

**DEMOGRAPHIC FACTORS AND SOCIAL MOBILIZATION
STRATEGIES ON UPTAKE OF CHILDHOOD IMMUNIZATION IN
IJEBU-NORTH LOCAL GOVERNMENT OGUN STATE, NIGERIA**

BY

LAWAL, Abiodun Sebioniga

**RN, RPHN, DCP (Lagos), Cert.HM (Ibadan) B.Sc (Ed), M.Ed (OOU), MPH (Ilorin)
(MATRIC NO. 04/68LLO9)**

AUGUST, 2018

**DEMOGRAPHIC FACTORS AND SOCIAL MOBILIZATION STRATEGIES ON
UPTAKE OF CHILDHOOD IMMUNIZATION IN
IJEBU-NORTH LOCAL GOVERNMENT OGUN STATE, NIGERIA**

BY

**LAWAL, Abiodun Sebioniga
(MATRIC NO. 04/68LLO9)**

**A DOCTORAL THESIS SUBMITTED TO THE DEPARTMENT
OF EPIDEMIOLOGY AND COMMUNITY HEALTH, FACULTY
OF HEALTH SCIENCES, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF DOCTOR OF PHILOSOPHY DEGREE IN
PUBLIC HEALTH, UNIVERSITY OF ILORIN, ILORIN,
NIGERIA**

**DR. 'BODE KAYODE
(SUPERVISOR)**

AUGUST, 2018

CERTIFICATION

This is to certify that this study entitled **Demographic Factors and Social Mobilization Strategies on Uptake of Childhood Immunization in Ijebu-north Local Government Ogun State, Nigeria** was carried out by **LAWAL, Abiodun Sebioniga (04/68LLO9)** and has been read and approved as meeting the requirements of the Department of Epidemiology and Community Health, Faculty of Clinical Sciences, for the award of Doctor of Philosophy (PhD) degree in Public Health of the University of Ilorin, Ilorin, Nigeria

Dr. Bode Kayode
Supervisor

Date

Dr. S.A. Aderibigbe
Post Graduate Coordinator

Date

Dr. Olajide Agbede
From other related Department in the University

Date

Professor G.K. Oshagbemi
Head of Department
Epidemiology and Community Medicine

Date

Professor A. Katibi
Dean Faculty of Clinical Sciences

Date

DEDICATION

This thesis is dedicated to Almighty Allah the Most Merciful, Most Beneficent

ACKNOWLEDGEMENTS

I am grateful to Almighty God for preserving my life and for the successful completion of the study. I am sincerely grateful to my supervisor Dr. Bode Kayode for his guidance and reading through the manuscript and in general for his encouragement. I appreciate contributions of Dr. Jide Agbede for his insightful and pertinent comments. I have been very privileged to have two excellent supervisors, who both complemented each other. My heartfelt thanks go to the former Heads of Department Professor A.O. Awoyemi and Professor T. M. Akande. I am particularly grateful to Professor G.K. Oshagbemi the incumbent Head of Department, my special thanks go to Professor I.O. Musa, Dr. S.A. Aderibigbe, Post Graduate Coordinator, and other Lecturers who contributed immensely towards the fulfillment of my dreams in Public Health. There are other people I owe debt of appreciation for various technical support and assistance: I thank Dr. M.J. Saka, Dr. Gafar Oyeyemi, Dr. Rasheed Tomori and Dr. Abdul Rasheed Salaam. I thank specially, the people in Ijebu North Local government Area who gave up their valuable time to be interviewed by me and who also put me into contact with other people, you are much appreciated. Most sincerely, I give special thanks to my supportive family, my wives Doyin and Yetunde, my children and grand children who I have little time to interact with because of demand of time that the course required; and also for their understanding, encouragement and advice.

ABSTRACT

The use of social mobilization (SM) as a process of engaging and motivating parents for utilization of immunization services has attracted much global attention. The time spent on dissemination of information using mass media showed that not much has been done to reinforce public perception of immunization as a social norm, hence, the widely reported persistent and low immunization coverage. The associating factors that can complement the process and also influence preference for particular approaches by parents need to be determined in order to reinforce such methods. The objectives of the study were to: (i) identify demographic factors for uptake of childhood immunization; (ii) assess the knowledge of respondents on SM strategies towards childhood immunization; (iii) determine the attitude of respondents towards social mobilization strategies (iv) identify SM strategies adopted by respondents; and (v) identify factors influencing SM in Ijebu-North Ogun State, Nigeria.

Cross Sectional descriptive design was adopted. Multistage sampling technique was used to obtain a sample size of 600 respondents with children less than two years of age. Data were collected with a researcher-designed questionnaire on a 4point Likert scale and was validated by the supervisor and two other experts. A reliability coefficient 0.82 was obtained through a test-retest method using Pearson Product Moment Correlation. Statistical package for Social Sciences was the tool adopted for analysis. Descriptive statistics was used to analyze the demographic data while inferential statistics of Chi-square was used to test the hypothesis at 0.05 level of significance.

The findings of the study were that:

- i. demographic factors of respondents were significantly associated with SM and uptake of immunization services ($p < 0.05$). Respondents with higher income and residents of close proximity had increased odds of obtaining information and uptake of immunization services than those in farther locations;
- ii. knowledge of respondents on SM and immunization services was not significant ($p < 0.148$). Only (58%) of respondents with good knowledge had children with fully immunized status, while 69% of others with good knowledge had children with partially immunized status;
- iii. good knowledge of SM strategies in the LGA influenced positive attitude towards immunization uptake among 61% of the recipients;
- iv. health care workers are the most preferred source of knowledge and information. Eighty percent of respondents reported positive interaction during immunization uptake; and
- v. respondents who interacted through radio, town announcers and house to house contacts have increased probability of being motivated to adopt immunization services five times more than respondents who did not benefit from the other media contacts.

The study concluded that SM greatly influenced uptake of immunization while good knowledge from health care workers was positively associated with attitude of parents who are using immunization services in Ijebu North LGA. It is therefore recommended that SM should be conducted in close proximity to residential areas and workplaces using many media for contact with potential users of immunization services.

LIST OF ACRONYMS

ACRONYMS	FULL MEANING
AWWs	Anganwadi Workers
(ANMs)	Auxiliary Nurse Midwives
BASICS	Basic Support for Institutionalizing Child Survival
BCG	Bacille Calmette Guerin
CDC	Center for Disease Control
CCC/NIR	Canadian Consensus Conference on a National Immunization Record System,
CEDPA	Centre for Development and Population Activities
DPT	Diphtheria, Pertussis and Tetanus
EPI	Expanded Programme on Immunization
EIW	European Immunization Week
FMOH/NHPP	Federal Ministry of Health/
HCP	Health Communication Policy
HBM	Health Belief Model
HCCC	Health Communication Capacity Collaborative,
HFA	Health For All
INLGA	Ijebu North Local Government, Area
HIV	Human Immunodeficiency Virus
MMR	Maternal Mortality Rate
NDHS	National Demographic Health Survey
NPHCDA	National Primary Health Care Development Agency
OV	Oral Polio Vaccine
PHC.	Primary Health Care
SocMob	Social Mobilization
SAGE	Strategic Advisory Group of Experts on Immunization (SAGE) Working
WG	Working Group
UNICEF	The United Nations Children's Fund
VPD	<i>Vaccine Preventable Diseases</i>
WHO	World Health Organization
WE	World Education (INGO) Philippines

TABLE OF CONTENTS

Content	Page
Cover Page	i
Title Page	ii
Certification	iii
Dedication	iv
Acknowledgements	v
Abstract	vi
Lists of Acronyms	vii
Table of Contents	viii
List of Tables	xii
List of Figures	xiv
CHAPTER ONE: INTRODUCTION	
1.1 Introduction	1
1.2 Background to the Study	1
1.3 Statement of Problem	7
1.4 Justification of the Study	10
1.5 Rationale for the Study	11
1.6 Research Questions	12
1.7 Research Hypotheses	13
1.8 Goals and Objective	13
1.9 Specific Objectives	13
1.10 Scope of the Study	14

CHAPTER TWO

2.0	Literature Review	16
2.1	Introduction	16
2.2	Expanded Programme on Immunization in Nigeria	16
2.3	Concept of Social mobilization	17
2.4	Theory of Behavior and social mobilization methods	24
2.5	Theory of Planned Behaviour	24
2.6	Social Mobilization Patterns and Trends and Determining Factors	30
2.7	Factors which Determine the Social Mobilization Trends of Immunization	31
2.8	Influence of Socio-Demographic Factors and Social Mobilization	38
2.9	Education of Parents and Uptake of Childhood Immunization	39
2.10	Employment of Parent and Uptake of Childhood Immunization	40
2.11	Knowledge and Use of Social Mobilization Strategies for Uptake Immunization Practices	41
2.12	Attitudes towards Social Mobilization	45
2.13	Information Seeking Behavior	50
2.14	Knowledge and Attitudes towards choice of Social Mobilization Strategies For Uptake of Childhood Immunization	54
2.15	Factors Influencing Social Mobilization and Uptake of Childhood Immunization	58
2.16	Social Mobilization: The Situation in Nigeria	61
2.17	Global Social Mobilization Programs for Immunization	67
2.18	Health Information Activities	69
2.19	Public Health Personnel as Communicators	70
2.20	Immunization Records	71
2.21	Talking with Parents about Immunization	71

2.22	Communication Issues in Immunization	72
2.23	Dialogue with Patients and Guardians	72
CHAPTER THREE		
3.0	Methodology	74
3.1	Research Design	74
3.2	The Study Area: Ijebu North Local Government, Nigeria	74
3.3	Study Population	76
3.4	Community Entry	76
3.5	Study Design	76
3.6	Sampling Technique	77
3.7	Sample Size Determination	77
3.7.1	Inclusion/Eligibility Criteria	79
3.7.2	Exclusion Criteria	79
3.8	Data Collection Process	80
3.8	Data Collection Tools	80
3.10	Pre-testing of instrument	81
3.11	Data Analysis Techniques	81
3.12	Ethical Consideration	82
3.13	Data Management	83
CHAPTER FOUR		
4.0	Data Analysis and Interpretation of Results	84
4.1	Introduction	84
4.2	Demographic Characteristics of Respondents	84

4.3	Influence of demographic factors of study participants by uptake of childhood immunization	87
4.4	Knowledge based profile of respondents	89
4.5	Knowledge base profile and influence on attitude towards social mobilization Strategies and uptake of childhood immunization	93
4.6	Social Mobilization Strategies Adopted by Respondents for Uptake of Immunization service	100
4.7	Factors influencing social mobilization for uptake of childhood immunization	103
CHAPTER FIVE		
5.0	Discussion, Conclusion and Recommendations	108
5.1	Demographic factors on social mobilization strategies	108
5.2	Knowledge of Respondents on Social mobilization and Uptake of Immunization Service	111
5.3	Attitudes of Respondents towards Social Mobilization and Uptake of Childhood Immunization Service	113
5.4	Social Mobilization Strategies for Uptake of Childhood Immunization	116
5.5	Factors Influencing Uptake of childhood Immunization	120
	Conclusion	123
	Recommendations	124
	References	126
	Appendices	142

LIST OF TABLES

Table 1:	Schedule of EPI Routine Immunization	17
Table 2:	Administrative and geo-political zones in Ijebu North, Nigeria	79
Table 3:	Knowledge Score of Respondents on Social Mobilization and Uptake of Childhood Immunization	82
Table 4:	Socio-Demographic variables of respondents	85
Table 5:	Socio-economic variables of respondents	86
Table 6:	Relationship between Socio-demographic Factors of Respondents and the Uptake of Childhood Immunization	88
Table 7:	Relationship between Socio-demographic Factors of Respondents and the Uptake of Childhood Immunization	89
Table 8:	Relationship between Child's Immunization Status and knowledge of Respondents on Social mobilization and Uptake of Immunization Service	91
Table 9:	Knowledge of Respondents on Social mobilization and Uptake of Immunization Service	92
Table10:	Knowledge Score of Respondents on Social Mobilization and Uptake of Childhood Immunization	93
Table 11:	Relationship between Knowledge and Attitudes of Respondents towards Social mobilization and Uptake of Immunization Service	94
Table 12:	Relationship between immunization status of respondents and attitude towards uptake of childhood immunization	95
Table 12a:	Attitudes of respondents towards social mobilization and uptake of childhood immunization	96

Table 12b:	Attitudes of Respondents towards Social Mobilization and Uptake of Childhood Immunization Service	97
Table 13:	Attitudinal Score of Respondents on Social Mobilization and Uptake of Childhood Immunization	98
Table 14:	Relationship between Socio-demographic Factors of Respondents and Attitudes towards Uptake of childhood Immunization	99
Table 15:	Relationship between Child's Immunization Status and Respondent's Source of Information on Social mobilization and Uptake of Immunization Service	100
Table 15a:	Social mobilization strategies adoption and influencing factors towards uptake of childhood immunization	101
Table 15b:	Social mobilization strategies adopted by respondents	102
Table 16a:	Factors Influencing Uptake of Immunization Service and Social Mobilization of Respondents	103
Table 16b:	Factors Influencing Uptake of Immunization Service and Social Mobilization of Respondents	104

LIST OF FIGURES

Figure 1: Influence diagram showing healthcare factors	20
Figure 2: Schematic diagram of Theory of Planned Behavior (Croyle 2000)	25
Figure 3: Frequency Distribution of Respondents' Attitude towards Uptake of Childhood Immunization by their Spouse's Occupation	106
Figure 4: Frequency Distribution of Respondents' Attitude towards Uptake of Childhood Immunization by their Level of Income	107

CHAPTER ONE

OVERVIEW OF THE THESIS

1.1 Introduction

The first chapter of this study gives some background and information about the variables under study and most importantly the current information about demographic factors and social mobilization strategies influencing uptake of childhood immunization, statement of problem, justification for the study, rationale for the study, general and specific objectives of the study, relevant research questions and hypothesis, scope and organization of the study were also presented

1.2 Background to the Study

The term Social Mobilization is attributed to United Nations Children's Fund (UNICEF), when it emerged from the first International Conference on Primary Health Care held in Alma Ata in 1978. It gives exclusive attention to building consensus and carrying out a broad educational process through all possible channels (Mckee 1992). Earlier definition of the concept of social mobilization strategy simplified it as the process of dialogue, negotiation and consensus building for action by people, communities and organizations to identify, address and solve a common problem (UNICEF, 1997). Social Mobilization strategies(SMS) involves engagement and motivation of a wide range of allies and partners at national and local levels to raise awareness of and demand for a particular development objective through face to face dialogue (UNICEF, 1999). It involves all relevant segments of society, from policy and decision makers to religious associations, professional groups, opinion leaders, communities and individuals. The National Health Promotion Policy (NHPP) stated that social mobilisation and participation of people and communities in improving and controlling the conditions for health is a core principle in promoting health. Promotion of community participation in planning, management, monitoring and evaluation of PHC system, is one of the main approaches identified

by the NHPP for delivering an effective, efficient, accessible and affordable health services to a wider proportion of the population (FMOH/NHPP, 2008)

The use of SMS and communication in promoting childhood immunization has gained significant popularity and attention as an interdisciplinary study within the social sciences. Its use of face-to-face communication and interactive discussion strategy with community members has being proven to yield increase awareness for demand and utilization of childhood immunization services. Its effectiveness has been established by studies that it created awareness for vaccine-related knowledge, attitudes and practices towards uptake of childhood immunization (Anand, Barning Hansen, (2004). According to McKee (1992), stakeholders in social mobilization efforts are national policy makers, the media, traditional leaders and religious leaders, health care workers or service providers and the intended beneficiaries who are parents with their children. The main approaches enumerated guarantee political mobilization, government mobilization, corporate mobilization and beneficiary mobilization. Dunu & Uzochukwu, (2015) agrees that social mobilization strategies involves informing and motivating the parents through community groups and communicating through traditional and mass media and through dialogue with planned messages for the beneficiaries.

The association between social Mobilization (SMS), demographic characteristics of parents, care givers and childhood immunization is well established. Rogers (2004) reported significant and positive relationship between socio-demographic factors (poverty, illiteracy and prevailing cultural practices) on specification and model designs and material to fill health information needs of the general public on immunization education (ICEC, 2000). Also, recommending Action Push approach, selected experts reported the contribution and impact of economic status and financial capabilities faced by women, user fee and sundry charges as potential twist to the argument for the need to appraise the consequence on services and demand

for childhood immunization services. (NPHCDA, 2011). In order to ensure universal health, and attain Health for All (HFA), the expert group recommended integrated social mobilization approach in the provision of and delivery of health care services. Data from developing countries including Nigeria demonstrate efficacy of social mobilization as one of the most prominent drivers of uptake of routine and supplemental immunization. (NPHCDA 2007)

The key immunization practice is to take children as scheduled to complete a full course of immunizations (BCG, diphtheria–tetanus–pertussis (DPT), oral polio vaccine (OPV) and measles) before their first birthday). Vaccine-preventable diseases (VPDs) account for approximately 10% of the global burden of mortality in children under- five years of age; this corresponds to 1.1 million child deaths each year (WHO, 2002). To ensure children receive a full course of immunizations in a timely, safe and effective way services must be accessible, of high quality and utilized. However, nearly 22 million infants mainly in low and middle income countries did not receive the full series of basic immunization in 2012 contributing to the 1.1 death. (WHO, UNICEF 2013)

According to Save the Children, factors such as lack of access to immunization services, poor quality of health services, missed opportunities, hidden financial and opportunity costs to families and lack of vaccine availability were the most cited reasons for why children were not immunized. The provision of immunization services to children in remote and hard-to-reach rural areas is often restricted due to factors such as physical distance from health clinics, geographical barriers, and the difficulty of travel for health workers. (Minh & Bhshen, Bloon, et. al, 2007).

Similarly, children living in urban slums often face barriers to immunizations such as a lack of access to health information and or a limited interchange of information regarding immunization services (Sheik-Mohamed & Velema, 1999) Mobile and nomadic populations also

have low immunization coverage, as they are often overlooked during immunization campaigns, and delivering subsequent doses of vaccine becomes difficult once population group have moved to another location (Schelling, Bechir, Abdoulaye, Wyss, Randolph, Ingtag, 2007).

During times of political unrest or violence, immunization activities are sometimes temporarily halted, leaving children unimmunized, about 198,202 children were left unimmunized following recent violence against polio workers in Nigeria. Complex emergencies can create situations that broke down routine health services for extended periods of time for example, prolonged industrial strike of health care workers. (Center for Disease Control and Prevention (US) Atlanta: CDC; 2009).

Among all the child survival interventions, immunization has generally had the greatest success thus far. Six out of ten children worldwide are now fully immunized by their first birthday; it becomes increasingly important to focus attention on understanding behavior of community members whose children have not yet been fully immunized. Every year about 3.5 million children in developing countries died and many more are disabled from vaccine preventable diseases. Even when vaccination services are accessible, and free, many mothers and child caregivers do not respond.

Although the popularity of social mobilization continues to increase, empirical evidence on the link between its use and immunization practices of care givers has yet to show consistent signs of significance. Incorrect knowledge on preventive role of routine immunization is widespread in Nigeria. Some parents held belief that diarrhea, fever, convulsion, and malaria are VPDs, while in some other rural and urban area malaria, teething problems, vomiting, convulsion and pneumonia are listed. (Slater 1999).

Social mobilization is central to motivation for immunization; some are not motivated to have their children immunized while some become motivated through an immunization campaign but loose motivation soon after the campaign is over. Parents have little information to guide them when making decision about immunization. Paterson and Gertrude 2005 stated the need to mobilize the local individual parents, local leaders and other community members with a better understanding of immunization. It recommends therefore, the necessity to inform, educate, teach and communicate appropriate messages to parents in order to promote positive behaviors and uptake of childhood immunization.

According to Ankrh, Nwaigue, 2000, Waisbord, Shrimp, Ogden, Murry (2010) social mobilization should take into account the impact of information transfer on tacit or indigenous knowledge for development. Care givers immunization practices will invariably be affected by the quality type of information and education or lack of it. Hence, major theories of social mobilization and communication is harped on information, education and communication which usually occur in form of statistical significance of demography characteristics, knowledge, attitude and immunization behavior of parents as measured by uptake and completion of immunization as scheduled. (Jegede & Owumi, 2013).

Zimick (1994) observed that most health instructions and encounter with clients in health centers are given casually as routine without due cognizance of the principles of teaching-learning processes hence parents and care givers are not led to self discovery and understanding upon which health instructions such as childhood immunization are based. These mismatches in the teaching and learning styles have been observed to have brought about boredom, inattentiveness, unresponsive and lack of motivation. These reasons undermined the capacity of

the local service providers to implement sustainable program at family and community level resulting in low demand for immunization due to lack of understanding of its value.

However, Obregon and Waisbord (2010) stated that social mobilization in health programs should not be viewed nonchalantly as a top-down educational tactics especially in under-resourced, underserved populations. The author stated further that factors that determine whether a group will accept or reject immunization initiatives are highly circumstantial because social dynamics are ever-unpredictable. According to him a “cookie-cutter approach” to social mobilization is a sentence for failure, as methods must be adjusted to accommodate specific cultural beliefs, health requirements of the area, and general population attitudes towards health services, local power structures, and persuasive authorities. In northern Nigeria in 2003, the political and religious leaders of Kano, Zamfara, and Kaduna states brought the immunization campaign to a halt by calling on parents not to allow their children to be immunized. These leaders argued that the vaccine could be contaminated with anti-fertility agents (estradiol hormone), HIV, and cancerous agents (Jegede, 2007)

The community understanding of diseases and their spread is complex, context dependent, and culturally mediated, individuals as well as group should be adequately equipped with information and knowledge from which to choose and make their own decisions without a force or command about childhood immunization. One of the key elements responsible for successes in raising people’s awareness of and demand for immunization have been concept of social mobilization. (Akande, 1996; Prasad, 2003) It is pertinent therefore, to organize social mobilization activities and disseminate in such a manner that will ensure that care givers receive a full course of immunizations in a timely, safe and effective way for their children. Lack of access to timely information and inadequate education on utilization of immunization services

are among the main reasons for the low uptake of immunization services resulting in high infant and childhood mortality in Africa regions. (NPHCDA 2012).

1.3 Statement of Problem

A social mobilization strategy is a means of responding to both epidemiological pattern and local perceptions of vaccine preventable diseases and need to motivate parents to demand and utilize immunization services. . The inability to sustain the universal coverage of immunization of children in the 80s and persistent lack of provision and barriers to access quality health care has further increased the poor immunization coverage for under -five children in Nigeria. Child health and the rates of neonatal and under-five mortality are significant indicators to measure level of development across countries and continents globally. Consequently, reduction of under-5 mortality rate by two thirds between 1990 and 2015, is goal number 4 of the Millennium Development Goals (MDG), which all countries in the world are encouraged to pursue rigorously (Rutherford, Mulholland, & Hill, 2010; UNICEF, 2012). .

Nigeria still fall short of the 90% Global Vaccine Action plan. In spite of innumerable potentials and overwhelming evidence of the efforts of global community of health partners in using social mobilization strategies and communication activities to advance uptake of childhood immunizations 31% of Nigerian children received first dose of vaccine, 40% did not receive at all while one out of three received the recommended three pentavalent vaccine doses. The small improvement in immunization coverage in the country is not acceptable. (National Immunization Coverage Survey 2016)

The National Primary Health Care Development Agency and State Primary Health Development Agency approaches of engaging in inform-educate-communicate (IEC) strategy are designed to share key health messages with the general public. Carr 2004 noted however that uptake of routine immunizations has been decreasing with time due to improper integration into

most national health plans. The decision by parents to demand or seek for and utilize childhood immunization as scheduled is taken within socio cultural context. Thus, such decision may involve more than the availability of and access to immunization doses. The mere availability of immunization vaccines alone may not translate in to higher immunization figures for immunization. Knowledge and attitude to information about childhood information are critical to seeking for and utilizing immunization facilities. This may be affected by failure to identify those who do not get their children immunized; who and what will influence those who do not get their children immunized; with what support and how to persuade such target audience. While parents and children are primary audience targeted for childhood immunization, the general audience properly grouped and appropriately sub-divided into narrower audience categories can be reached more effectively with specific target communication efforts.

Little is known in Ogun State about the parents' characteristics and exposure to social mobilization strategies and immunization of their children. The parents of children under-5years of age are not the same and can be divided into different groups, they do not all live in the same place under the same socio-economic conditions, their needs are not the same, they do not all have the same reasons to immunize or not to immunize their children, they may not all be reached effectively by the same social mobilization and communication efforts. The study is designed to fill the gap and thus investigated influence of demographic factors and social mobilization strategies on uptake of childhood immunization. (Bosu et al. 1997) In order to reach caregivers or parents, the government is promoting information through radio, open air shows and spots, distributing printed materials such as pamphlets and posters, and supporting health centre workers in public health education. NPHCDA identified some behavioral and non behavioral factors that influenced uptake of immunization facilities; lacks of information and

health workers reprehending parents. Also how target group were identified, defined and group based on their characteristics which include marital status, age, level of education socio-economic status, area of residence, religious affiliation and number of children. This assertion was alluded to by Kita, 2011 in a simpler form stating that low level education when combined with some elements of harmful traditional practices and environment promoting risky immunization avoidance and hesitancy pose risks to uptake of childhood immunization. Ritvo, Irvine, et al, (2008); Health Canada, 1996; & Bedford and Elliman (2000) isolated other factors for low uptake of immunization as: religious or philosophical objections, fear of government control in areas of personal choice, concern about safety and efficacy, belief that vaccine preventable diseases do not pose a serious health risk, certainty that alternative treatments are superior, concerns that vaccines are promoted for the sake of gain, and belief that vaccines are not “natural”. The time available for health care providers to address parents who have questions about immunizations, the recommended schedule and adverse effects following immunization (AEFI) is not certain in view of shortage of human resource availability (Barbara P, 1990). There is dearth of available evidence on local adaptation and appropriate communication strategies which are needed to address the socio-cultural and political influences that impact immunization behavior. Awareness of local, social and cultural perspectives has greater potentials of meeting the challenges associated with immunization program.

There is dearth of empirical evidence and literature on demographic factors and social mobilization strategies towards uptake of childhood immunization. Available literature on social mobilization concentrate on selective primary health care services and majorly in countries outside Nigeria; and the findings may not be generalized in Nigeria context. This researchable gap existed and must be filled; provide opportunity and information on how to counter low

parental knowledge of immunization and or lack of access to information thus creating demand for childhood immunization (Emmanuel, Chelsea, Melodee et al. 2015).

1.4 Justification for the Study

The role of social mobilization is still not fully understood by individual and community in accepting and deciding on uptake of childhood immunization. The content of social mobilization needs to be better monitored with respect to socio-demographic characteristics of parents their attitudes and influence of different media approaches towards uptake of childhood immunization.

Mass communication campaigns have been found to be effective in building support for immunization programs (Nyhan, Reifler, Richey, Freed, 2014). These campaigns may however, prove counterproductive with subgroups which are ardently opposed to vaccination based on diversity of socio-demographic characteristics, environmental or community influence. UNICEF (2008) highlighted some reasons for the low coverage on routine immunization notably frequency of National Immunization Days (NIDs) campaigns which have resulted in public expectations that all forms of immunization would be brought to their homes, poor infrastructure for the distribution, storage and maintenance of the vaccine that is, cold chain at grass root level, higher motivation (in terms of social benefits) for health workers to carry out NIDs compared to routine immunization, absence of organized supervision, monitoring and evaluation of the routine immunization activities especially at health facility level. Although, community dialogue and mass media have also received some attention in dealing with challenges of scourge of polio virus in developing countries; reports were devoted to low immunization coverage and its determinants with sparse arguments which are somewhat inconclusive on socio-demographic characteristics and social mobilization of parents on uptake of immunization.

There is need to conduct more studies on mix of social mobilization strategies, mediums and approaches that are well grounded (Nyhan, Reifler, et al 2014) and identified media patterns and most preferred source of information which would help in building support for childhood immunization in order to facilitate development of a sustainable social norm of positive behavior for uptake of childhood immunization in the society. The result of this study would contribute to existing knowledge and serve as useful resource material to experts, health planners, social mobilization officers, health educators and researchers who may be concerned and involved with mobilizing populations for development program such as promotion of childhood immunization and other child health program in developing countries.

It is important to reach parents with what appeals to them and how best it appeals to them such that they demand and utilize available immunization services for their children. There is need also to find out about methodical, proactive social mobilization and communication strategy that will respond to misinformation and anti-immunization activities the result of which will contribute to knowledge for use in health care service delivery in Nigeria..

The results and findings may be integrated to existing knowledge and would be of great benefit to health workers on designing, organizing and implementing health promotion activities for uptake of childhood immunization. The findings will also promote policies that encourage skills development of health and other allied workers in social mobilization for health promotion of primary health care services.

1.5 Rationale for the Study

The capital invested on mobilizing citizens for uptake of childhood immunization is huge. The best way to assess influence of social mobilization strategies on demand and utilization practices of parents and care givers is to conduct a survey of the population and

examine related factors of demography, knowledge, attitude and other environmental and system specific factors. Childhood immunization practices and decision making by parent or caregiver is a complex process with many factors influencing it directly and indirectly. Some factors may be more important in certain contexts than in others. Experience and circumstance may change the weight of a factor(s) in different settings. The more accurate information given on safety, values and importance of childhood immunization, the less misinformation, rumor, ignorance and the higher the informed choice and norms of uptake of childhood immunization. When parents are denied opportunity to correct information, access to services and encouraging health care provision environment, the temptation to seek alternative source of information is higher. This study therefore, sought to focus on contextual influences arising from demographic differences of parents, the communication and media environment, influence of formal and informal leaders, religion, culture and geographic barriers. Furthermore, individual influences arising from personal perception of the vaccine or influences of the social and peer environment. Beliefs, attitudes about health and prevention held by individual, level of knowledge and awareness and whether accurate and enough to ensure uptake of childhood immunization has to be determined,

1.6 Research Questions

Research Questions

- i. Are there relationships between demographic characteristics, use of social mobilization strategies and uptake of childhood immunization in Ijebu- North LGA?
- ii. What are the demographic differences in level of knowledge, use of social mobilization strategies and uptake of childhood immunization in Ijebu- North LGA?
- iii. Are there significant influence of knowledge and attitude towards use social mobilization strategies for uptake of childhood immunization in Ijebu North?

- iv. Are there significant differences in adopted social mobilization strategies and uptake of childhood immunization?
- v. Which factors influence preferred choice of social mobilization strategies and uptake of childhood immunization?

Research Hypotheses

For the purpose of this research the following hypothesis were tested:

- i. Demographic characteristic of respondents have no correlation with social mobilization strategies and uptake of childhood immunization.
- ii. Level of knowledge of social mobilization strategies and immunizations has no correlation with uptake of childhood immunization
- iii. Demographic characteristic and level of knowledge of does not influence their attitude towards uptake of childhood immunization
- iv. There is no significant relationship in demographic characteristics and specific factors influencing use of social mobilization strategy towards uptake of childhood immunization.

1.8 General Objectives of the Study

The overall goal of the study is to assess demographic factors and social mobilization strategies on uptake of childhood immunizations.

1.9 Specific objectives

- i. To identify demographic factors for uptake of childhood immunization among respondents in INLGA.
- ii. To determine knowledge of respondents on mobilization strategies and uptake of childhood immunization in Ijebu- North LGA.

- iii. To assess attitude of respondents towards social mobilization strategies for uptake of childhood immunization in Ijebu- North LGA.
- iv. To identify social mobilization strategies utilized by respondents for uptake of childhood immunization in Ijebu- North LGA.
- v. To identify factors influencing social mobilization and uptake of childhood immunization by respondents in Ijebu- North LGA.

1.10 Scope of the Study

This research is restricted to assessment of demographic factors and social mobilization strategies for uptake of childhood immunization among caregivers in Ijebu North Local Government Area, Nigeria. The research focuses mainly on parents and caregivers who have responsibility to cater for children who are under five years of age. The respondent acceptable globally met the criteria of parents and caregivers and includes both sexes who are adults 18 years and above who have complete information on all the variables needed for the study.

In addition, data used to analyze the variables on social mobilization, demographic factors on uptake of routine immunization could only be readily available from the caregivers as it may be difficult in acquiring all required information from clinic data. Furthermore, the study is restricted to some characteristics of the respondents, including, gender, source of income, educational status, perception of childhood preventable diseases, values associated with the possession of childhood immunization cards, proximity to health facility, attitude, source of support for child care and source of information for uptake of immunizations. These factors were incorporated in the analysis of the effect of social mobilization for uptake of childhood immunization.

Six hundred respondents were randomly selected from the local government area. The instrument used for the study was questionnaire developed by the researcher. Percentages and t - test statistical technique and the One Way Analysis of Variance were used to describe the

demographic data, answer the research questions and used to test the hypothesis drawn for the study respectively.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter deals with review of conceptual, theoretical and empirical frameworks. The chapter considers research and contemporary literature in the area of demographical characteristics and social mobilization strategies towards uptake of childhood immunization.

2.2 Expanded Programme on Immunization in Nigeria

The Nigeria Expanded Program on Immunization (EPI) was started in 1980 with an intention of reaching 100% coverage by 1990 (WHO: Expanded program on immunization). The EPI program in Nigeria is administered by the Federal Ministry of Health and National Primary Health Care Development Agency (FMOH/NPHCDA) with technical support from the WHO and other Organizations (Sullivan et al., 2009). International partners provide extra support in expanding coverage of EPI. For instance, the Reaching Every Ward (REW) an adaptation of Reach Every District (RED) approach is collaboration with the WHO, USAID, UNICEF, Global Alliance for Vaccines and Immunization (GAVI), and Centers for Disease Control (CDC) consists of strengthening social mobilization activities, and developing culturally appropriate behavioral change communication strategies (NPHCDA 2007).

The EPI schedule for routine immunization in 2005 consisted of nine rounds of vaccinations to be completed by the child's first birthday.

Table 1: Schedule of EPI Routine Immunization

Vaccine	Disease	Age
BCG	Tuberculosis	At Birth
DPT	Diphtheria, Pertussis, Tetanus	6, 10, 14 Weeks
OPV	Polio	At Birth, 6, 10, 14 Weeks
Measles	Measles	9 Months

Studies have shown inconclusive results of the necessity for birth dose of oral polio vaccine (OPV) (Benn et al., 2008). However, it is recommended for added protection in regions with high poliovirus prevalence. Women of child bearing age receive tetanus toxoid vaccine to protect their unborn children. Globally the EPI schedule for developing countries was updated to include a pentavalent consisting of the tetravalent of DPT and Hepatitis B and Haemophilus Influenza type B (HIB).

2.3 Concept of Social Mobilization Strategy

In today's society, social mobilization is a common and a necessary activity employed by global health organizations in connection with communicative approach to health promotion and development (Deutsch, 2010). According to UNICEF social mobilization strategies are strongly visible communications in support of immunization from key personnel and experts, local and formal leaders, religious and traditional leaders. A global picture of success was established using social mobilization strategies to respond to specific concerns and information gaps concerning uptake of immunization and other health issues. Using communication approach

plays a major role in molding parents' knowledge and attitude towards uptake of childhood immunization. Social mobilization strategy includes more than spoken and written messages (such as exchanges of mail, diplomatic correspondence, newspapers, and listening to radio broadcasts). Its strategies must respond to both epidemiological pattern and local perceptions of health illness and need. Many models and frameworks relate availability of social mobilization tools, explanatory models, immunization seeking behavior and practices to knowledge and uptake of childhood immunization. Influencing factors towards childhood immunization provides the basis for review of the study on demographic factors and social mobilization strategies for uptake of childhood immunization. The ethno medical model asserts that efforts to secure the compliance of target populations are likely to be inadequate without an alliance between health professionals and communities to identify and address mutually comprehensible objectives that are perceived locally as meaningful and relevant. An appreciation of local cultural models and the diversity of cultural contexts enables health professionals to (i) recognize the significance of local perceptions of childhood immunizations and vaccine preventable diseases with respect to pertinent outcomes and perceived needs, (ii) develop ways to introduce recommendations that communities will accept, and (3) make appropriate use of existing community resources representing local traditions. According to Global Alert (2006) the concept of social mobilization can be summarized as meaning: an uninformed, misinformed parent or care giver will have to undergo various changes as it develops into one that is informed, educated and advanced; these modifications will allow communication to be effective in fusing divergent groups together to accept the global methods of reducing unnecessary death among children due to vaccine preventable diseases. It stated further that SM means engaging people's participation in achieving development goal based on self reliant efforts and participatory

approach. This involves all relevant segments of the society: decision and policy makers, opinion leaders, bureaucrats and technocrats, professional groups, religious associations, commerce and industry, communities and individuals. It is a planned decentralized process to facilitate change for development through a range of players engaged in interrelated and complementary efforts.

2.3.1 Social Mobilization Model

Social mobilization can be modeled with programs to reach community members and increase their awareness of uptake of childhood immunization. Community members then communicate about childhood immunization, arriving at a consensus level of awareness. It is assumed that increased awareness decreases: (1) the delay in follow up visits to obtain immunization as scheduled (2) the delay between initial dose and completion of immunization. Homer & Hirsch (2006)

2.3.2 Application of theory of social mobilization

It is assumed that literate, urbanized, gainfully employed parents are more receptive to various social mobilization strategies and mass information than those who do not have all the above stated qualities. Furthermore, that some underlying indices; age, urban population; occupations; education; income; other factors may influence use of information, knowledge and attitude of parents towards social mobilization and uptake of childhood immunization.

2.3.3 Social mobilization: Models of factors and issues associated with uptake of immunization

Health care factors (supply of immunization services) bring trust, increase awareness and knowledge on uptake of immunization. Loop R1 shows increase in health centre attendance attracting more financial and logistical support. Increase support results in well maintained equipment, availability of vaccines motivation of health workers results in improved health

services delivery (reduce waiting time for mothers, more time to explain immunization issues to mothers, reliability of immunization services, health workers attitudes) in turn increase health center attendance. Loop R2 shows that the more parents attend health centers the more knowledge acquired through educational activities carried during contacts and immunization session.

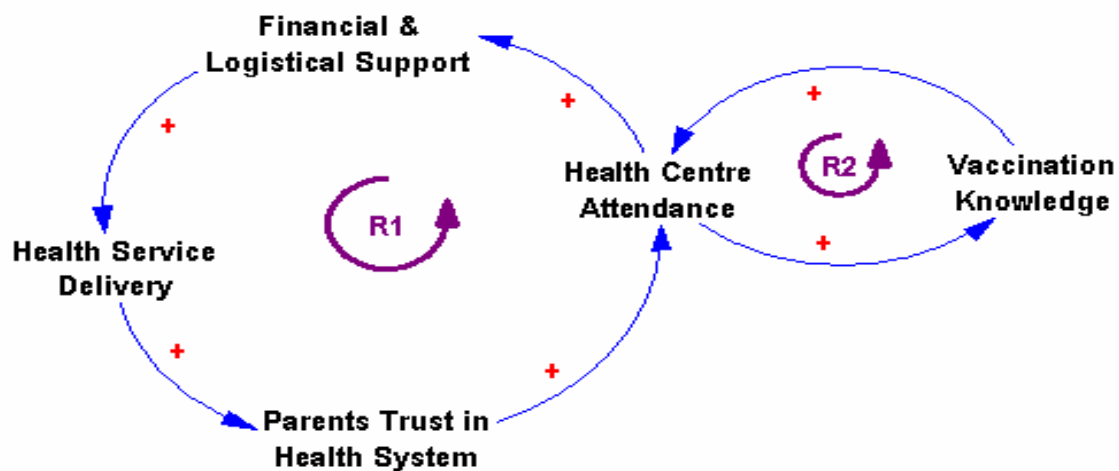


Figure 1: Influence diagram showing healthcare factors
Source: Homer & Hirsch (2006)

Hamilton et al. (2004) asserted that implication of social mobilization strategies in several African countries and in particular Mogadishu, Maputo and Dakar a noticeable leap was observed in immunization coverage rates which rose from about 20 percent to 70 percent within a few years following significant contribution and influence on uptake of immunization. Oche & Umar et al, (2011) opined that social mobilization projects for the adoption of immunization promised quick and tangible results from selected measures rather than the lengthy and

cumbersome process of setting up structures to provide people all over the country with comprehensive primary health care services.

Education and communication are inseparable processes. In that sense social mobilization is a form of educational communication not only about transmitting information and messages, but about educating and forming the citizen through processes that are systematically organized to influence the change in attitudes, values, practices and behavior. Anvaccineaeto, (2010) stated that the strategic framework of social mobilization is broad and encompassing. He explained further that the whole process took account of the felt needs of the people, embraced the principle of community involvement, allocate resources mobilized to, disseminate information tailored to targeted audiences, generating inter-sectoral support and fostering cross-professional alliances. It is a communication strategy interpreted broadly to include more than spoken and written messages (such as exchanges of mail, use handbills', posters, diplomatic correspondence, newspapers, and listening to radio and television broadcasts). Strategies must continue to address barriers such as access to healthcare and provider factors. This means that in most situations if service delivery is of good quality and outreach to the population is active, effective communication will assist in raising awareness, creating and sustaining demand, and encouraging acceptance and uptake of immunization.

According to Anand & Barning Hansen, (2004) the term social mobilization denotes advocacy, engagement of traditional media, and involvement of key political and religious leaders which expose participating group and individuals to activities that promotes childhood immunization or any development program. Social mobilization for promoting childhood immunization has gained significant popularity and attention as an interdisciplinary study within the social sciences. Its use of face-to-face communication and interactive discussion strategy

with community members has being proven to yield increase awareness for a particular health outcome or intervention especially in the area of awareness creation for vaccine-related knowledge, attitudes and practices towards uptake of childhood immunization. A better understanding of how vaccines work and the benefits of immunization, even during period of low incidence, improve uptake and demand.

Obioha, Ajala, Matobo, (2010) propounded that high-level visibility of notable figures and their endorsement of immunization, support and proactive practical measures can be effective promotional strategies. Kim Steatfield, Masri Singarimbun, Ian Diamond, (2003) discovered a significant persuasive and engaging effect of direct personal appeals (involving face-to-face- communications) on individuals not compliant with national immunization schedules. Follow up findings indicated that direct personal contact may also be justifiable for those who are clearly identified as vaccine hesitant while information management and internal communications of health care systems will also be an effective support to personalized promotion of immunization. For example improved record keeping and tracing systems enabled healthcare providers to identify and follow up individual defaulters.

Odusanya, Alufohai, Meurice, Ahonkhai, (2008) stated that the undesirably high levels of poor uptake of childhood immunization in low-and middle income countries may be attributed partly to immunization-related knowledge, attitudes and practices of parents and care givers. In a like manner, Abdul Raheem et al (2008) posited that information deficit to parents and care givers is responsible for low coverage and poor sustenance of uptake of immunization as scheduled. The most common strategy was for public health nurses, community health workers and volunteers to liaise with community members and community organizations in the promotion of immunization in the community. Parents were encouraged by health workers to

talk about immunization in their communities. Local opinion leaders, including ward heads, imams, pastors and teachers, were also used to promote immunization locally.

Social mobilization strategies must be responsive to both epidemiological pattern and local perceptions of health illness and need. A conceptual framework must relate availability of social mobilization tools, explanatory models, immunization seeking behavior and practices to knowledge and uptake of childhood immunization. Influencing factors towards childhood immunization provides the basis for review of the study on demographic factors and social mobilization strategies for uptake of childhood immunization. The ethno medical model asserts that efforts to secure the compliance of target populations are likely to be inadequate without an alliance between health professionals and communities to identify and address mutually comprehensible objectives that are perceived locally as meaningful and relevant. An appreciation of local cultural models and the diversity of cultural contexts enables health professionals to (i) recognize the significance of local perceptions of childhood immunizations and vaccine preventable diseases with respect to pertinent outcomes and perceived needs, (ii) develop ways to introduce recommendations that communities will accept, and (3) make appropriate use of existing community resources representing local traditions.

2.3.4 Theoretical Framework

The Reach Every Ward strategy in Nigeria is been used to promote dialogue, overcome non compliance and improve immunization coverage. Engaging community helped to dispel doubts regarding safety of polio vaccine and religious objections to the vaccination during special Friday sermons (NPHCDA 2008). Opel (2008) asserted that implementation of social mobilization strategies is cost effectiveness in addressing broader determinants of health, risk factors, building trust, commitment and fostering community participation and empowerment

towards implementation of childhood immunization programs. He recommended mobilizing for behavioral change to counter rumors about health services (immunizations, family planning, and screening tests) which are often inhibited by health seeking behaviors and utilization of services. Poor communication can contribute to rejection of immunization and vaccinations or dissatisfaction with care. The advent of the immunization Plus Strategy in 2006 was designed to place additional importance on communication for reaching households through appropriate channels with relevant messages prior to and during child health activities. According to Noar (2006) the goal of shaping parental attitudes to childhood immunization is harped on the parent's interactions with health professional and the ability of the process to address the concerns of immunization supportive parents and motivate a hesitant parent towards immunization acceptance.

2.4 Theory of Behavior and social mobilization methods

Health Belief Model (HBM)

Carpenter (2010) explained the use and relevance of the first theories of health behavior model developed in the 1950s by social psychologists Irwin, Rosenstock, Godfrey, Hochbaum, Stephen Kegeles, and Howard Leventhal at the U.S. Public Health Service to better understand predict a wide variety of health-related behaviors such as being screened for the early detection of asymptomatic diseases and receiving immunizations.

2.5 Theory of Planned Behaviour

The Theory of Planned Behavior is designed to help program to design interventions that effectively address a particular behavior as the case with promotion of uptake for childhood immunization. (Health Communication Capacity Collaborative, 2003) Further review found little evidence that the Theory of Planned Behaviour or the Health Belief Model were appropriate effective frameworks for the design of pro-immunization communication interventions. This

theory holds that individuals are more likely to intend to have healthy behaviors if they: have positive attitudes about the behaviors, believe that subjective norms are favorable towards those behaviors, and believe they are able to perform those behaviors correctly. This theory holds that outside factors and restrictions can prevent an individual from performing a behavior, even when they have an intention to do so. The implication of this is for program planners and implementers the need to study the beliefs that control the subjective norm, the intention to perform a particular behavior and the actual behavior that is traditionally performed.

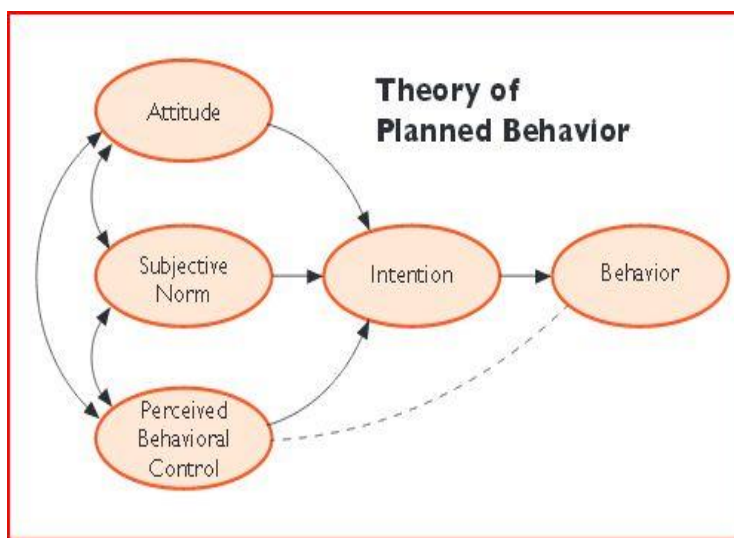


Figure 2: Schematic diagram of Theory of Planned Behavior (Croyle 2000)

Increasing individual knowledge and skills using health information, education and behavior change communication techniques has significantly achieved measurable social and behavioral outcomes among specific audience and uptake of services as reported in rural Kwara State, Nigeria. The Dietary Management of Diarrhea (DMD) Project (1988-1992), recorded positive attitudinal changes in mothers involved in the project in about 120 rural communities. Mass media components are reinforced with interpersonal communication, community outreach

and mobilization, and a number of forms of information dissemination, education and dialogue. Waisbord, Shrimp, et.al (2010)

Centre for Development and Population Activities (CEDPA) explained the theory under different nomenclature and used “health promotion” to denote its holistic approach to health education in successful immunization and oral rehydration work. The solid achievements of the universal child immunization and control of diarrhea disease programs of the 80s benefitted significantly from social mobilization and was aptly reported that odds were mitigated and goals which were thought unattainable were realized. Those engaged in family planning, nutrition and child survival projects have practiced social mobilization and development communication. Social mobilization is a promising approach that is attracting use of marketing techniques with varying degrees of success in what is generally referred to as Information, Education and Communication. The facilitation of immunization uptake and promotional communications is a very important strategy that takes place between health care providers, individuals, groups and communities using all varieties of mobilization tools and methods (CEDPA, 2008).

Among underlying assumptions of social mobilization theory is that the process engages in dialogue and partnership with wide spectrum of the society at the policy level. The basis of social mobilization is to promote participation and a collective decision, which is critical to empowering the communities to act at the grassroots levels. (HCP, 2003) The outcome will encourage active involvement in achieving developmental objectives and evaluation effort.

According to NPHCDA, behavior change is contingent upon perceived personal benefits, societal norms and influence; and other attitudinal factors that emerge from engaged reflection. Access to services has also been found as crucial to ensure that people who want them can get them. Services should be easily accessible and staff well trained to keep parents attracted to

immunization services as telling people what to do or where to access the services become meaningless in the absence of service (NDHS, 2008). Ankrh & Nwigue (2005) observed that health professional body language during clinic or outreach interaction for uptake of immunization could hamper or promote thorough understanding and comprehension of ideas. Hence he recommended the need to speedily establish rapport and clarify parental concerns and avoiding the temptation to minimize or dismiss the worries as nothing to worry about.

Mastry (1999) propounded signposting, chunking and checking in order not to deprive the parents of vital issues during information, education, and communication encounter. Signposting is the skill of clearly indicating to the parent or patient the different phases of the consultation. Chunking and checking refers to the provision of information in small chunks followed by checking what the person understands. This technique contrasts with the common practice of providing much larger amounts of information before checking, which can lead to information overload. Instead, it is important to fully understand parents concerns and motivations using open questions and emphatic responses. Although health professionals may be reluctant to encourage questions with practice; targeted questions allow health professionals to tailor their discussions. Giving information is an integral part of the immunization encounter.

Ling (1999) enumerated the benefits of social mobilization including, information dissemination, awareness creation, motivation and mobilization in order to create demand and promote uptake of childhood immunization practices. He stated that it serves as basic avenues to appreciate the values of immunization against Vaccine Preventable Diseases (VPD). However, low uptake of childhood immunization is one of the major public health problems facing our society. Lack of information and or misinformation is a barrier to immunization. Hence, major theories of social mobilization and communication is harped on information, education and communication which usually occur in form of statistical significance of demography

characteristics, knowledge, attitude and immunization behavior of parents as measured by uptake and completion of immunization as scheduled (Jegede & Owumi, 2013).

It was observed that caregivers understand the benefit of bringing children to immunization sites clinic or outreach sites, feels that the investment in travel and time is worth the payoff, have the knowledge necessary to find the sites at the appropriate time and proceed to demand for such services on their own. It was stated further that it is critical for child caregivers to participate in the immunization of their children. This assertion was on some basic assumptions: that thrust of social mobilization strategy is to move from individual and household focused behavior to community behavior focus within the context of PHC.

Also it is assumed that those in contact with non-compliant families will adopt, maintain and promote healthy behavior practices the pockets of non compliant family will dissipate as those families will later join the bandwagon and embrace immunization. The foundation for the adoption of healthy behaviors is knowledge, awareness or basic knowledge is an essential step but in itself is not sufficient to create a change in practice or behaviors.

Bedrega (2002) expressed that belief system theories demonstrated the potential relevance of designing, developing and positioning of pro-immunization messages. Access to mass and personalized communications against perceived barriers to vaccines in individual and group settings was associated with increased uptake among parents and caregivers. Immediate immunization delivery combined with face-to-face contact to address misinformation and false beliefs were found to significantly increased vaccination uptake. The marketplace strategy and the nomadic tracking experience improved vaccination uptake among those who had previously given personal inconvenience as a reason for their non-vaccination status. Deutsch (2010) pointed out that a literate, urbanized citizen engaged in work and exposed to knowledge and information is more receptive to social mobilization and mass communication than the illiterate

ones who are not exposed or those who have one form of barrier to immunization services. He stated further that, as major new information gives place for old and psychological commitments are eroded and broken, people become more aware and available for new patterns of socialization and positive health behavior. It is assumed that literate parent or care giver living in the city and who have access to information, timely and quality services will be more interested in immunizing his or her child against vaccine preventable diseases and in that way, contributing to directing the country's destiny of promoting uptake of childhood immunization.

According to Global Alert the concept of social mobilization can be summarized as meaning: an uninformed, misinformed parent or care giver will have to undergo various changes as it develops into one that is informed, educated and advanced; these modifications will allow communication to be effective in fusing divergent groups together to accept the global methods of reducing unnecessary death among children due to vaccine preventable diseases. It stated further that SM means engaging people's participation in achieving development goal based on self reliant efforts and participatory approach. This involves all relevant segments of the society: decision and policy makers, opinion leaders, bureaucrats and technocrats, professional groups, religious associations, commerce and industry, communities and individuals. It is a planned decentralized process facilitates change for development through a range of players engaged in interrelated and complementary efforts.

Noar (2006) asserted that attempt to increase coverage must include awareness of people's attitudes and the influence of these behaviors on those parents who are in doubt about the necessity of immunization and or its efficacy to prevent infection. Incorrect knowledge on preventive role of routine immunization is widespread in Nigeria. Some parents held belief that diarrhea, fever, convulsion, and malaria are vaccine preventable disease (VPDs), while in some

other rural and urban area malaria, teething problems, vomiting, convulsion and pneumonia are listed (Slater, 1999).

Although the popularity of social mobilization continues to increase, empirical evidence on the link between its use and immunization practices of care givers has yet to show consistent signs of significance. Care givers immunization practices will invariably be affected by the quality and type of information and education exposed to. For example social mobilization activities were organized and disseminated in such a manner to ensure that parents receive a full course of immunizations in a timely, safe and effective way for their children.

2.6 Social Mobilization Patterns and Trends and Determining Factors

A great deal of concern has been expressed in recent years over the dramatic changes from mere information dissemination in the 80's through to today's complex combination and prevention approaches that blend behavioral, biomedical and structural approaches in childhood immunization. Much has been accomplished, with reducing resistance to immunization and increase in immunization coverage using social mobilization and marketing strategies. Despite these successes, more needs to be done. Social mobilization program deploy a number of methods to achieve social and behavioral outcomes.

Cultural, religious, and scientific beliefs throughout history have influenced what and how treatments are obtained for children by their parents, hence the disparities in immunization status of all eligible children between religions, countries and even between population groups within countries are not unexpected. A global picture of uptake of childhood immunization over space and time reveals a unique pattern: - the prosperous countries of the world record high immunization practice behavior e.g. Switzerland whereas in developing countries such as Nigeria, the trend is on the decline. The discernible fact about this trend is that a pattern of

decline is often followed by resurgence, with high socio-economic class taking the lead in setting the trend. This pattern was observed in Adah study in 2005. In the study, there was significant relationship between socio-economic groups selected for the study and uptake of childhood immunization. This confirms the hypothesis that population groups and hence countries pass through different phases in a sequential manner.

2.7 Factors which Determine the Social Mobilization Trends of Immunization

The current aggressive marketing of childhood immunization through multimedia public advertising campaigns which claimed that childhood immunization is safe, prevent childhood death and sicknesses has to a large extent contributed to increase uptake immunization for eligible children and has blurred the distinction between the experiences suffered from having the vaccine preventable diseases and not having it at all.

Besides, the low uptake of immunization may be considered to be a necessity forced on parents by the global socio-economic changes, such as industrialization, the need of mothers to be employed away from home, the breakdown of the supportive family structure to mention few. Thus as each population group emerges from its traditional life style, these forces begin to infringe on parents resulting in a decline in the uptake of childhood immunization (Oyefara, 2006). In a study to investigate factors limiting use of immunization services and their determinants, it was found that distant from health facilities, hours of immunization services which inadvertently coincided with official hours of public health facilities interfere with immunization uptake but more dramatically in urban settings where mothers take public employment. The immunization practices of parents have shown that a poor understanding of the types and benefits of vaccines determined the pattern and uptake of childhood immunization. In a study conducted in Ilorin by Abdul Raheem et al, to observe the immunization uptake, it was

found that 44% of mothers completed the immunization as scheduled. The reasons proffered for this was mainly lack of information.

World Education (2005) and Akande (1996) at various times also attributed low immunization coverage to low level of parental knowledge about immunization services and the poor attitude of health workers (Waisbord et al, 2010). NPHCDA also reported that maternal knowledge and understanding of benefits of vaccines and childhood immunization was positively associated with uptake of immunization. UNICEF also asserted that greater awareness and education of parents will bring them out of the orbit of low knowledge and also function to increase and sustain demand, acceptance, and utilization of immunization services. In earlier studies, Adetokunbo & Gilles (2003) had indicated that parents' decision are made in a broader context of beliefs about a child's health, personal experiences, perceived norms, and trust in health systems and professionals. Similarly, the reality of busy clinical environments can act as a disincentive for health professionals to actively set out questions and concerns. In a similar study, Myburgh, Jackson, (2004) found that low motivation depend a great deal on education, poverty, and on other circumstances and constraints of the individual mother. The study recommended therefore that health teaching and communication approaches must also vary. Good communication is part of a suite of measures needed to maintain high uptake of child immunization.

Hamilton, Corin, Gover, Rogers (2004) study found that social mobilization strategy addressed barriers such as access to healthcare and provider factors. According to Oche, Umar, Ibrahim, et al, (2011) social mobilization towards childhood immunization promised quick and tangible results from selected measures rather than the lengthy and cumbersome process of setting up structures to provide people all over the country with comprehensive primary health care services. This means that in most situations if service delivery is of good quality and

outreach to the population is active, effective communication will assist in raising awareness, creating and sustaining demand, and encouraging acceptance and uptake of immunization.

World health Assembly reiterated that knowledge empowers people towards actions which can transform lives and allows for a great sense of independence. Sharply, however, Mchombu (2014) argued that one cannot have knowledge unless one gets information. He stated further that information equips a person with power, the power to choose and to act in an informed manner. Immunization practice is not solely associated with knowledge of mother, it connotes therefore that improved knowledge and community participation has the potential to create positive attitudinal and behavioral change if culturally appropriate community educators and influencers are used. And according to World Education (INGO) Philippines changes in popular beliefs, values and practices of the people may subsequently come about as a consequent result of effective information and message dissemination.

Among all the child survival interventions, immunization has generally had the greatest success thus far. Six out of 10 children worldwide are now fully vaccinated by their first birthday; it becomes increasingly important to focus attention on understanding behavior of community members whose children have not yet been fully immunized. Even when vaccination services are accessible, and even free, many mothers and child caretakers do not respond.

In a more comprehensive attempt therefore, Akinpelu (2010) outlined social mobilization as innovative approach to health education which includes music and drama as a means of promoting and projecting health messages. Its impact in developing countries attracted significant attention and it is also argued to have stirred a good critical thinking on operational and ethical issues during the last decade. (Saji, 2013) Mothers' education and regular watching of television had a significant influence on the minority group and those living in rural areas and

in Indonesia, coverage increased by 55% after schoolchildren were targeted to take messages about immunization back to their parents (Babalola, 2004).

CEDPA observed that the key to effective social mobilization is to use its four components in various ways to lead to action. Components of social mobilization: community mobilization, advocacy, behavior change communication, and social marketing. Al- ela (2011) reported that 40% of mothers were prompted by immunization promotion activities to seek immunization for their children and the Philippines; a mass communication campaign the number of fully vaccinated children increased from 54% before the campaign to 65% after the campaign. There is substantial evidence that the campaign increased knowledge and that knowledge was related to uptake of immunization services (Hariweni, 2004). In essence, it is, the man that is mobilized at the end, not the money or material used, which are tools in the process of mobilization.

Mobilization means to assemble men and materials in preparation for action or a purpose: When community is mobilized, it is ready to attack social problems at any time. Social mobilization is a process of motivating communities to organize in a cohesive group for an active participation towards their own development mobilization refers to the process of forming crowds, groups associations and organizations for the pursuit of collective goal. (Chandri, Khan, Hussain, et al., 2014).

The pragmatic approaches to educating parents include use of interpersonal communication, media engagement, community dialogue, use of formal and informal leaders, school teachers and a host of others to stimulate and generate discussions that would help to motivate and improve uptake of health services that will make difference in people's life. That of course assumes that the information disseminated is appropriate, effective and capable of

motivating the public to access health services how, when and where they can receive immunizations for their children (Perloff, 2008).

Care providers must be equipped with enough knowledge of cultural practices so as to be able to provide knowledgeable health guidance that does not impede care givers utilization of services. Appropriate language proficiency by health workers is a vital cultural characteristic that may promote uptake of childhood immunizations. The health care workers support may be needed to challenge lack of assertiveness of women in deciding unilaterally to access childhood immunization without the authority of the husband or the in laws (WHO 2005).

Rolinik, Butler *et al* (2010) classified some parents who may be in the action and maintenance stage as cautious and unquestioning acceptors and those contemplating or even preparing to immunize as hesitant parents. Those who are willing may contemplate full uptake of immunization if guided by a health professional. Lora Shrimp observed that poverty and other socio economic reasons were barriers that hindered people to go beyond their traditional thinking and understanding. Vaccine rejections are usually in the pre-contemplation stage where they are not considering vaccinating at all. It is unrealistic to expect such parents to move to the action stage at one visit. Parents cannot go beyond what they know and do daily

According to Lundal, Nurke, (2009) health professionals were advised to avoid mismatch between parent's expectations and needs and their own assumptions. For example a hesitant father may be planning only to obtain information but feels he is being pressured to vaccinate. The cost may be loss of his trust and subsequent unwillingness to return. Similarly a refusing mother might be approached by a health professional that is intent on changing her mind. The overwhelming righting reflex is the natural response of health professionals to instinctively 'put right' health care problems rather than finding out patients' concerns or points of view. It may

lead to an adversarial position and further entrench the parent's views, closing the door to any future possible gains (Lankester Khanom, Salahuddin, 2009). In this situation a better goal would be to build a rapport that may lead to willingness for further discussion or partial immunization.

Communication strategies to date have lacked clear evidence of efficacy. A framework for talking with parents about immunization is informed by evidence and acceptable to the health professionals. Good communication is part of a suite of measures needed to maintain high uptake of child immunization. Strategies must also continue to address barriers such as access to healthcare and provider factors (Ward, Chow, King, Leask, 2012). Nevertheless, there is an urgent need to build an evidence base which informs vaccine communication, given that the parent-provider interaction remains integral to maintaining public confidence in vaccination. (Ruijter, 2001)

Health Communication Partnership 2003 observed that women were too reluctant and mindful of the consequences both financial of domestic violence for confronting the authority of the husband. Dependency on the husband for financial support will complicate access not only to childhood immunization but to other health issues concerning the mother and the child especially reproductive health services. Childhood immunization was perceived by some as not necessary as they believe that God does everything and that their ancient parents were using herbs, sacrifices to appease God and concoction as the best method to avert the preventable childhood diseases often described as western diseases (Health Communication Partnership 2003).

Financial problems often faced by women, user charges and sundry charges at the health centers may impede the ability to pay for services for childhood immunization. Unemployment and full housewife syndrome brings about delay in seeking immunization for children. These may account for the high incidence of incomplete immunizations status and defaulters rate

(UNICEF 1999). According to Hamilton, Corin, Gover, Rogers (2004) the women do not have equal opportunity in education, and income. Most women have reasons for not attending scheduled immunizations, lack of time, was reported as a reason and as barrier to uptake of childhood immunization. The time needed to take care of older children at home and prepare other domestic chores accounted for poor access of services. Employed care givers equally reported and described ordeals of securing time at paid work as employers are not supportive. The embarrassment at work accounts for defaults and to avoid shame of being scolded by health workers after a period of default mothers would discontinue with the immunization schedule.

Media presenting information should realize that people of higher socioeconomic status get their information in different way than lower educated people. According to Paterson, Gertrude, (2005) accurate truthful and timely information replaces gossip and rumor and eases anxiety. Failures resulted partly from the application of inappropriate communication strategies and the adoption of wrong development paradigms in the Third World. These paradigms, based on system specific theoretical assumptions and over-emphasis on mass media technology have widely been questioned, even by their very architects. Though, poverty and illiteracy affect information utilization, books, pamphlets, periodicals, films and other library materials which are indispensable tools to all levels of education from training in literacy to University education and continuing adult education (Paterson, Gertrude, 2005).

This observation is important for African women, who, with their young children, were the main target groups for the immunization program. It was understood from earlier studies, that women did not understand what they were being immunized against and why that was important. According to evaluation studies from Zambia, Angola and Mozambique, focusing primarily on knowledge aspects, levels of knowledge and awareness about immunization are significantly lower than adoption rates.

The social mobilization tradition thus shows the KAP gap in a reversed form. Instead of high knowledge and low practice, we now find high practice and low knowledge. This should not be surprising altogether since the immunization coverage has often been boosted as a result of short campaigns. The mass media limited themselves mostly to motivating people to visit the health centers: announcing the dates and places where one could be vaccinated rather than explaining the why and what.

2.8 Influence of Socio-Demographic Factors and Social Mobilization

Some demographic factors have been identified to influence uptake of childhood immunization with the following characteristics. Religious beliefs, high educational level, proximity to health facilities, mothers whose attitudes towards childhood immunization is positive, age, sex, economic class, marital status, family size or number of children, language/dialect, occupation, membership of organizations, media habits and parents geographic locations. Al-Lela et al., 2014 reported in a study that father's and mother's education level (>18 years) were found in a higher proportion within the parents with adequate knowledge-practice than other groups. Also the study reported that mother's age at delivery of 20 to 29 years had a higher percentage (60.5%) of adequate Knowledge and immunization practices than other groups. Families who had two or three preschool children were found in a higher proportion within the parents with adequate and inadequate knowledge-practice than other groups.

Tichenor et al, in the 70s reported that there is strong peer group influence on mothers to attend and access immunization or not to. According to the study, some care givers will follow advice of friends and family members who shared previous experiences or who are totally intelligible about immunization. This finding is pertinent to ineffective communication and indeed a knowledge gap. It may be reasonably concluded that increase in information in society

is not evenly acquired by every society people. Those with higher socio-economic status tend to have better ability to acquire information. This leads to a division of two groups, a group of better educated people who know more about more things and those with low education who know less. Low socio-economic status (SES) people defined partly by educational level, have little or no knowledge about public affairs issues are disconnected from news, events and important new discoveries and usually aren't concerned about their lack of knowledge (Hariweni, 2004). The experts expanded further to state five reasons justifying the knowledge gap as people of higher socio economic status have better communication skills, education, reading, comprehending and remembering information; people of higher socioeconomic status can store information more easily or remember the topic forming background knowledge; people of higher socioeconomic status might have a more relevant social context; people of higher socioeconomic status are better in selective exposure, acceptance and retention; the nature of the mass media itself is that it is geared toward persons of higher socio-economic status.

2.9 Education of Parents and Uptake of Childhood Immunization

Akande emphasized that uptake of childhood immunization by parents could be determined and influenced by parental education. Parental education is significant and a major background characteristic in social mobilization and uptake of childhood immunization. Hariweni, et al (2004) indicated that mothers with higher educational level occupied upper socioeconomic class as such find it easy to obtain knowledge from many sources the press, books, television, radio and internet. Higher educated parents are more likely to carry a position of privilege that commands respect from health care providers and enable families to better utilize the medical system. Education raises a mother's status and enables a more self confident interpersonal style that smoothes interactions with the medical care system. (Magadi, 2002;

Mba, 2006; Oyefala 2011) also found out that education was single most important factor explaining differentials in child health outcomes. Owais, et al. (2011) expressed that parents with incomplete knowledge about immunization doses and timing may be less likely to fully complete her child's immunization. Parental education enhances their earnings capacity and improved standard of living. A better educated family tends to seek better health care and have improved survival rate. Adequate knowledge and information seem to generate demand for childhood immunization and desire to keep the home based child's health card. Educated parents have broader social networks that provide knowledge of good health behaviors and where to find good medical care. They also participate in more often in local organization that broadens their social contacts that make medical services more accessible.

2.10 Employment of Parent and Uptake of Childhood Immunization

Wang, et al (2007) and Al-Lela et al. (2012) stated that childhood immunization practices were significantly influenced by employment status. The economic status of families was found to have a strong association with immunization knowledge, attitudes and practices of parents. Families with income ≤ 400 US\$ are more common within the group with inadequate knowledge and practice than other groups, whereas families with income between 401 and 1000 US\$ were more frequent (40.7%) in parents with adequate knowledge practice than other groups. Fathers were represented more often within adequate knowledge-practice, whereas mothers were represented more often within inadequate knowledge-practice. In addition, Zhang, et al., 1999 found that health insurance and the frequency of watching TV or listening to the radio have a strong relationship with immunization knowledge, attitudes and practices of parents. Maintaining high vaccine uptake rates is an essential component of the success of any vaccination programme and in improving the health status of children.

It is therefore imperative that more open discussion and dialogue is implemented to reduce information gap among various group and for parents and women, it is important that timely and more vigorous health education in child survival units and at community level be employed using a combination of interpersonal and mass media communication strategies in order to establish the correct understanding of the importance of childhood immunization and social mobilization for sustenance of global coverage target of 90% and above. The place types, social mobilization approaches and mode of delivery have also been found to have a statistically significant influence on the uptake of childhood immunization, urban residence, high income, and other socio-demographic factors which determine the pattern of childhood immunization.

2.11 Knowledge and Use of Social Mobilization Strategies for Uptake Immunization Practices

One of the most relevant studies to social mobilization and immunization was the study by Pande & Yazbeck (2003) which found that poor utilization of immunization services and low immunization coverage for all antigens is failure of the demand and supply sides. From the assertion of these scholars, uptake of childhood immunization is hampered by some underlying factors. Similarly most of the international studies of knowledge of social mobilization strategies to uptake of social mobilization were commonly cited.

In Purken, Barman, Mahanta et al. (2009) study knowledge gap about the benefits of immunization was identified and possibly due to lack of immunization campaigns; families not being adequately informed; failure of the health worker to arrive on time or be regular and inadequate supplies as some of the factors responsible for the failure of demand and utilization of immunization services and system deficit. Ruhul, Telma et al. (2013) believed that the main

reasons for low vaccination rates included caregivers' knowledge, attitudes, and perceptions as well as barriers at immunization service sites. Other important factors observed by this study were access to services and information, particularly in the city periphery, health workers' attitudes and practices, caregivers' fears of side effects, conflicting priorities, large family size, and lack of support from husbands and paternal grandmothers, and seasonal migration.

The evaluation study of Porter et al. (2000) highlighted significant influence of campaign intervention and activities on knowledge of people who had second or third doses of the vaccination during an intervention period. The study reported that those who were immunized were significantly more likely to have been exposed to the campaign (TV news reports and radio news reports) than those who did not have second or third doses of the vaccination during the intervention period. This study seems to affirm that those immunized were significantly more likely to have been told by a doctor or nurse about the need to be immunized. Nuttall (2006) tested effect of health professional visit on promotion of uptake of influenza immunization on those who were not immunized during previous immunization campaign and did not discover difference in immunization uptake between the study groups as not significant suggesting that the older participants may be more responsive to a 'more personal approach' than the younger age group.

There is substantial evidence to support use of social mobilization strategies, Jackson et al 2010 in an evaluation study on use of 'aid format' to help inform parental decision-making on uptake of immunization observed wide acceptability of the decision aid format. The majority of the parents (88.2%) expressed positive views about the format and content of the decision aid. The majority of parents reported vaccinating their child with MMR (first or second dose) at three months post-intervention. Perez-Cuevas et al., (1999) Mexico research study observed significant influence of social mobilization on mothers' knowledge, mother's comprehension and

40% of mothers reported that they were prompted by immunization promotion activities to seek immunization for their children. In the Philippines, a mass communication campaign providing information about details of the time, place and age of routine measles vaccination was successfully implemented. The number of fully vaccinated children increased from 54% before the campaign to 65% after the campaign.

The interview study of Corrigan 2006 assessed the effectiveness of European Immunization Week (EIW) and found increased vaccination coverage by drawing attention to increase awareness of the importance of every child's need and right to be protected from vaccine preventable diseases. The study further revealed that knowledge or comprehension of key communication messages as correlates of increased awareness of immunization as a means of preventing infectious disease and noted increase from 43.2% before EIW to 57.5% after EIW in evaluation of participants. The proportion of participants that did not know why they needed to be immunized increased from 12.5% before EIW to 18.8% after EIW and 89.9% of participants were aware that rubella immunization protects from rubella after EIW compared to 82.5% before EIW. 37.6% of participants were aware that rubella vaccination protects their future children from congenital rubella syndrome after EIW compared to 32.9% before EIW. The use of internet as source of information has been reported to have brought about confusion and misinformation about vaccine safety. Bonnie Rochman, (2013)

In Nigeria, childhood immunization services is provided free of charge in most public health institution, however, the travel costs along with waiting and opportunity cost can be high, particularly when it comes to family residing far from the immunization sites, or geographically disadvantage locations. This finding confirms that the existing health inequity is due to lack of attention given to social determinants of health highlighted by WHO and Rio Political

declaration of 2011 along with malfunctioning of health system to provide essential health services among those in need. Commission on Social Determinant of Health (2008)

However, the current aggressive social mobilization for promotion of uptake of childhood immunization through public campaign, media channels (Radio and Television), house to house visit by Health Care Workers (HCWs), engagement of local and informal leaders, use of traditional media communication (town criers or announcers) claim that immunization is safe, prevents children against childhood illnesses and deaths, economical and free; has to a large extent contributed to the decline in immunization refusals and also created demand for uptake of childhood immunizations in developing countries. As shown in previous studies, good immunization coverage has been achieved by the efforts of a robust social mobilization approach, mother's knowledge and the provision of immunization information. Bradley, IGLAS (2005).

Heather Ames, Diangha Mabel Njang, et al (2015) observed that most social mobilization and communication interventions for uptake of childhood immunization focus on national campaigns against polio rather than routine immunization. The study also stated that such trend target communities more broadly, rather than parents. Al-Lela et al., (2014) described majority of the communication interventions as efforts aimed to inform or educate or remind or recall members of the community about vaccination. By far the most commonly used and reported by a study in Cameroon include mass media, social mobilizers (community members trained to deliver health promotion) and announcements at community focal points such as churches, community-based organizations, schools and the houses of local or community leaders. Town criers or announcers with loud speakers were specifically use for purpose of vaccination communication interventions to inform or educate.

NPHCDA developed and instructed states and local government health authorities to combine and target high and low profile personalities, parents, community leaders. The majority of these were geared towards communities. The focus was on informing people about the dates, locations, target ages and reasons for the upcoming campaigns. In both urban and rural settings, this was done. In addition, the local government health officials used SMS-technology to inform the general population about routine vaccination. Also, wife of President and other key influential people were tagged ‘Ambassador of immunization’ to advertise in television with the goal to help inform and educate the public about immunization.

In addition, parents were targeted at the clinics or at their home during door-to-door campaigns. However, the door-to-door campaigns can also be seen to target communities as every house was approached, not just those with children. Houses with no children were given minimal information and the team moved on quickly to the next house. At clinics, parents were usually given a health talk before the immunization sessions. These health talks typically included information about the immunization their child would receive that day and when to return for their next immunization appointment. Sometimes the health care workers would sing songs about immunization during health talks. Another strategy targeting parents was the immunization card received and filled in at their child’s first routine immunization. Although the amount of information in the vaccination cards is limited, parents noted that they saw them as an important source of information (NPHCDA 2008) The Agency’s handbook provide caregivers with more in - depth information about topics such as vaccination, nutrition, breast-feeding and injury prevention using both text and pictorial instructions.

2.12 Attitudes towards Social Mobilization

Bonnie Rochman, (2013) argued that influence of non-compliant parents’ networks was significant in predicting what parents decide to do than any other factor, including parents’ own

opinions for childhood immunization. He noted that the effect was overwhelming, particularly for parents whose network mostly recommended not following immunization guidelines; they were more than 1,500 times more likely to not adhere to vaccination schedules for their children than other parents. Even parents whose networks were more compliant about following immunization schedules (comprising 26% to 50% of people who advised against the guidelines) were 31 times more likely to not vaccinate as recommended. The above view was validated by Brunson 2013 who stated that “Parents’ people networks matter,” He asserted that having those conversations with sister, with parent, with or friends about childhood immunization matter a lot.

Parents who didn’t follow vaccination advice were also more likely to have extensive “source networks” troves of books, websites and magazine articles they turned to for vaccine-related information. On average, 59% of non-compliant’ sources recommend ignoring CDC guidelines compared with 20% of conformers’ sources. Arthur et al (2001) discovered that home visits to carry out a general health assessment, and vaccinate against flu and other health assessment have been found to have changed minds of parents. The study also compared uptake in those patients who received a nurse visit with those who did not. Patients who received the nurse visit were four times more likely to be vaccinated against influenza (subsequent to the health assessment offer) than those who did not (OR 4.1, 95% CI 1.7-9.9, $p < 0.001$), after controlling for age and vaccination status for the previous winter.

Overall, these studies indicate that parents are differently inclined towards particular social mobilization strategies than another. Some studies also found that there are different sources and most preferred source of information to sustain continuous utilization of immunization services by parents. Other indications are that parents do not have a habit of using same source for seeking information on immunization of children.

Waisbord & Larson (2005) citing (Bond et al. 1998; Bukenya & Freeman 1991; Eng et al. 1991; Harmanci et al. 2003; Khanom & Salahuddin 1983) reported that knowledge gaps underlie low compliance with vaccination schedules. Caregivers are less likely to complete immunization schedules if they are poorly informed about the need for immunization, logistics (time, date, and place of vaccination), and the appropriate series of vaccines to be followed. Although knowledge per se is insufficient to create demand, poor knowledge about the need for vaccination and when the next vaccination is due is a good predictor of poor compliance. More specifically Bhattacharyya et al. (1994) study in Burkina Faso in the early 1990s showed that mothers who had been exposed to a variety of interpersonal and media messages were more likely to know the requirements to complete vaccination schedule and know the dates for specific vaccines than mothers in the control group. Earlier intervention study in Ethiopia found that “reminder/prompt” materials reduced dropout rates compared to the control group (Berhane & Pickering 1993).

Hutchinson and others also described the 'Smiling Sun' multi-media campaign in Bangladesh between 2001 and 2003. A 26-episode television drama series featured recognizable local actors and intertwined drama and themes related to maternal and child health, family planning and communicable disease control (including vaccination). Episodes were followed by discussion and quizzes with prizes. The campaign included TV and radio promotions, posters, billboards, advertisements in newspapers and local publicity activities. At the community and clinic levels there were group meetings, rallies and loudspeaker announcements with campaign logos widely displayed. Two household surveys in 2001 and 2003 examined three outcomes: antenatal care, DPT3 and measles vaccination in children 12-35 months.

About one half of the respondents recalled seeing 'Smiling Sun' messages and, in the unadjusted analyses, this exposure was strongly associated with use of health services. Mothers recalling the campaign were more likely than those who did not to report DPT3 vaccination (64% versus 48%) and measles vaccination (79% versus 61%). The authors recognized that better off mothers were more in touch with the media and more likely to access health services.

Cutts (1988) and others reported on door-to-door canvassing for a vaccination program intended to accelerate the expanded program on vaccination in Mozambique. The initiative sought to increase uptake of vaccination services through three household visits by volunteers from grassroots organizations. Door-to-door canvassing established a 'census' of children and mothers requiring vaccination. They reported increased measles vaccination coverage between 1% and 31% in different towns that applied the scheme.

Tulchinsky and his colleagues (1997) tested 'village-resource rooms' to provide a variety of preventive-oriented services (information about well baby visits and mass vaccination programs) in Hebrun, West Bank. The staff also carried out general health education activities in the community, aimed at improving the knowledge of new mothers. The intervention did *not* increase the vaccination uptake although they claimed the project met other goals: better access to and utilization of preventive health services. They do not provide costing data.

Community health providers followed 6-week-old to 23-month-old children who visited vaccination centers to determine whether reminder stickers applied to the inside of their home front door would reduce immunization dropout rates. The health workers gave a circular sticker with a picture of a child receiving a vaccination and an appointment date to one group of mothers. The immunization dropout rate of children whose mothers received a reminder sticker was 55 percent lower than that of the control group (7.3 percent vs. 13.3 percent; p.01).

BASICS, WHO, and UNICEF 1999 study concluded that door-to-door canvassing and strategic “miking” (the use of itinerant megaphones) accounted for increased vaccination coverage in peri-urban and rural areas in Mozambique (BASICS, WHO, and UNICEF 1999).

Because health workers tend to be among the most influential source of information in vaccination behavior, effective interpersonal communication between health providers and caregivers is critical. Specific behaviors by health care providers such as rudeness and insensitivity deter caregivers. This has been found to account for incomplete immunization of young children. When care givers feel disparaged they become less motivated to return to health posts to complete the immunization as scheduled.

A media project was credited for a significant change in knowledge about the immunization schedule in Ecuador in the late 1980s. The proportion of respondents with correct knowledge went from 65 percent in November 1985 to 91 percent in April 1987. During that period, measles immunization coverage among 12 month-olds increased from 15 percent to 35 percent (HEALTHCOM, 1992).

According to Porter et al. (2000) social mobilization provided significant support to diphtheria immunization programs in Russia in the mid-1990s, following outbreaks after a significant drop in DTP coverage. After two months, various media were cited by one-third of Novgorod’s vaccinated population as one of the means through which they learned about the need for additional doses of diphtheria vaccine. In Voronezh, higher exposure to media messages correlated with higher coverage rates for the same communication intervention period.

In India, exposure to television and radio spots featuring a popular film celebrity influenced caregivers’ decision to go to vaccination booths during the polio immunization campaigns in 2003 (Waisbord 2003). In the Philippines, a media campaign was credited for

increasing knowledge about measles and other vaccines in 1990. Good access to well-developed media system also contributed to positive changes in knowledge and increased participation in services. During the period of the communication interventions, the percentage of fully vaccinated children increased from 54 percent to 65 percent. Similar increases were observed in the percentage of children ages 2-8 months with at least four vaccines and the percentage of children ages 9-11 months who had all vaccinations (Zimicki, et al. 1994).

Communication with religious and political leaders is crucial to increase acceptance of immunization (UNICEF 2004a). For example, it has been credited with increasing the acceptance of immunization campaigns in India (Das & Das 2003; Verma et al. 2004). Also Shrimp 2004 emphasized that combination of communication interventions that included advocacy with leaders, community involvement with service delivery and child tracking, and media partnerships at various levels were responsible for dropout reduction and immunization coverage above the national average in two provinces in Madagascar in 2003.

2.13 Information Seeking Behavior

NPHCDA considers the channels of information available to parents and care givers as both formal and informal. The formal channels include radio and television, local Government health authorities, information office, agricultural extension workers, primary health care workers. The informal channels on the other hand constitute Village or Ward Heads, the School Headmaster, The Imams (Religious Leaders) and other elite group in the community. Friends and relatives, market women, as well as Non-Governmental Organizations (NGOs).

NPHCDA reported significant benefits in peering traditional and mass media institutions with support from the National Social Mobilization Working Group and State/LLA Social Mobilization Committee. The concept suggested development and use of national guidelines for

use by key stakeholders such as the Forum of Traditional and religious Leaders, Media and Professional Associations as tool for public advocacy. The strategy described as proactive, continuous, collaborative and cooperative factors in both local and international media as stakeholders, channels and audiences. The use of this community based interactive channels may facilitate and promote understanding of health issues and behavior change. However, it is pertinent to identify trained locally, relevant traditional media practitioners to disseminate appropriate messages on immunization and PHC program. The existing ward health model using Ward Development Committees, Local and State and Social mobilization Committees and other stakeholders have been recommended to partner with these channels. At each level of health care multiple channels exist for effective health promotion, improving knowledge, guiding and encouraging attitude leading to informed decisions and positive health actions (NPHCDA, 2008)

Informal community based interactive channels is often used to generate, disseminate and promote understanding of health issues and behavior change. Ward Development Committees, Local and State Social mobilization Committees and other stakeholders at each level of health care and use of multiple channels have been suggested for effective health promotion, improving knowledge, guiding and encouraging attitude leading to informed decisions and positive health actions.

In the view of Mommoh (2002) information seeking behavior of rural women is mainly informal because “those sources to them are more reliable and authentic.” This is in conformity with the ‘Principle of Least Effort’ in human behavior. Zip (1949). The women align more to information gotten from friends, relatives, husbands, sons and daughters, and market women. According to Adamu & Lasisi, (2011) the rural woman hardly seeks information in a formal way

through formal sources or channels. Watching television or listening to radio where available, is seen as luxury only

House level may engage with family meeting, folklore, songs, rhymes, peer group discussions and counseling. Traditional birth attendants and volunteer village health workers may lead discussions, mobile women house to house traders (Dillaliya in the north; Alajapa in the S/West). At community level, mothers club, praise singers, peer group counseling, association meetings, dramas, cooperative thrift societies, church groups and societies, the Islamic societies, Forum of Islamic Women societies, mobile vendors, mobile theater for development, social gatherings such as naming, marriage, and burial ceremonies, religious sermons and activities. Pitrow et al (1997) observed positive result in use of community based activities, age group association; cultural groups market women association meetings, trade associations and village square meeting to increase family planning acceptors. The Mass media are important channels for influencing the thoughts, feelings and behaviors of the people. Many Nigerians tend to rely on the mass media for information on issues that affect their well being. Thus the available media outlets like the radio, television, newspapers and magazines have been extensively used in other developmental health programs for example, family planning and HIV control.

Patience Cofie et al (2012) reported relationship between awareness and enrolment in community based health scheme to be statistically significant. Community leaders heard about the community health initiative through participation in advocacy seminar, radio discussions, and congregational announcements in mosques and churches and at the formal launch of the scheme. The study also reported positive association between educational status and level of knowledge and between educational status and participation in the community health scheme. Furthermore,

involvement of community heads and religious leaders was found to be vital in the scheme promotion strategy. Radio discussions was reported by the study to be the most preferred channel through which most of the population heard about the scheme, which in their opinion, helped the campaign to gain prominence and facilitate the achievement of better communication outcomes. This finding therefore explains that radio discussion can possibly give a clear understanding of any program including childhood immunization because of its coverage and possibility to generate discussion and built trust among audience and such discussions on radio can be useful; making everyone to understand.

The use of information vans and posters has been found to have very little appeal to the parents in their decision to immunize their children. Though considered as awareness creation tools, the mobile van, in particular, was perceived as a tool for propaganda used by politicians and therefore not ideal for improving people's understanding on an important issue such as the health scheme. A head of an NGO as reported Patience Cofie et al 2012 by said: ... it moves fast and makes much noise so you cannot focus on the messages, all you hear is allo, allo. Use of traditional folk media, and information put at the door steps of parents are likely to be more effective than radio as this will promote real interaction between health workers and promote follow up discussions among small group of audiences, and also motivate them to take action.

Kinavainen (1996) noted the responsibility of women as household managers. She stated that such responsibility and roles could be overwhelming as most of their time are spent doing household chores. They are responsible for food provision, improvement of food security and nutritional well being of family members; they also control income and manage the whole household resources. Some of the activities highlighted include cooking for the family, fetching water from far away rivers, cleaning the house, fetching wood from the forests and some

working in the offices to complement family income. Saito et al (1994:27), is aware of hard and tiring duties performed by women as she notes that almost exclusively women provide and prepare the family's food - a time consuming and arduous process.

The United Nations Economic Commission for Africa (1998) concurs with the above statement by Saito. It reports that women shoulder 90 % of the domestic production tasks, and they have indeed the biological and social tasks of bearing, nurturing and providing initial education for children and ensuring the well-being of the family and that of the entire society. A large number 78(71 %) of women found were married and only 26(24 %) found were single.

2.14 Knowledge, Attitudes and Practices of Social Mobilization Strategies and Uptake of Childhood Immunization

Immunization is the process of conferring increased resistance to an infectious disease by a means other than experiencing the natural infection. Typically, this involves exposure to an agent (antigen or immunogen) designed to fortify the person's immune system against that agent or similar infectious agents (active immunization). Immunization also can include providing the subject with protective antibodies developed by someone else or another organism (passive immunization). When the human immune system is exposed to a disease once, it can develop the ability to quickly respond to a subsequent infection. Therefore, by exposing an individual to an immunogen in a controlled way, the person's body will then be able to protect itself from infection later on in life (Blakemore & Jennett 2001).

Childhood immunization is an act of inducing immunity to a child by applying a vaccine that almost guarantees protection from many major diseases. Childhood vaccination is widely considered to be 'overwhelmingly good' by the scientific community (GIVS, 2005; Wright, 1995). Vaccination coverage has now reached a plateau in many developing countries, and even

where good coverage has been attained; reaching children not yet vaccinated has proved difficult (EPI, 1998).

The dynamics of vaccination uptake remain unclear; the critical questions that remain to be answered therefore include to what extent is vaccination accepted by the public in response to recommendations and pressure from health workers and community leaders?

To what extent does an informed public actively demand it? What is the level of awareness of its benefits and importance?. Previous studies have shown that uptake of vaccination services is dependent not only on provision of these services but also on other factors including demographic characteristics of parents or caregivers, knowledge and attitude (Matsumura et al., 2005; Torun & Bakirci, 2006), density of health workers (Anand & Barnighausen, 2007), accessibility to vaccination clinics, availability of safe needles and syringes and the opportunity costs (such as lost earnings or time) incurred by parents (mothers).

A survey of 1,000 parous women in rural Sheema district in southwest Uganda reported that the majority of women were able to state that childhood immunizations protect children from diseases (93.5%). Many also thought that they strengthen or improve children's health (32.8) or promote children's growth (26.3%). The most common VPDs identified were polio (81.3%) and measles (77.5%). A majority of women correctly stated how often an infant needs to be vaccinated (63.9%) or the nearest facility for vaccinations (88.9%). Up to 88% of these children received age-appropriate, on-time immunizations. The sources of information regarding immunization amongst majority of the respondents were family members and relatives (42.48%), followed by health workers such as auxiliary nurse midwives (ANMs) or Anganwadi workers (AWWs) (34.19%) and doctors (17.42%). Only 16.67% of the children whose sources of information were family members or relatives were completely immunized.

A study on assessment of parental knowledge on the vaccine preventable diseases revealed that 41.3% of mothers erroneously believed that immunization prevents HIV, while 84.6% held the same opinion for diarrhoea. Clearly, this may be due to the fact some health educators do not specifically state that not all childhood diseases are vaccine preventable, hence some mothers are left to assume that it confers an all-round protection. (Adeyinka, Oladimeji, et.al, 2008)

Another study conducted in India by Angadi et al showed that majority of the respondents (65.16%) opined that diseases could be prevented by immunization, while only 11.61% could name two or more diseases that could be prevented by the immunization schedule. No respondent could name more than three of diseases and 61.16% could not even name one. Only 34.84% of the Children were fully immunized, 62.58% were partially immunized and 2.58% were unimmunized. Forty six respondents (29.98%) were of the opinion that it was important to give all the doses in the immunization schedule, while only 18 (11.61%) knew when the doses had to be given. Among the 101 respondents who said that diseases could be prevented by immunization only, 43 children were fully immunized. Even though 46 respondents opined that it was important to give all doses of the immunization schedule, only 26 children among these were fully immunized.

Awodele et al in LUTH study found that almost all the respondents were aware of immunization and that immunization could prevent childhood sickness (93.8%; 98.1%) respectively. However, some of the respondents felt immunization will make their children brilliant (28.8%) or grow fast (10.9%). Quite high percentages of the respondents knew that immunization could prevent Poliomyelitis, Measles, Diphtheria, Tuberculosis, Yellow fever and Hepatitis respectively. Also, a large percentage of the respondents (62.6%) knew that

immunization ought to be given at a specific period, 66.5% were convinced that immunization is necessary for their children, 64.2 % of the respondents were ready to ensure their children are immunized irrespective of the cost while 65.4% of the respondents believed they can advise their fellow women to receive immunization for their children. A large percentage of the respondents (62.6%) knew that immunization ought to be given at a specific period, 66.5% were convinced that immunization is necessary for their children, 64.2 % of the respondents were ready to ensure their children are immunized irrespective of the cost while 65.4% of the respondents believed they can advise their fellow women to receive immunization for their children, forty-nine percent of the respondents agreed that children should be brought for immunization at the appointment time while 10.5% thought immunization should be taken at one's convenient time; 33.5% of the respondents did not know when their children should be brought for immunization while 7% would bring children for immunization when they had money.

Another study in Jos by Chris Otubor et al revealed that a high percentage (99.2%) of mothers reported that they have heard about immunization. About 90% also reported that they knew that vaccines are meant to prevent childhood diseases rather than cause harm to the children. This knowledge therefore accounts for the overall "good" knowledge rated among the sampled women (89.6%). Less than 60% reported for vaccination at the stipulated time and less than 3% had negative attitude towards immunization. Only 23.4% completed their immunization schedule revealing poor practice by mothers.

In Ethiopia study, 86.6% of mothers have heard information about infant immunization, and 48.2% of them have accesses of information from health professionals. Only 55.0%, 53.8%, and 84% of respondents had good knowledge, positive attitude, and good practice towards immunization of infants, respectively. Good infant immunization practice

was significantly associated with mothers who heard information about vaccination (AOR=1.784, 95% CI: 1.002, 3.176), mothers who know correctly the time when infants should begin immunization (AOR=2.240, 95% CI: 1.198, 4.192), know the number of sessions needed (AOR=1.772, 95% CI: 1.076, 2.918), know the time when infants should complete immunization (AOR=1.800, 95% CI: 1.123, 2.885) and place of delivery (AOR=23.829, 95% CI: 10.025, 56.639).

The sources of information were neighbors 16.7%, school /college 2%, health workers 62.2% and media 19%. Also, 70% of women started routine immunization of the child (Kemari town, Karachi, Pakistan study).

The immunization status of children in the rural community was significantly better than those in the urban community ($P<0.000$). Only 11.46% of the children in the rural community were not immunized, compared to 47.04% in the urban community. Another study in Zamfara reported that 84% of participants possessed poor knowledge (score of 0 - 2 points) while 16% possessed satisfactory knowledge (score of 3 - 5 points). High education level was significantly associated with satisfactory knowledge - 46% of mothers whose knowledge were satisfactory possessed high education level (secondary/post-secondary) (p-value: < 0.05) (Saidi, Patrick et al 2010).

2.15 Factors Influencing Social Mobilization and Uptake of Childhood Immunization

When mothers were asked in a study conducted in Pakistan about reasons for incomplete immunization status of their child, they reported non availability of immunization center 23.4%, busy in domestic work 32%. Non availability of health staff 34% and 10.5% reported some other reasons. when fathers were asked reasons about child immunization majority (86.6%) said that vaccination is necessary.

In Uganda study, the two most common response categories, “fearful of side effects” and “ignorance/disinterest/laziness,” were both over twice as prevalent (44% each) as the next most prevalent response. Reasons related to vaccine supply, “vaccine shortages” and “crowds or long waits,” were only mentioned by 10% of respondents.

The main reason for partial and non-immunization was found to be lack of information, with many citing a combination of both, lack of information, along with lack of motivation. Ninety seven respondents blamed it on the lack of knowledge regarding the schedule, while 8 respondents said they did not know the place and /or time of immunization. Thirteen respondents declined from bringing their children for immunization for the fear of side effects and 4 respondents were unaware of the importance of immunization. Many respondents cited feasibility problems as the reason for partial or non-immunization. Two respondents complained that the immunization centre was too far, while two others said that the time of immunization was inconvenient. Four respondents claimed that the vaccinator was absent when they had visited the centre and 2 respondents said that their children were not given immunization as they had been brought ill. Twelve respondents did not take their children for the due dose as they were ill.

In another study twenty-three percent of care givers had no knowledge regarding the immunization that their child was receiving and the disease for which the vaccination was administered. In fact, 18 percent of care givers were unsure of the relationship between immunization and the likelihood of their child contracting an infectious disease. The personal health record was not found to be useful as an educational resource. Although 99 percent of care givers had the booklet in their possession only 8 percent had referred to it as a source of information. The major sources of information were identified as child health nurses (44%) and

hospital midwives (34%). The results of this study highlight the disparity in knowledge levels among care givers with regards to immunization and the diseases they prevent and the important role of the midwife and child health nurse in disseminating information relating to immunization.

A study in Bayelsa State, South-South- Nigeria reported that most of the reasons given in the urban community for the incomplete immunization were linked to lack of motivation, and include relocation (11.34%) and the adverse rumor about childhood immunization (17.23%), while the reasons in the rural community were mostly health facility related, and included the absence of the vaccinator (20.46%) and non-availability of vaccines (26.64%).

In a study conducted in Dares Salaam, Tanzania by Mazgie et al, seventeen Key Determinants were identified with frequencies in brackets: caregivers' social status (25); caregivers' knowledge on immunization (22); access to immunization services and information (20); health workers' knowledge attitude and practice (12); social influence and support (110); quality of immunization services (10); alternative strategies for hard-to-reach populations (9); caregivers' perceptions about immunization (7); gender (7); and care givers' beliefs and attitude towards immunization (6). Overall, 62.3% of the key determinants were clients based; 29.5% were immunization system based; 8.2% were providers based.

Five factors were significantly associated with full immunization at bivariate analysis: possessing satisfactory level of knowledge on RI, possessing at least secondary education, receiving ante-natal care, having received information on RI in the 12 months preceding the study, and delivery at health facility. Of these factors, possessing satisfactory level of knowledge on RI (p-value: < 0.05) and possessing at least secondary education (p-value: < 0.05) remained as the only independent determinants of full immunization after performing logistic regression.

2.16 Social Mobilization: The Situation in Nigeria

In almost all parts of Nigeria, immunization of children was revitalized in the 80s with universal coverage above 80%. Globally vaccination is recognized as a cost effective public health measure for decreasing childhood mortality and morbidity. Hinman (1999) observed that two strategies improve the uptake of immunization include ‘supply side’ interventions, such as ensuring a constant supply of potent vaccines, strong health systems to ensure delivery of these vaccines and sufficient health personnel to administer vaccines; and ‘demand side’ components which focus on individual and household determinants of health seeking behaviors, such as building the knowledge base of individuals to utilize immunization programs to their advantage, while (Goldstein, 2015, Streefland 2001, Uddin 2009) linked the incidences of immunization resistance to parental knowledge, understanding, attitudes, beliefs, and behaviors as important examples of demand side component. Odusanya highlighted factors associated with a higher rate of immunization against all six diseases in GSK supported Health Center and found that maternal factors were more strongly associated with non completion of immunization and the most frequent was lack of awareness of the need for immunization. The study further revealed that high (87.0%) and positive level of knowledge towards uptake of childhood immunization.

Some cultural factors practices and beliefs may be responsible for some of the disparities in immunization uptake. (Ayene 2014) He observed cultural attitudes to gender, where male children are more likely to receive full immunization compared to female girls. In some parts of Nigeria, often parents were observed to be confused as to the reason why a perfectly healthy looking infant should receive an injection. Even though recent research has conclusively established that more children are not being immunized some parents still holds the perception that immunization is a means of “fertility control” (Jegede & Owumi 2014 and Monguno 2013)

study revealed the in the northern part of Nigeria rumors about immunization still go around and are relevant throughout Nigeria.

The most popular worrisome factor found in earlier study is reported fear of side effects as a reason why they did not allow their children to be immunized. The singing and dancing at immunization centers stimulate interest of nursing mothers attendance as a social event. As succinctly observed by Jegede & Owumi (2013) a visit to immunization assembly point is usually an event associated with group movement, singing and dancing and social networking, Nursing mothers engage in group visits to immunization centers as they sometimes come in company of those living in the same neighborhood or with friends. This behavior promotes compliance, since mothers tend to remind one another about the need to go for immunization, while everyone sees it as opportunity for relaxation and an outing.

The World Health Organization have stated that social mobilization is not an event whereby the stakeholders are invited to a meeting or a group discussion and decisions are take there; rather it is a continuous process of participatory service delivery analysis, information sharing, consultation, negotiation, dialogue, decision making, capacity building, monitoring and evaluation. Successively, studies revealed that there was a strong social demand and culturally grounded active demand for immunization in most part of Nigeria contrary to the earlier findings of low use of immunization services in some areas (Jegede, 1995).

It has always been known from experience that before exposure to disease, infants and other individuals must be routinely reached with potent vaccines in a safe, effective and affordable way and with adequate service quality, so that they will want to return to complete all their doses. In order to achieve this, social mobilization is a primary form of intervention in promotion of uptake of childhood immunization. The ultimate goal of sensitizing, and mobilizing

parents for immunization is to produce literate decision makers who are motivated, knowledgeable, skilled, and willing to choose to immunize their children as scheduled by the Federal Ministry of Health.

Steinglass (2013) asserted that families need information and counseling to become aware of and accept immunization services. Retaining the trust of families and communities is an old challenge that requires systematic effort to ensure the predictability and quality of services. Families need information and families must know where and when to come for immunization and to bring vaccination cards. They must be treated affably and respectfully by health workers.

The performance of social mobilization has attracted much attention because of its broad social influence. The approach, time and preference by the client are critical to the final results. To be effective, immunization education must communicate clear messages with a specific behavior-change goal for target groups (Mahmood & Yakubu 2003). Social mobilization and communication if utilized in a carefully planned and integrated strategy can be an effective tool to influence the behaviors of populations on a number of health issues, including promotion of uptake of childhood immunization. (Schiavo 2013), just *as a* multifaceted and multidisciplinary well researched and implemented strategy will reach different populations and groups to exchange health-related information, ideas in order to influence, engage, empower, and support individuals parent and public health outcomes.

According to experts experience has shown that the success of devising and implementing a social mobilization and communication plan is hinged on: (i) necessity to be proactive; (ii) communication is a two-way process; (iii) knowledge is important but not enough to change behavior and (iv) communication tools; are available and can be selected and used creatively to promote vaccine uptake. They believe that social mobilization strategy,

incorporating an appropriate selection of the available communication tools, should be an integral part of every immunization program, addressing the specific factors that promote uptake of childhood immunization among the target populations.

The Strategic Advisory Group of Experts on Immunization (SAGE) Working Group on Vaccine Hesitancy (WG) noted that poor communication can undermine vaccine acceptance in any setting. For example, in 1999, the rationale for the decision to minimize the use of thimerosal as a preservative in some vaccines in the USA was poorly communicated. As a consequence, public confidence in vaccines and the vaccine delivery system decreased, leading to increased vaccine hesitancy and refusal.

In Nigeria the polio controversies of 2003 was a setback in the drive towards polio eradication. For example, GPEI 2015 the Independent Monitoring Board on polio eradication noted deep concern about “the Global Programme’s weak grip on the communications and social mobilization that could not just neutralize communities’ negativity, but generate more genuine demand. Within the immunization program, communication is undeservedly receiving far less focus. Communications expertise is sparse throughout and needs to be strengthened” Thus, regardless of the setting, poor communication to promote uptake of immunization needs to be addressed generally, in addition to developing quality targeted communication to specifically address hesitancy and improve vaccine uptake. The WG also noted that community engagement and social mobilization have an important role in encouraging and fostering trust in vaccines and immunization and that communication is an essential tool in accomplishing this. Where and who the messages come from is significant when lack of trust is a driver of hesitancy.

Secondly, communication is a two-way process. It is in equal measure a process of listening and telling. Understanding the perspectives of the people for whom immunization services are intended, and their engagement with the issue, is as important as the information that experts want to communicate. According to Jaret 2015 and Dube 2015, knowledge is important but is not sufficient to bring about changes in health behaviors or to ensure their adoption. They speculated that basically several models describe communication and social mobilization models. Bertrand (2015) and Perblos concurred that different change models have been developed and validated, and may be appropriate in different contexts While the merits of each model can be debated, the importance of underpinning a communication strategy on one or a combination of validated models cannot be overestimated. Communication is more effective when it is based on theory.

Experts stated that appropriate mix of mediums and tools should be determined and used creatively together to engage target groups in dialogue. They include mass electronic media, digital media, print media, social mobilization, mobile technology, and service-based communication. The tools need to be used thoughtfully, monitored for their impact, constantly honed and refined, and discarded if they are not achieving their objectives. The content of social media needs to be better monitored and assessed with respect to attitudes to immunization uptake. Nyhan (2013) observed that some media approach may prove counterproductive with subgroups which are ardently opposed to immunization. According to him for any communication approach to be successful, it is critical that it be grounded not only in theory, but also in social data that informs accurate targeting of subgroups.

WG stressed the importance of reinforcing public perception of immunization as a social norm, reviewed data from UNICEF and the Global Polio Eradication Initiative on community

and individual concerns raised about polio immunization in Nigeria and India. Noteworthy findings were that by 2014, only 1.2% of unvaccinated children in Nigeria were not vaccinated because of refusal, and the refusal rates were highest where insecurity and social strife were highest. Many of the unvaccinated children had been missed, i.e. not at home when called, rather than having refused the vaccine (although in some settings this was interpreted as a “silent refusal”).

UNICEF advocated continuous use of social mobilization in partnership with WHO and member states to ensure competencies in the field of vaccine refusal worldwide. Communication strategies can and should be harnessed for vaccination, as a means of counteracting vaccine hesitancy and promoting optimal vaccine uptake. Despite the complexity of vaccine hesitancy and the broad range of its determinants, a carefully devised communication strategy should be an integral component of any immunization program, addressing the specific factors that influence vaccine uptake in the targeted population. The incorporation and implementation of a well thought-through immunization communication plan should be a regular – and inextricable – part of good immunization program practice. (UNICEF, 2008)

Social mobilization and communication for immunization have evolved from a one-way flow of communication, that is, a mere dissemination of information to persuade mothers to utilize immunization services to a two-way process of sharing, much preferred; where parents and care givers can freely exchange knowledge, values, and practices on childhood immunization and other child survival practices. This view of social mobilization as a mechanism for interaction ensures the active involvement of those who could and should take part in decision making for uptake of childhood immunization and in motivating and providing users with easy access to vaccine preventable diseases, information, resources, and services. (Babalola, 2007)

2.17 Global Social Mobilization Programs for Immunization

Further review of strategies to promote uptake of childhood immunization revealed that over the last decade many African governments have implemented social mobilization programs aimed at the widespread adoption of 'new' health practices like immunization, family planning and oral rehydration therapy. According to Ruitjer majority of the program concentrate on the wide scale delivery of immunization, services while simultaneously creating a massive demand to ensure their optimum utilization.

Ruijter pinpointed use of social mobilization strategy as a means to obtain political and financial support for developmental programs, particularly in health. He justified the influence of social mobilization based on presumptions that adoption of childhood immunization did not mean that African women, who, with their young children, were the main target groups for the immunization programs, understood what they were being immunized against and why that was important. According to a result of evaluation studies conducted in Zambia, Angola and Mozambique which focused primarily on knowledge aspects, levels of knowledge and awareness about immunization are significantly lower than adoption rates.

Indeed, most ministries of health managed to rally the political support of African leaders for their immunization campaigns. In various countries, the President, personally launched the campaign, thus, ensuring the massive participation of these structures". But the very nature of the political channels as vehicles for promotion of immunization limited the genuine, creative and active participation and responsibility of people for these programs. In some cases it even provoked a certain popular resistance to these programs.

It was also reported that in some instances even the military in the case of Somalia, were largely responsible for mobilizing the people to attend immunization services. Equipped with

maps of the area and lists of names of all inhabitants, they went from house to house to round up defaulters who had not completed the immunization schedule. In this, they were effective. It is not unlikely though that the massive concurrence of the population to vaccination facilities emanated from the people's experience with extension workers and party agents in their role as law enforcers. Little research has been done in understanding the people's perception of health services and immunization- the attitudinal aspects. Because of this, one should not be surprised to find neutral or even negative attitudes towards immunization, even among those immunized.

The new cadre of health workers (community health extension workers) has been shown to be stronger in mobilization than in education. As a result, the changes brought about by the massive immunization efforts seem rather superficial, because the people's adoption of immunization was the result of temporary social pressure and control rather than the outcome of effective health education evaluative process. The concentration of the campaign approach itself on achieving quick results among large groups of people reinforced a tendency to impose ideas on the people, rather than allowing for time to incorporate these new ideas into their existing framework of thoughts.

Similarly most of the international studies reported that the significant increases in coverage rates can only rarely be maintained. It often proved too costly for government ministries to maintain the special facilities of transport, mobile vaccination centres and allowances for health personnel and mobilizers, created during campaigns, on a longer term, not mentioning the disruptive effects the campaigns often had on the provision of other health services through the regular mechanisms. Special co-ordination structures which were set up for the campaigns often fell apart after a short period, once different sectors reverted to their regular programme of activities.

As a result, coverage rates dropped in many countries to almost pre-campaign levels, when the high-profile, politically-backed campaigns were abandoned, special incentives were no longer provided and immunization services were really being delivered through the regular health package. For example, the coverage rates in the Somali capital, Mogadishu, rose from 22 percent to 70 percent in 1985, but within a year dropped again to a mere 8 percent above the original level, a position it has maintained since.

In Odusanya et al, the experience of some West African countries, such as Nigeria, Senegal and Togo with the use of regular mini-campaigns, is slightly better. These mini-campaigns are a recurrent feature of the Expanded Programme Immunization (EPI) and constitute a high peak in the regular provision of immunization services, enabling impressive support from non-health sectors, like the business and political community, to be rallied. The highly visible mini-campaigns also shake up the population and rejuvenate awareness and interest of the health sector and the population at large, while minimizing the disruptive effects or wasting of resources through bad planning. Data from 1989, a year after the last round of campaigns, showed that vaccination coverage rates in these countries had settled roughly at 10 percent above their original levels, a result achieved at a relatively low price.

2.18 Health Information Activities

Policy makers and health professionals often assume that low demand or rumors reflect public ignorance of misinformation which needs to be corrected through education (IDS, 2006). In order to increase the demand for immunization, governments finance immunization campaigns and advertise through various media. However, government's investment in the immunization programmes must be aggressive and sufficiently rapid to forestall reduced demand. Often key immunization targets (desired immunization coverage) are lowered to justify

underinvestment. In Nigeria the Expert Review committee, reportedly embarked on national health education programmes widely initiated on the six geo political zones of the country by the National Primary Health Development Agency, in conjunction with UNICEF, and other partners in the last decade using the Social Mobilization Working Group (SMWG. Most of these programs generally focus on two lines of activity: training of health and para-medical personnel, and production of health educational materials through print as well as audio-visual media.

2.19 Public Health Personnel as Communicators

Although group dynamic skills and health education techniques have been introduced in the national training curricular for all cadres of health care providers, there is no available data to proof whether this has led to a significant improvement in their human relations skills. Elsewhere in Kenyan study of 1983 it was concluded that 73 percent of health workers in Kisumu District in the western part of the country never advised their clients and a larger number (82%) were even incompetent to do so. Overall, bad treatment by health staff has been reported has a recurrent cause for failure of mothers to return to health centers to complete the immunization schedule. Data also confirm that health talks, advice and demonstrations are the most common health education technique, even though a fair number of health staff is aware that health talks are not effective. The boost in programs to equip and train community resource personnel for example, religious leaders, volunteers, has led to a wider use of immunization services.(Expert Committee Report 2008)

More often, parents who changed their minds after considering delaying or refusing a vaccine for their child gave the credit to the child's health care provider. Other research also found that health care providers who are able to communicate effectively and with respect can positively affect patient satisfaction and adherence (Akande, 2006).

2.20 Immunization Records

Each person who is immunized should be given a permanent personal immunization record. Individuals should be instructed to retain the record, produce it for updating whenever they receive a vaccination and keep it in a safe place. Parents should maintain these records on behalf of their children. Completion of Immunizations: being able to have fully received all antigens due at age 1year as prescribed by the National Primary Health Care Development Agency immunization policy.(Canadian Consensus Conference on a National Immunization Record System, CCDDR 1998) Record keeping procedures should facilitate the retrieval of immunization records. It is essential that the health care provider maintain a separate, permanent record of the immunization history of each individual on the medical chart, in a readily accessible section that is not to be archived. Headings on this record should include the following vital information about the vaccine, the trade name; disease agent which it protects; date given; dose; site and route of administration; manufacturer; and lot number.

2.21 Talking with Parents about Immunization

There is a real concern that misconception about childhood immunization safety threaten to reduce immunization coverage to levels that would open the door to epidemics of diseases. The success of vaccines in preventing disease means that many health care providers practicing today and certainly most parents of young children may never have seen a life-threatening case of diphtheria, polio or even measles. Because immunization requires informed consent and the number of approved vaccines is growing, the continued success of immunization programs will depend on a very high level of public confidence. Widely trusted as a source of information among parents and adult patients, health care providers have a vital role to play in keeping the success of vaccine program strong.

Appropriately, more and more questions are being asked about the vaccines being offered. Unfortunately, however, small minorities of people actively oppose immunization, and their messages are often dramatic, misleading and widely disseminated on television and radio, on the internet, in public libraries and print media, parents and adult patients are often confronted with conflicting information about immunization. In their genuine concern for the safety of their children, parents especially may give undue weight to reports of vaccine related concerns.

2.22 Communication Issues in Immunization

Communicating skills play a vital role in the proper implementation of immunization programs at several levels. The advice of a trusted health care provider is recognized as an important factor in determining whether a person is immunized or not. Physicians and other health care workers are viewed as reliable sources of information about immunization issues. Public health officials are called upon to address the public during outbreaks of infectious diseases.

2.23 Dialogue with Patients and Guardians

Provider behavior may be the most important determinant of parents' acceptance of immunization for their children, but a minority of parents will require more detailed explanations. Adherence to recommendations made by medical personnel has been found to be directly related to the degree to which their discussions are patient centred. When preventive measures and health promotion are being dealt with, the patient-centered approach means listening to concerns with respect, answering any questions forthrightly and arriving at a common understanding as to the goals and roles of both patient and care provider. It is important to have relevant information readily at hand in a number of formats and languages. The reading level of this information must be appropriate for various levels of education. There are a variety of sources for accurate information about vaccines in printed format and on the World Wide Web.

Good risk communication requires that we understand how risks are perceived and that we recognize the inherent biases of both the public and health care providers. It has been demonstrated that perceptions of risk are not based strictly on a numerical evaluation of risks and benefits. Risk perception reflects an individual's previous experience as well as religious and cultural contexts. Risks perceived as uncontrollable or those involving children are, generally, more feared than other types of risks; man-made risks are considered in a more negative light than those that are perceived as natural. Parents are unlikely, then, to undertake immunization for their children unless they perceive a serious threat as well as some control over the risk (UNICEF 2000). It is important to recognize that people use heuristics or shortcuts to arrive at decision and rarely resort to simple cost benefit determinations. This means that the framing of the risk is very important i.e., framing a vaccine in terms of its benefits and not only its risks. The goals of communication include advocacy, education and the development of decision making partnership. The method and the content of the communication should reflect these goals.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

Research design is the structure of the research problem and the plan of investigation used to obtain empirical evidence on the problem under study. This chapter deals with the methodology adopted in the study. The presentation is the following order: description of the study area, study population, community entry, study design, sampling techniques, sample size calculation for the study, eligibility criteria, data collection for study, pre-testing of the instrument, data analysis, ethical consideration, informed consent of participants and result dissemination.

3.2 The Study Area: Ijebu North Local Government, Nigeria

The study area for this research work is Ijebu North Local Government Area. (INLGA) Ogun State. It covers an area of 13,394 hectares of land with projected population of 323,767, making it one of the largest local governments in the state. The local government is located at the north central part of Ogun State, bounded in the North by Lagelu Local Government of Oyo State in the East by Ayedade Local Government of Osun State, Ikenne Local Government is to the West; and Odogbolu and Ijebu North East to the South East and South West respectively.

The local government was established in 1976 as one of the 10 local government areas that were created at the inception of Ogun State. However, when the 30 local governments were created in the state in 1981, 3 local governments were carved out of it. This partitioning was short lived as military coup of 1983, which returned Nigeria to military state, led to the remerging of the 3 local governments back to its former status. The Local Government Area is located between latitude 6° 55' and 7° N and between longitude 3° 45' and 4° 05' East of the

Greenwich Meridian. Consequently, the local government is basically tropical in nature with two distinct seasons; the rainy season (April to October) and the dry season (November to March). The local government experiences an annual rainfall of between 2023 and 2540 mm, and double maxima in June and September, with a short dry period in August which separate the maximal months. The LGA has an average temperature of 30°C throughout the year and an annual range of between 6-10°C. Ijebu Igbo is the headquarters of the local government since the creation of the local government. The local government is divided into 11 health wards shared between 3 major zones in the local government area namely: Ijebu Igbo zone, Ago Iwoye zone and Oru/Awa/Ilaporu. The 3 zones are age long traditional and political arrangement that exist in the local government for sharing of political offices and infrastructural facilities at ratio 2.1.1.1 (Ijebu Igbo 2: Ago Iwoye 1: Oru/Awa/Ilaporu).

Generally the local government is made up of two urban centers (Ijebu Igbo and Ago Iwoye) and semi urban settlements of Oru, Awa and Ilaporu, and a host of other villages (well over 200). The estimated population according the National Population Commission (NPC) was 323,767. The local government area is made up of two groups of settlement the urban/semi urban and the purely rural settlements.

In terms of health facilities, the local government is endowed, as it can boast of a General Hospital (Ijebu Igbo), a catholic hospital, a specialist eye centre (catholic owned) at Ago Iwoye, and a couple of health facilities. Beside these health centres, there are many private hospitals and clinics distributed all over the local government, with the highest concentration of about 8 clinic/maternity centres being at Ijebu Igbo. In terms of educational facilities the local government area is perhaps one of the most privileged, with the presence of Olabisi Onabanjo University (formally Ogun State University) at Ago Iwoye, Abraham Adesanya Polytechnic at

Ijebu Igbo, about 23 secondary schools, 98 public primary schools and over 18 private nursery/primary schools (I.N.L.G. 1998). The local government area is dominated mainly by Ijebus, some other Yoruba ethnic and major ethnic group in Nigeria.

3.3 Study Population

The study population consists of all parents and children between 0 and 24 months from three administrative zones in INLG, Ogun State, Nigeria. The wards are Oke Agbo, Atikori, Ago Iwoye, Orun/Awa/Ilaporu. According to Daramola (2006) a sampling procedure is a systematic process employed to select a required proportion of a target population, while a sample of the population is the representation of that population which has approximately the characteristics of the target population under investigation.

3.4 Community Entry

A letter of introduction was collected from the Department of Epidemiology and Community Health with approval was obtained from the Chairman , INLG area to administer the instruments in the sampled wards and settlements. The researcher used some members of the communities as research assistants. Ten (10) experienced and retrained interviewers were recruited for the study to collect all necessary data from the respondents.

3.5 Study Design

The study utilized cross sectional descriptive method. A questionnaire guided by the objectives of the study as well as the study population was developed. A series of questions were contained in the instrument to obtain information on demographic characteristics, socio economic status of respondents and ascertain basic knowledge, attitudes towards social mobilization strategies for uptake of childhood immunization. The survey instrument contained

questions about social mobilization strategies preferred/ source of information on uptake of immunizations.

3.6 Sampling Technique

The sampling techniques used for this study was multi-stage sampling approach and randomization to draw sample from the population. There are eleven wards in INLGA of Ogun State.

Stage 1 The 11 health wards in Ijebu North were grouped into the three administrative zones (Ijebu Igbo, Ago Iwoye, Oru/Awa/Ilapory) . Ijebu Igbo Zone consists of six health wards namely: Oke Agbo, Atikori, Ojowo, Japara, Osunbudepo, Oke Sopen. Ago Iwoye Zone consists of three health wards namely: Ago Iwoye 1, Ago Iwoye, Ehin Etiri and Oru/Awa/Ilaporu is made up of two health wards namely: Oru/Awa, Mamu

Six wards were selected from the three administrative zones using a simple random sampling technique by balloting with two health wards from Ijebu Igbo zone, one health ward from Ago Iwoye and one health ward Oru/Awa/Ilaporu.

Stage 2: In each of the selected ward, settlements were randomly selected by (dip hat) method in compliance with existing sharing formula.

Stage 3: In each settlement house was selected using systematic random sampling at intervals of five houses using existing PHC numbering during the sampling process.

Stage 4: Simple random sampling technique was used for the selection of households of parents with children 0-24months.

3.7 Sample Size Determination

Since the population in Ijebu North Local Government Area of Ogun State is more than 10,000. The sample size was determined using Fisher's formula thus:

$$n = \frac{Z^2 Pq}{d^2}$$

Where n = the desired sample size (when population is greater than 10,000)

Z = the standard normal deviation, usually set at 1.96 (or More simply at 2.0 which corresponds to the 95% Confidence level)

P = the proportion in the target population estimated to have a particular characteristic. If there is no reasonable estimate then 50% (0.50) is used.

Q = 1.0-P

d = degree of accuracy desired, usually set at 0.05 or occasionally at 0.02.

Therefore

$$n = \frac{(1.96)^2 (0.50) (0.50)}{(0.5)^2}$$

$$= 384$$

Using the more convenient 2.0 for the z statistics, then the sample size is

$$Nn = \frac{(2)^2 (0.50) (0.50)}{(0.5)^2}$$

$$= 400$$

This implies that, the sample size should not be less than 384. However, the researcher have decided to use (600) subjects as the respondents.

Table 2: Administrative and geo-political zones in Ijebu North, Nigeria

Selection of Households			
	Name of Zone	Name of Ward	Total no of Household selected
.	Ijebu Igbo	Oke Agbo	165
.		Osunbudepo	135
.	Ago Iwoye 1	Ago Iwoye	150
.	Oru/Awa/Ilaporu	Mamu	150

3.7.1 Inclusion/Eligibility Criteria

To satisfy criterion of parenthood of children of 1 to 5 years, the parent or caregiver were asked whether they had children who were still receiving immunization shots. On responding in the affirmative, the parent or caregiver was included in the study population in the selected household. Simple random method was used to select one sample from a household in case of multiple eligibility. The choice of the parents was made because it was discovered from the literature that the age group of the children is most vulnerable and often neglected and are at disadvantage of independent decision to access health immunization on their own. Data obtained included socio-demographic and socio-economic characteristics, their health seeking behavior, access to childhood immunizations and health care services among other information. Secondary data were obtained from health records of the local governments, published journal the internet and library sources.

3.7.2 Exclusion Criteria

Parents and children not residing in the settlements and not willing to participate in the study.

3.8 Data Collection Process

The structured questionnaire used to obtain information was interviewer administered. Preliminary review sessions were held with the supervisor in order to address quality issues relating to the study. The instrument was developed in English and administered in Yoruba dialect and in some instances administered in English. A series of questions were asked to obtain information about the demographic characteristics of the respondents, knowledge and attitude towards social mobilization strategies for uptake of childhood immunization. The instrument also asked questions about social mobilization strategies adopted by respondent for uptake of immunizations.

3.9 Data Collection Tools

3.9.1 Demographic characteristics and Social Mobilization strategies towards uptake of childhood immunization

The survey tool collected information on respondents' demographic characteristics and socio-economic status. These questions were pertinent and agree with NDHS model of eliciting demographic information. The thirteen questions in Section A specifically asked about age, marriage status, gender, educational attainment, religious affiliation, and income and child immunization status.

3.9.2 Knowledge of social mobilization and uptake of childhood immunization

Participants were asked about knowledge and understanding of social mobilization strategies and uptake of childhood immunization. The sixteen questions on knowledge consisted of 11 correct responses and 5 incorrect responses. The respondents were expected to answer 'yes' or 'no' to any of the statements. The range of possible score to knowledge of social mobilization strategies is 0 to 16.

3.9.3 Attitudes towards social mobilization and uptake of childhood immunization

The tool asked questions to assess participants' attitudes towards social mobilization strategies and uptake of childhood immunization using four point Likert approaches of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) to attitude scale which was found to be suitable. It allows the subjects to express with his degree of agreement or sometimes, merely whether he agrees with the statement or not. Likert type scale

3.9.4 Factors influencing uptake of immunization

Participants were asked using Likert approaches of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) to agree on factors influencing uptake of childhood immunization.

3.10 Pre-testing of instrument

The pilot testing of the instrument preceded the administration of the survey instrument in order to ensure that the data collected was meaningful. The draft survey was reviewed with the supervisor and also presented at the Departmental seminar; necessary input to the draft questionnaire was implemented to determine its adequacy for the study. In view of this, face to face interview on chosen sample size of sixty (60) randomly selected samples of parents from location different from the Ijebu North was carried out. The opinions on the content and phrasing of questions were obtained to ensure that questions are not ambiguous. The instrument was further reviewed with feedback provided by academic staff of the Department of Epidemiology and Community Health.

3.11 Data Analysis Techniques

The result of the survey/questionnaire was analyzed using a combination of Microsoft Excel spreadsheet and Social Program for the Social Sciences version 22.0 (SPSS 22.0). Upon

receiving the completed questionnaires, a coding scheme was developed and each questionnaire was reviewed and coded and then entered into a computerized database using Microsoft Excel spreadsheet. These databases were then imported into SPSS for cleaning. The data cleaning is very important as it helps to identify inconsistencies and outliers. This was quickly done by producing frequency figures for each question or each of the columns (variables) and examining the outliers. The data set cleaning process was also supported with cross- tabulation as it has the potential of uncovering more subtle errors. Then, using SPSS, statistical analysis package, various statistical procedures and reports (i.e. frequencies, cross tabulations and charts) were generated for analysis and discussion. All the other research questions having corresponding hypothesis were tested using inferential statistics. Other research hypotheses were tested using the one-way Analysis of variance (ANOVA) at alpha level 0.05.

Table 3: Knowledge Score table about Social Mobilization and Uptake of Childhood Immunization

Poor knowledge	0-5
Good knowledge	6-16

3.12 Ethical Consideration

The study was conducted in full compliance with the University of Ilorin Ethics Review Committee. There was close coordination between the researcher and research supervisor to keep track of the study progress, issues about study implementation and input from other academic staff from the Department of Epidemiology and Community Health was implemented. Participants were recruited mainly upon their willingness to participate in the study and no inducement was offered to influence their contributions.

3.13 Data Management

Materials for data collection are carefully kept as necessary for review, monitoring and auditing in future by authorized study staff.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

This chapter deals with the collation analysis and interpretation of data derived from the 600 respondents from three administrative three administrative zones in Ijebu North Local government Area , Ogun State.

4.2 Demographic Characteristics of Respondents

The mean age of respondents in Table 4 was 31.5 ± 5.6 with 83.6% of them married and 64.3% females. About 72% of them attended up to secondary level of education and 72.3% are Yoruba by ethnicity.

In Table 4 below mean age of respondents was 31.5 ± 5.6 with 83.6% of them married and 64.3% females. About 72% of them attended up to secondary level of education and 72.3% are Yoruba by ethnicity.

Table 4: Socio-Demographic Variables of Respondents

Socio-demographic variables	Frequency (N = 600)	Percent
Age group (years)		
20 – 24	41	6.8
25 – 29	232	38.7
30 – 34	144	24.0
35 – 39	121	20.0
40 – 44	51	8.6
45 – 49	11	1.9
Mean $\pm$ SD	31.50 $\pm$ 5.66	
Range	22 - 46 (24)	
Sex		
Male	214	35.7
Female	386	64.3
Religion		
Christianity	294	49.0
Islam	263	43.8
Traditional Religion	43	7.2
Ethnicity		
Yoruba	434	72.3
Eegun	78	13.1
Hausa	32	5.3
Igbo	56	9.3
Educational level		
None	39	6.5
Primary	115	19.2
Secondary	436	72.6
Tertiary	10	1.7
Marital status		
Single	3	0.5
Married	502	83.6
Divorce	55	9.2
Separated	22	3.7
Widow	18	3.0
No of Children		
Less than 2	61	10.2
2 – 4	507	84.5
Greater than 4	32	5.3
Sex of Child		
Male	219	36.5
Female	381	63.5

SD: Standard deviation

As shown in Table 5 about 81% of the respondents were employed with 49.5% of them being civil servants. The monthly income of the majority of them was between 30,000 and 50,000. Eighty-seven per cent of the respondents fully immunized their children and 70% of them leave within 5km distance from health facilities.

Table 5: Social Economic Variables of Respondents

Social Economics variables	Frequency (N = 600)	Percent
Child's Immunization Status		
Fully Immunized	522	87.0
Partially	78	13.0
Employment Status		
Civil Servant	297	49.5
Farming	41	6.8
Self Employment	192	32.0
Casual Job	43	7.2
Family Support	10	1.7
Community Support	11	1.8
Faith Based Support	6	1.0
Spouse's Employment Status		
Civil Servant	183	30.5
Farming	65	10.8
Self Employment	274	45.7
Casual Job	49	8.1
Family Support	25	4.2
Faith Based Support	4	0.7
Income		
300,000 and above	4	0.7
300,000 – 201,000	2	0.3
100,000 – 5a1,000	8	1.3
50,000 – 41,000	190	31.7
40,000 – 31,000	212	35.3
30,000 – 21,000	120	20.0
Less than 21,000	64	10.7
Proximity to Health facility		
Less than 5km	420	70.0
5 – 10km	171	28.5
Greater than 10km	9	1.5

Hypothesis One

Demographic factors of respondents have no influence on uptake of childhood immunization.

4.3 Influence of demographic factors of study participants by uptake of childhood immunization

In Table 6 and 7, it is shown that statistical relationship exists between socio-demographic characteristics of respondents and uptake of childhood immunization. Age, sex, marital status, income, religion, proximity to health facility and parity of respondents were found to be significantly associated with social mobilization and uptake of immunization service. The respondents living in close proximity to health facility had about 20 times the odds of childhood immunization uptakes than those living far away from health facility. Also, respondents with high income had about 6 times the odds of childhood immunization uptakes than those with low income. Female respondents had about 6 times the odds of childhood immunization uptakes than those with males.

Respondents with child at young age had 70% the odds of childhood immunization uptakes less than those with older age.

Table 6: Relationship between Socio-demographic Factors of Respondents and the Uptake of Childhood Immunization from Simple Logistic Regression Analysis

Variables		Crude OR (95%CI)	Wald Statistics (df)	P value
Age (year)		1.16 (1.11,1.21)	42.29 (1)	< 0.000*
Sex	Male	1.00		
	Female	0.46 (0.26,0.81)	7.24 (1)	0.007*
Marital Status	Single	1.00		
	Married	0.01 (0.00,0.03)	53.39 (1)	< 0.000*
Educational Status	Divorced	0.24(0.06,0.92)	4.30 (1)	0.038*
	Separated	0.53(0.09-0.33)	0.63 (1)	0.428
	None	1.00		
	Primary	188... (0.00, ...)	0.00 (1)	0.999
	Secondary	100... (0.00, ...)	0.00 (1)	0.999
Employment Status	Tertiary	496... (0.00, ...)	0.00 (1)	0.999
	Unemployed	1.00		
	Civil servant	0.00 (0.00, ...)	0.00 (1)	0.999
	Farming	0.00 (0.00, ...)	0.00 (1)	0.999
	Self-employed	0.00 (0.00, ...)	0.00 (1)	0.999
	Casual Job	0.00 (0.00, ...)	0.00 (1)	0.999
	Family Support	0.00 (0.00, ...)	0.00 (1)	0.999
Spouse Employment	Unemployed	1.00		
	Civil servant	0.00 (0.00, ...)	0.00 (1)	0.999
	Farming	0.00 (0.00, ...)	0.00 (1)	0.999
	Self-employed	0.00 (0.00, ...)	0.00 (1)	0.999
	Casual Job	0.00 (0.00, ...)	0.00 (1)	0.999
	Family Support	0.00 (0.00, ...)	0.00 (1)	0.999
Income		4.17 (3.07,5.67)	83.14 (1)	< 0.000*
Religion	None	1.00		
	Christianity	0.06 (0.27,0.12)	54.94 (1)	< 0.000*
	Islam	0.12 (0.58,0.24)	35.79 (1)	< 0.000*
Proximity to HF		3.85 (2.48,5.97)	36.14 (1)	< 0.000*
Number of Children		2.71 (1.43,5.13)	9.28 (1)	0.002*

* Statistically significant (P value < 0.25)

Table 7: Relationship between Socio-demographic Factors of Respondents and the Uptake of Childhood Immunization

Variables		Crude OR ^a (95%CI)	Adjusted OR ^b (95%CI)	Wald Statistics ^b (df)	P value ^b
Age (year)		1.16 (1.11,1.21)	0.70 (0.59,0.86)	16.07 (1)	< 0.000
Income		4.17 (3.07,5.67)	5.89 (2.54,13.62)	17.15 (1)	< 0.000
Religion	Traditional	1.00			
	Christianity	0.06 (0.27,0.12)	0.18 (0.01,3.22)	1.35 (1)	0.246
	Islam	0.12 (0.58,0.24)	1.64 (0.09,31.69)	0.11 (1)	0.743
Proximity to HF		3.85 (2.48,5.97)	19.75 (4.65,83.85)	16.35 (1)	< 0.000
Marital Status	Single	1.00			
	Married	0.01 (0.00,0.03)	0.00 (0.00,0.10)	10.92 (1)	0.001
	Divorced	0.24(0.06,0.92)	2.71 (0.12,60.18)	0.40 (1)	0.528
	Separated	0.53(0.09-0.33)	0.78 (0.04,15.79)	0.03 (1)	0.872
Sex	Male	1.00			
	Female	0.46 (0.26,0.81)	5.45 (1.20,24.67)	4.84 (1)	0.028

^aSimple logistic regression, ^bMultiple logistic regression The model reasonably fits well. Model assumptions are met. There are no interaction and multi-collinearity problems.

Hypothesis 2

Level of knowledge of respondents on social mobilization and immunization has no correlation with uptake of childhood immunization.

4.4 Knowledge based profile of respondents

Among those respondents who fully immunized their children, 58.4% of them had good knowledge of immunization while 69.3% of those who partially immunized their children also had good knowledge of immunization. From the results the p-value is 0.148 greater than 0.05 table value thereby positive significant relationship existed between childhood immunization status and knowledge on social mobilization.

Table 8: Relationship between Child's Immunization Status and knowledge of Respondents on Social mobilization and Uptake of Immunization Service

	Knowledge of Immunization				χ^2	<i>p</i> value
	Service and Social Mobilization					
	Good	Fair	Poor	Total		
Child's immunization	n (%)	n (%)	n (%)	n (%)		
Uptake						
Fully Immunized	305 (58.4)	175 (33.5)	42 (8.1)	522 (100.0)	3.825	0.148
Partially Immunized	54 (69.3)	21 (26.9)	3 (3.8)	78 (100.0)		
χ^2 : Chi square						

Table 9 shows that knowledge of respondents on social mobilization and uptake of immunization was very high with the least being 77% for use of mass media as a tool.

Table 9: Knowledge of Respondents on Social mobilization and Uptake of Immunization Service

Variable	Yes (%)	No (%)
Use of Community support	560 (93.3)	40 (6.7)
Use of Mass Media	462 (77.0)	138 (23.0)
Mass Media as a source of Information	124 (20.7)	476 (79.3)
Use of Town Announcers	514 (85.7)	86 (14.3)
Town Announcer as a source of Information	466 (77.7)	134 (22.3)
Visibility and use of Community Leaders	53 (8.8)	547 (91.2)
Use of Mobile vaccination	90 (15.0)	510 (85.0)
Use of Mobile Van for campaigns	72 (12.0)	528 (88.0)
Use of Combined Messages for Understanding	543 (90.5)	57 (9.5)
Use of Combined Message for Benefits	562 (93.7)	38 (6.3)
Use of Health Promotion Activities for Knowledge	527 (87.8)	73 (12.1)
Natural Immunization as best body defense	56 (9.3)	544 (90.7)
Immunization contribution to Illnesses	11 (1.8)	589 (98.2)
Diet and Exercise more important than Immunization	24 (4.0)	576 (96.0)
Spiritual influence on Illness and Diseases	83 (13.8)	517 (86.2)
Immunization for Protection	500 (83.3)	100 (16.7)
(N = 600)		

Table 10 shows that majority of the respondents (59.8%) and 32.7% of them had a good and a fair knowledge of social mobilization and uptake of childhood immunization respectively.

Table 10: Knowledge Score of Respondents on Social Mobilization and Uptake of Childhood Immunization

Knowledge Score	Frequency (N = 600)	Percent
Poor	45	7.5
Fair	196	32.7
Good	359	59.8

Hypothesis three:

Level of knowledge of respondents on social mobilization and immunization does not influence their attitude towards the uptake of childhood immunization.

4.5 Knowledge Based Profile of study participants on attitude towards social mobilization and uptake of childhood immunization

Table 11 reveals that majority of the respondents (85%) gave their consent to social mobilization and uptake of childhood immunization while 78% of them disagreed with incentive rewards as a necessity for social mobilization and uptake of childhood immunization. Table 5b reveals that positive attitudes of the respondents was highest towards utilization of DPT vaccination while the highest negative attitudes was towards uptake of childhood immunization as being associated with too much visits to health facility.

Table 11, 12 and 13 shows the knowledge score (61.6%) to be good status and also having 0.005 to be the tabulated value indicated existing positive relationship between knowledge and attitude of respondents towards social mobilization and uptake of child immunization.

Table 11: Relationship between Knowledge and Attitudes of Respondents towards Social mobilization and Uptake of Immunization Service

Attitude Score	Knowledge Score				χ^2	<i>p</i> value
	Good n (%)	Fair n (%)	Poor n (%)	Total n (%)		
Good	318 (61.6)	156 (30.2)	42 (8.2)	516 (100.0)	10.679	0.005*
Poor	41 (48.8)	40 (47.6)	3 (3.6)	84 (100.0)		

χ^2 : Chi square; *: Statistically significant, $P < 0.05$

Table 12: Relationship between Immunization Status of Respondents and Attitudes towards Uptake of childhood Immunization

		Attitude Grade		X ²	P value
		Poor	Good		
Immunization Status	Fully Immunized	80	442	5.861	0.015
	Partially Immunized	4	74		

Table 12a: Attitudes of Respondents towards Social Mobilization and Uptake of Childhood Immunization Service

	Strongly Agreed (%)	Agreed (%)	Disagreed (%)	Strongly Disagreed (%)
Attitudes of Respondents				
Consent to immunization	407 (67.8)	103 (17.2)	62(10.3)	28(4.7)
Sufficient Protection	59 (9.8)	79 (13.2)	332 (55.3)	130 (21.7)
Too much visits and time	24 (4.0)	63 (10.5)	344 (57.3)	169 (28.2)
Financial Reason	81 (13.5)	41 (6.8)	300 (50.0)	178 (29.7)
Religion Injunction	133 (22.2)	60 (10.0)	232 (38.6)	175(29.2)
DPT Immunization	371 (61.8)	132 (22.0)	68 (11.3)	29 (4.7)
Penta -valent Immunization	353 (58.8)	211 (35.2)	29 (4.8)	7 (1.2)
Measles Immunization	279 (46.5)	219 (36.5)	91 (15.2)	11 (1.8)
Polio Immunization	246 (41.0)	180 (30.0)	131 (21.8)	43 (7.2)
Incentives Reward	84 (14.0)	67 (11.2)	244 (40.6)	205 (34.2)

Table 12b: Attitudes of Respondents towards Social Mobilization and Uptake of Childhood Immunizations

Attitudes of Respondents	Positive (%)	Negative (%)
Consent to immunization	510 (85.0)	90 (15.0)
Sufficient Protection of Immunization	138 (23.0)	462 (77.0)
Too much visits for Immunization	87 (14.5)	513 (85.5)
Financial cost of Immunization	122 (20.3)	478 (79.7)
Religion Injunction about immunization	193 (32.2)	407 (67.8)
DPT Immunization Utilization	503 (83.8)	97 (16.2)
Penta-valent Immunization Utilization	564 (94.0)	36 (6.0)
Measles Immunization Utilization	498 (83.0)	102 (17.0)
Polio Immunization Utilization	426 (71.0)	174 (29.0)
Incentives Reward for Immunization	151 (25.2)	449 (74.8)

Table 13 shows majority (86%) of respondents had good attitudes towards social mobilization and uptake of childhood immunization.

Table 13: Attitudinal Score of Respondents on Social Mobilization and Uptake of Childhood Immunization

Attitude score	Frequency (N = 600)	Percent
Poor	84	14.0
Good	516	86.0

Table 14: Relationship between Socio-demographic Factors of Respondents and Attitudes towards Uptake of childhood Immunization

Variables		Attitude Grade		X ²	P value
		Poor	Good		
Sex	Male	31	183	0.065	0.800
	Female	53	333		
Marital Status	Single	0	3	14.255	0.007
	Married	80	422		
	Divorced	0	55		
	Separated	4	18		
	Widow	0	18		
Education Level	None	0	39	15.231	0.002
	Primary	26	89		
	Secondary	58	378		
	Tertiary	0	10		
Religion	Christianity	47	247	2.976	0.226
	Islam	34	229		
	Traditional	3	40	2.976	
	Religion				

Hypothesis 4:

Social mobilization strategies utilized by the respondents have no influence on the uptake of childhood immunization.

4.6 Social mobilization strategies adopted for uptake of childhood immunization

The majority of the respondents, 92.4% and 84.2% agreed to immunization campaigns and use of town announcers respectively as factors that promote social mobilization and uptake of childhood immunization. However, 82.2% of them disagreed that health-workers are not too busy and in hurry to give accurate information on social mobilization and uptake of childhood immunization.

Table 15: Relationship between Child's Immunization Status and Respondent's Source of Information on Social mobilization and Uptake of Immunization Service

	Source of Information on Immunization Service and Social Mobilization		χ^2	<i>p</i> value
	Mass Media	Town Announcer		
Child's immunization Uptake				
Fully Immunized	406	438	2.978	0.226
Partially Immunized	70	70		

Table 15a: Social mobilization strategies adoption and influencing factors towards uptake of childhood immunization

Influencing Factors	Strongly Agreed (%)	Agreed (%)	Disagreed (%)	Strongly Disagreed (%)
Too Busy and Hurry to give accurate Information	58 (9.7)	49 (8.1)	219 (36.5)	274 (45.7)
Long Waiting Hours for Clinics	65 (10.8)	103 (17.2)	264 (44.0)	168 (28.0)
Short Distance to HF	161 (26.8)	177 (29.5)	145 (24.2)	117 (19.5)
Useful Information on Radio	51 (8.5)	60 (10.0)	291 (48.5)	198 (33.0)
TV Accurate Information	46 (7.7)	33 (5.5)	321 (53.5)	200 (33.3)
Accurate Knowledge on Immunization	112 (18.7)	31 (5.2)	269 (44.8)	188 (31.3)
Immunization Campaigns	412 (68.7)	93 (15.5)	50 (8.3)	45 (7.5)
Use of Town Announcers	369 (61.5)	185 (30.9)	35 (5.8)	11 (1.8)
Visibility and Political Good will of WDC	334 (55.7)	177 (29.5)	49 (8.2)	40 (6.6)
House to House Campaign	150 (25.0)	67 (11.2)	170 (28.3)	213 (35.5)

In Table 15b it is shown that majority of respondents (80.2%) identified health care workers as social mobilization strategy adopted for their uptake of Immunization service while only 10.7% of them identified posters as a strategy.

Table 15b: Social Mobilization Strategies Adopted by Respondents for Uptake of Immunization service

	Yes	No
Strategies	n (%)	n (%)
Health Care Worker	481 (80.2)	119 (19.8)
Radio	251 (41.8)	349 (58.2)
TV	163 (27.2)	437 (72.8)
Drama	62 (10.3)	538 (89.7)
Town Announcer	141 (23.5)	459 (76.5)
Posters	64 (10.7)	536 (89.3)
Bill Board	91 (15.2)	509 (84.8)
Community Dialogue	412 (68.7)	188 (31.3)
Friends	105 (17.5)	495 (82.5)
Mobile Phone	66 (11.0)	534 (89.0)

***: Multiple responses are allowed**

4.7 Factors influencing social mobilization for uptake of childhood immunization

Table 16 indicates that too busy health workers, short distance of respondents to health facility, use of radio, use of town announcers and house-to-house campaigns were found to be significantly associated with social mobilization and uptake of immunization service.

Table 16a: Factors Influencing Social Mobilization and Uptake of Childhood Immunization from Simple Logistic Regression Analysis

Variables		Crude OR (95%CI)	Wald Statistics (df)	P value
Too busy health workers	Negative	0.37(0.22,0.62)	13.87 (1)	< 0.000*
	Positive	1.00		
Long waiting Hours	Negative	1.24 (0.72,2.15)	0.59 (1)	0.443
	Positive	1.00		
Short Distance to HF	Negative	1.00	40.64 (1)	< 0.000*
	Positive	0.15(0.81,0.27)		
Use of Radio	Negative	1.00	1.89 (1)	0.170*
	Positive	0.61 (0.31,1.23)		
Use of Television	Negative	1.00	0.12(1)	0.729
	positive	1.13 (0.57,2.25)		
Accurate Knowledge of Immunization	Negative	1.00	0.47 (1)	0.493
	Positive	1.21 (0.70,2.07)		
Immunization Campaign	Negative	1.00	4.20 (1)	0.040*
	Positive	2.47 (1.04,5.85)		
Use of Town announcers	Negative	1.00	0.22 (1)	0.642
	Positive	0.82 (0.35,1.90)		
Visibility and Political good-will of WDC	Negative	1.00	0.04 (1)	0.846
	Positive	1.07 (0.54,2.11)		
House-To-House Campaign	Negative	1.00	5.28 (1)	0.022*
	Positive	0. 53 (0.31,0.91)		

* Statistically significant (P value < 0.25)

In Table 16b it is shown that respondents who reside within a short distance to immunization Clinics have increase odds of being socially mobilized and encouraged to receive immunization services by 16.1 times than those who leave far away.

Those respondents who benefited from house-to-house immunization campaigns have increase odds of being motivated to adopt the childhood immunization practices by 4.9 times than those who did not benefit.

Respondents who did not benefit from childhood immunization campaigns have decrease odds of being motivated to adopt the childhood immunization practices by 64% than those who benefited.

Table 16b: Factors Influencing Social Mobilization and Uptake of Childhood Immunization among the Respondents

		Crude OR ^a (95%CI)	Adjusted OR ^b (95%CI)	Wald Statistics ^b (df)	P value ^b
Variables					
Short Distance to HF	Negative	1.00	16.13(8.44,30.85)	70.76 (1)	< 0.000
	Positive	0.15 (0.81,0.27)			
House-To-House Campaign	Negative	1.00	4.91 (2.59,9.28)	23.87 (1)	< 0.000
	Positive	0.53 (0.31,0.91)			
Immunization Campaign	Negative	1.00		4.40 (1)	0.036
	Positive	2.47 (1.04,5.85)	0.36 (0.14,0.94)		

^aSimple logistic regression, ^bMultiple logistic regression

The model reasonably fits well. Model assumptions are met. There are no interaction and multicollinearity problems.

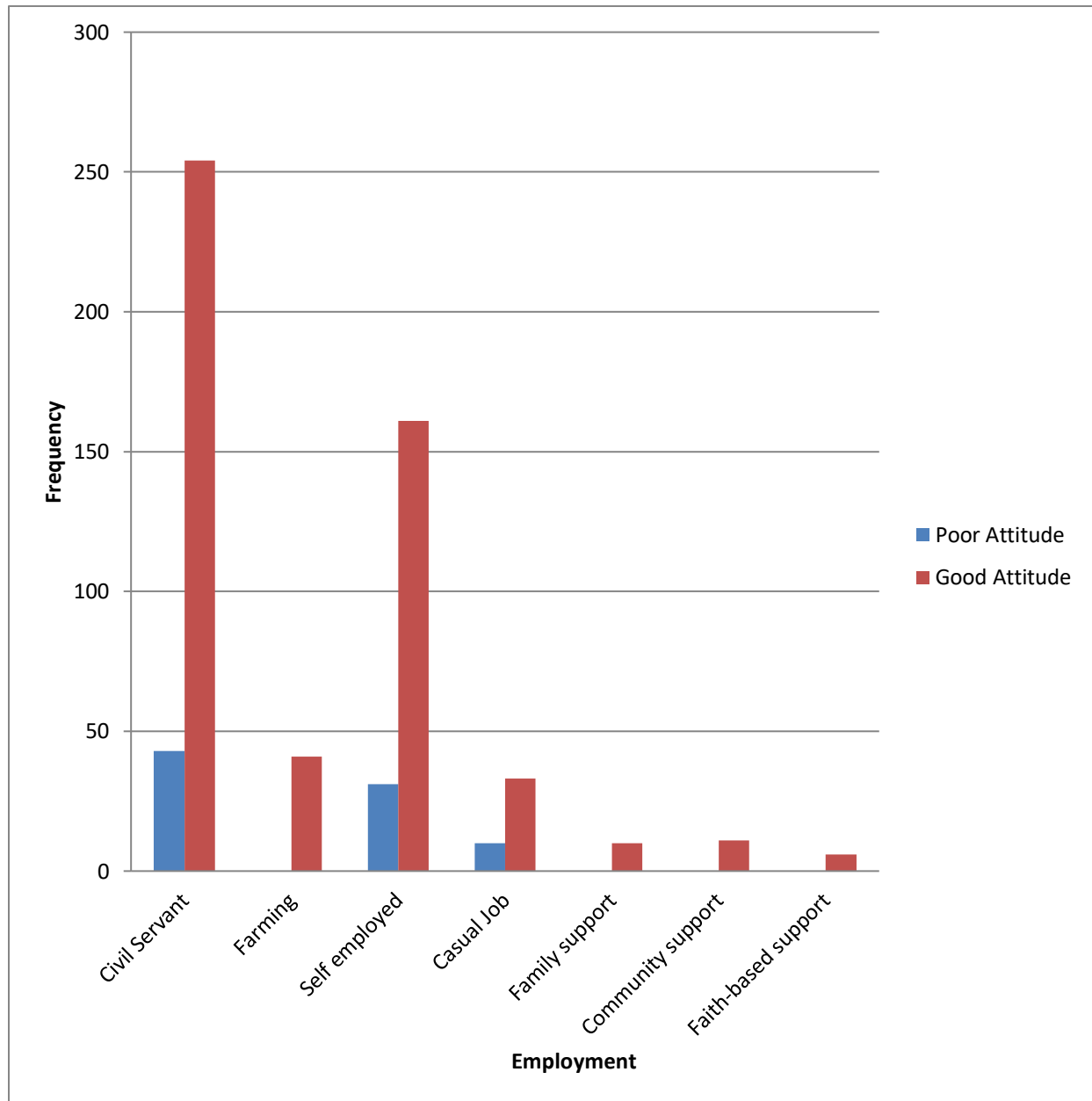


Figure 2: Frequency Distribution of Respondents' Attitude towards Uptake of Childhood Immunization by their Occupation (Chi-square: 14.920; P-value: 0.021)

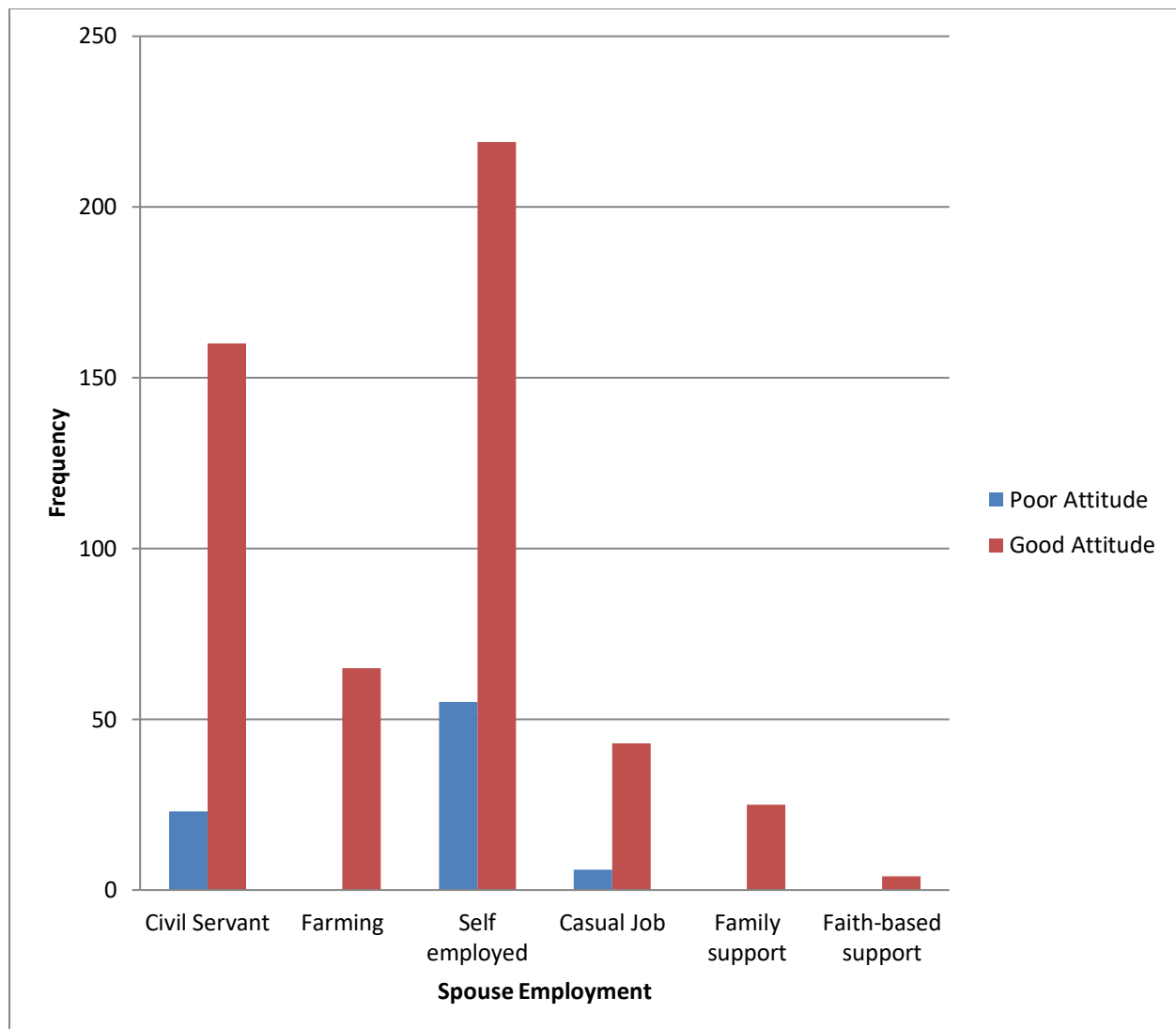


Figure 3: Frequency Distribution of Respondents' Attitude towards Uptake of Childhood Immunization by their Spouse's Occupation (*Chi-square: 24.132; P-value: <0.000*)

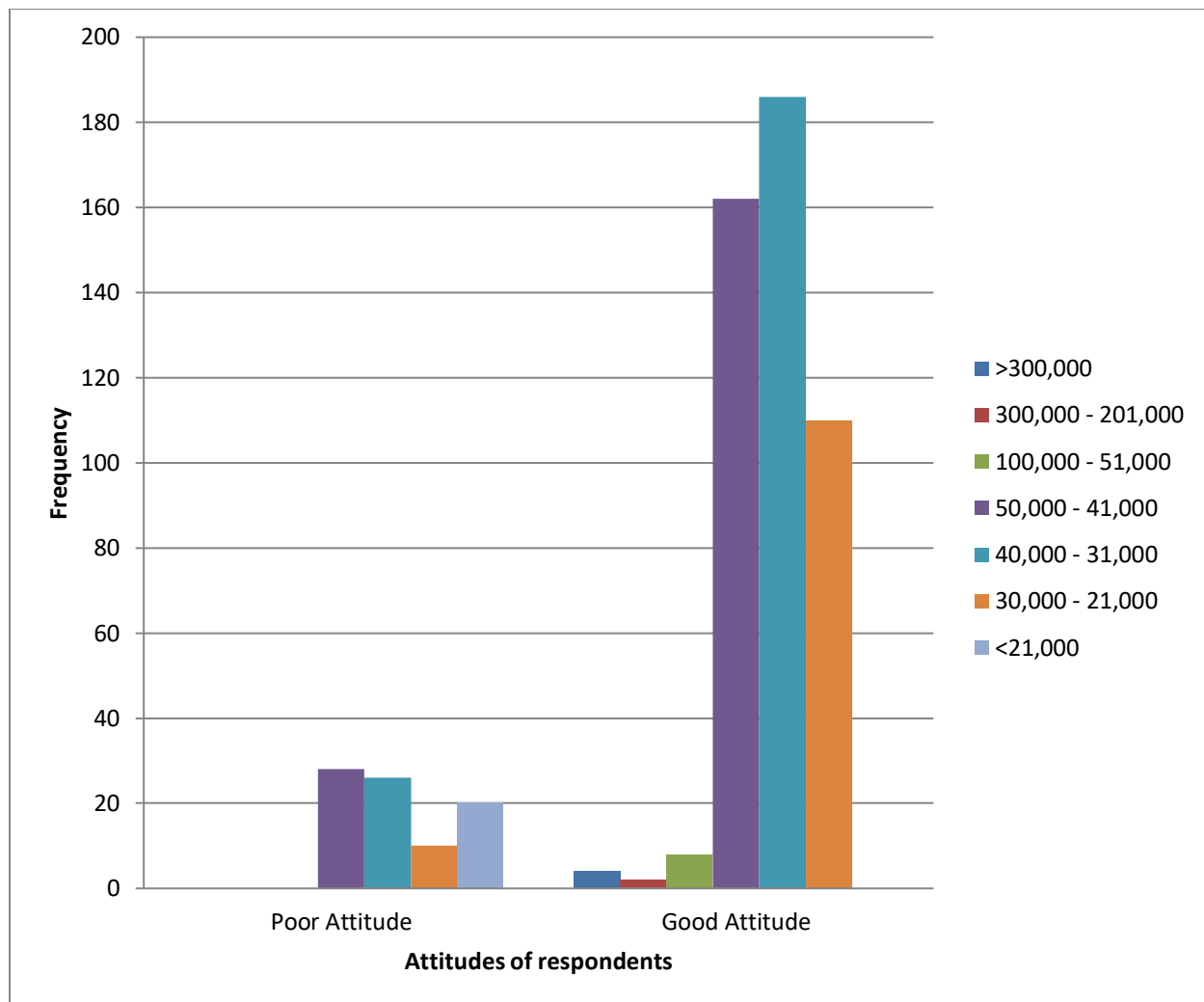


Figure 4: Frequency Distribution of Respondents' Attitude towards Uptake of Childhood Immunization by their Level of Income (*Chi-square: 21.913; P-value: 0.001*)

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter presents the discussion of results on the main objective which was to assess demographic factors and social mobilization strategies towards uptake of childhood immunization among parents in Ijebu North local government Area, Ogun State. Five research questions were formulated and four hypotheses were tested at 0.05 alpha level of significance.

5.1 Demographic factors on social mobilization strategies

The study showed that higher proportion of women had good attitude towards social mobilization strategies for uptake of childhood immunization. The study observed significant influence of parental education and income on uptake of childhood immunization and this corroborate earlier studies. Antai 2009 and Abdulraheem et al. 2011 had reported similar findings noting that any lack of these two interrelated and mutually complementing variables are factors responsible for low immunization uptake. These variables promote and bridge lack of knowledge, improve access and use of social mobilization strategies available to inform, educate and communicate appropriate knowledge about vaccine preventable diseases. This finding also corroborated earlier works by Bairagu R, Doctor HV et al. 2011; Owino & John, 1998 in which it was explicitly stated that use of social mobilization strategies is associated with parental socio economic status which is also an important determinant in uptake of childhood immunization.

The reality of being educated and financially buoyant is reflected in this finding, those within high socio economic status do not often have the stress of accessing health services attributable to financial limitation of transportation, user fee charges, use of available media and are most likely to have informed decision and appreciate the need for childhood immunization. So, the implication of the finding is for mobilization strategies to design messages that will address those

in low economic status using community resource people (community leaders, religious leaders, and opinion leaders other charismatic and highly regarded) to engage and educate them on the risks of vaccine preventable diseases and benefits of immunizations and other key messages.

The high uptake of immunization noted in the study shows that there is correlation between immunization seeking behavior, education, income and immunization practices of parents and information seeking behavior which compelled them to immunize their children. This finding corroborates earlier findings by Olumuyiwa et al, 2008 which reported significant and positive relationship between higher education levels and positive uptake of childhood immunization. However, the finding is in contrast with Hamilton, Corwin et al. 2004 study in New Zealand which stated that parents who chose not to immunize their children were known to be highly educated often with tertiary qualification. A raft of international studies have produced evidence which suggests that highly educated parents have more concerns about childhood vaccines and are less likely to vaccinate (Smith, Yajhood 2007; Reading, Surridge, Adamson 2004). After adjusting for other socio-demographic factors, several Australian studies have shown that children of the highly educated are less likely to have had the triple-DPT and more likely to be completely unimmunized (Lawrence G, Hull B, MacIntyre C, McIntyre 2004).

More married than unmarried participated and had their children fully immunized than unmarried confirming the findings results of study in Oyo State by Brown & Oluwatosin which noted that children of parents with secondary education and those children whose mothers were married are much likely to complete immunization. The result further noted that female respondents had about 6 times the odds of childhood immunization uptakes than those with males. This finding contradicts Gidado et al which reported significant correlation between knowledge and at least secondary education with full immunization in Bungudu, Nigeria. This finding has implication for parental experience in childcare and accurate knowledge about importance of immunization that comes with the role of women. Respondents with child at

young age had 70% the odds of childhood immunization uptakes less than those with older age. Antai (2011) reported similar findings that younger age group reduced the odds of vaccination of a child. This may also be due to experience and knowledge of the young parents. The implication of this finding is to encourage programme planners, and motivators to design messages that will appeal to different groups and according to their abilities, gender, educational opportunities and relevance of the channels to their orientation. Brugha and Kevany (2009) opined that it is important to desperately design messages to meet up with challenges confronting uptake of childhood immunization in developing countries using appropriate social mobilization strategies that will influence functional parental literacy and improve demand and utilize immunization services thereby sustain it as a norm.

The demographic pattern in study area revealed that parents were generally older, highly educated and were usually professionals engaged in the formal sector of the economy. Parental income of parents is bound to have meaningful interaction with relation with immunization behavior and practices of parents. Majority being civil servants have opportunities to interact with colleagues at work and participate in some government activities such as immunization campaigns in the course of daily official duty.

The study found relationship between proximity of residence, maternal knowledge and exposure to social mobilization activities among respondents. This study showed that children living farther than 5kilometers had low odds of being immunized. This finding confirmed the results in Kidane et al, (2006) study which uncovered that those who live longer than 30 minutes walk from an immunization site had lower vaccination rates. The implication of this finding is that due to geographic disparities the cost is higher for lower income families than other groups to demand and utilize immunization services hence the need for extension of health care services and community engagement.

5.2 Knowledge of Respondents on Social mobilization and Uptake of Immunization Service

The study showed that good knowledge towards social mobilization strategies and uptake of childhood immunization was statistically non-significant ($p\text{-value} = 0.148$). Interestingly, some respondent with good knowledge had delay in completing immunization as schedule. This finding is consistent with earlier studies by Buchner D (2011) which reported noticeable variation in full immunization due significant influence of many providers unrealistically expecting consumers to come to them and therefore failing to reach out to those in need of care who may be uncomfortable in strange settings. Kamau's study also stated range of factors that may affect motivation to seek immunization service for the child. Within some families, parents may show frustration and shame for default. The consequence and complexity may significantly limit parents' ability to engage with the health care system and health worker in formal setting to acquire services on behalf of their children. In communities where outreach is not well funded, missed opportunities also exists. One would have expected higher knowledge to correlate with higher uptake. This finding corroborates Akande & Aderibigbe (2006) where a higher percentage of health workers in a teaching hospital did not complete Hepatitis B vaccination as scheduled. Interestingly, some respondent with good knowledge had delay in completing immunization as schedule. This finding is consistent with Kamau's result which stated range of factors that may affect motivation to seek immunization service for the child. High and positive levels of awareness and knowledge of social mobilization and childhood immunization found in the study could also be attributed to high education levels, quality of information, education and other socio economic and demographic factors. Previous studies revealed that information dissemination is arbitrary and extremely low among parents. Most respondents in this study acknowledged use of media as tool for creating awareness and disseminating information on

childhood immunization when prompted to elicit responses on questions designed to assess respondents' knowledge on social mobilization. The finding confirms that parental exposure to social mobilization strategies would influence and motivate mother to demand and utilize childhood immunization service. Jackson (2013) in a study reported significant increase in knowledge, understanding and improved confidence among mothers using "decision aid" to establish trust, efficacy and safety of childhood immunization. Hutchinson reported that mothers exposed to media campaign were more likely than those who did not to report back for DPT3 vaccination (64% versus 48%) and measles vaccination (79% versus 61%). Better off parents respond to media exposure due to improved knowledge. Cutts and others reported significant increase in measles immunization coverage between 1% and 31% when the door-to-door canvassing for a immunization program scheme was applied. Awodele et al in LUTH in his study found that almost all the respondents were aware of immunization and that immunization could prevent childhood sickness (93.8%; 98.1%) respectively. However, some erroneously believed that immunization will make their children brilliant (28.8%) or grow fast (10.9%). Majority of the respondents (62.6%) knew that immunization ought to be given at a specific period, and 64.2 % of the respondents were ready to get their children immunized irrespective of the cost. The implication of this finding is to focus on parents and motivate them to adopt the right attitude towards uptake of childhood immunization using correct information and education. The group of defaulter found among those with good knowledge is big; however, both the children that have no immunizations and those that have partial immunizations are in similar risk of acquiring vaccine preventable diseases. Any attempts to improve immunization delivery and efficacy must take into account the default rates in Ijebu North.

However, the finding is in contrast with Mchombu 2003 finding in an evaluation studies from Zambia, Angola and Mozambique, which reported knowledge, attitude and practice (KAP) gap in a reversed form. Instead of high knowledge and low practice, what was reported was high practice and low knowledge. This should not be surprising altogether since the immunization coverage has often been boosted as a result of short campaigns. The mass media often limited themselves mostly to motivating people to visit the health centers: announcing the dates and places where one could be vaccinated rather than explaining the why and what. In general, information gives knowledge, improves attitude and increases participation. Abdul Raheem et al (2011) posited that knowledge is a paramount factor in improving behavior towards uptake of immunization. Emmanuel (2015) also stated that knowledge and understanding of diseases preventable by vaccines among parents are much more crucial than other factors affecting quality decision for uptake of immunization.

5.3 Attitudes of Respondents towards Social Mobilization and Uptake of Childhood Immunization Service

The study showed significant association at a p-value of 0.005 between knowledge on social mobilization strategies and attitude towards uptake of childhood immunization. It is easy to transfer knowledge when information is passed using appropriate tool and medium during interpersonal interaction, education and communication in health settings (Gust et al 2005); perceived lack of information was associated with negative attitudes about immunizations and toward healthcare providers. This implies that when messages is rightly targeted and in appropriate settings and by credible source there will be positive attitude, increased parental awareness, improve behavior and intention to immunize children will also increase.(Akande & Akande, 2006) When health care providers are able to communicate effectively and with respect it positively affects patients satisfaction and adherence. In general, strong association

exists between parents who received good information about immunization and positive uptake of immunization. Oshagemi & Olu (2005) also asserted that worries and fears of parents about vaccination would be eased when parents have access to correct information.

The finding in this study revealed that attitude of parents is a predictor of immunization status of the child as well as willingness to accept immunization. This finding supports the observations of in earlier study by Wroe A, Turner N, Slaikovakis P, (2004) that improving the knowledge and immunization attitude will invariably change the immunization practices of parents. Also Angadi et al also reported that conflicting roles of mothers to attend to other domestic or economic cores caused delay in accessing services as scheduled. In his study most of the respondents (65.16%) believed that diseases could be prevented by immunization. Only 34.84% of the children were fully immunized, 62.58% were partially immunized and 2.58% were unimmunized.

This study revealed that majority of respondents (85%) gave consent to social mobilization and uptake of childhood immunization, and fairly large (78%) disagreed with incentive towards social mobilization and childhood immunization. This is an indication that the parents highlighted remarkable positive attitudes towards utilization of DPT vaccination while the highest negative attitudes was towards uptake of childhood immunization as being associated with too much visits to health facility. The finding agrees with Anyene (2014) who affirmed that financial incentives will create room for inappropriate patronage-seeking which often end up inadvertently weakening primary health care. This finding disagrees with Amin and Li on incentive which found significant relationship on incentive and uptake of immunization among poor women. The finding stated that collateral-free credit to poor women on assumption could lead to social changes and increase uptake of vaccination. Their cross sectional survey found lower rates of infant mortality and modestly higher rates of vaccination among credit members

than among non-member in the same area: last born vaccinated DPT3: 88.6% credit members, 82.1 non-members from the same district and 73.4% in non program districts. In the case of measles coverage: 67.8% for credit members, 58.8 for non-members in the same districts and 49.4% in non-program districts. Logistic regression analysis showed a significant relationship between credit membership and completion of vaccination. In the same vein, Loevinsohn and Loevinsohn which tested provision of food rather than credit in north-west Nicaragua where 19% of children under six years of age were malnourished found that special mobile clinics with food incentives (3.2 Kg of flour, 0.9 Kg of skim milk powder, one liter of cooking oil and three cans of chopped beef or pork) achieved attendance rates of 99%, compared with 94% in stationary clinics with food, and 63.3% with regular mobile clinics. The assumption is that well child clinic attendance translates as completed vaccination. In the case of stationary clinics, attendance dropped with increasing distance to be travelled.

The study found non-statistical significant relationship between level of knowledge of social mobilization strategies and childhood immunization status. (P-value = 0.148). Similar finding was reported by Austin et al, that simply providing more information is unlikely to change decision of a subset of parents of incompletely immunized children who had decided that their children would not have full immunization, as this group had little trust in information provided by healthcare professionals. This finding confirms that though knowledge or awareness is an essential step and foundation for the adoption of healthy behaviors but in itself is not sufficient to create a change in practice or behaviors. Knowing what to do is different from doing it. This finding also corroborates Akande & Aderibigbe (2010) in an earlier study that revealed poor response and compliance to vaccination among health workers in tertiary health institution where only (76.5%) of health workers returned for second dose and less than half of those returned for

the third and final dose of Hepatitis B vaccination after taking the first dose. When prompted on attitudes and use of vaccinations the respondents was highest towards utilization of DPT vaccination while the highest negative attitudes was towards uptake of childhood immunization as being associated with too much visits to health facility with majority about 86% of the respondents considered TV as a source of accurate information.

5.4 Social Mobilization Strategies for Uptake of Childhood Immunization

Access to and use of social mobilization strategies in this study is associated with parental socio-economic status which is also an important determinant in uptake of childhood immunization. This finding as reported earlier in other African countries and previous studies in Nigeria stated that parents, especially mothers want to be informed decision makers and recommended that health providers should provide truthful information on the risk and benefits of vaccines, as this appears to have the greatest influence over their immunization practices and behavior. (Bairagu R, Doctor HV et al. 2011; Owino & John, 1998). This study showed further that source of information about childhood immunization plays an important role in the motivation of parents. Another result of the study found health-workers being too busy and in hurry to give accurate information as negative factors for social mobilization and uptake of childhood immunization. The implied that high proportion of respondents has a positive impression about attitudes of health workers in health care settings. This implies that health workers demonstrated good skills and effective interpersonal communication. The most preferred social mobilization strategy and source of information was the health workers. This finding is consistent with Leask, Chapman, Hawe, Burgess, (2006), study that found significant relationship between uptake of immunization and exposure to good interpersonal relationship during clinic sessions. This probably was a direct consequence of receptive attitude and interest

of respondents in carrying out their parental responsibilities of protecting the children from preventable illnesses and deaths. It was assumed that health workers will address both risk and benefit of immunizations and also be the greatest influence on parents choosing to immunize. Also that access to information will counter rumors and misinformation about immunizations, and when faced with confusion, parents turn to professionals or their social network for support. The study revealed that access by 92.3% to immunization campaign and use of town announcers by 84.2% significantly contributed as positive factors that promote social mobilization and uptake of childhood immunization. Elsewhere in a related study Zhang et al., found that frequency of watching TV or listening to radio have a strong relationship with immunization knowledge, attitude and practices of caregivers. In general, it was suggested that social mobilization using verbal, video, or provider delivered communication tools may also increase parents' understanding, especially if the tools are structured, tailored and interactive. This indicate that care givers in the study had access to media use and could ask questions during the vaccination visit and this could possibly lead to increased trust in the vaccination program. The result corroborated similar study by Waisboard (2005) that reported increase in immunization of children from 54% to 65% due to exposure to television.

This finding is in contrast with Blairs et al. 1997 which indicate a very low level of knowledge among care givers attending health clinic. The study reported that twenty-three percent of care givers had no knowledge regarding the vaccinations that their child was receiving and the disease for which the vaccination was administered and 18 percent of care givers were unsure of the relationship between immunization and the likelihood of their child contracting an infectious disease. The personal health record was not found to be useful as an educational

resource. Although 99 percent of care givers had the booklet in their possession only 8 percent had referred to it as a source of information.

Also Danis 2010 Greek study reported unfriendly health provider attitude and general ineffectiveness and inefficient of organization at preventive services as major factor contributing to an increase in unimmunized children. Investing in health care workers and strengthening their communication skills would further enhance uptake of immunization in the local government.

Overall, this finding also add to the limited evidence on the role of knowledge acquisition in uptake of immunization in INLG. Social mobilization strategies to reduce incomplete immunization need different approaches. Irrespective of the world's region the advantages in the utilization of health care services by literate parents and who have access to services and health promotion activities over those who do not have has been repeatedly emphasized. The urban infrastructure has often been attributed to the improved modern health care system. In the contrast the utilization of health services in some locations differs and is limited by factors associated with availability accessibility and quality of services as well as the characteristics of the users and the communities in which the users live.

Specifically geographical access has a greater impact on the utilization of health services including immunization services particularly in communities with limited service provision of health care services. One of the arguments put forward for low immunization coverage is the failure of the demand and supply sides. The demand failure includes the knowledge gap about the benefits of immunization, possibly due to lack of immunization campaign and families not being adequately informed. However, supply or system failure of the health workers to arrive on time or be regular, inadequate supplies can be higher to mention few.

Distance to nearest health facilities have demonstrated that families who live more than five kilometers from health facility are less likely to access services at the facility and more likely to

seek health care from informed provider closer to home. Finding from this study indicated that the respondents leaving in close proximity to health facility had about 20 times the odds of childhood immunization uptakes than those leaving farther away from health facility. This finding confirms Uganda study which found that a distance exceeding three kilometers created a barrier to health facility access Ettah, Galiwango et. Al. 2011. Also in earlier studies Borooah, (2003) Bryce *et al.* (2003) identified that area of residence, urban or rural is a key variable associated with immunization demand.

Similarly Sabaski et al., (2010) also reported that respondents who resided within a short distance to immunization clinics have increase odds of being socially mobilized and encouraged to receive immunization services by 16.1 times than those who leave far away. The reasons for the high uptake of immunization due to proximity are readily obvious. Due to the higher number of health institutions and centers located in the study area, immunizations are more easily accessible to mothers. Poor access to and limited healthcare facilities in rural and hard to reach areas or communities could also contribute to lower immunization uptake.

Another result of this study highlighted that income index and education positively influenced immunization uptake in the study. The respondents with high income had about 6 times the odds of childhood immunization uptakes than those with low income. This finding corroborates Abdul Raheem et al, (2011), Antai (2009) & Impicattorie et al., (2000) that found travel costs along with long waiting hours of operation at clinic sites and other opportunity costs can poses barrier on uptake of immunization. In particular when it comes to paying for user fees, time spent away from regular source of income, family residing in far areas to health facilities, not knowing where to go to access service, language barrier for non indigene and

having experienced poor treatment by a health care provider are factors affecting social mobilization strategies and uptake of childhood immunization.

In this study, respondents benefited from house-to-house immunization campaigns thus have increase odds of being motivated to adopt the childhood immunization practices by 4.9 times than those who did not benefit. In a similar study Brugha and Kevany (2009) found increased in completion of immunization by 26.5% in the intervention group, compared with 6% in the control group ($P < 0.005$) thus the finding of this study agreed with the finding home visit and followed by health care workers to households of children is an effective social mobilization strategy. Respondents who did not benefit from childhood immunization campaigns has decreased odds of being motivated to adopt the childhood immunization practices by 64% than those who benefited. The results revealed that health workers are preferably used as information sources by the respondents. This finding concurs with Arthur (2005) that home visit changed the mind of parents who were initially reluctant to get their children vaccinated. In Uhegbu (2000:53), Iwiyi & Odi also indicated that substantial success in communication network among the Nigerians can be achieved through the oral medium.

5.5 Factors Influencing Uptake of childhood Immunization

According to Brugha and Kevany (2009) it is important to desperately design messages, and means to increase demand for childhood immunization in developing countries. This is because social mobilization contributed to increase in knowledge transfer to increase uptake of immunization.

Good knowledge of social mobilization strategy was significant in respondents' ability to demand and utilize immunization services. This agrees with Olumuyiwa et al., and contradicts the work of Mchombu (2000). However, there is a need for more researches to investigate ways of improving uptake of immunization as knowledge increases. There was embarrassing gap in

the number of women had knowledge of benefits of immunization and yet delayed completion of immunization as scheduled. One would have expected that the more knowledgeable and better informed the less resistance and hesitancy to get the children immunized. There is need therefore to find out if this is a deficit in the quality of information or the content and context of the health talks given at clinic and community level.

There was significant difference in incentives and uptake of immunization in this study. The implication of this finding is that protecting the child from vaccine preventable diseases is a major parental role. It is important to note, however, that individuals are answerable for the quality of lives of his or her child but overall, the impact on the community and global health is at huge cost. Although, WHO stated that only few parents possess the knowledge of the consequences of this on the global health status of the children. However, each strategy of social mobilization has a preferred method of presentation and special appeals to respondents. By using the appropriate strategies to match the needs and expectation of the respondents, uptake of childhood immunization could improve.

Social mobilization strategy is important in shaping knowledge, attitudes and practices of parents towards childhood immunization. The source of mobilization and information is critical for its internalization, acceptability and translation into action. In the study area, parents obtained information about childhood immunization from various sources, including radio, television, friends and health workers. However, information accessed from health workers had the greatest impact in terms of completion of immunization as scheduled. This suggests that information provided by health workers was bound to be clearer and more authoritative than information provided by posters which is less interactive; this re-emphasizes the need for the health planners and those in charge of service delivery to improve the quality of health education program during

clinic days, through better programming, adequate staffing, better facilities and materials, as well as through staff motivation.

In most developing countries, matters related to childhood immunization majorly, form part of women's responsibility, alongside childcare, farm work and domestic chores. Too many roles of mothers may compromise the time and resources that would enable women to access immunization services in good time for completion as scheduled. This study revealed appreciable participation and positive attitude of men and support women to facilitate early and consistent uptake of childhood immunization. The success of the uptake of childhood immunization services depends on the extent to which men are involved and targeted with information for better knowledge, understanding and attitude change. It is optimistic to conclude that this positive attitude is facilitated by level of education, maturity of parents and income of parents.

Distance to health facilities is a critical factor influencing uptake of childhood immunization. In the study area, respondents who reside within a short distance to immunization clinics have increase odds of being socially mobilized and encouraged to receive immunization services by 16.1 times than those who leave far away.

Study Limitation

This study has some limitations. Though the study used a fairly large sample size, the results of the findings cannot be generalized to all local government areas in Nigeria. There are differences in socio-cultural background, and provision of social amenities in different parts of the country, that may influence demographic characteristics, immunization behaviors and practices of parents.

Also, some eligible participants who were not fully resident respondents in the area of study were excluded only households with children 0-23 months of age and who had at least one dose of immunization and verifiable by possession of child health card was included.

Furthermore, the study relied on the capability of respondents to recall different exposures to different strategies at the same time. Some of them may have found this stressful and burdensome. A few may have felt embarrassed due to forgetfulness and may actually give one or two inaccurate answers. These possibilities may have introduced biases into the recall of media exposure and utilization. As a means to counter this, participants were given to choose among several choices to determine their exposure to social mobilization strategies.

Future Research

There are few studies on communication this study was the first to examine demographic factors and uptake of childhood immunization in local government area settings. Future studies could increase the scope to cover more Local government areas in Nigeria. Future research can also compare different local government areas in Nigeria using the same independent variables of socio-demography and social mobilization strategies and uptake of childhood immunization. Nevertheless, future research can be conducted on Social mobilization, demography and Communication Styles as predictor of uptake of childhood immunization among parents in Nigeria.

Conclusions

When mothers are informed and aware of benefits of immunization, they are likely to seek and demand for childhood immunization to prevent their children from illnesses. They are receptive to appropriate methods and strategies used to inform them about childhood immunization and this method and strategy may be reinforced in order to sustain their interest and trust in the immunization services. Social mobilization strategies becomes more effective to

drive uptake of childhood immunization when other factors; demographic easy access to immunization services occasioned by proximity of residence of parents to immunization services are in place messages designed to inform, educate and communicate are appropriate. to reinforce childhood immunization practices among illiterate mothers who belong to the low socio-economic classes, it is believed that they may upturn the fortune and increase the immunization coverage for all antigens.

Recommendations

In view of the findings of this study, the following measures are recommended to help improve the social mobilization deficiencies detected.

1. The cooperation and support of all (health care workers, parents, media specialist, and local women groups, community leaders) is important in devising and implementing explicit social mobilization strategies that will sustain parents knowledge, awareness and uptake of childhood immunization..
2. Mechanism for evaluating the effectiveness of existing social mobilization strategies should be put in place for example data should be collected routinely on the most preferred method(s) of communicating messages on childhood immunization and other related health services.
3. More health facilities including private hospitals should be supported to participate in promoting and communicating immunization messages.
4. Health worker's professional associations should be actively involved in promoting appropriate teaching curriculum for health workers and for developing socially responsible policies which encourage and support childhood immunization practices.

5. Continuous and training and retraining of health workers should be encouraged on interpersonal communication skills to specific staff members who may be interacting with parents on during immunization clinics.
6. Health workers should take the lead in preserving or re-establishing childhood immunization culture by promoting positive attitudes towards immunization in the society as a whole and by stimulating and working closely with community leaders, media practitioners, social workers to achieve this end.
7. Information and education on childhood immunization and its related problems should be routinely provided by staff with specialized training for all parents males inclusive in the clinics, communities and during outreach services and should be provided with printed materials, that give relevant guidance and information.
8. Every mother, parent should be given appointments and encouraged to attend subsequent visits after the initial doses of immunization and infant child health care clinic should they encounter problems with immunization.
9. Immunization practices should be reinforced among literate and illiterate parents who belong to both high and low socio-economic classes by using combination of personal contact and the mass media, so that they will act as positive role models for future parents to emulate.

REFERENCES

- Abdulraheem, .I.S., Onajole, .A.T., Jimoh, A.A.G., Oladipo, A.R., (2011). Reasons for incomplete vaccination and factors for missed opportunities among rural Nigerian children: *Journal of Public Health and Epidemiology*. Vol. 3 (4), pp. 194-203.
- Abtoms, L.C., Maiach, E.W. (2008). The effectiveness of mass communication to change public behavior. *Annual Review of Public Health* 29: 219-34.
- Acharya, L.B, Cleland, J., (2000). Maternal and child health services in rural Nepa: does access or quality matter more? *Health Policy Plan*; 15-223-229
- Adamu, G.S., Lasisi, F.I. (2011). *Information needs and information seeking behavior of rural women in Borno State*, Nigeria. Library Philosophy and Practice, ISSN 1522-0222.
- Adetokunbo, O.L; Gilles, H.M.; (2003). *Short textbook of public Health Medicine for the Tropics*. Bookpower. 4th edition. pp4, 283-287.
- Africa Routine Immunization System Essentials (ARISE) Project for the Bill & Melinda Gates Foundation. Available at: <http://arise.jsi.com/landscape-analysis-2/>
- Akande, T.M. (1996). Knowledge of Mothers Attending EPI Clinics in Ilorin about Childhood Immunization. *Journal of Community Medicine and Primary Health Care*. Vol. 8. No.2:10-13.
- Al-lela, .O.Q.B Bahari, M.B. Salih, M.R.M. Al-abbassi, M.G. Elkalmi, R.M. Jamshed, S.Q. (2011). Influence of health providers on pediatric immunization rate. *Journal Tropical Pediatric* 58 (6) 441-445.
- Alyssa, B. Shakey, Sandrine Martin, Teresa Cerveau, Erica Wetzler, and Rocio Berzal (2014). Demand generation and social mobilization for integrated community case management (iCCM) and child health: Lessons learned from successful programmes in Niger and Mozambique, *Journal of Global Health*.
- Amir, R, Shah M, Beckr, S. (2010). Socio economic factors differentials maternal and child health seeking behavior in rural Bangladesh; A cross sectional analysis; *International Journal of Equity in Health* 9:9.
- Anaeto, S.G. (2010). *Developing Communication Principles and Practice*. Ibadan, Stirling-Horden Publishers Ltd.
- Anand, B, Barning Hansen T. (2004). Health workers and vaccination coverage in developing countries: an econometric analysis. *Lancet* (04) 369 (9569).

- Anand, S. (2007). *Health workers and vaccination coverage in developing countries: Lancet* (4) 14: 369: 1277-85.
- Ankrh U, Nwigue F, (2005). *Immunization system review and training needs assessment in Ekiti State*, MOH Adoekiti Jegede & Owumi, 2013).
- Antai, D. (2009). Inequitable childhood immunization uptake in Nigeria: A multilevel analysis of individual and contextual determinants *BMC Infectious Diseases*, 9 Article 181.
- Anvaccine Aeto, S.G, (2010). *Developing Communication Principles and Practice*, Ibadan, Stirling-Horden Publishers Ltd.
- Anyanwu CN, (2008). *Community Development: The Nigeria Perspective*. Ibadan. Gabesteher Education Publishers.
- App. (2013). Polio eradication: vaccine refusal cases addressed in K-P, FATA. The Express Tribune, News Network,).
- Arthur, A.J, Matthews, R.J, Jagger, C., Clarke, M., Hipkin, A., Bennison, D.P. Improving uptake of influenza vaccination among older people: a randomised controlled trial. *The British Journal of General Practice: the Journal of the Royal College of General Practitioners*. 2002;52 (482):717–8, 720.
- Austin, Helen; Champion-Smith, Charles; Thomas, Sarah; Ward, William (2008). *Health knowledge Community Practitioner*; Oct2008, Vol. 81 Issue 10, p32.
- Babalola, S.O. (2004). A Community and Systematic Factors Affecting the Uptake of Immunization in Nigeria: A Quantitative Study in Five States, Nigeria: Abuja: Department for Transforming Health Systems (PATHS) CEDPA.
- Ball, L.K, Evans, G., Bostrom, A., (2010). Risky Business: challenges in vaccine risk communication. *Pediatrics* 101 (3pt 1): 453-58.
- Barbara, P. (1990). Immunizations the behavioural issues in child survival programs: A synthesis of the literature with recommendations for project design and implementation. Monograph No 3 USAID.
- Battersby, F. (2005). *Design of routine immunization initiative Trip Report DfID*
- Bedrega, T.F. (2002). *Communication for sustainable Development: The Conceptual Frame Work*.

- Bertrand, J.T. Reilly, K. O' Denison, J. Anhang, R. Sweat M. (2006). Systematic review of the effectiveness of mass communication programs to change HIV/AIDS-related behaviors in developing countries *Health Educ Res*, 21 (August (4)), pp. 567–597.
- Bishai D, Suzuki E, McQuestions M, Chakraborty J, Koenig M. (2002). The role of public health programmes in reducing socioeconomic inequities in childhood immunization coverage. *Health Policy Plan* 17: 412 419.
- [Blair A](#), [Davies E](#), [Nebauer M](#), [Pirozzo S](#), [Saba S](#), [Turner C](#). (2000). Why immunise. Care giver understanding of childhood immunisation. *Collegian* Jul;4(3):10-7.
- Bola, U. (2003). *Making a case for meeting her health needs*.
- Bonnie Rochman, (2013). How Social Networks Influence Parents' Decision to Vaccinate. A small group of parent advocates is mobilizing "gentle propaganda" against vaccine naysayers: Time.com
- [Bosu WK](#), [Ahelegbe D](#), [Edum-Fotwe E](#), [Bainson KA](#), [Turkson PK](#). (2008) Factors influencing attendance to immunization sessions for children in a rural district of Ghana. Health Research Unit, *Regional Health Administration*, Cape Coast, Ghana. w.bosu@lshtm.ac.uk
- Bradley, J, & Iglas, S. (2005). Improving the quality of child health services; participatory action by provinces. *International Journal Qual Health Care* 17:391-399.
- Brown V.B. Oluwatosin O.A. (2012) Social demographic factor associated with CI uptake in Akinyele LG Area, Oyo State. *Afr J Med Sci* 41(2) 161-167.
- Buchner, D. (2011). *Stories without endings: illness and narration from Lao PDR* Calgary, University of Calgary.
- Buckly, S. (2011). *Community media: a good practice handbook*. Pris, UNESCO ISBN 978-92-3-104210-2.
- Butler, R. MacDonald, N.E. (2015). The SAGE Working Group on Vaccine Hesitancy Diagnosing the determinants of vaccine hesitancy in specific subgroups; the guide to tailoring immunization programmes (TIP) *Vaccine*, 33 (34), pp. 4176–4179.
- Canadian Consensus Conference on a National Immunization Record System, *CCDR* 1998:24 (17):137-140.
- Carpenter, C J. (2010). A meta-analysis of the effectiveness of health belief model variables in predicting behavior. *Health communication* 25 (8): 661-669.

- Carter, S. (2008). *Structuring Your Research Thesis*. New York: Palgrave Macmillan, 2012; Lunenburg, Frederick C. *Writing a Successful Thesis or Dissertation: Tips and Strategies for Students in the Social and Behavioral Sciences*. Thousand Oaks, CA: Corwin Press.
- Chandri S, Khan, A.J, Hussain, H., Usman, H.R., Kowaja, S., Halsey, A., Omar S.B. (2014) Effect of food coupon incentives on timely completion of DPT immunization series in children from low – income area in Karachi, Pakistan: A longitudinal intervention study. *Vaccine impact factor* 3:49 (19) 3473-8.
- Christie, AS, Gay A. (2011). The Measles Initiative: moving toward measles eradication. *J. Infect. Dis.* 204 514-517.
- Ciefie, P, De Allegri M, Kouyale B, Saubun R (2013). Effects of information, education and communication campaign on community based health programme in Burkina Faaso, *Global Health Action* Vol 6: 1-8.
- Commission on Social Determinant of Health (2008). *Closing the gap in a generation: health equity through action on the social determinant of health*. Final report of the commission on social determinant of health WHO, Geneva.
- Croyle, R.T. (2000). *Theory at a Glance: Application to Health Promotion and Health Behaviour* (second Edition) U.S. Department of Health and Human services, National Institutes of Health, 2005; available at www.thecommunityguide.org
- Cui Fom Gofin R. (2007). Immunization coverage and its determination in children aged 12-23 months in Gaunsu, China. *Vaccine* (25) 664-671.
- Deern, H, Turboh H.B, (2005). Diptheria Immunization campaign in South Aucland District, Ne Zealand: *AJHR* (19) P.114.
- DiClemente C.C, Marke, V.M, (2002). *Motivational interviewing and the stages of change*. In *Motivational interviewing* 2nd edition Edited by: Miller WR, Rolinick S. New York. Tuilfor Press: 201-216.
- Dube, E., Gagnon, D. MacDonald, N.E. (2015). The SAGE Working Group on Vaccine Hesitancy Strategies for addressing vaccine hesitancy: review of published reviews *Vaccine*, 33 (34) pp. 4204–4211.
- Dukeshire, S., Thurlow, J. (2008). *Challenges and Barriers to Community Participation in Policy Development Rural Communities Impacting Policy Project*.
- Dulcose P (2007). Vaccination coverage of 2 year old children and immunization practices: *Vaccine* 2007 15 (1): 20-24.

- Dunu, Ifeoma Vivian, Uzochukwu, Chinwe Elizabeth (2015) Social Media: An Effective Tool for Social Mobilization in Nigeria. *IOSR Journal of Humanities and Social Science* (IOSR-JHSS) Volume 20, Issue 4, Ver. III PP 20-21.
- EOC (2015). *Fighting Polio: Religious Leaders lead the way: Update Issue VIII*.
- Ettarh R, Galiwango E, Rutebemberwa E, Pariyo G, Peters S.(2011). Spatial analysis of determinants of choice of treatment provided for fever in under five children in Iganga, Uganda *Health & Place* 320-326.
- Fielden Battersby (2005). *Design of routine immunization initiative Trip report DfID*.
- Freimuth, V.S, Quinn, S.C. (2004). "The contribution of Health Communication to Eliminating Health Disparities" *American Journal of Public Health* 94 (12): 2053-2055.
- Friere, P. (2003). Education for critical consciousness, Ney York Seabury Press. Egeth, H (2007) "Selective Attention" *Psychology Bulletin*, 67 (41-57).
- Gedlu E., Tesemma T. (1997). Immunization and identification of problems associated with vaccination delivery in North West Ethiopia, *East African Medical Journal*, 74(4):239-241.
- Glanz, Karen; Barbara K. Rimer; K. Viswanath (2008). Health behavior and health education: Theory, Research, and Practice. (4th ed.). San Francisco, CA: Jossey-Bass. pp. 45–51.
- Glanz, Karen; Bishop, Donald B. (2010). "The role of behavioral science theory in development and implementation of public health interventions". *Annual Review of Public Health* 31: 399–418.
- Global Polio Eradication Initiative (2013). 8th meeting of the Independent Monitoring Board *Wkly Epidemiol Rec*, 88 (July (28)) pp. 297–300.
- Gust, D., Darling, N., Kennedy, A., & Schwartz, B. (2008). Parents with doubts about vaccines: which vaccines and reasons why. *Pediatrics* 122: 718-725.
- Gust D, Brown C, Sheedy K, Hibbs B, Weaver D, Nowak G. Immunization attitudes and beliefs among parents: beyond a dichotomous perspective. *Am J Health Behav* 2005;29(1):81-92
- Hamilton M, Corwin P, Gower S, Rogers S. Why do parents choose not to immunise their children? *NZ Medical Journal* 2004;117(1189):768-774.
- Hall, John. "Cross-Sectional Survey Design." In *Encyclopedia of Survey Research Methods*. Paul J. Lavrakas, ed. (Thousand Oaks, CA: Sage, 2008), pp. 173-174;

- Hamilton, M, Corin P, Gover S Rogers S,(2004). Why parents choose not to immunize; *New Zealand Medical Journal*; 117 (1189).
- Hariweni, T, KAP (2004). Of under five children stimulation of working and non working mothers, *Pediatrics Indonesia* 44 (3-4) 1011-105
- Health Communication Partnership (2003). *The New P-Process, steps in strategic communication*, Baltimore: John Hopkins Bloomberg School of Public Health/Center for Communication Programm/Health Communication Partnership
- Heather Ames, Diangha Mabel Njang, Claire Glenton, Atle Fretheim, Jessica Kaufman, Sophie Hill, Afiong Oku, Julie Cliff, Yuri Cartier, Xavier Bosch-Capblanch, Gabriel Rada, Artur Muloliwa, Angela Oyo-Ita and Simon Lewin, (2015) BMC Public Health BMC series – open, inclusive and trusted 15:1264 10.1186/s12889-015-2557-9.
- Helen Barratt, Maria Kirwan. (2009). *Cross-Sectional Studies: Design, Application, Strengths and Weaknesses of Cross-Sectional Studies*. Wikipedia.
- Howley K, (2012). *Understanding Community Media*, SAGE Publications, Inc, ISBN 978142959056.
- Hull, S., Hagdrup, N., Hart, B., Griffiths, C., Hennessy, E. (2002). Boosting uptake of influenza immunisation: a randomised controlled trial of telephone appointing in general practice. *The British Journal of General Practice: The Journal of the Royal College of General Practitioners*. 482:712–716.
- Jackson C, Cheater F M, Rose P, Julie L, Lyndal T. Evaluating a web-based MMR decision aid to support informed decision-making by UK parents: A before-and-after feasibility study. *Health Educ J*. 2010;1:74–83.
- Jamil, K., Bhuiya, A., Streatfield, K., Chakrabarty, N. (1999). The immunization programme in Bangladesh: impressive gains in coverage, but gaps remains, *Health Policy Plan*: 14:49-58.
- Janz, N.K, Marshal, H.B. (1984). The health belief model: A decade later. *Health Education Behavior* 11(1):1-47.
- Jarrett, C. Wilson, R. Leary, M. O', Eckersberger, Larson, H.J. (2015). The SAGE Working Group on Vaccine Hesitancy Strategies for addressing vaccine hesitancy – *A Systematic Review Vaccine*, 33 (34), pp. 4180–4190.
- Jegede, A.O. & Owumi, G.A. (2013). Factors influencing infant immunization uptake in the Yoruba community of South Western Nigeria, *Comm Medical Health Education* 3: 215

- Jones, R. (2014). Health Communication: University of Arkansas Monograph of Health communication 4:2.
- Karim, A.M. (2011). "Enhancing interactions between households, communities and health workers for improving maternal and newborn health: the Last Ten Kilometers project." Presentation on Bill & Melinda Gates Foundation.
- Kasonde, J.M, Maretin, J.D, (1994). *Public health in Action 2, Experiences with Primary health care in Zambia*, WHO, Gene.
- Kaufman, J., Synnot, A., Ryan, R., Hill, S., Horey, D., Willis, N. *et al.* (2013). Face to face interventions for informing or educating parents about early childhood vaccination *Cochrane Database Syst Rev*, 5, p. CD010038.
- Keane M, Walter M, Patel B, Moorthy S, Stevens R, Bradley K, et al. Confidence in vaccination: a parent model. *Vaccine* 2005;23(19):2486-2493
- Kenneth, L.S. (2005). *Handbook of visual communication: theory, methods and media* p.123 ISBN 978-0-8058-4178-7.
- Khanom & Salahuddin (1983) *Health Workers Continuing Education Baseline Survey Reports*, Ministry of Health, Nairobi, Kenya, 1983.
- Kim, S, Singarimbun M, Diamond, I. (1990). *Maternal education: Demography* Vol 27, (3) 447-455.
- King EM, Hill MA, (1983). *Women's Education in Developing Countries: Barriers, Benefits and Policies*.
- Kita, A. (2011). *Vaccination and public concern in history: legend, rumor and risk perception*, Florence, KY: Routledge Studies in History of Science, Technology and Medicine.
- Kriti, V., Vanneman, R., Sonalde, D. (2012). Linkages between maternal education and childhood immunization in India, *Soc Sci Med* 75 (2) 331-339.
- Landscape Analysis Synopsis: An Initial Investigation of the Drivers of Routine Immunization System Performance in Africa (May 2011). Arlington, VA: John Snow, Inc.
- Lankester, K.K., Salahuddin, A.K.(2011). A study on impact of educational programme on Immunization behavior of parents, Bangladesh *Med Res Counc Bull.* 9(1):18-24,198.
- Leask J. How anti-immunization issues affect coverage. In: Centre IA, editor. The Really Active Immunisation Conference; 2004 10-11 September; Rotorua, available at www.immune.org.nz/?t=739; 2004.

- Leask, J. (2009). How do general practitioners persuade parents to vaccinate their children? A study using standardized scenario. *N.S.W. Public Health Bull.* 20: 119-224.
- Leask, J. and McIntyre, P. (2002). *Public Opponents of Vaccination: A Case Study*.
- Leask, J., Kinnersley P., Jacson C, Cheater F., Bedford H, Rowles G., (2012) “Communicating with parents about vaccination: a framework for health professionals”. *BMC Pediatrics* 12(154).
- Ling, J. (1999). *Health Promotion and the Media*. Technical Paper, HO Eastern Mediterranean Regional Office, Alexandria Egypt.
- Magadi, (2002). *Analysis of factors influencing childbirth care in Kenya*. In U Isiugo-Abanibe (ed) Proceeding of the Third African Population Conference, Durban, South Africa.
- Maiman, L A.; Marshall H.B, John P. Kirscht, D P, Drachman RH. (1977). *Scales for measuring health belief model*.
- Mapatano MA, Kayembe K, Piripiri L, Nyandwe, K. (2008). [Immunisation-related knowledge, attitudes and practices of mothers in Kinshasa, Democratic Republic of the Congo. SA Fam Pract. 50: 61-61e.](#)
- Martin, J.F. and Marshall, J. (2002). New tendencies and strategies in international immunization: GAVI and The Vaccine Fund. *Vaccine.* 21 : 587-592.
- Mason BW, Donnelly, P.D. (2000). Targeted mailing of information to improve uptake of measles, mumps, and rubella vaccine: A randomized controlled trial. *Commun Dis Public Health*; 3(1):67–8.
- Massimiliano, S. (2015). Scaling up Communication strategies to support demand and adherence to vaccination in Mozambique – experiences and lessons learnt Global Vaccination Conference / COMMVAC symposium UNICEF
- Mastry, L. (1999). *Eradicating Polio: A model for International Cooperation* Worldwatch Institute.
- Mba, C. (2006). *Reproductive health and maternal and child health challenges confronting Africa*.
- Mchombu, E.N. (2014). *The role of information and knowledge in Poverty Eradication in Africa: case study f Namibia*: <http://library.ifia.org/996/189.mchombu-en-pdf>

- McKee, N. (2002) “Motivation to Act” in *Involving People, Evolving Behavior*, New York, UNICEF.
- Minh Thang, N., Bhishen I., Bloom E., Bonus S. (2007). Child immunization in Vietnam: situation and barriers to coverage. *J. Biosoc. Science*; 37: 41-58.
- Miranda, EM (2007) *Gang injunctions and community participation*, Faculty of the School of Policy, Planning and Development, University of Southern California.
- Mitchell, D. (2000). Getting our point across: immunization information resources for staff in Ontario health units. *Communicable Disease Control services*, Halton Region (Ontario Health Department).
- National Institute for Health and Clinical Excellence (2009) NICE public health guidance 21: reducing differences in the uptake of immunization (including targeted vaccines) among children and young people aged under 19years. London.
- National Network for immunization Information. Communicating with patient about immunization: a resource kit. 2000. www.immunizationinfo.org.
- National Population Commission (Nig.) and ICF Macro 2009 Nigeria Demographic Health Survey 2008, Calverton.
- National Strategic Health Development Plan (NSHDP – 2010-2015)
- Naugle, D.A. Hornik, R.C. (2014). Systematic review of the effectiveness of mass media interventions for child survival in low- and middle-income countries *J Health Commun*, 19 (Suppl. 1), pp. 190–21.
- Ndumbe, P.M., Gregor, D.H. (2012) Individual contextual factors associated with low childhood immunization coverage in sub-Saharan Africa: *A multi level analysis: Plos ONE* 7(5) 10-13.
- Noar, S.M. (2006). A 10 year retrospective of research in health mass campaign” where do we go from here? *Journal of Health Community*; 11:21-42.
- NPHCDA (2012) *Integrated Training Manual for Primary Health Care Workers in Nigeria, Facilitators Guide* 317-319.
- Nundal, B., Nurke B.L. (2009). The effectiveness and applicability of motivational interviewing a practice –friendly review of four meta-analyses. *J. Clin Psychol* 65: 123 2-1245.

- Nuttall Dilyse (2003). The influence of health professionals on the uptake of the influenza immunization. *Br J Community Nurs.* 2003;8(9):391.
- Nyhan, B. Reifler, J. Richey, S. Freed, G.L. (2014) Effective messages in vaccine promotion: A randomized trial *Pediatrics*, 133 (April (4), pp. e835–e842.
- Obioha EE, Ajala AS, Matobo TA, (2010). Analysis of the performance of Expanded Program on Immunization for four diseases under the Military and Civilian regime in Nigeria *Ethromed* 4 (1): 43-52.
- Obregon, R. & Waisbord, S. (2010). “The Complexity of Social Mobilization in Health Communication: Top-Down and Bottom-Up Experiences in Polio Eradication.” *Journal of health Communication*, Vol. 15, No. 1, pp. 25 – 47, (07 May). Accessed on 8 July 2010, <http://www.informaworld.com/smpp/content~db=all?content=10.1080/10810731003695367>
- Obregon, R., Chitnis, K., Morry, C., Feek, W., Bates, J., Galway, M. (2009). Achieving polio eradication: a review of health communication evidence and lessons learned in India and Pakistan *Bull World Health Organ*, 87 (August (8), pp. 624–63.
- Oche MO, Umar AS, Ibrahim, MTO, Sabitu K (2011) An assessment of impact of health education on maternal knowledge and practices of immunization in Kware., Sokoto State. *Journal of Public Health Epidemiology*. Vol. 3 (10) pp 440-447.
- Odusanya OO, Ewan FA, Maurice FP, Alufoai V (2008). *Determinant of Vaccination Coverage in Rural Nigeria*, BM Vol. 8.
- One Million Baby die before five in Nigeria (2011). *The Nation*, p 44.
- Opeke, A., Ifukor, C. (2000). *An analysis of information environment of women in Ukwani local government Area, Delta State, Nigeria: Nigeria Library and information science research*: Vol. 18:1 & 2, pp 31.
- Opel, D., Robinson, J., Heritage, J., Karfiatis, C., Taylor, J., Mangione-Smith R, (2015). Characterizing providers’ immunization communication practices during health supervision visits with vaccine hesitancy parents: ‘A pilot study: *Vaccine*: (3) 1269-1275.
- Ophori, EA, Tula MY, Azih VA, Okojie R, Ikpo PE, (2014). Current Trends of Immunization in Nigeria: prospect and Challenges. *Trop, Med Health*, June 42 (2) 67-75.
- Oso L, Usman (2007). *Integrated Social Mobilization and communication strategies for immunization in Nigeria*

- .Owais A, Hanif B, Siddiqui AR, Agha A, Zaidi AK.(2011). Does improving maternal knowledge of vaccines impact infant immunization rates? A community-based randomized-controlled trial in Karachi, Pakistan. *BMC Public Health* 2011 Apr 17;11:239. doi: 10.1186/1471-2458-11-239.
- Oyefala, J.L. (2011). *Socio-cultural context of adolescent fertility in Yoriba Society: Insight from Osun State*. Nigeria.
- Pablos-Mendez, A.E. (2004). Fox Enhancing child survival and development in lower- and middle-income countries by achieving population-level behavior change. *Journal Health Community* 17 (10) (2012), pp. 1117–1118.
- Pande, R.P., Yazbeck, A.S. (2003). What is in a country average? Wealth, gender and regional inequalities in immunization in India, *Social Science and medicine* 57: 2075-88.
- Partnership for Reviving Routine Immunization in Northern Nigeria: (2010). *Immunization coverage- turning the corner in the four PRRINN-MNCH states*.
- Paterson TM, Gertrude A, (2005). *Dictionary of New Zealand Biography* DNZB.
- Patience Cofie, Manuela De Allegri, Bocar Kouyaté and Rainer Sauerborn (2012). A wareness, knowledge and enrolment Effects of information, education, and communication campaign on a community-based health insurance scheme in Burkina Faso.
- Paul, M.L. (2007). *Visual communication: Images with Messages*. Belmont, CA: Thomson Wadsworth ISBN 978-0-534-63720-0.
- Perloff (2008). *The dynamics of persuasion: Communication and Attitudes in the 21st century*, 2nd edition, Mawa, NJ: Lawrence Erlbaum Associates.
- Porter, et al (2000). Porter-Jones G, Williams S, Powell C, Pusey L, Roberts RJ. Impact of a novel way to communicate information about MMR on uptake of MMR vaccine: A randomized controlled trial. *Public Health* (Elsevier) 2009 January;123(1):78–80.
- Promotional campaign awareness: Asked "have you heard of EIW? 54.6% (yes), 44.6% (no) Corrigan A. European Immunization Week 2005: *Regional Evaluation of the Pilot Initiative*. 2006.
- Purken, R.K, Barman, M.P., Mahanta, J. (2009). Factors associated with immunization coverage of children in Assam, India: over the first year of life. *Journal of Pediatrician* 55: 249-252.

- Rennie, E, (2006). *Community Media: A Global Introduction (Critical Media Studies)*. Lanham, Md: Rowman & Littlefield. ISBN 978-0-7425 -3925-9.
- Rimer, BK, & Kreuter MW, (2006). Advanced tailored health communication: a persuasion and message effects perspective: *Journal of Communication*. 56 (suppl 1): 5184-201.WHO.
- Ritvo, P., Irvine, J., Klar, N., Wilson, K, Brown, L.A. (2008). Canadian national survey of attitudes and knowledge regarding preventive vaccines, *J. Immune Based Ther Vaccines*. 1:3) Health Canada, 1996.
- Rolinick, S., Butler, C.C., Kinnersley, P., Gregory, J., Mash, B. (2010). *Motivational interviewing*. BMJ 340:c1900.
- Rosenstock Irwin (1974). Historical origins of the health belief model. *Health education behavior* 2 (4): 328-335.
- Rosenstock, Irwin M.; Strecher, Victor J.; Becker, Marshall H. (1988). Social learning theory and the health belief model. *Health Education & Behavior* 15 (2): 175–183.
- Ruhul Amina, Telma Joana Corte Real De Oliveira, Mateus Da Cunhab, Tanya Wells Browne, Michael Favina, Kelli Cappeliera (2013) Factors limiting immunization coverage in urban Dili, Timor-Leste. *Glob Health Sci Pract* November 1, 2013 vol. 1 no. 3 p. 417-427. <http://www.ghspjournal.org/content/1/3/417.short?rss=1&ssource=mfr-aff-1>
- Ruihter, J.M. (2001). Mass Media Alone are not Effective Change Agent, *African Media Review* Vol 5 No 1, African Council for Education.
- Rwashana and Williams (2006). *An Evaluation of Healthcare Policy in Immunization Coverage in Uganda*. In the Proceedings of the 24th International System.
- Sabaki, S, Fujino Y, Igarashi K, Tanabe N, Mulera C (2010). Access to health facility and care seeking for danger signs in children: before and after community based intervention in Lusaka, Zambia, *Tropical Medicine an International Health* 15: 212-220.
- Saeterdal, I. Lewin, S. Austvoll-Dahlgren, A. Glenton, C. Munabi-Babigumira S. (2014). Interventions aimed at communities to inform and/or educate about early *childhood vaccination Cochrane Database System Rev*, 11, p. CD010232
- Saji, I.A. (2013). Social Mobilization: A conceptual understanding: *Niger Medical Journal* 53 (1) 21-25.
- Samba E.S, Rasheed S (2000) *Communication Handbook for Polio Eradication and Routine EPI*, UNICEF, WHO in collaboration with Polio Partners.

- Schayy, N, Clifford M. Ster R, Alexander Lucy (2003). *Health Promotion1, Module Guide*.
- Schiavo, R. May, L.M. Brown, M. (2014). Communicating risk and promoting disease mitigation measures in epidemics and emerging disease settings *Pathog Glob Health*, 108 (March (2)) (2014), pp. 76–94
- Severing WJ, Tankard JW, (2001). *Communication Theories* (5th Ed.) *Origins, Methods and Uses in the Mass Media*. Addison Wesley Longman.
- Shuttleworth, Martyn. (2008). Descriptive Research Design, Explorable.com website.
- Slater, M. (1999). Integrating application of media effects, persuasion and behavior change theories to communication campaigns: A staged of change framework. *Health Comm* 11: 335-54.
- Smith A, Yarwood J, Salisbury D. Tracking mothers' attitudes to MMR immunisation 1996-2006. *Vaccine* 2007;25(20):3996-4002.
- Stoto MA, Evans G, Bostrum A, (1998). Vaccine risk communication. *Am J. Preventive Medicine*: 14 (2) 237-39.
- Straubhaar, J, Larose, R. (1996). *Communication Media in the information society*, Belmont, Calif Wadsorth.
- Streatfield, K, Singarimbun M, Diamond I. (1990). *Maternal education and child immunization*. *Demography*; 27:447-455.
- Stretcher, Victor J.; Irwin M. Rosenstock (1997). "The health belief model". In Andrew Baum. *Cambridge Handbook of Psychology, Health and Medicine*. Cambridge, UK: Cambridge University Press. pp. 113–117.
- Stuart, H.T. (1994). Participation for empowerment and sustainability. How development support communication makes a difference. *Media Asia*, 21 (4): 213-220. Singapore AMIC.
- Talbort, L., Verrinder, G. (2005). *Promoting Health: The Primary Health Care Approach*. 3 ed: Elsevier, Churchill Livingstone, Austria.
- The National Primary Health Care Development Agency (2008) "Rapid Assessment of Social Mobilisation for Immunisation Plus Days (IPDs) KAP [Knowledge, Attitudes, and Practice].

The Strategic Advisory Group of Experts on Immunization (SAGE) Working Group on Vaccine Hesitancy (WG)

Tichenor, P.J., Donohue, G.A., Olien, C.N, (1970). *Mass Media Flow and Differential Growth in Knowledge, Public Opinion* Quarterly 34. Colombia University Press.

Trevena, L.J., Davey, H.M., Bennett, A., BuTRUS p, Caldwell, P., (2006). A systematic review of communicating with patients about evidence, *Journal of Clinical Practice*, 12 13-26.

U.S. Department of Labour (2014). *Presenting Effective Presentation with Visual Aids*>

UNFPA (2006) <http://www.unfpa.org/profile/uganda.cfm> (accessed January 3, 2006).

UNICEF (2003). Measles. Trends over the decade. <http://www.childinfo.org/eddb/measles/trends.htm>. (accessed March 14, 2003)

UNICEF (2004). Global and regional trends in immunization coverage. <http://www.childinfo.org/eddb/immuni/trends.htm> (accessed November 1, 2004)\

UNICEF (2004). *The state of the world children 2004: Girls' education and development*. New York publishers.

UNICEF (2005) "Report of a UNICEF Seminar on EPI and Social Mobilisation in Child Survival and Development Revolution. Bogota, Columbia. 17-23 October 1985. New York, USA.

UNICEF (2006) Social mobilization framework for the Four Country Program Work U.S. Department of Health and Human Services, Public Health Service, NIH Publication No 92-1493.

UNICEF (2008). Tracking progress in Maternal, Newborn and Child Survival, Geneva

UNICEF (2009). A manual on communication for water supply and environmental sanitation programs. New York: UNICEF 'Program Division, Water, Environment and Sanitation Action'

UNICEF (2009). Universal childhood immunization and social Mobilization Evaluation of Nigeria Immunization Programme, Evaluation Office, New York.

UNICEF (2011) UNICEF Strategy for Social Mobilization in response to Cholera Outbreak in Haiti

UNICEF (2012) The State of the World's Children Report

UNICEF (2013) Communication for development N.P.

UNICEF/WHO (2005). Global Immunization Vision and Strategy. *Vaccine JVAC*, 4056:1-4.

Usukum, E, Usukum SB, Uysalgenc M, Yagiz M.(2008) Effectiveness of a training intervention on immunization to increase knowledge of primary health care workers and vaccination coverage rates. *Public health (Elsevier)*. 9:949-958.

Valdecanaas, O.C. (1991). Setting objectives. In Valbuena, VT, (ed) *Modules in public education and social marketing*. Singapore, AMIC.

Waisbord, S. & Larson, H. (2005) citing (Bond et al. 1998; Bukenya & Freeman 1991; Eng et al. 1991; Harmaneci et al. 2003; Khanom & Salahuddin 1983).

Waisbord, S. (2001). *Family tree of theories, methodologies and strategies in development communication: convergence and Differences*: The Rockefeller Foundation.

Waisbord, S., Shrimp, L., Ogden, E., Murry, C. (2010). Communication for Polio Eradication: improving the quality of programming through real time monitoring and Evaluation. *Journal of. Health Community* 15 suppl 1: 9-24.

Wallack, L.M. (2002). Mass media campaigns: The odds against finding behavior change. *Health Educ Quart*, 8(3): 209-260.

Wang, Y.Y. (2007). Status of mother's KAP on child immunization in minority areas, Guizhou Province.

Ward, K, Show MYK, King C, Leask J (2012). Strategies to improve vaccination uptake in Australia: A systematic review of types and effectiveness. *Aust NZ J Public Health* 36: 367-377.

Ward, K., Chow, M.Y.K., King, C., Leask, J. (2012). Strategies to improve vaccination uptake in Australia, a systematic review of types and effectiveness. *Aust NZ J Public Health* 36: 367-377.

Weng, S (2000). *Mass Communication Theory and Practice*. Taipei: San-ming.

WHO (1978). Declaration of Alma-Ata. In International conference on primary health care; 6-12 September; Alma-Ata, USSR. World Health Organization.

- WHO (2001). *Immunization drop-out in Uganda*. Kampala: WHO Country Office.
- WHO, (1988). *Dietary Management of Diarrhea project*, Mass Media mediation.
- WHO/UNICEF (2006). *Global Immunization Coverage*http://www.who.int/immunization_monitoring/data/en
- Willis, N., Hill, S., Kaufman, J., Lewin, S., Kis-Rigo, J. De Castro S., Freire, *et al.* (2013). “Communicate to vaccinate”: the development of a taxonomy of communication interventions to improve routine childhood vaccination BMC Int Health Hum Rights, 13, p. 23.
- Wisonge, C.S., Nomo, E., Mawo, J.N., Ticha, J.M. (2008). *Accelerated Measles in sub Sahran Africa Lancet* 367-395.
- World Bank 2011 from <http://datqabank.worldbank.org/ddp/home.do?>
- World Education (INGO) Philippines, Inc. (2005).
- World Health Organization (2001). *Measles mortality reduction and regional elimination strategic plan 2001- 2005*. Geneva: WHO 01:(13).
- World Health Organization/United Nations Children’s Fund (WHO/UNICEF) coverage estimates for 1980 to 2010, as of July 2011 Available at:http://apps.who.int/immunization_monitoring/en/globalsummary/countryprofileselect.cfm
- Wroe A, Turner N, Slaikovakis P, (2004) Understanding and predicting parental decisions about early childhood immunization, *Health \psychology* 23 (1) 33-41
- Zhang X, *et al.* (2009). Knowledge, attitude and practice survey on immunization service delivery in Guangxi and Gansu, China *Soc Sci Med*, **49**(8):1125-112
- Zimicki, S, Hornik, R, Verzoza, C., Hernandez, J., de Guzman, E., Dayrit, M, Fausto, A, Lee, M. B. & Abad, M. (2004). Improving vaccination coverage in urban areas through a health communication campaign: The 1990 Philippines experience, *Bulletin of the World Health Organization* 72: 409-422.

**QUESTIONNAIRE
UNIVERSITY OF ILORIN
FACULTY HEALTH SCIENCES
DEPARTMENT OF EPIDEMIOLOGY AND COMMUNITY HEALTH**

**DEMOGRAPHIC FACTORS AND SOCIAL MOBILIZATION STRATEGIES FOR
UPTAKE OF CHILDHOOD IMMUNIZATION QUESTIONNAIRE (DFSMSUCIQ)**

**TARGET: PARENTS OR CARE GIVERS SELECTED FROM HOUSEHOLDS IN
IJEBU NORTH LOCAL GOVERNMENT AREA.**

Dear Respondent

Good day, I am a Post graduate student of the University of Ilorin, Nigeria, Department of Epidemiology and Community Health. I am conducting a study on Demographic Factors and Social Mobilization Strategies for uptake of childhood immunization in Ijebu North Local government area, Ogun State. I would like to ask you few questions and discuss with you issues pertaining to immunization of your child. You are free to ask for clarity of any question asked. The study is purely academic; therefore all information collected will be used to improve on intervention for sustaining the implementation of immunization program in the country. All information you give during this interaction will be treated as confidential and use for the purpose of this study and kindly have my assurance that it will not affect the services you get from the health facilities or your relationship with the health care providers.

The questionnaire will be interviewer-administered and the interview will take approximately 45 minutes. In fact, this is not a test, but I am trying to get information that will assist Ijebu North to improve on childhood immunization services. You may choose not to participate without any anticipated consequences. The questionnaire will be administered in local language having been translated. Hope we can proceed with the interview.

Thank you.

Instructions: For all parts (one to three) please circle the appropriate response.

SECTION A: Socio-Demographic Characteristics of Respondent

1. Age (as at last birthday)_____years
2. What is your gender? Male (), Female ()
3. What is your marital status? Single (), Married (), Divorced (), Separated (), Widowed ()
4. What is your highest level of Education? None (), Primary (), Secondary (), Tertiary (), Post-graduate ()
5. Source of Income: Civil servant (), Farming (), Self employment (), Casual job (), Family support (), Community support (), Faith based support ()
6. What is your spouse's employment status? Salary (), Farmer (), Self employed (), Casual (), Family support (), Community support (), Faith based support ()
7. What is your monthly income? 300,000 and above (), Between 300, 000 – 200,000 (), Between 200, 000 – 100,000 (), Between 100, 000 – 50,000 (), Between 50, 000 – 40,000 (), Between 40, 000 – 30,000 (), Between 30, 000 – 20,000 (), Less than 20,000 ()
8. What is your religion? Christianity (), Islam (), Traditional religion (), Others (please) state.....
9. What is your child's immunization status? Fully Completed (), Partially Completed (), Non ()
10. Other's Possession of Immunization card: Card Available (), Card Not Available (), Non ()
11. Proximity to Health facility (30 minutes trek = 5km): <5km (), 5-10km (), >10km ()
12. Number of Children: ≤ 2 (), ≥ 3 ()
13. Gender of Child: Male (), Female()

SECTION B: Knowledge of Caregivers on Social Mobilization and Uptake of Childhood Immunization

	Knowledge of social mobilization and uptake of childhood immunization	Yes	No	Don't know
14	Community support is important in promoting utilization of immunization services			
15	Mass media is strong tool for promoting utilization of immunization services			
16	Mass media is my most preferred source of information			
17	Use of town announcers is a strong tool for promoting utilization of immunization services			
18	Town announcer is my most preferred source of information			
19	visibility and use of community leaders(e.g.Soc\mon, WHC, Reps of partner agencies) is not a strong source of information on utilization of childhood immunization			
20	The use of mobile van for promotion and campaign for immunization does not serve or enhance my participation in childhood immunization			
21	The use of mobile vaccination is necessity for child immunization services			
22	exposure to combine immunization promotion messages enhances my understanding about VPDs and the administration of multiple antigen			
23	Exposure to combined immunization promotion messages on VPDs and antigen can make a person states the benefits of administration of multiple antigens			
24	Exposure to health promotion activities at the community increases the knowledge and understanding of immunization (schedule, diseases,			

	side effects and antigen)			
25	Natural immunity is the body's best defense against childhood diseases and illnesses therefore mothers should not worry much about them			
26	Immunization of children contributes to most childhood illnesses, I am not worried about the diseases that vaccine prevents because they are rarely seen in the community.			
27	Diet and exercise are more important than immunization to prevent infectious diseases.			
28	Illness and diseases responsible for paralyzing the child is spiritual and may not require any immunization			
29	Immunizing a child against diseases is the only way to protect the child against infections and disease			

SECTION C: Attitude of Caregivers towards Social Mobilization and Uptake of Childhood Immunization

	Attitudes towards social mobilization and uptake of childhood immunization	SA	A	D	SD
30	I will consent to having my child immunized because I know about its benefits and its value to me and my child				
31	Taking and receiving at least one immunization for the child against preventable disease should be sufficient to protect the child				
32	In my opinion the repeated visits, time for immunization and the many ‘shots’ recommended before he would be one year old is too much and unnecessary				
33	In our daily life we experience several needs, I once had financial reason for not immunizing my when it was due for immunization				
34	At all times belief in my religious injunction is supreme and should not be violated for my child’s immunization				
35	Nevertheless, health workers disrespect and unfriendly treatment I took my child for DPT immunization				
36	Nevertheless health workers unfriendliness I completed DPT vaccination for my child				
37	Nevertheless health workers unfriendliness I completed Measles vaccination for my child				
38	Nevertheless health workers unfriendliness I completed polio vaccination for my child				

39	Incentive for keeping child immunization cards and completing child's immunization should not be rewarded				
	SECTION D: Factors Influencing Uptake of Immunization				
	Factors influencing uptake of immunization	SA	A	D	SD
40	Most often health workers are too busy and in always in hurry to give accurate information to mothers on immunization issues against preventable diseases				
41	I am not bothered about the unduly long waiting hours allotted to child immunization activity in the clinic				
42	Short distance from my home to immunization centre encourages caregivers to receive immunization services as scheduled.				
43	In my own opinion and understanding I do not find useful information given on childhood immunization on radio about risks and benefits associated with vaccines uptake for a sick child.				
44	The accuracy of information given on childhood immunization on television did not facilitate my thorough understanding of immunization issues				
45	The accurate knowledge on immunization may not necessarily determine the use of immunization services in Ijebu North.				
46	Childhood immunization campaigns in the community enriched my understanding of vaccine preventable diseases and antigen for child hood immunization				
47	Use of Town announcers on immunization activities enhanced mothers participation in immunization and health promotion activities				
48	Visibility and political good will of ward development committee enhances effective promotion and uptake of childhood immunization services				
49	House to house campaign to sensitize mothers on childhood immunization does not necessarily motivate mothers to adopt the childhood immunization practices				

SECTION E: Social Mobilization Methods Utilized By Respondents

50 What is your favorite and utilized method of social mobilization/ (Multiple responses is allowed)

1. Health worker
2. Radio
3. Television
4. Open air drama
5. Town announcer
6. Posters
7. Bill board
8. Community dialogue
9. Friends
10. Mobile phone