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SOCIOCULTURAL FACTORS AS PREDICTORS OF IMMUNIZATION PARTICIPATION AMONG RURAL MOTHERS OF WATERSIDE IN OGUN STATE, NIGERIA

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ABSTRACT: *Active Immunization Coverage in the rural community of Ogun Waterside have been perceived to be bedeviled by several factors ranging from geographical to demographic issues limiting accessibility to health care. The study looked into those factors that prevented and distorted complete uptake of Immunization in the rural location of waterside. The study was conducted in eight wards of the Local Government Area. Descriptive survey research design with qualitative method was adopted. SFIIPQ: R = 0.78, CFPIPQ R = 0.810, AUPIPQ: R = 0.93 and MMFPIPQ: R = 0.88 were the instrument used to glean data. The study revealed that cultural factors of living style, health seeking behavior and values are 59.0% of the total variation (R^2 = 0.587, P < 0.05). Also, the social variables of peer influence, parenting style, socioeconomic status, level of education and sex of the child accounted for 55.0% of the total variation (R^2 =0.550, P <0.05). Mothers reported that sometimes, vaccines are not available in the right quantity. Conclusively, immunizations in the local community of waterside is fairly good as reported but require more education, supply of adequate vaccines and provision of active cold chain facilities.*

KEYWORDS*: Immunization, participation, rural mothers, waterside, vaccines.*

INTRODUCTION

The increasing effects of communicable diseases among young children of under five years of age has led to the aggressive process of prevention all over the world. Apart from personal hygiene and environmental sanitation that have been copiously employed to reduce the incidence and prevalence of many communicable diseases, immunization programme is the most common and active strategy to prevent many communicable diseases with the use of vaccines to build immunity among young children because of their vulnerability. Immunization has been said to be a proven tool for controlling and eradicating communicable diseases all over the word. It has been reported that a number of serious childhood diseases have thereby been successfully eradicated. All countries of the world have national immunization programme, and in most developing nations of the world, children under age five years are immunized with the standard World Health Organization recommended vaccines that protect against diseases like: tuberculosis, diphtheria, tetanus, poliomyelitis, measles, Pertusis, among others. WHO,(2000) & UNICEF, (2012) have reported that the vaccines have prevented more than 2.5 million deaths among children annually. Immunization is one of the key strategies to achieve the millennium development goals (MDGs) specifically to reduce child mortality. The proportion of children immunized against measles is

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one of the indicators of health MDGs target for decreasing the child mortality and morbidity from measles (UN, 2000).

It is therefore pertinent and requires urgent attention to find ways of increasing vaccination coverage and particularly to encourage parents to have their children fully vaccinated. Of all the child survival interventions, immunization generally has the greatest success thus far: 6 out of 10 children worldwide are now fully vaccinated by their first birthday. It is therefore imperative to focus attention on the behaviour of rural community dwellers whose children have not been fully immunized or not immunized at all to increase coverage. Every year, about 3.5 million children in developing countries still die and many more are disabled from vaccine preventable diseases. It has been reported that even when the vaccination services are accessible in almost all ramifications (financial, geographical, and social), many mothers and child caretakers do not participate effectively for several reasons.

Statement of Proble

Many children living in rural communities in Nigeria are not reached by routine immunization services because of several limiting factors of which Ogun Waterside is one due to geographical and other sociocultural factors such as transportation problem and level of awareness among others. Also, significant variations in coverage exist between and within the regions of the country due to uneven levels of development. Poliomyelitis that was said to have been eradicated in Nigeria by the World Health Organization re-emerged few months after the W.H.O. declaration which shows that several factors are bedeviling effective immunization of children especially in the rural communities where accessibility to health services is said to be limited by several sociocultural and geographical factors. Such as distance to health centres, sex of the child, economic status and others. This study delved into several sociocultural factors limiting accessibility to immunization participation, causing missed opportunities and hindering introduction to immunization programme in a complete rural community which is predominantly riverine.

Significance of the Study

This study may be helpful to several groups of the community. It may help the local, state and federal health planners and policy makers in developing special intervention programme for the Local community dwellers to improve accessibility to health care services. The result of the study may assist the vaccinators at the local government level to design a comprehensive forum through which the local dwellers can better be assessed. The result of this study may also create awareness for all collaborators in the public health project to develop a more comprehensive programme with up-to-date facilities to cater for all citizens irrespective of their dwellings and location. Lastly it may create an avenue through which further studies can be designed for the purpose of boosting immunization coverage in rural communities of Nigeria.

Scope of the Study

The study was delimited to socio-cultural and some geographical factors affecting immunization participation by rural community members (mothers) of Ogun Waterside local government area of Ogun State Nigeria which is riverine and limits accessibility to active participation in immunization programme.

The study examined the various secondary independent variables of peer influence, economic status, level of education and sex of the child. Also, belief system, living style, healthseeking

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behavior and values system among others as they influence the dependent variable of immunization participation.

REVIEW OF RELATED LITERATURE

Expanded programme on immunization (EPI) was put in place in 1974 by the World Health Organization (WHO) with the mandate of full accessibility of the routine vaccines by all children to prevent target communicable diseases. Despite the successes recorded in the control of vaccine preventable diseases in the developed countries of the world, diseases such as measles and poliomyelitis still require better control particularly in developing countries with limited resources. 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.,Abdulkarim,Ibrahim,Fawi,Adebayo,Johnson,2011.,Wonodi,Stokes-Prindle, Aina, Oni, Olukowi, Pate, Privor-Dumm & Levine,2012).

The aforesaid difficulties are often due to geographical, economic and other socio-cultural inaccessibility. Hitherto, Nigeria accounted for the highest 785 prevalence of circulating wild polio virus in the world, though, it has been lately reported that polio incidence has drastically reduced and the World Health Organization gave the nation clean slate of health on polio eradication but barely few months after, there was reported cases of poliomyelitis infection in some rural communities of Nigeria. The Country is still among ten countries in the world with vaccine coverage below 50% (FBA, Health System Analysis, 2005., Antai, 2010., Itimi, Dienye and 0rdinioha, 2012). It is also of interest that Nigerian's under five mortality rate is 124 per 1000 and currently ranking 9th according to recent United Nation Children's Fund (UNICEF) estimates (UNICEF, 2014). Religion is said to have influence on Immunization as (Babalola and Adewuyi, 2005, Obadare, 2005) reported in Oluwadare (2009), that North east and west of Ekiti state dominated by Moslem had low immunization coverage. Waisbord and Larson (2005) also identified four key challenges facing active immunization uptake which includes: poor knowledge of the importance of vaccines, poor physical access to immunization service, lack of trust of the safety of the vaccine and non-availability of the vaccines.

Several studies have been conducted on immunization in Nigeria: Vaccination Coverage and its Determinants in Children Aged11-23 Months in an Urban District in Nigeria (Tagbo,Eke, Omotowo,Onwuasigwe, Onyeka, and Mildred, 2014);The Social Determinants of routine immunization in Ekiti State of Nigeria (Oluwadare,2009); Reasons for incomplete vaccination and factors for missed opportunities among rural Nigerian Children (Abdulraheem, Onajole, Jimoh and Oladipo, 2011);Routine Immunization in Nigeria: the role of Politics, Religion and Cultural Practices (Anyene,2014), Landscape Analysis of Routine Immunization in Nigeria (Wonodi,Stokes-Prindle, Aina,Oni, Olukowi, Pate, Privor-Dumm &Lavine,2012). Ogun Waterside Local Government was established to enhance grassroots development in 1989 with population estimate of approximately 148,902 and located on the riverine side of the Atlantic Ocean with the land mass of 1860.32 Square Kilometers in Ogun State Nigeria (Ogun Waterside

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Local Government Information Department, 2003). In view of these aforementioned facts, it was hypothesized that:

1. Social factors of: per influence, parenting style, economic status, level of education and sex of the child, will not significantly influence participation of mothers on immunization of their children.
2. Cultural factors: Belief system, living style; health seeking behaviour and values, will not significantly predict mothers participation on Immunization.
3. Age will not significantly predict mothers' participation in immunization.
4. Health education/mass media will not significantly influence participation of mothers in immunization.

METHODS OF THE STUDY

Source of Data

The data used for the study was made up of structured interview guide and self-structured and validated questionnaire: social factors influencing immunization participation questionnaire (SFIIPQ) R = 0.78; Cultural factors predicting immunization participation questionnaire (CFPIPQ) R = 0.810; Age variable predicting immunization participation questionnaire (AVPIPQ) R = 0.93 and Mass media/Health Education factors predicting immunization participation questionnaire (MMFPIPQ) R = 0.88.
The interview guide was used to collect qualitative data which was used to describe the phenomenon.

Sample Selection

The population of the study comprised of all child bearing age women that attended immunization clinic for the vaccination of their children. Two hundred (200) participants were randomly selected using proportionate random sampling technique from the eight (8) purposively selected health centres from the 10 existing geopolitical wards of Ogun Waterside local government area of Ogun State, Nigeria.

Statistical Methods

Frequency count and percentage were used to statistically describe the demographic characteristics of the study participants while multiple regression analysis was used to test the sociocultural variables as they predicts immunization at 0.05 level of significance.

Limitation of the Study

The number of round for interview and data collection may likely be a limitation. The coverage of over eighty percent (80%) of the geographical size of the local government was to reduce the limiting effect. The size of local government (a relatively small) may be a limitation but the geographical structure of the local government makes the study very important to elicit information on factors hindering effective immunization coverage in rural setting

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FINDINGS

Table 1:Demographic Characteristics of Participating mothers

Variables	N = 200	%
AGE Group		
20 – 29 years	88	44.0
30 – 39 years	104	52.0
40 years and above	08	4.0
RELIGION		
Christian	136	68.0
Muslim	64	32.0
QUALIFICATION		
SSCE and below	88	44.0
NCE / NDE	16	8.0
BSC / HND	88	44.0
Master's Degree & Above	08	4.0
OCCUPATION		
Farmers	104	52.0
Trader	88	44.0
Artisan / Civil Servants	08	4.0
ETHNIC Background		
Hausa	16	8.0
Yoruba	144	72.0
Ibo	40	20.0

Table 1 illustrates the various demographic descriptions of mothers that participated in the study. 44% were age between 20 - 29 years, 52.0% were aged between 30- 39 years, while, 4.0% were aged 40 years and above. 68% were Christian while 32.0% were Muslim. On the qualification of the participants, 08.0% have NCE / NDE certificate and below, 44.0% have Senior Secondary School certificate while 44.0% have Bachelor degree and 04.0% have master degree and above. On the occupation of the participants, 52% were farmers, 44.0% were traders while 4.0% were artisans / civil servants. On the ethnic background of the participants, 8.0% were Hausa, 72.0% were Yoruba while 20.0% were Ibo.

Table 2: Statistical analysis of the social influence of participants on immunization.

Parameter	Coefficient	Standard error	Italic	Probability
Constant	102.12	15.319	6.67	0.000
Peer influence	2.94	0.29	9.95	0.000
Parenting style	2.06	0.41	5.08	0.000
Economic status	-1.69	0.35	-4.88	0.000
Level of education	1.02	0.87	1.18	0.238
Sex of the Child	1.50	0.19	7.89	0.000

$R^2 = 0.550$
Adjusted $R^2 = 0.550$
F Statistic = 47.47

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Results in table 2 showed that peer influence, parenting style, economic and sex of the child as independent variables accounted for 55.0% of the total variables in the level of mother's participation in immunization of their children (R^2 = 0.550, P< 0.05) This showed that the variables are significant, meaning that all the social variables tested played significant roles in mother's participation in immunization of their children.

The table presented shows that all the exogenous variables were significant except level of education. Thus the F–value of 47.47 with probability close to zero percent showed statistically that those social variables significantly influenced mothers' participation in the immunization of their Children. The women always call one another during immunization day and that had boosted participation. The number of children was said to be a factor because the previous experience was a guiding principle in the current involvement while sex was a factor affecting the perceived reaction of babies to immunization, mothers felt that male children were more irritable after injectable vaccination uptake, a good percentage of mothers could not complete immunization because of cost of transportation to the health centres but the door-to-door immunization with poliomyelitis vaccination has helped to improve participation.

Table 3: Statistical analysis of cultural factors as predictors of mothers' participation in immunization.

Parameter	Coefficient	Standard error	Italic	Probability
Constant	110.90	8.06	13.75	0.000
Belief system	1.17	0.29	3.97	0.000
Living style	1.53	0.15	9.95	0.000
Health seeking behavior	1.38	0.26	5.31	0.000
Values	1.39	0.34	4.03	0.000

R^2 = 0.587
Adjusted R^2 = 0.579, F Statistic = 69.40

Table 3, belief system, living style, health seeking behaviour and values as the independent variables, accounted for about 59.0% of the total variables in the level of mother participation in immunization of their children. (R^2 = 0.587, P< 0.05) Therefore, cultural factors played significant roles in mothers' participation in the immunization of their children. The table also indicated that all the exogenous variables were significant at 5% level. Thus, the F–value of 69.40 with Probability close to Zero percent showed statistically, that cultural factors significantly influence mother's participation in immunization of their children. The belief that immunization can prevent some diseases was a motivating factor and communal living of the people assisted in encouraging each other and health seeking behaviour of traditional medicine was a limiting factor as health workers were perceived to be unfriendly with the mothers.

Table 4: Statistical analysis of Age as predictor of mothers' participation in immunization of their children.

Parameter	Coefficient	Standard error	Italic	Probability
Constant	164.07	3.70	44.32	0.000
Age	2.26	0.29	7.93	0.000

R^2 = 0.241
Adjusted R^2 = 0.237
F statistic = 62.82

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In table 4, Age as the only independent variable accounted for 24.1% of the total variation in the level of mother participation in immunization of their children.(R^2 0.241, P< 0.05). Therefore, age play a significant role in mother's participation in the immunization of their children. The table also indicated that the coefficient of age group is significant at 5% level. Thus, the F–value of 62.84 with Probability close to zero percent showed statistically that age significantly influence mothers' participation in immunization of their children. The implication was that mothers with mature age with many children that are mature participated more actively on immunization day with increased knowledge of all the necessary precautions.

Table 5: Statistical analysis of health education and mass media as predictors of mothers' immunization of their children

Parameter	Coefficient	Standard error	Italic	Probability
Constant	112.22	6.89	16.27	0.000
Mass media involvement	1.69	0.19	9.11	0.000
Health education at the clinic	2.52	0.34	7.43	0.000

$R^2 = 0.445$
Adjusted $R^2 = 0.439$
F statistic = 78.850

In Table 5, Mass Media involvement and health education at the Clinic as the independent variables, accounted for 44.5% of the total variation in the level of mother participation in immunization of their children ($R^2 = 0.445$, $P < 0.05$) which was significant. Therefore, health education and mass media awareness played significant role on mother's participation in immunization of their children. The table also indicated that both independent variables were significant at 5% level. Thus, the F – value of 78.85 whose probability is close to zero percent showed statistically, that health education significantly influence mothers participation in the immunization of their children.

DISCUSSION OF FINDINGS

This study was conducted to investigate the perceived causes of inactive participation of mothers on the immunization of their children either in form of incomplete dose/missed opportunity due to poor adherence to prescribed dose or breakage in the process. It was carried out in a rural location of Ogun Waterside local Government area of Ogun State Nigeria where there are several issues limiting accessibility to Health care services: cultural, economic, geographical and social inaccessibility factors.

On the qualitative findings, many of the mothers interviewed reported that frustration sets in whenever there is no vaccines available or when there are not enough number of babies to be immunized with a single vial/ampoule of a given vaccine, hence mothers were turned back without their babies been immunized, and sometimes the health workers would not open a vaccine(s) meant for 8 or 10 babies for just 3 or 5 babies these has constituted reasons for default. A particular set of mothers reported that they had visited the health centre for over two occasions to receive measles vaccine but their children were not immunized because the number of babies present was not enough to open a vial of measles' vaccine.

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Mothers from the coastal/Riverine area of the local government reported poor accessibility to all the vaccines as at when due while the community health workers also reported poor cold-chain facilities which sometimes rendered the vaccines impotent. They also reported the involvement of the community leaders in providing necessary information on the availability of the vaccines to parents in the community to boost participation. They all reported that missed or incomplete vaccination was often caused by in availability while the vaccinators informed that there were occasions when the vaccines were not supplied to the health centres as at when due. On cultural issues, the mothers reported that a greater percentage of mothers are fully aware of the benefit of immunization while a few still have the fear of side effects but socially, mothers reported that the cost of visiting the health centres is sometimes a limiting factor. Though the vaccines were free, transportation can sometimes be a challenge among other social issues.

The result of the tested hypothesis on social factors was significant which indicated that, peer influence of other mothers, parenting style on child welfare, economic viability, sex of the child, influence the mothers participation in immunization of their children both positively and negatively. This finding was not completely in agreement with the findings of Itimi, Dienye and Odinioha (2012. Casselli, Leuch, Fairhead, Small and Mercer (2006) which stated that women that were socially upright in the cities with better education with fewer number of children that should improve their immunization patronage, but their findings revealed improved patronage by rural mothers than the city mothers though this work is not comparing rural with cities mother but it was obvious that rural mothers were more cooperative when there are no obvious limiting factors, it should be known that factors affecting participation at both end differs. The study is in agreement with Oluwadare (2009),Uchena(2009) that social factors of rural/urban factor is directly linked with the availability of the services, it was revealed in this study that the rural location affects regular supply of potent vaccines and there was no active cold-chain facilities due to absence of electricity to power the refrigerators where vaccines were kept to sustain their potency.

The result of the hypothesis tested on cultural factors of: belief system, living style, health seeking behavior and values, significantly influenced mothers participation in immunization of their children. The result of the effect of age variable on participation revealed that age was a significant factor on child immunization meaning that mature mothers were more involved in the immunization of their babies, which was in synergy with their knowledge on child welfare (Odiit &Amuge, 2003, Akande &Akande, 2006, Atkinson, Vallely, Fitzgerald, Whittaker., Tanner & Maler, 2011., Prata, Ejembia, Fraser, Shittu & Minkler, 2012., Abdulkarim,Ibrahim,Fawi, Adebayo & Johnson,2011). On the effects of health education at both the clinic and the mass media predicted mothers participation in the immunization of their children (Owais, Hanif, Siddiqui, Agha, & Zaidi, 2011; Giwa, Olayinka, & Ogunshola, 2012) supported the findings.

CONCLUSION AND RECOMMENDATIONS

Immunization programme had been aggressively pursued in Nigeria to eradicate some selected vaccine preventable communicable diseases. However, several factors had been identified to promote and limits the maximal achievement of the set goals. It had been revealed that several social factors such as economic and geographical inaccessibility, cultural issues are significant in predicting immunization participation of children by their mothers at the local community of Ogun

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waterside area of Ogun State Nigeria as a result of the aforementioned scenario; the following recommendations were therefore suggested:

1. An accessible cold chain facility that is well powered with solar energy should be developed at all the health centres with good communication and monitoring.
2. The immunization staff should be well motivated to access all the geographically difficult parts of the local government area.
3. The vaccines should be made available at all times to prevent frustration on the part of the mothers.
4. Special packs of vaccines that can be used for any available number of children should be developed to prevent wastage.

IMPLICATIONS FOR HEALTH EDUCATORS AND RESEARCHERS

Immunization in the rural communities requires aggressive motivation through comprehensive health education. This should be geared towards the identification of positive and negative factors that should be reinforced and jettisoned respectively for the purpose of achieving optimal immunization goals in the rural communities. Improved health Education therefore enhances the positive outcome of immunization as it relates to participation among Rural Mothers. The challenge was to overcome the limiting factors to active immunization participation among rural community inhabitants. Provision of safe and accessible locations for the immunization of all babies.

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