instruments.

Method of data collection: The questionnaire was self-administered and collected after responses from respondents. The data collection took 3 (Three) days and a total of 100 copies of questionnaire were distributed and collected.

Method of data analysis: The data was collected, tabulated each as related to the research question. The data was analysed using tables, percentages, and frequency distribution.

Ethical consideration: A letter of consent for the research was submitted at the Hospital's ethical board office, the same was approved and signed May, 2023.

For the participants, verbal consent was issued, after orientation on the research. No form of compulsion was placed on them, but allowed to willingly accept.

3. RESULTS

Frequency, percentage and charts were used as a source of data representation. A total of 100 questionnaires were distributed and all questionnaires were reviewed back for analysis. The research from the findings are presented as follows;

Table 1 below shows the demographic characteristics of the respondents. A total of 100 nursing mothers participated in the study, the majority of the participants were between the age of 21-30(54%), followed by those aged 31-40(31%). Also, the ethnicity shows that 84% are Yoruba followed by hausa 7%.

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TABLE 1: DEMOGRAPHIC CHARACTERISTICS OF THE STUDY POPULATION

Age	Frequency	Percentage
Less than 20	4	4%
21-30	50	54%
31-40	31	31%
41-50	11	11%
Total	100	100%
Ethnicity		
Igbo	1	1%
Hausa	7	7%
Yoruba	84	84%
Nupe	3	3%
Edo	2	2%
Ighala	2	2%
Afiama	1	1%
Religion		
Islam	55	55%
Christianity	45	45%
Total	100	100%
Number of children		
1	37	37%
2	33	33%
3	22	22%
4	7	7%
5	1	1%
Total	100	100%
Does your religion support childhood immunization?		
Yes	100	100%
No	-	-
Total	100	100%

The study below provide information that the beginning and completion period of child vaccination is 90% yes, and 10% no, child immunization is important for your child's health 100% yes, force to take immunization 2%, 98%, taking immunization for all your child/children 99% yes and 1% no ,child allergies on vaccine, 17% yes and 83% no, is any reaction in past there any serious 11% yes 89% no, can the disease be prevented by vaccine 11% yes ,89% no ,positive attitude towards immunization 93%, 7% no, concern about the adverse effect of vaccination 70% ,30%, is getting vaccine a good way to protect your child 98%yes,2%. The result shows that 90% of nursing mother have adequate knowledge on immunization practice.

Table 2: knowledge of mothers on immunization (N=100)

Questions/Options	Frequency	Percentage
Do you know about the beginning and completion period of child vaccination?		
Yes	90	90%
No	10	10%
Total	100	100%
Do you feel childhood immunization is important for your child's health?		
Yes	100	100%
No	-	-
Total	100	100%

Are you being forced to take immunization?		
Yes	2	2%
No	98	98%
Total	100	100%
Do you take immunization for all your child/children?		
Yes	99	99%
No	1	1%
Total	100	100%
Does your child have allergy to immunization or vaccines?		
Yes	17	17%
No	83	83%
Total	100	100%
Has the child had a serious reaction to vaccine in the past?		
Yes	89	89%
No	11	11%
Total	100	100%
Do you think disease can be prevented through vaccination?		
Yes	96	96%
No	4	4%
Total	100	100%
Do you have a positive attitude toward vaccination?		
Yes	93	93%
No	7	7%
Total	100	100%
Are you concerned about the side effects of vaccination?		
Yes	70	70%
No	30	30%
Total	100	100%
Does getting a vaccine a good way to protect your child?		
Yes	98	98%
No	2	2%
Total	100	100%
Do you think your child do not need to take vaccine for disease that are not common anymore?		
Yes	81	81%
No	19	19%
Total	100	100%
Are you afraid that new vaccines are more risky than older vaccine?		
Yes	59	59%
No	41	41%
Total	100	100%

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The table below shows the attitudes of mothers towards immunization, 91% of mothers says they do remember their child's next appointment while 9% says no, 72% says they've never delayed their child's immunization while 28% said yes, 99% of the using mothers says they do take along their immunization card and 1% says no, 52% of nursing mothers says their child has received immunization for the past 4 weeks while 48% says no, and finally 89% of nursing mothers do complete their child immunization while 11% of them don't .

Table 3: attitude of mothers towards immunization

Question/Option	Frequency	Percentage
Do you remember the date of the next appointment of vaccination for your child?		
Yes	91	91%
No	9	9%
Total	100	100%
Have you ever delayed your child's immunization?		
Yes	28	28%
No	72	72%
Total	100	100%
Do you take along your immunization card?		
Yes	99	99%
No	1	1%
Total	100	100%
Has the child received immunization for the past four weeks?		
Yes	52	52%
No	48	48%
Total	100	100%
Do you complete immunization for your child/ children?		
Yes	89	89%
No	11	11%
Total	100	100%

The table below shows what nursing mothers think of the behaviour of healthcare workers. 95% of the nursing mothers says the information they receive from the healthcare workers about vaccination is reliable and trustworthy and 5% says no, 86% of the nursing mothers says the healthcare workers give them enough information about the next vaccine before giving them, 93% of mothers says the healthcare workers encourages them to take immunization while 7% says no, and 68% of the nursing mothers says the behaviour of some healthcare workers makes them angry which makes them not to come for the next appointment while 32% says no.

TABLE 4. BEHAVIOR OF HEALTHCARE WORKERS

Question/Option	Frequency	Percentage
Does information you receive about vaccines from the healthcare workers reliable or trustworthy?		
Yes	95	95%
No	5	5%
Total	100	100%
Do the health workers give enough information about the next vaccine to take before giving?		
Yes	86	86%
No	14	14%
Total	100	100%
Do the health workers encourages you to take the immunization?		
Yes		
No	93	93%

Total	7 100	7% 100%
Do the behaviour of some healthcare workers makes you angry which makes you not to come for the next appointment? Yes No Total	 68 32 100	 68% 32% 100%

4. DISCUSSION

This study shows that 90% of nursing mothers are quite aware and knowledgeable about immunization and it is adequately practised. This is in accordance to Streefland[16] who revealed in his study that majority of parents would have positive attitude towards immunization services to prevents their children from getting infected by vaccine-preventable diseases, despite being aware of their side effects. The result of this study is in credence with the studies of Al-Zaharani[17] that shows positive correction in attitude.

One of the major factors contributing to the low patronage of immunization services in the past was the attitude of the clinic staff[18,19,20]. In this study, we examined this in order to assess the extent to which staff's attitudes have changed over the years. The present study revealed that community members then had different views about staff. Staff/mother relationship had changed in a positive direction, so that it then contributes to the demand for immunization.

Furthermore, the study showed that there was strong social demand and culturally-grounded active demand for immunization in this part of Nigeria contrary to the earlier findings of low use of immunization services in the study area Odutola et al.[21]. Nevertheless, there were some mothers who defaulted. It was not that defaulters did not accept vaccination; rather, most of them started the use of the technology but dropped out for some reasons, whether due to time constraints, forgetting appointments, travelled, economic activities or gender dynamics; as consistent with Jegede and Owunmi[18]. These factors thus played significant roles in the immunization uptake.

Earlier data in the study area also highlighted these problems, suggesting that the problems still persisted even a decade later. Studies from other parts of the world have also emerged with similar findings Odutola et al; Oladokun et al. and Duru et al[21,22,23].This suggests that common factors affect immunization uptake worldwide with the exception of some cultural practices localized to specific environment which may complicate the process of resolving the problems[24].

5. CONCLUSION

Based on the findings in this study, it was concluded that behaviour/attitude of healthcare workers and lack of enough information were determinants of incomplete routine immunization, while religion or belief did not determine incomplete routine immunization among nursing mothers in Jericho specialist hospital, Ibadan. Rural women in Nigeria required more information on immunization practices. Health professionals should provide preventive information at various clinics. Continuous reinforcement of educational information on immunization practices is a priority to increase knowledge and participation.

6. RECOMMENDATION

Therefore, it is recommended that:

Government and Philanthropists should build more health care facilities close to the reaching health care facilities for immunization.

- Effort should be geared towards public campaign using local dialect to discourage incomplete routine immunization in the community.
- Community mobilization should be strengthening especially among nursing mothers to be fully informed about the merits of completing the routine immunization.

- There should be sensitization of Community and religion leaders towards adequate completion of childhood immunization, so as to avert childhood morbidity and mortality.
- There will be a need to create more jingles on air in English and other dialects to promote knowledge on the immunization schedule and the various vaccines that should be taken.
- Fliers and billboards with relevant information on immunization should be produced and widely distributed.

Strength: Open ended questions were used to.obtain data and the questions were interpreted to the local language for those who didnot have a good understanding of the English language

Limitations: The study was conducted within three days and the sample size is less than the calculated.

Suggestion for Further Studies

There is need to further investigate the impact cultural and behavioural factors affecting nursing mothers across most hospital both federal, state and private hospital across in Nigeria making it a cross- sectional studies to the level of awareness of immunization attitudes towards immunization.

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