AN EVALUATION OF COMMUNICATION STRATEGIES USED IN POLIO IMMUNIZATION CAMPAIGNS IN KADUNA AND SOKOTO STATES, NIGERIA

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A THESIS SUBMITTED TO THE DEPARTMENT OF COMMUNICATION AND LANGUAGE ARTS, FACULTY OF ARTS, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DOCTOR OF PHILOSOPHY IN COMMUNICATION AND LANGUAGE ARTS, UNIVERSITY OF IBADAN, IBADAN, NIGERIA

SEPTEMBER, 2016

CERTIFICATION

I certify that this work was carried out by Cosmos Ikechukwu EZE under my supervision, in the Department of Communication and Language Arts, University of Ibadan, Ibadan.

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DEDICATION

Dedicated to Almighty God and my late mother Catherina Eze.

ACKNOWLEDGEMENTS

I thank Almighty God for giving me the opportunity to be part of the people worthy to have a doctor of philosophy. I lost hope that my dream would come true after all, but through fervent prayers and supplication to God, it became a reality. God works for us through man and He did so through my able supervisor Professor Ebenezer Soola. I feel greatly honoured to be among the family of doctors that he has nurtured and brought to limelight. I am honestly grateful to him for his patience and endurance over the years and I pray that God will bless him.

I am also immensely grateful to Dr. Olusola Oyewo for the numerous contributions and his words of encouragement throughout the duration of this programme. To Professor Ayo Ojebode, I do not know how to express all my gratitude to you but suffice is to say that those who wipe people's tears, the Lord will reward them exceedingly. God bless you for standing by me when the tunnel seemed to be dark. Even when my knees were about to buckle, you propped me up. My special appreciation to Dr. Raphael Ojebuyi for the painstaking effort he took to go through my abstract many times. And to numerous well- wishers, non-academic staff and lecturers who assisted me in the Department of Communication and Language Arts, particularly, Dr B.A Laninhun, God will be your strength and your provider. I am immensely grateful to Dr. Kabiru Salami of the Department of Sociology, University of Ibadan, Nigeria for his appreciation and scholarly contributions to this work. Also, worthy of mention is Dr S. Alawode, my external examiner, for his critical observations which greatly improved this thesis.

I also thank my wife Elizabeth, my children, Whitney, Promise,Nnamdi Charles and little Victorious for their patience and understanding when I was doing those dangerous night journeys to Ibadan. And to my late mother who predicted what I will be, may God grant you eternal rest. For those I failed to mention, try to understand me and God bless you all exceedingly in Jesus mighty name, Amen.

ABSTRACT

One of the fundamental factors that determine the success or failure of a behavioural change campaign is the nature of communication strategies adopted by the change agent. Nigeria has been declared a polio free nation, but scholarly attention has not been given to the role played by communication strategies in the success of polio immunisation and eradication projects in Northern Nigeria. This study, therefore, investigated the communication strategies used in polio immunisation campaigns in Kaduna and Sokoto states, the extent of participation in the design and implementation of these strategies, the influence of demographic, socio-cultural variables and knowledge on acceptance and use of polio vaccine.

Health Belief Model, Multi-Step Flow and Knowledge Gap theories were adopted. Five key informant interviews were conducted with one each of parent, opinion/religious leader, UNICEF/WHO official, health reporter, and Federal Ministry of Health worker, each of whom was purposively selected. A semi-structured questionnaire was administered on 200 parents/guardians purposively selected from Kwarbai, Sabon Fegi, in Kaduna State; Dange Shuni and Sokoto Municipal in Sokoto State. Four focus group discussion sessions comprising 10 participants from each study area were conducted with parents who have children aged between one and five years. Quantitative data were analysed using descriptive and chi-square statistics at $p< 0.05$, while qualitative data were content analysed.

Strategies used in the two states were advocacy, social mobilisation and programme communication. Their manifestations were: Advocacy: (Kaduna-79.8%, Sokoto-70.0%) and Social Mobilization: (Kaduna-69.2%, Sokoto-84.7%). The programme communication in Kaduna (74.7%) and Sokoto (84.7%) showed that the responses did not conform on the issue of acceptance of a singular communication strategy (x^2=314.7). The need to adopt multiple communication strategies in both states was reiterated. The implementation of the contents of polio campaign strategies was low (x^2=15.9). Adoption of multiple communication strategies was more effective in both states (x^2=314.7). Demographic factors influenced their acceptance and use of polio immunisation as there was conformity in response across the two states (x^2=0.1). Socio-cultural variables influenced acceptance and use of polio vaccine (x^2=0.1). Respondents' knowledge and awareness of polio immunisation influenced them to accept and use polio vaccine.

Adoption of different communication strategies led to increased acceptance and use of polio immunization among parents/guardians in Kaduna and Sokoto States. Multi-dimensional communication strategies should be used in order to achieve maximum success in immunisation campaign to eradicate polio in Nigeria.

Keywords: Evaluation of communication strategies, Polio immunisation campaigns, Kaduna and Sokoto States Nigeria

Word count: 387

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ABBREVIATIONS AND ACRONYMS

AIDS- Acquired Immuno-deficiency Syndrome

CDD- Control of Diarrhea Diseases

CLAP- Community Leaders against Polio Projects

DFID- Department for Foreign International Development

DPT- Diphteria Pertusis and Tetanus

FDA- Food and Drugs Administration

FGN- Federal Government of Nigeria

FGD- Focus Group Discussion

FMH- Federal Ministry of Health

FOWMAN- Forum for Muslim Woman in Nigeria

GAVI- Grand Alliance for Vaccine and Immunization

GLADD-Gay and Lesbian Alliance against Defamation

GPEI-Global Polio Eradication Initiative

HBM- Health Belief Model

HIV- Human Immuno-deficiency Virus

IDI- In-depth Interview

IEC- Information, Education and Communication

IMB-Independent Monitoring Board

JAP- Journalist Initiative on Immunization against Polio

KAP- Knowledge Attitude and Practices

LGA- Local Government Area

MAP –Movement Advancement Projects

NAFDAC- National Agency for Food and Drug Administration and Control

NIDS-National Immunization Days

NGF-Nigerian Governors Forum

NGOs- Non Governmental Organizations

NPI- National Programme on Immunization

NPHCDA-National Primary Health Care Development Agency

NTLC- Northern Traditional Leaders Community

OPV- Oral Polio Vaccine

SIA- Supplementary Immunization Activity

SMC- Social Mobilization and Communication

STD- Sexual Transmission Diseases

TCG- Technical Consultative Group

UNICEF- United Nations Children's Funds

UN- United Nations

UNAIDS- United Nations Acquired Immuno-deficiency Syndrome

VCM- Volunteer Community Mobilizer's

WHO- World Health Organization

WPV- Wild Polio Virus

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Information, education and communication are effective tools for behaviour change, especially in the global efforts by governments, non-governmental organizations and other stakeholders and groups in public health towards the complete eradication of polio virus. Communication is central to live; it connects people, groups, communities and societies and is necessary for effective decision-making (Elegbe, 2010). It is an everyday affair, cutting across boundaries of age, gender, works et cetera. It is also essential to human survival and communication exchange can lead to physical, cognitive, attitude and behavioural change. The Harvard School of Public Health (2011) defines health communication as the study of how health information is generated and disseminated and how that information affects the individuals, community groups, institutions and public policy. Communication is a process and cannot be complete without a feedback. This is very important especially for those engaged in the design of messages particularly in the field of health promotion. Persuasive messages designed to influence attitude, behaviour, beliefs and knowledge need to be well designed in order to achieve the desired objective. Within the health communication field, communication is conceptualized as the central social process in the provision of health care delivery and the promotion of public health (Kreps, 1988). It plays an essential role in the prevention of disease and poor health. In order to achieve good health for majority of the populace, good communication is indispensable.

It is a great human process that enables individual and collective adaption to health risks at many different levels as health information is the critical resource derived from effective health communication (Kreps, 1988a; Kreps, 2001). This is because when communication is effective, consumers and providers of health care are able to gather relevant health information, a good source of education on significant threats to health and identification of strategies for avoiding and responding to threats.

An understanding of the process of communication therefore enables those engaged in the field of health promotion to develop persuasive messages which can be sent through various channels to provide target audiences with relevant health information to influence their health knowledge, attitudes, and behaviours. Such an intervention programme that has been designed to promote social change will have a greater chance of success if it includes multiple levels of communication. The new advances in information and communication technology has tremendously increased people's appetite for information and communication especially as it concerns healthcare. Today, a lot of people are demanding more information about their health from various channels because they are no longer satisfied with the daily information coming from the popular media such as radio, television, newspaper, and magazine. They search for information about their health through opinion leaders, community associations and other numerous channels. Therapeutic communication in promoting psychological health is very necessary and important because of the complex nature of illness afflicting humans today. Nearly everyday, people are demanding information and communication on what they can do, how they can access, and how they can treat diseases or ailments that affect them.

Communication and information are necessary in order to sensitize the populace because a populace that lacks adequate information is often ignorant of important issues. Using health officers to inform people about health issues from house to house is no longer feasible or effective in many places. Nowadays, for any health message to be really effective and have a wider reach, it has to be disseminated through multiple channels. For polio eradication campaign to be successful leading to a complete eradication of the disease, it requires a well designed information campaign strategy. Towards achieving this, Uwakwe (2004) observes that popular participation is essential, noting that it is necessary to carry the people along by addressing their social realities.

Similarly, Nwuneli (1986) asserts that any information or social programme, no matter how beneficial, stands the risk of being rejected if it fails to conform to the social realities of the target population in terms of their aspirations and perceptions. This is best achieved through persuasive communication which is required to win or mobilize the populace to accept new ideas and practices such as vaccination. Without adequate information which is relevant to health

campaign, it will be difficult for any government programme such as polio eradication campaign to succeed. Many people who have access to information pertaining to polio can cope with the disease while others may resort to harmful practices. Nigeria is a nation with diverse tribes, different religions and a prevalent high level of illiteracy; many government campaigns have often not achieved the desired objectives and as such failed woefully because they were not properly packaged. (Njelesani, 1988).

According to Witte, Meyer, Casey, Kopman, Maduschke, Marshall, Morrison, Ribsil, and Robbens (1996), there are two broad categorisations of health and communication. The first is health-related information while the other is health-related behaviour. In their studies, they consider the first category as referring to "any information via any channel that is pertinent to an individual's mental, physical, emotional, and spiritual well-being," while the latter is seen as "any actions or non-actions that influence an individual's mental physical, emotional, and spiritual well-being." Every health communication initiative must take cognisance of this categorisation.

Pertinent to achieving a successful health campaign is a good knowledge of health communication strategies that will be successful. In Nigeria, various communication strategies are being used in health communication campaigns most especially on polio. Onuekwe (2013) observes that prior to the era of strategic design, health communication in the 1990's was largely characterized as the medical era. He noted that this era has gone and now health communication has evolved into what can be called the strategic era. He observes that strategic design is the hallmark of successful health communication programmes and Nigeria's polio communication design was an off-shoot of the strategic design. Nigeria polio campaign strategy is hinged on advocacy, social mobilization, the intensified ward communication strategy, compound meetings, sensitization meetings, Volunteer Community Mobiliser's network (VCM) and programme communication (Onuekwe, 2013).

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1.2 Statement of the Problem

Polio is a paralytic disease that has been ravaging children between the ages one and five years. Between year 2000 and 2010, a total of 4,748 Nigerian children were paralyzed by polio in the northern states of the country alone. Recent reports by the World Health Organisation (WHO, 2015) indicate that Pakistan and India are the most polio-endemic countries. Even though Nigeria has been delisted among the endemic countries, the World Health Organisation is yet to certify Nigeria completely free from polio virus. It was once considered a global disease, though it is now considered as a disease associated with poverty. Polio, especially the acute flaccid type, is only preventable through immunization. However, it can be effectively managed through proper education and information on immunization. Knowledge of any disease is a major weapon against such a disease and this is achievable through effective information and education.

Gradually, health managers are becoming aware of the importance of information and communication in any health campaign. As Njelesani (1988) observes, information is a crucial factor in the fight against diseases. Again, information and communication have been recognized by the World Health Organisation (2010) as an important weapon in the fight against diseases. Consequently, all health intervention strategies towards achieving proper management and prevention of major health issues have communication content.

In 2003, Nigeria launched the Global Polio Eradication Initiative (GPEI) with the aim of reducing and eradicating polio diseases in Nigeria. Two years after this laudable initiative had been launched, precisely in 2005, there appeared to be signs of improvement, especially in the southern Nigeria, though the disease remain intractable in the north. Also, in the global scene, Nigeria has achieved the greatest success compared with other polio endemic countries such as Afghanistan, Pakistan and India.

Since 2005, Nigeria has embarked on polio campaign using many strategies. These strategies include advocacy and political strategies, involvement of religious and community leaders, community dialogues especially with non-compliant communities, using films to drive home the message of polio vaccination through entertainment and even house to house

sensitization, social mobilization, and programme communication among others (Onuekwe, 2013). Evidently, these communication efforts yielded poor results because parents and guardians continued to reject polio vaccine. Consequently transmission of polio virus among under-five children continued. The rate of the spread was highest in Kaduna, Sokoto, Kano, Jigawa among others (WHO, 2010). It is assumed that if the spread of polio is controlled in Nigeria, efforts at curtailing its spread in other countries in West Africa and even beyond will improve, thereby helping to shift the efforts and focus of government and other non-governmental agencies to other challenges of development. Polio interventions can only achieve their desired impact when they lead to behaviour change. Scholars believe that people's behaviour is a contributory factor to the spread of disease, and they recommend the use of diverse strategies to design behaviour change communications aimed at reducing the spread (Mwenesi, 2003).

Social scientists have attempted to explain the factors that can influence individual or group decisions to perform or not to perform certain behaviours. These factors are multiple levels of influence at individual, interpersonal, institutional and community levels, in addition to public policy and the interaction between individuals and their environment.

However, as important as individual behaviour may be, it is not sufficient for understanding health actions taken in the context of rural African societies where personal, preventive health behaviour may be as much a community-based process, as it is governed by individual decision-making processes. This is because African societies depend more on group norms than individual decision making processes. Also, Onuekwe (2013) notes that Nigeria's current communication approaches are largely pro-innovation or at best, passively participatory and as such ineffective to impact non-compliant individuals.

The role of communication and information cannot be underestimated in dealing with management and eradication of polio virus. Onuekwe (2013) advocates the use of entertainment education for behaviour change, while Jibo (2010) advocates that all social mobilization and communication activities should be driven by epidemiological data. Even though Nigeria has been delisted among the countries where polio is endemic, the failure to follow well designed

communication campaign strategies is not good for polio immunization campaign, and it can make complete eradication impossible.

It is in this regard that the study sought to evaluate the communication strategies used in polio campaign with a view to investigating whether the message designers took into consideration people's participation in the design and implementation of the communication campaign for polio. The study also investigated the influence of demographic factors, socio-cultural variables, knowledge and awareness of polio immunization campaigns on the acceptance of polio vaccine and the most effective strategy in Kaduna and Sokoto states of Nigeria. Towards achieving these objectives, the following research questions were considered pertinent.

1.3 Research Questions

The study sought to provide answers to the following questions:

1. What is the extent of parents and guardians' participation and involvement in the design and implementation of the communication campaign strategies for polio eradication in Kaduna and Sokoto states?
2. In what ways do demographic factors such as age, sex, ethnicity, family or household status influence the acceptance of communication strategies used in polio campaigns in Kaduna and Sokoto States?
3. How do socio-cultural variables such as language, religious beliefs, traditional values and urban/rural background influence the acceptance of polio immunization campaigns in Kaduna and Sokoto States?
4. How effective are the communication campaign strategies in influencing the acceptance and use of polio vaccine in Kaduna and Sokoto states?
5. How do knowledge and awareness of polio immunization campaigns strategies influence the acceptance and use of polio vaccine in Kaduna and Sokoto States?

6. Which of the polio communication strategies used significantly influenced the acceptance and use of polio vaccine in Kaduna and Sokoto states?

1.4 Basic Assumptions

The following assumptions underpinned the study.

1. Parents and guardians participate in the design and implementation of the communication campaigns for polio in Kaduna and Sokoto states.
2. Demographic factors such as age, sex, ethnicity, family or household status influence the acceptance of communication strategies used in polio campaigns in Kaduna and Sokoto states.
3. Socio-cultural variables such as language, religious beliefs, traditional values and urban/rural background influence the acceptance of polio immunization campaigns in Kaduna and Sokoto states.
4. Communication campaigns strategies used are effective in influencing the acceptance and use of polio vaccine in Kaduna and Sokoto states.
5. Knowledge and awareness of polio immunization campaigns influence the acceptance and use of polio vaccine in Kaduna and Sokoto states.
6. The most significant polio communication strategies used influenced acceptance and use of polio vaccine in Kaduna and Sokoto states.

1.5 Objectives of the Study

The aim of this study was to evaluate the communication strategies used in polio immunization campaigns in Kaduna and Sokoto states, Nigeria. The specific objectives therefore were to:

1. Examine the extent to which parents and guardians participated and were involved in the design and implementation of the communication campaign for polio in Kaduna and Sokoto states.

2. Identify the way(s) in which demographic factors such as age, sex, ethnicity, family or household status influenced the acceptance of polio immunization in Kaduna and Sokoto States.

3. Examine the influence of language, religious beliefs, traditional values and urban/rural background on acceptance of polio immunization campaigns in Kaduna and Sokoto states.

4. Examine the effectiveness of communication campaigns strategies used in influencing the acceptance and use of polio vaccine in Kaduna and Sokoto states.

5. Determine how knowledge and awareness of polio immunization campaigns influenced the acceptance and use of polio vaccine in Kaduna and Sokoto states.

6. Determine which of the polio communication strategies used significantly contributed to acceptance and use of polio vaccine in Kaduna and Sokoto states.

1.6 Significance of the Study

The study has a lot of significance, especially for the academia, media and health professionals. The study evaluated the effectiveness of information/communication strategies on polio immunization campaigns in Kaduna and Sokoto states. According to the World Health Organization (WHO Data base, 2012), 75% of infected children have had less than three or zero doses of oral, polio vaccine because their parents have denied them polio vaccine despite all forms of communication and mobilization strategies used to convince them. This study would provide empirical data for researchers, health care providers and government to plan for future health care. More so, it will assist in reducing the scourge of polio among children in Nigeria because it provides a base for successful immunization, campaign through planning, strategising and carrying out effective media campaign. In addition, the significance of this study can be understood better in a statement by the World Health Organization (WHO, 2012) that "as long as

polio virus circulates somewhere in the world it can be introduced anywhere people are not vaccinated". The study has evaluated why polio immunization in Northern Nigeria has often not achieved the desired effect in core northern Nigeria, especially in Kaduna and Sokoto states. Finally, it will assist policy makers and programme implementers at the World Health Organization (WHO), the Federal Government and other Non-Governmental Organizations to plan their programme on polio and other related diseases of this nature very well.

1.7 Limitations of the study

The literacy level of some of the respondents in the study areas was worrisome. In some instances, the researcher had to employ an interpreter who had to interpret the questions in Hausa language. Many parents and guardians refused to divulge information on polio immunization. They claimed that they did not understand English and besides that, they did not trust the interpreters. During the Focus Group Discussions (FGD) with parents and guardians, some of the participants tried to dominate the discussion but the researcher was able to advise in the subsequent panel that everybody should participate. In order to win the confidence of the participants, the researcher had to demonstrate with a voice recorder and this eventually made them to discuss freely on polio immunization. The high level of suspicion among the parents and guardians and sometimes even among the state immunization officers to divulge relevant information on polio immunization was a major setback for this research work. Several trips and attempts to interview some UNICEF, state immunization officers and even opinion leaders were futile as some of them fixed appointments they could not honour. However, all these setbacks did not affect the quality of data gathered in any way.

1.7.1 Scope of the Study

In order to have a comprehensive assessment of the problem, Kaduna and Sokoto states were studied. WHO (2006) acknowledged that Kaduna and Sokoto states were among the polio endemic states in Nigeria. During the polio immunization campaigns in both states, majority of the parents and guardians rejected polio vaccine for their children. Prior to the declaration of polio as a national emergency, polio was still ravaging children aged one to five (under-five

children) despite the considerable efforts made through various communication strategies. For instance, in the then four affected states (Borno, Kano, Sokoto, and Yobe) and Kaduna, less than 65% of children had greater 4% oral Polio Virus (OPV) doses (Global Polio Emergency Plan 2012-2013:11). The study covered the period between 2003 to 2014 when polio was very endemic in the studied states. The WHO and UNICEF officials, officers of the Federal and State Ministries of Health, parents/ guardians, health workers, and journalists involved in health reporting were involved or participated in this study.

1.7.2 Study Area

This study was conducted in Kaduna and Sokoto states. In Kaduna state, Kwarbai ward which is an urban area in Zaria city, Zaria Local Government Area and Biye, a rural settlement in Giwa Local Government, was studied. The Emir of Zaria resides in Zaria city while Biye is a rural settlement in Giwa Local Government Area, Kaduna State. Biye is situated just a few kilometers from the Ahmadu Bello University Teaching Hospital, Shika. Also, in Sokoto State, Sokoto municipal area and Dange Shuni village in Dange Shuni Local Government Areas were studied in order to evaluate the communication strategies in use. Sokoto is the seat of the caliphate in Nigeria. The supreme leader of Muslims in Nigeria, the Sultan of Sokoto, who is also the Goodwill Ambassador of polio in Nigeria, lives in Sokoto. In these aforementioned areas, majority of the parents/guardians are from the Hausa/Fulani tribe, and only few of them have the basic primary school education.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review of the research topic. Pertinent to the understanding of this chapter is the fact that despite all the concerted efforts being made to eradicate polio in northern Nigeria, the disease is still ravaging many children. Communication is a critical component in assuring that children are fully immunized and that simultaneous immunity is attained across large geographic areas for disease eradication and control initiatives. Active, quality and effective health service delivery and effective communication ---through advocacy, social mobilization, program communication (including behaviour change activities and interpersonal communication)---will assist in raising awareness, creating and sustaining demand, preventing or dispelling misinformation and doubts, encouraging acceptance of and participation in vaccination services, more rapid reporting of disease cases and outbreaks, and mobilizing financial resources to support immunization efforts.

The Federal Government of Nigeria with the support of Global Polio Eradication Initiative partners launched a new communication campaign on September 24th, 2011 entitled, "Polio Free Torch Campaign" supported by the Nigerian Olympic Committee (NOC) and some Nigerian Olympians. This campaign was designed to overcome resistance to polio immunization and to mobilise wide support from a variety of stakeholders at national and state levels for the final lap of the polio eradication efforts in Nigeria. It is on this note that the literature for this study were reviewed under the following crucial topical issues as they relate to effective communication and information as a panacea for solving the polio menace. They are as follows: Poliomyelitis, health communication/promotion campaign strategies, attributes of health communication campaigns, and factors determining the effectiveness of health communication campaign. Other issues are why communication is important in health communication campaign, an overview of communication strategies used in polio communication campaign in Nigeria, persuasive communication campaign, advocacy for Polio immunization and socio-cultural challenges to communication campaign. The study also reviewed literature on communication

campaign for polio immunization in Nigeria, and examples of successful health communication in Nigeria. The chapter also contains a review of empirical studies and the theoretical framework relevant to the study.

2.2 Poliomyelitis

Paralytic poliomyelitis has been known for more than 3000 years. Documented evidence in Egypt shows an Egyptian stone carving portraying a priest with a withered leg, leaning on a staff suggesting that he had suffered from poliomyelitis (John-Paul, 1971). In the study conducted by Shehu, Thairu, Nasir and Yayaha (2016), paralytic poliomyelitis has been with man in epidemic proportions from time immemorial.

Poliomyelitis is a highly contagious, incurable viral infection. At its peak, polio paralysed and killed up to half a million people every year, before Jonas Salk invented a vaccine for its prevention in 1955. It was once considered a global menace, polio is now mainly a disease associated with poverty and it is spread through water or food contaminated with human waste. It is usually prevalent in urban slums, where sanitation is poor, children are malnourished and lack ready access to basic health services (UNICEF, 2007).

2.3 Health Communication/Promotion Campaign

Health communication may be defined as an area of theory, research and practice related to understanding and influencing the interdependence of communication (symbolic interaction in the forms of messages and meanings) and health related beliefs, behaviours and outcomes (Cline, 2003). It originated from development communication theories and practices, with increased emphasis on social marketing principles and behaviour analysis. It is a purposeful effort designed to facilitate intended changes in health- related practices (Bagui, 2004). In the past, the practice of health communication education was characterized by one–way approach with little planning. In many developing countries, particularly Africa, although there were traditional modes in population health communication, there was an increasing use of modern approaches primarily aimed at satisfying the interest of what is known as the ‘source” in the linear model of

communication (Yankah, 1992). However, this approach has changed drastically. Health communication practice has been perceived as evolving around three basic models:

1. Information model in which message transmission was emphasized with little attention paid to how the message was received and whether it was acted upon.
2. An instruction model that treats health content as a school syllabus.
3. A medical model that compels the health communicator to give prominence to the scientific accuracy of the message and totally neglects his role in demystifying the complexity of health knowledge for a better comprehension by the target group. (Yankah, 1992).

According to Yankah (1992), this was in the past as new idea about health communication has come into use. Health communication can be defined as a systematic process of packaging and distributing accurate risk factors and behaviour change information, with a view to influencing positively the health practices of individuals and groups of people. This is realised through a strategic design that draws from principles and methods of social science marketing, behaviour analysis techniques and anthropological methods. These technical tools underlie health communication education as a major strategy that contributes to the creation and distribution of health products and services. Nigeria being a developing country continues to face problems in setting up development communication efforts especially in the area of health. As Yankah (1992) notes, besides lack of skilled personnel and services, the mass media (radio, television and print media) are still government controlled unlike what obtains in the developed countries.

The objectives of the communication strategies have been: to reduce non-compliant households to 50% of the previous round's level; to get 90% of heads of households to agree that multiple doses of oral polio vaccine is safe; to reach 95% of children with oral polio vaccine in each immunization days; to have 50% of parents state the number of diphtheria, pertussis and tetanus (DPT) doses a child requires before their first birthday; and to have 75% of children receive three doses of DPT. (NPHCDA 2013).

In Nigeria, advocacy strategies entailed high level sensitization of policy makers in government and private sectors to promote immunization policies. According to Onuekwe (2013), one of the outcomes of the advocacy efforts was that the late President of the Federal Republic of Nigeria, Alhaji Umaru Yar'dua endorsed polio eradication initiative and publicly committed himself to ensuring that polio was finally and totally eradicated from Nigeria. In the report of Onuekwe (2013), the thirty six state governors on the other hand committed in writing what is known as 'Abuja commitments' to provide necessary support and leadership to fast track eradication efforts in Nigeria. The northern traditional leaders also formed a primary healthcare delivery committee with special focus on polio eradication. The mass media have been an important partner in creating awareness for parents/guardians to take action. All the state -owned radio stations in northern Nigeria including the television stations have been involved in the campaign. Often times, there are panel discussions on radio and television with experts and stakeholders on polio in addition to announcements for polio campaign days, interviews with health workers et cetera. Again, series of community sensitization activities were also conducted. These involved traditional and religious rallies and flag-off ceremonies among others. In order to impart interpersonal communication skills to the vaccination teams, vaccinators were trained and re-trained 5-6 times a year or just before every round of Immunization Plus Days (WHO Nigeria, 2011). However these communication efforts yielded very poor results because parents/guardians kept rejecting polio in its entirety.

Communication is such an important part of contemporary health management that Schiavo (2000:17) has argued that the first strategic awareness is disease awareness, which is usually achieved through communicating relevant aspects of health problems with the target audience. From the perspective of the challenges of polio immunization in urban and rural Nigeria, it is imperative to look at health communication campaigns because these are the veritable mechanisms for taking the messages of immunization to the people. Health communication makes it possible to educate relevant publics about pressing health issues. A health communication campaign encompasses the use of communication strategies to inform and influence individual and community decisions that enhance health. It links the domains of communication and health, which are increasingly recognized as a necessary element in efforts at

improving personal and public health. From a broader perspective, a health communication campaign can be seen is the art and technique of informing, enlighten, influencing, mobilizing and motivating individuals, institutions, and public audiences about important health issues through a strategic and targeted communication effort. The scope of health communication includes disease prevention, health promotion, health literacy policy and the business of health care, as well as enhancement of the quality of life and health of individuals within the community. Health communication campaigns touch on some of these various aspects.

Health communication campaigns can contribute to all aspects of campaign strategies with regard to disease prevention and health promotion. They are therefore relevant in a number of contexts including: society exposure and use of health information, society adherence to clinical recommendations and requirement, the construction of public health messages and campaigns, the dissemination of individual and public health risk information, that is, risk communication, images of health in the mass media, and the culture at large, the education of consumers about how to gain access to the public health and health care system, and the development of tele-health application among other relevant health need that is peculieir to a society.

For individuals, effective health communication campaigns can help raise awareness of health risk and solution, provide the motivation and skills needed to reduce these risks, help them find support from other people in similar situations, and effect or reinforce attitudes. Health communication can increase demand for appropriate health services, and move people towards healthy behaviours. It provides information to assist in making complex choices, such as selecting health plans, using care providers and accessing some treatments. At the level of community health, health communication campaigns can be used to advocate policies and programs, promote positive changes in the socio-economic and physical environments, improve the delivery of public healthcare services, and encourage social norms that benefit health and quality of life (Imoh, 2007).

Many health communication campaigns employ public education methods and mechanisms to engender healthy behaviours, create awareness, change attitudes and motivate

individuals to live better lives, and help people to engage in recommended health practices such as immunization. Such campaigns also play important role in immunization efforts of governments, non-profit health agencies, and communities. Onuekwe (2013) observed that for any comprehensive campaign to be successful, it must have some components such as rationale for the campaign, scope, objectives, target groups, key messages and evaluation methods among others. According to him, Nigeria's polio communication is strategically categorized into three main approaches: advocacy, social mobilization and programme communication.

2.4 Attributes of Effective Health Communication

A campaign is not the only means of using communication to achieve desired health outcomes, although it is often regarded as the most effective and efficient, especially when it is carefully designed, strategically implemented and appropriately evaluated. Ideally, communication campaigns should be part of an integrated communication effort that includes news, features, advertising, social marketing communication and interpersonal communication. To be optimally effective, such integrated communication efforts should reflect the following characteristics: Accuracy, availability, balance, consistency, cultural competence, evidence-base, reach, repetition, timeliness and understanding (Schiavo, 2000).

Accuracy: The content of all health communication campaigns must be valid and without errors of fact, interpretation, or judgement. The same message should not be interpreted differently in one region or state.

Availability: The content of any health communication campaign (whether targeted messages or other information) should be placed where the audience can access it. The literacy level of the audience should determine whether the message will be placed on billboards, radio, television, print media or the internet.

Balance: Where appropriate, the content presents the benefits and risk of potential actions, or recognizes different and valid perspectives on the issue.

Consistency: The content of health communication campaigns must remain internally consistent over time and must also be consistent with information from other sources (the latter is a problem when other widely available content is not accurate and reliable). The information on radio, newspaper or television must be consistent with each other.

Cultural competence: The design, implementation and evaluation of health communication campaigns must recognize the culture, racial and linguistic background of the target audience. This is one reason many campaigns of this nature often fail to achieve the desired objective.

Evidence base: Relevant scientific evidence that has undergone comprehensive review and rigorous analysis is necessary to formulate guidelines for performance measurement. All the contents of the claim made in any health communication campaign must be on the basis of scientific evidence.

Reach: The content gets to or is available to the largest possible number of people in the target population. When the content of health communication campaigns such as for polio immunization fails to reach a large segment of the people, such campaigns cannot achieve their desired objectives.

Reliability: The source of the content must be credible and the content itself must be kept up to date. Information on polio that emanates from any medium that is used in polio campaigns must be from a credible source so as to avoid mistrust and suspicion.

Repetition: The delivery or access to the content is continued or repeated over time both to reinforce the impact with a given audience and to reach new generations. Health communication campaigns on polio must be repeated over time so that the target audience will get the message.

Timeliness: The content is provided or available when the audience is most receptive to, or in need of, the specific information. The success of health communication campaigns depends on how timely the information is received. In fact, there is need to use the media during the prime viewing time in order to achieve maximum success.

Understandability: The reading or language level, format and multi-media strategy are appropriate for specific audiences. All information pertaining to polio immunization campaigns should be in the language that the target audience will understand (Schiavo, 2000).

In the contribution of Schiavo (2000) on this, the scholar noted that the characteristics mentioned above are critical for the success of any communication campaign in any society, especially in such contexts as the eradication of polio in Nigeria. Unfortunately, not all of them are accorded the priority and significance they deserve from health workers, government officials, and community leaders, all of whom are expected to exercise leadership in the use of communication to promote greater acceptance of polio immunization in both urban and rural areas of Nigeria.

2.5 Factors Determining Effectiveness of Health Communication Campaigns

Empirical evidences abound to support the effectiveness of health communication campaigns. A perusal of the relevant literature reveals particularistic and holistic features. While some scholars have attributed the effectiveness of health communications to the combination of media, interpersonal and community events, others have attributed it to a wide range of factors that include the media. However, it was Mendelsohn (1973) who analysed his own participation in three communication project campaigns and concluded that his three campaigns were successful because they were based on these four steps: First, spell out clearly the objectives of the campaign. Second, pinpoint the target audience. Third, work to overcome indifference of the audience towards the particular issue and lastly, find relevant themes to stress its messages.

But Rogers and Storey (1988) posit that comprehensive communication campaigns are most effective when they include a combination of media, interpersonal and community events. According to them, these approaches work together to reinforce each other in certain ways. First, the media are considered as an appropriate approach for certain objectives of communication campaigns. Buttressing this point, they opined that limited involvement or interaction is only possible through the mass media. For this reason, a combination of mass media and interpersonal communication tends to be more effective. This is because interpersonal communication often flows from media messages, as opinion leaders and others shape what they have learned, approve

the messages, and otherwise enhance the impact of media activities. Second, interpersonal communication allows for much greater participation where interaction and feedback are required; and this is mostly enhanced by the use of audio-visual-aids, props and other forms of multimedia. Finally, events combine both media and interpersonal communication and are often promoted and reported through the media. Because events are designed to be newsworthy, media coverage is considered a key objective and an indicator of success.

In a review of empirical evidence on the effectiveness of health communication campaigns, Freimith and Taylor (1993) confirmed the veracity of these factors. The studies reviewed confirmed the impact of these factors in the areas of awareness, information seeking, knowledge, attitude, behavioural intentions and behaviour. The review shows that 15 evaluators reported changes in awareness while simple recognition of health messages was 46% (median); 14 evaluations found impact in knowledge with a dramatic increase as great as 60%; 16 evaluations found significant improvement in post-campaign attitudes, 7 evaluations showed clear evidence of change in behavioural intentions with 19% to 73%; and 29 evaluations showed a median change of 29% with a range of 4% to 74%. However, a report on communication best practices released in 2008 by the Gay and Lesbian Alliance Against Defamation (GLADD) and the Movement Advancement Project (MAP) gave holistic factors responsible for the effectiveness of (health) communication campaigns. These factors are seven and are referred to as "the elements of an effective communications campaign". According to the report, these elements make a campaign to succeed and they include the campaign objective or goal, target audience(s) messages and research, media communication plan, messages or spokespeople, budget; and the campaign evaluation. The report suggested that the following questions must be answered:

a) In the campaign objective or goal, what are the intended aims or what does it set out to achieve. This is because a good campaign requires focus and attempting to do much may not augur well after all. A study to buttress this factor is the test of the general principle of stating behaviour change goals conducted in a research on HIV/AIDs campaigns in Uganda. The study found that campaigns were of higher execution quality when they specified behaviour change goals rather than awareness of HIV or a general goal such as

reducing AIDS (Snyder, 1992).

b) For the target audience(s), the question that comes to mind is, "who are we trying to reach? This is due to the fact that the "general public" is not a target audience. This is because if an attempt is made to reach everyone, the campaign may end up not reaching anybody. When planning an effective communication campaign, consideration should be given to the audience, especially in the research and the message in order for them to take notice and be supportive. The audience is diverse and heterogeneous and what works for an individual may not work for the audience.

Therefore, research is needed to know the difference between the messages the campaigner likes and that which is effective to be recommended. A media communication plan is necessary when planning for any health communication campaign. Media communication plan deals with how the campaigns will reach the audience. This is because people generally need three exposures to a message before they internalise it. Therefore, the media plan should reach the same people multiple times and media placements should not be spread too thin. Again, the spokesperson or messengers should be clearly identified because they are the people who are going to say it. It is very important to note that the best spokesperson are not always family members or friends or people that work with each other. Furthermore, there is often a big difference between an individual's choice and who an audience likes and trusts. A health campaign is most effective when the most reliable and trusted people speak. Budget, coupled with adequate resources, is also an important factor that determines the effectiveness of communication campaigns. Without enough money to launch an effective campaign that is based on research, it is better-off not doing it. However, if the budget is limited, the sample of the target audience and payment placements must be reduced. The final step involved in getting out an effective health communication campaign is evaluation. However, planning and conducting an evaluation is involved from the beginning. Evaluation should be included as part of campaign development for the following reasons:

a. To ensure that programs achieve maximum effectiveness.

b. To be accountable to funders.

c. To aid in the dissemination of knowledge so that others can learn from our experience

d. To enhance the standing of organization.

e. To predict the results of a program, measure the results or help determine why certain results occur (Snyder, 1992).

According to the Health Communication unit of the University of Toronto, seven conditions are necessary for successful and effective campaigns. They are:

a. Develop high quality messages, services and channels through news assessment, applied theory and formative research.

b. Disseminate "stimuli" to intended audiences, financially and consistently over a sustained period.

c. Attract the attention of the potential receivers.

d. Encourage favourable interpersonal communication about the issue

e. Change awareness, knowledge and /or behaviour of individuals.

f. Cause societal change with supplemented community and government changes.

g. Use summative evaluation to accumulate a systematic knowledge about the conditions of maximum impact (Health Communication Unit, Toronto, 2007).

2.5.1 Why Communication/Information is Important in Health Campaign

Information, Education and Communication (IEC) are effective tools for behaviour change, especially in the efforts by governments, non-governmental organizations and other stakeholders and groups in public health towards the complete eradication of polio virus worldwide. Information and communications are universally recognized as part of the tools for health promotion. Njelesani (1998) notes that they have been at the very heart of the work of the World Health Organization (WHO), they are contained in the constitution of the organization and have been underlined many times over the years in several resolutions of the World Health

Assembly and the Regional Committee for Africa. In order to achieve good health for majority of the populace, good communication is indispensable. The fact that it is people themselves who must be at the centre of health policy was fully recognized by the WHO constitution, and this has gained worldwide acceptance over the years (Njelesani, 1998).

The public is extremely diverse, making it important to remember that for it to be accessible and meaningful, information must be couched in terms that take into account the culture and priorities of the target audience. This is very important especially when designing campaign messages in a multicultural country like Nigeria. A campaign message on any health programme may succeed in one part but may turn out to be a failure in another part. This is because of the differences in religion, culture, language and to some extent socio-economic factors. (Eze, 2013). Due to new advances in information and communication technology, people's appetite for information and communication has increased tremendously especially as it concerns healthcare. Despite the importance of information and communication to health, efforts of stakeholders in support of health care development in Nigeria have been rather limited and their impact has been almost insignificant particularly in dealing with such health problems as polio, malaria and HIV/AIDS.

This situation, Njelesani (1998), is definitely unsatisfactory because in spite of the efforts made by the WHO, other health organizations and the national authorities in the last 60 years, many diseases such as polio and malaria are still rampant and a lot of people are still victims of avoidable suffering and preventable deaths. Due to rapid increase in population and hard economic conditions, government alone can no longer meet the ever-growing demand for health care. Hospitals and clinics are becoming more dilapidated and can no longer give basic first aid treatment. In addition, the dearth of qualified staff, poverty, ignorance and poor information and communication about certain health problems have made people to resort to treating some diseases at home. People are demanding information and communication on what they can do, how they can access, and how they can treat diseases or ailments that affect them. They also want to know the causes of various illnesses, and their prevention. This can only be solved by providing effective communication to people who need them. Even when the information is available, it may not be in the form they can understand easily. (Njelesani, 1988).

Again, some of the information needed may not reach the target audience because of the weaknesses or gaps in the information and communication systems in the country. The greatest need for health information is in the rural areas where the majority of people live. In Nigeria, most of the mass media outfits are largely urban-based and cater predominantly for an urban audience whose needs they understand. The implication therefore is that reaching rural audiences is a big challenge. The belief among the majority of Nigerians is that rural areas are inhabited by poor and illiterate people who are generally backward and have limited access to information; the reverse is the case for the urban areas. (Smah, 2001).

This situation prompted Smah (2001) to observe that the exclusion of vast majority of citizens from such opportunities is due in part to social inequalities in the distribution of wealth and social services. Nigeria has over the years mounted several information and communication campaigns aimed at promoting good health, governance and ethics. An evaluation of some of these programmes revealed that they did not enjoy maximum acceptance, support and patronage. As a result, many of them failed to achieve the set targets (Imoh, 1991).

According to Imoh (2006), one major constraint to the effectiveness of these health campaigns at the national level was lack of effective communication between the policy/decision makers and the public. Because of this, efforts at mobilizing the masses for action have lagged somewhat behind the technical and operational aspects of the programme such that community involvement and participation in health programmes have been taken for granted. This is especially the case in the polio eradication campaigns which have not performed at the expected level, thus making polio still a threat, not only in Nigeria, but also in other developing countries such as India, Pakistan and Afghanistan. Polio has continued to ravage large population of children in northern Nigeria despite all the campaigns to combat it. (Onuekwe, 2013).

Most campaign design strategies are done without the involvement of the target audience and this is very necessary for any communication campaign to succeed. Effective communication strategy is very necessary in any campaign in Nigeria because the greatest need for health information is in the rural areas where the majority of people live. Yet, according to Njelasani (1998), the mass media on which much responsibility lies for disseminating such

information are largely urban-based and cater predominantly for an urban audience whose needs they understand. Distribution of printed materials containing Information, Education, and Communication (IEC) on health issues and newspapers in rural areas are often very difficult because of poor roads and transport systems. This is coupled with lack of adequate provision in the budget for information programme.

Moreover, rural people tend to have limited access to television and radio. Language, attitude of professionals may also create barriers to the dissemination of health information. This may be due to the attitude of health professionals who tend not to see why technical and scientific information should be made available to people who need them. In the same vein, media professionals do little to challenge this prejudice because many of them lack confidence in handling scientific subjects. This means that health workers at grassroots level are often inadequately equipped with information, materials, and communication skills to take advantage of the opportunities offered by regular contacts with the communities.

Much of the information that the public get on health problems comes from the media workers and decision makers who do not give it the desired attention. Rather, other issues such as sports and politics take the centre stage and are often budgeted for more. No society can develop without good healthcare and good healthcare can only be achieved when the populace is given adequate and effective communication that will help them to make an informed decision. Effective communication strategy on health is important in order to tackle non-compliance with polio campaigns in the northern Nigeria as against what obtains in the southern Nigeria which appear to be succeeding in polio immunization and eradication. This unsatisfactory health situation is further aggravated by reduced access to effective information which could help people avoid common and preventable diseases such as polio. A well designed effective communication strategy should have as its goal, full coverage of the population with information, education and communication blueprint for tackling the polio scourge in Nigeria once and for all. Communication is a critical component in assuring that children are fully immunized and that simultaneous immunity is attained and maintained across large geographic areas for disease eradication and control initiatives (Waisbord, Lora, Ogden, and Chris, 2010).

2.6 Persuasive Communication Campaigns

The relevance of persuasive communication to health communicators lies ultimately in its proposed effect: change in an individual's attitude toward specific behaviours (Simons, 1976 and Smith, 1982). Although there is no agreement on the proper definition of attitude, there is an agreement that attitudes are composed of evaluations of people, events, products, policies, institutions, or behaviours (Ajzen and Fishbein, 1980; Audi, 1974, Bagozzi, 1978; Bagozzi, Tybout, Craig and Sternthal, 1979; Breckler, 1984; Lalljee, Brown, and Ginsbrg, 1984; O'Keefe, 1990). According to O'keefe (1990), attitudes are learned, relatively enduring mental states that can exert influence on behaviour. Therefore, adoption of an attitude will ensure that an individual will enact a specific behaviour since attitudes are thought to predispose individuals to choose certain actions over others (Ajzen & Fidhbein, 1980; O'keefe, 1990). Persuasion can affect enduring change in individuals' attitudes, with consequent capacity to affect behaviour change. This is because pre-existing attitudes play a determining role in how people respond to health communications and other forms of social influence. Persuasion is divided into two: coercive and persuasive forms of influence. Coercive forms of social influence can affect behaviour change more directly and immediately than persuasive forms, which emphasize internalization (Kelman, 1961; Smith, 1982). Persuasion has distinct practical advantages over coercion that extend beyond its ethical advantages. Kelman (1961) notes that coercion is a less powerful form of social influencer in the long term because it relies on the presence of an authority figure to activate and reinforce behaviour.

For health communication to be persuasive, it must be both transactional and response dependent. Communication is transactional when it allows for give and take exchange (Smith, 1982). Thus, to be persuasive, a communication must (a) motivate the receiver to actively attend to messages and perceive and interpret their content, (b) include interactive and transactional solicitation of feedback from audience members, and (c) activate elaboration of message arguments and counter arguments to encourage individuals to move through the process of attitude change (McGuire, 1978, 1989; O'Keefe, 1990; Smith, 1982). The persuasion process requires that individuals "tune in " to a message, attend to its content, comprehend its arguments,

agree with what they hear, yield to the advocated positions, and retrieve the adopted attitudes for future applications to decision making and action. A second and related dimension of persuasive communication is its response dependence. Because attention to, adoption of, and elaboration of a specific message depend on the population of the receiver of a persuasive communication, persuasion must be viewed as a receiver –driven process that is dependent on series of responses from the individual trying to persuade people (Simons, 1976; Smith, 1982). In conclusion, it may be alright to state that as communicators, "we do not persuade others at all; we only provide the stimuli with which they can persuade themselves" (Simons, 1971, p.232). Simons (1976) still argues that a communicator can send persuasive messages without the intent to persuade and can fail to persuade when the intention is present. The recipient of a persuasive message is always free to participate or not in the process of persuasion.

2.7 Advocacy for Polio Immunization

A number of scholars concurred that advocacy is very important within the field of health communication as it is a prerequisite or component of most behavioural change effort (Wallack, et al. 1993; Kar, Alcalay & Shane, 2001 and Pervanta, et al. 2011). According to Sharma and Bar-llans (2010), advocacy is very important especially when a change is needed. More so, If health communication is recognized 'as a multi-faceted approach to reach different audiences and share health-related information'(Shavio, 2000), then advocacy is definitely one of the approaches of health communication as it provide support, influence public opinion, and bring issues up to decision-making level (Pervanta, et al. 2011). Advocacy efforts target policy makers and leaders to elicit their endorsement and support for polio eradication. Sharma and Bar-llans (2010) recognizes advocacy as speaking up, drawing a community's attention to an important issue, and directing decision-makers towards a solution. To him, advocacy is all about pleading for, defending or recommending an idea before other people. In another submission, Christoffel (2000) saw advocacy as the application of information and resources (including finances, efforts and votes) to effect systemic changes that shape the way people in community live. Summing up all these clarifications, it is clear that advocacy denotes any effort to influence policy and decision makers, to fight for social change, to transform public perceptions and attitudes, to modify behaviours, or to mobilize human and financial resources as stipulated by interventionists

like, Global Fund to Fight AIDS, Tuberculosis and Malaria (GFFATM); the Global Alliance for Vaccines and Immunisation (GAVI); the United Nations Population Fund (UNPF); the World Bank's Human Development Network; Joint United Nations Programme on HIV/AIDS/UNAIDS, Global Health Research Initiative (GHRI) (Canada), Pan American Health Organisation (PAHO) (USA), the United Nations Development Programme (UNDP), and; the Global Health Program of the Bill & Melinda Gates Foundation among others.

UNICEF (2011) defines advocacy as a continuous and adaptive process of gathering, organizing and formulating information into argument, to be communicated to decision makers and stakeholders through various inter-personal and media channels with a view to influencing their decision towards raising resources or political and social leadership acceptance and commitment for a development programme, thereby preparing a society for acceptance of the programme. One of the fields in which advocacy is mainly applied is public health campaign especially immunization programmes aimed at eradicating deadly diseases such as polio. On scope and importance of advocacy in immunization, Waisbord (2005) writes:

> Advocacy affects both infrastructural and normative and behavioural aspect of immunization…… Advocacy is a means not only to strengthen vaccine supply but also to cultivate demand through working with leaders (e.g. Governors/mayors, priests/imams, traditional birth attendant, healers, and medical staff). Advocacy among authorities who have power to influence practice through non-persuasive means (ordering, coercing, jawboning) to get communities vaccinated and among opinion leaders willing to endorse immunization as a desirable practice too change and maintain cultural norms (p 283- 284)

Over the years, immunization has remained the only way of rolling back and eradicating polio from different countries of the world (Chaturvedi, 2008). Polio is a crippling or paralysis inducing disease. There is no cure, but it can be prevented through administration of Oral Polio Vaccine (OPV). Hence, the strategy to eradicate polio is based on preventing infection by

immunizing every child to stop transmission and ultimately make the world polio free (Chaturvedi, 2008).

The Global Polio Eradication Initiatives (GPEI) launched in 1988 to interrupt transmission of wild polio viruses in all human communities in the world hinges mainly on advocacy at the sub-national, national and international levels to raise public awareness and participation, political commitment and public and private sector spending (WHO, 1999). Within this larger global polio eradication programme, the polio eradication initiative began in Nigeria in 1996 (Renne, 2010) with mass polio immunization campaign for children under the age of five in northern Nigeria, which can be regarded as the hotspot of polio viruses in Nigeria (Ozohu-Suleiman, 2010, Renne, 2010). However, the immunization campaign was met with substantial resistance on the part of northern masses and elites (Renne, 2010). This resistance, which partly stemmed from the fear that the oral Polio vaccine (OPV) is contaminated with anti-fertility hormones and HIV virus (Ozohu-Suleiman, 2010 and Waisbord, 2010), became a cog in the wheel of projected complete eradication of polio virus in Nigeria.

Renne (2010) explains this situation thus:

> During this period of increased vaccination open resistance to polio eradication initiatives emerged in Northern Nigeria, with parent refusing to allow health workers to enter their home or vaccinate their children, and sometimes physically and verbally abusing health workers. These parents' distrust and resistance to the campaign, expressed in rumour that the polio vaccine was contaminated with contraceptive substances or HIV/AIDS, was reinforced in 2003 when safety of the oral polio Vaccine was questioned by a range of individuals in Northern Nigeria, including medical doctors, University professors, Muslim scholars, as well as politicians (pp.39)

This intense skepticism and refusal of parents to immunize their children even led to official suspension of immunization campaigns in Kano state (Renne, 2006, Yahaya, 2007) pending the confirmation of the safety of the Polio vaccine in use. Consequently, the polio eradication initiatives lags in the country and as at 2008, northern Nigerian was reported as having the highest number of confirmed polio cases in the world (Renee, 2010; Chartuvedi, 2008). The situation report about polio in Nigeria as at 2011 was painted thus:

> In 2011, Nigeria reported 62 cases due to wild poliovirus (47 due to WPV1 and 15 to WPV3), a three-fold increase over 2010. In addition, 33 cases due to circulating vaccine derived poliovirus type 2 (cVDPV2) were reported. Transmission of all three types was restricted to the endemic northern states, particularly Kano, Jigawa, and Borno, with significant transmission also in Sokoto, Zamfara, and Kebbi. In 2011, Nigeria continued to export the virus to neighbouring countries (Niger and Cameroon). While the immunization status of children in northern Nigeria has continued to slowly improve in 2011, both the number and geographical extent of cases are increasing. In four infected states, less than 65% of children have greater that 4 OPV doses {Borno, Kano, Sokoto and Yobe} (Global Polio Emergency Plan, 2012-2013: 11)

All these provided a fertile ground for a growing multi-player and multi-dimensional advocacy for polio immunization in Nigeria en route a complete 'interruption of transmission of wild polio in human communities in the world (Chartuverdi, 2008).

Consequently, advocacy has been playing a key role in mobilising communities towards getting their children immunized while also securing increased commitments from national and local policy makers. Advocacy for polio immunization in Nigeria also entails dispelling rumours and various conspiracy theories about the Oral polio vaccine. Over the years, the mass media have been playing a major role in creating and raising awareness about polio issues, educating the populace on the importance of polio vaccination as well as mobilising communities to support current polio eradication efforts. Latest UNICEF social data analysis reveals that about 38 percent of caregivers were informed about the polio campaign via radio in Kano State (Laulajainen, 2012). Other media such as print media and television have also been pressed into the service of social mobilisation for polio immunization. The 2011 Polio Communication Summary Report for Nigeria recognizes that:

> The level of awareness about polio immunization has increased from 65% (2009) to 75% (2010) with a wide variation among States (25% in Kano to 94% in Bauchi). The milestone target is to bring the awareness level to 85% by the end of 2011. Effort is (now) underway to increase awareness through community dialogues, compound and town hall meetings, *Majigi film* shows, the use of IEC materials and mass media (2011 Polio Communication Summary Report: 5)

In line with the basic fact that interpersonal communication is more effective than mass media in persuasive polio communication (Oziohu-Suleiman, 2010), UNICEF also initiated an interpersonal communication training to strengthen the capacity of health educators, supervisors and ward focal persons to convince communities to be immunized against polio (2011 Polio Communication Summary Report). The commitment on the part of the government toward eradicating polio via immunization has also increased. President Goodluck Jonathan in March, 2012 inaugurated the Presidential Task Force on polio eradication. In the same month, he promised to increase government funding for immunization from 17 million dollars to 30 million dollars (The Game Changer, March 2012). The President reiterated his support for phasing out polio in Nigeria before 2015 and countered the pessimistic spirits of some Nigerians about polio eradication by noting that:

> We cannot begin to say that the Nigerian population is high or big that is why we cannot eradicate polio that is no excuse because countries that have over one billion people have done that. We are just about 170 million people so, we have no excuse (The Game Changer, March, 2012:6)

Similarly, all the 36 state governors in the country have signed up the Nigeria immunization challenge launched by the Bill and Melinda Gates Foundation in the year 2011. The Nigeria Immunization Challenge set some specific objectives that need to be realized as a prerequisite for improving the country's chance of wiping out polio (The Game Changer, March 2012). There are also individual state efforts in canvassing for immunization and immunization acceptance among their people. For example, Jigawa State Government in February 2012 launched the Community Leaders against Polio Projects (CLAP) with the responsibility of getting eligible children immunized as a way of stopping the transmission of polio. Traditional and religious leaders are also stepping up advocacy for polio immunization. According to UNICEF 2009 Annual Report, sustained advocacy among and by traditional and religious leaders in Nigeria resulted to 3 million immunizations among children in 2009.

All these indicate that advocacy for polio immunization in the country is a collaborative effort among multi-actors consisting of foreign and local stakeholders. These stakeholders include: UN specialized agencies (e.g. WHO, UNICEF), public health institutions,

traditional/religious and opinion leaders, international development agencies, centre for disease control and prevention, foreign NGOs and foundations, local NGOs.

The diagram in *Fig 1* below captures the leading advocates of polio immunization in Nigeria:

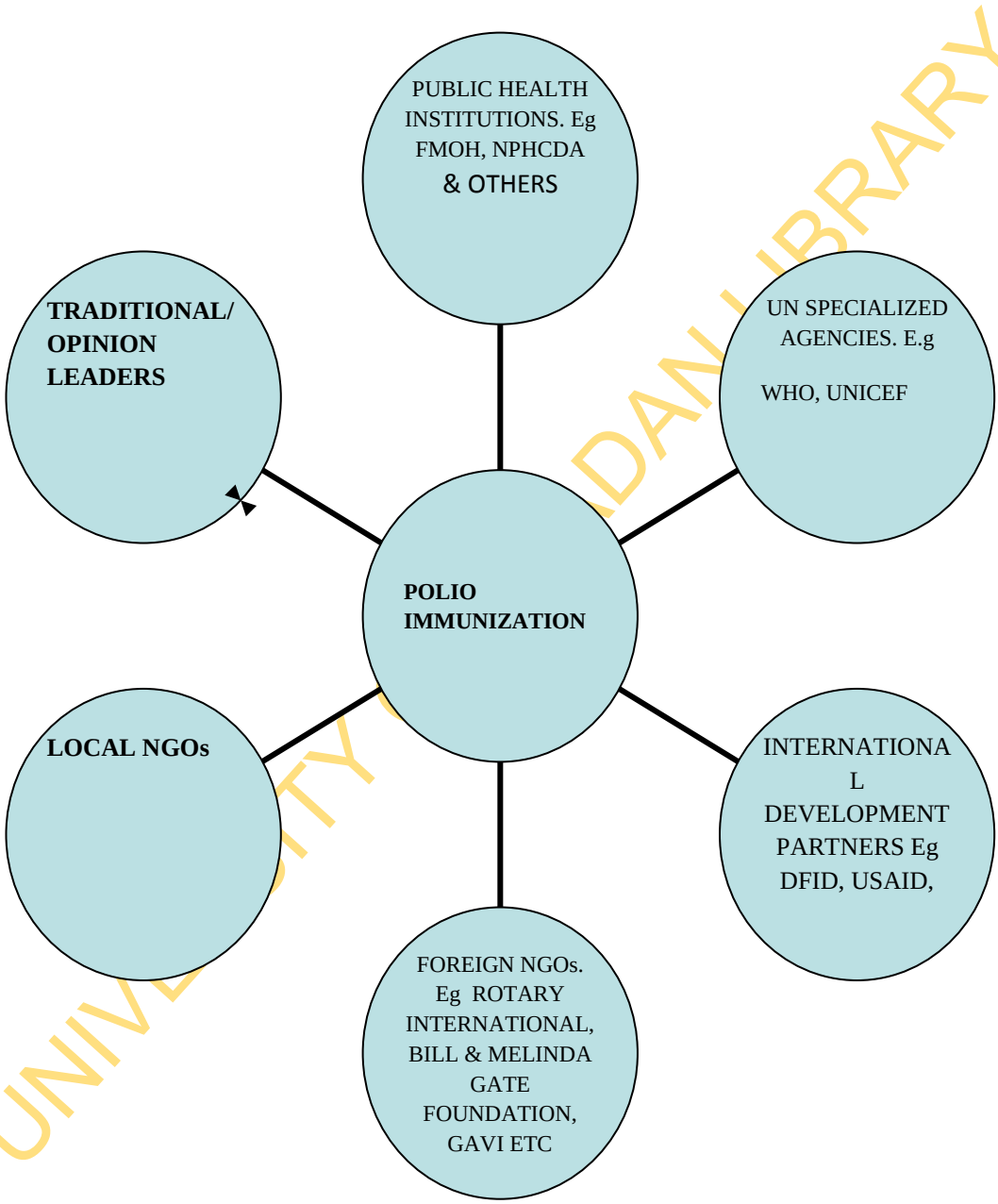


Fig 1: ***Stakeholders in Polio Immunization***

The figure above shows how important it is to involve various stakeholders as identified above in the campaign against the spread of polio in a typical Nigerian society.

The combined forces of WHO and UNICEF still remain the most powerful advocate of polio immunization en route polio eradication in all countries of the world. The World Health Organisation through its headquarters, regional, and country offices provide technical direction, coordination and strategic planning for polio immunization worldwide (Shendurnicar & Thacker, 2005). These agencies are also at the forefront of advocacy for polio immunization in Nigeria. Government interventions are routed through these bodies and they are also responsible for the implementation of the Expanded Programme on Immunization (EPI), advocacy and social mobilization (Sorungbe,1989).

Traditional and religious leaders have also become one of the leading advocates for polio immunization in the country. This is because people tend to listen to them even more than the political leaders. International development agencies such as USAID, JICA, DFID, and CIDA are also partners and advocates for polio immunization in Nigeria. Through funding and other logistics support, they have been canvassing a polio-free Nigeria through immunization. Other advocates include foreign NGOs and foundations such as Rotary International, and Grand Alliance for Vaccine & immunization (GAVI) among others. The Rotary International has been particularly visible in Northern Nigeria through its various activities geared towards wide coverage of polio immunization in this area. According to Thacker & Shendurnicar (2005), more than one million members of Rotary International continue to volunteer their time and resources towards the success of polio eradication. They are mainly involved in mobilization of volunteers during National Immunization Days (NID) and helping to raise funds for the success of polio immunization. Shendurnikar & Agrawwal (2005) also note that GAVI is an international coalition of multinational agencies, international development bank, foundations (Bill & Melinda Gates Foundation, Rockefeller Foundations), vaccine industry, NGOs, and national government health programmes. GAVI, among its five strategic objectives, is committed to improving access to sustainable immunization services in 74 developing countries and making immunization coverage an integral part of international development effort (Shendurnikar & Aggrawal, 2005). All these make GAVI one of the leading advocates of polio immunization in Nigeria. Local

NGOs committed to the cause of polio immunization have also sprung up in the country. One of such NGOs is the Journalist Initiative on Immunization against Polio (JAP). According to the Chairman, Kano State branch of JAP, Abdu Zango, the NGO has been playing a key role in mobilizing communities and getting their children immunized against polio (Laulajainen, 2012).

In essence, advocacy, awareness creation and social mobilization for polio vaccination can never be said to be in shortage in Nigeria. Through the collaboration between national and international stakeholders, Nigeria as one of the last strongholds of poliomyelitis has been making concerted efforts aimed at eradicating polio. Advocacy activities are anchored by the National Social Mobilization Working Group at the national level with oversight functions at the state level. A state Social Mobilization Committee with the state health education as the technical adviser plans and executes all advocacy programmes at the state levels, while the Local Government Social Mobilization Committees with the LGA health education officer as the focal person oversees advocacy activities at the local government levels. Onuekwe (2013) notes that although advocacy plans like any other communication should be well planned in advance with clear-cut objectives, implementation of strategic plans, measurable indicators and evaluation plans, this is hardly the case due largely to non- availability of required funds and communication technocrats especially at the state and LGA levels. He reiterated that advocacy activities are haphazardly done and tied to polio campaign timelines.

2.8 Socio-Cultural Challenges to Health Communication Campaigns/Environmental Factors

Geist-Martin, Ray and Sharf (2003) note that health promotion programmes should not only demonstrate cultural sensitivity but use culturally relevant symbols to communicate the message. In short, the dimension of cultural sensitivity refers to the extent to which interventions fit with the culture, experience, and behavioural patterns of a target group. On the other hand, deep structure reflects how cultural, social, psychological, environmental and historical factors influence health behaviour. This less readily visible characteristics includes understanding how the target audience perceives the cause, course, and treatment of illness, as well as how they perceive the determinants of specific health behaviour and involves

appreciation of how the religion, family, society, the economy and the government influence their behaviour (Glanz, 2002).

Studies have shown that religion has effectively worked as a coping and preventive strategy in health-related issues (Koening, 2001; Salem, 2006). Religion has an important role in social integration and control. It is part of the culture or the way of life of a society and it helps to maintain cultural traditions. Religiousity relates to the influence of social referents and this may be viewed as analogous to construct from the theory of planned behaviour (Kabir, 1998; Kagimu, 1998; Surur, 2000; Woldehanna, 2006). Linking health messages to religion or spiritual themes, or using religious elements on messages, may be appropriate motivation strategies. This can be done through manipulation of social effects such as linking health behaviours to specific Biblical/Koranic commandments or using the norms of the faith as a source of positive or negative sanctions (Glanz, 2002). As noted by Ahmad et al. (2008), empirical studies have shown an association between religiousity and positive (or less negative) healthy behaviour and a negative religiousity and behaviour such as alcohol abuse and promiscuous sexual behaviour (Abraham, Sheraran, and Abraham, 1992, Bree, 2005, Wallace, 1991). Regarding the relationship between religiousity and drug abuse, studies have found strong negative correlation (Adlaf, 1985; Amonini, 2006; Burket, 1987; Lugoe, 1997).

In the same vein, religion can also be a big barrier to successful health communication campaign. In Nigeria, religion plays a big role in polio immunization campaign in northern Nigeria. Islamic scholars and non- scholars in Northern Nigeria are generally opposed to western medicine. However, immunization which requires the injection or ingestion of disease laden substances (either killed or attenuated viruses) may be seen as unclean or harmful practice which threatens children's health (Renne, 20010). In fact, in the northern states, Islamic scholars have questioned their use (Renne, 2006).

Babalola et al. (2004) observed that environmental factors have a lot of influence on immunization noting that environmental factors hinder immunization activities. According to them, rural parents especially those who are farmers, are less likely than their urban counterparts to get other necessities like medical care and clothing. They observed that in the rural areas, there

is a high level of unemployment, under-employment, delayed payment of salaries and the attendant widespread poverty. In the same vein, Belcher et al. (2005) conducted a research on mass immunization campaign in rural Ghana with emphasis on factors affecting participation. Some of these factors include: social circumstances, superstitions, literacy level, public trust, socio economic factors, urban/rural issues, and communication/transportation and gender issues.

Social Circumstances: Social circumstances also play a lot of roles in immunization programmes. Hanlon et al. (1988) conducted a research on factors influencing vaccination compliance among peri-urban Gambian children. The vaccination status of 251 children aged 12-18 months in two Gambian communities were determined from their health cards. Two sub-groups were identified: children who were fully vaccinated and those who had received less than half their vaccinations. The social and environmental circumstances of those children were investigated to detect factors which were associated with poor vaccination compliance. Mothers of well vaccinated children were more inclined to bring them for non-curative services. Mothers of poorly vaccinated children had a poorer knowledge of the diseases against which their children should be vaccinated. (Hanlon et al, 1988).

Superstitions: A lot of people attach superstitious belief to polio immunization. Some of the views have to do with disease causation and the belief attached to the immunization. Ignorance and suspicion (based primarily on rumours) are factors found to hinder immunization. Babalola et al. (2004) noted that this was more prevalent in the Northern States of Nigeria. According to them, ignorance, in many cases negative rumours peddled around concerning immunization, led to many parents making decisions to avoid the practice. There was not a single state that did not report on rumour about what some vaccines could do or not do.

Babalola et al. (2004) note that in Kano State (a predominantly Muslim community) and some parts of Maiduguri, rumour had it that oral polio vaccine was intended to reduce fertility among Moslem communities. Hence, most Moslem religious leaders and fathers are in the forefront of the battle against oral polio vaccine for infants in these communities. For example, during a national immunization day exercise in Zamfara State in January 2007, parents agreed to

let their children receive drops of polio vaccine but refused to allow their children be given Hepatitis B injections on the ground that it would cause paralysis (Renne, 2006).

In fact, in the Northern States, Islamic scholars have questioned their use, as one scholar observed:

> Immunization does not belong to Islam because Allah has given humans protection in their appropriate best form. We have been created in the best of forms, in the best of constitutions – which is seen in the mental, spiritual and has endowed man with so many things. Physical composition of man. They are made of many systems, including immune system. Nature, is so kind, it has endowed man with so many things (Renne, 2006, p 1856)

The superstitious beliefs attached to polio immunization in the Northern States of Nigeria are very much different from the states in Southern in Nigeria. Still on the rejection in the North, Renne (2006, p.1857) cited one Zaria resident who observed thus:

> Anyone that says Zaria residents reject immunization is only saying something that is far from the truth. What we rejected was the polio immunization because we saw no reason why they were disturbing us with polio immunization when they did not effectively handle killer diseases like measles. Our point of contention is that it is only on rare occasions that one comes across death caused by polio or even a victim of it, then why the prominence. This is what we reject, not immunization generally.

Literacy Level: The literacy level of parents, guardians and some stakeholders has a lot of impact on the success of polio immunization campaign. In the Northern States, the programme fell short of expectation because of the literacy level of traditional/religious leaders. Literate parents brought their children for immunization because they are aware of the benefits of polio immunization (Renne, 2004).

Public Trusts: Public trust is essential in promoting public health. Such trust plays an important role in the public compliance with health interventions, especially with vaccination programmes which target mainly healthy people. Where public trust is eroded, rumours can spread and this can lead to rejection of health interventions (Jegede, 2007). Lack of trust was responsible for the

failure of the polio immunization campaigns in 2003. In many cases, negative rumours peddled around concerning immunization led to many parents making decisions to avoid the practice. For example, there are rumours that certain vaccines (especially the oral polio) could cause paralysis in children, hence many parents avoid them.

There was not a single state that did not report one rumour or the other on what some vaccines could do or not do. In Kano and Jigawa states (predominantly Muslim communities), rumour had it that oral polio was intended to reduce fertility (Jegede, 2007).

Socio-Economic Issues: Providing full immunization coverage and reducing infant and child mortality are high priority, national public health objectives not only in Nigeria but in sub-Saharan Africa. Because children depend largely on their families to meet basic human needs, programmes aimed at reducing child mortality could be improved by the availability of better information on the home environments in which children are most at risk of adverse health outcomes. The economic status of children is a major determinant of their health care status. Children from a rich household are often better exposed to good health care system (Gage, et al. 1997).

Harsh economic conditions in families were expressed in all the communities irrespective of being rural or urban in the qualitative study of five states by Babalola et al. (2004) on the community and systemic factors affecting the uptake of immunization in Nigeria. According to them, in Lagos State, economic problems resulting from unemployment, under-employment and delayed payment of salaries are major concerns of both men and women.

Virtually all study groups complained of their inability to meet basic family needs including housing, food and healthcare. Although parents acknowledged that immunization services are almost free, some argued that children have to be fed and clothed before any consideration for immunization. In many cases, widespread poverty makes it difficult for mothers to keep appointments and take care of their personal needs. (Babalola et al, 2004).

In Enugu, fathers of non-immunized children said they would rather be concerned with meeting economic needs of their families rather than be bothered with child immunization. One

of them said that the "barrier is that I am hungry. I am always on the farm looking for what we are going to eat. So, if I don't immunise my children, it is because I am never around to make decision for them to be immunized" (Father of non-immunized child, rural Enugu State).

Babalola et al (2004) concluded by stating that lack of funds may also hinder mothers in rural and urban areas from obtaining immunization for their children. Eventually, lack of funds may affect transportation which may hinder the mothers from travelling to the urban areas where medical services are available to obtain treatment for their children. Also, unemployment, under-employment and delayed salaries can affect polio immunization campaigns in both the urban and rural areas.

Urban and Rural Issues: Foege (1990) provides an overview of urban immunization links' work in cities. According to him, urban campaigns have been unusually stressful for many programmes. Frequently, lack of social cohesion makes it difficult to mobilize segments of a geographic area. From the first polio campaign in 1950 through the small pox eradication programme into the current childhood immunization campaigns, urban areas have presented special challenges. Often, urban areas have required such labour intensive efforts that the expenditure per person is prohibitive. In addition, the diseases themselves may put urban area at a disadvantage.

Again, Foege (1990) observes that in some African cities, a lower median age for measles disease actually reduces the opportunity between when a child can receive vaccine without interference from maternal vaccine to avoid natural diseases. It has been noted by scholars that in some Asian countries like Bangladesh, the EPI was nationally inclined and targets were set, vaccines ordered and the implementation plan was based on rural model (WHO 2012). However, the cities were in advertently forgotten. The reason probably is due to the fact that people usually attribute diseases to a rural phenomenon. So in planning for disease eradication, they always plan for rural areas forgetting that urban area too possess myriads of problems. Babalola et al. (2004) note that rural parents especially those who were farmers were less likely than their urban counterparts to get other necessities such as access to medical care and clothing and thus will greatly impact on their health status.

Gender Issues: Social and environmental factors such as gender have always been a contentious issue whenever polio immunization campaign in Nigeria is mentioned. However, the issue of gender as it affects polio immunization is important. In a study conducted by Aliede (2002) on media consumption patterns of selected urbanites, 'slumites' and ruralites in Nigeria, he noted that majority of the people interviewed (102 out of 150 respondents) representing 68% agreed that such factors as gender, age, income level, educational background among others have influence on the pattern of their choice and consumption of media contents.

In another qualitative study by Babalola et al. (2004) on community and systemic factors affecting the uptake of immunization in Nigeria, which targeted men and women of reproductive age and key information in the study locations, it was observed that in the five states, women tend to be more knowledgeable about vaccine preventable diseases than men. However, there were differences based on age, education and religion, not only among the states but also among the communities and between men and women within the same state. The observed differences, Babalola et al. (2004) note, reflect variations in the socio-demographic composition of Nigeria's population by place of residence. The male participants were on the average, better educated than their female peers. Moreover, the level of education of the participants was relatively higher in the urban locations compared to rural locations.

Also Kabir et al. (2005) conducted a cross sectional descriptive study to examine the knowledge of attitudes towards and beliefs about routine childhood immunization among mothers of children below the age of two years in Danbare village of Kumbotso Local Government in Kano State, Nigeria. The study group comprised 200 children below the age of two years. About 75% of the mothers (150 respondents) were aware of the existence of routine immunization services in the village. Majority of the respondents (69%= 136 respondents) had poor knowledge of schedules of immunization services and the existence of routine immunization services, as well as knowledge of which diseases are preventable. One hundred and sixty (54%) of the mothers were against their children being immunized but up to 59.5% (119 respondents) believed vaccines offer protection against diseases, while 48.5% (98) of respondents believed vaccines are safe (Kabir et al 2005).

They noted that mothers who had formal education were more likely to be aware of the existence of facilities for childhood immunization compared to mothers who had no formal education. Mothers with formal education were also more likely to believe in the efficiency of vaccines compared to respondents with no formal education. The research concluded with an observation that although majority of the mothers were aware of immunization services, their knowledge of immunization schedule as well as vaccine preventable diseases is poor. In fact, Kabir et al. (2005) observed that poor level of knowledge among the mothers may also stem from lack of effective communication and counseling on health issues by health workers in the village.

The ability to make an informed decision without undue outside influence is a privilege that most individuals cherish. However, in many African societies for cultural reasons, women and other under-privileged social groups are not allowed to make important decisions without prior consultations and approval of their husbands and or significant members of the husband's family (mother-in-law, older wives etc). Generally, men preside over household resources and make major decisions concerning the use of the resources. Where women are relatively economically independent, the control of their resources may still be problematic. In the case of immunization, if the ultimate decision- maker does not see the need for immunization or lacks confidence in immunization services, the child is not likely to be immunized even if the mother is in favour of immunization. The research and social marketing Services arm of GAVI and WHO (2012) have examined the variables of knowledge, attitude and practice in a study on social mobilization and communication factors affecting polio and routine immunization uptake in northern Nigeria. The study revealed that 22 percent of cases of rejection of immunization were due to disapproval by husbands. In Bauchi state, the same report showed that 46 percent refusal was due to husband's non consent, 28 percent in Kano and 51 percent in Borno. Babalola et al. (2004) in their research titled, "community and systemic factors affecting the uptake of immunization in Nigeria: A qualitative study in five states," noted that in Enugu State, the data revealed that many of the participants whose children were immunized took the decision on their own without seeking counsel or permission from a third person. While in urban and rural Borno

and Kano States, fathers' were responsible for making the final decisions on whether a child was to be immunized or not.

However, most Nigerian societies are deeply patriarchal and a woman generally has low decision-making power. In general, a mother's decision to immunize a child is communicated to specific significant others (the husband and/or other older members of the household) prior to actual implementation. This practice actually provides a safety net for the women in case of complications arising from the vaccine. In Jigawa State, specific male gender concepts such as those which emphasize male authority and male choice in domestic and matrimonial affairs were found to be the main obstacles in decision making concerning health issues. Women in many cases require the express permission of their husbands to attend health facilities especially when this involves money.

In Lagos State, South West Nigeria, almost all the participants in the FGD groups reported that the final decision-maker regarding child immunization was the father although a few reported that joint decisions are sometimes taken with the fathers merely symbolically endorsing a decision already taken by the mothers. Even mothers of fully immunized children emphasized the need for a mother to inform and carry the father of the child along in the decision to practice child immunization (Babalola, et al. 2004). The gender of the provider is another factor that affects polio immunization. In all the communities studied by Babalola et al. (2004), there was a preference for female immunization service providers. Preference for female service providers was particularly strong in Kano, Jigawa, and in the predominantly Moslem rural community in Lagos. The attitude on the part of the end user could encourage or discourage parents from immunizing their children. As pointed out by one service provider in rural Lagos:

> We are all female. The only male has been transferred…when the women in Purdah see a male; they close their eyes and only open them after he leaves. This may discourage them from coming, and if the husband knows they may not like it.

2.9 Health Communication Campaign in Polio Eradication

Many health communication campaigns involving a wide range of innovations and investments have been launched by successive governments in Nigeria as a contribution to the

improvement in the quality of life of rural and urban dwellers. Programmes such as the National Programme on Immunization (NPI), Control of Diarrhoeal Diseases (CDD), Roll Back Malaria, Population and Family Planning, Reproductive Health, STD/HIV-AIDS, condom social marketing, and polio immunization campaigns, have been launched by the Federal Government in consonance with the goals and objectives of the National Health Policy, which is based on health care for all. An evaluation of some of these programmes, which were proudly launched, reveals that they did not enjoy maximum acceptance, support and utilization. Consequently, they did not achieve the targets set for them (Imoh, 1991). Even though public awareness of the existence and efficacy of many national health programmes is relatively high, some people will not utilize the health services provided, even if they are given free of charge. Several factors may be responsible for this anomaly. One major constraint to the effectiveness of these health communication campaigns at the national level is lack of effective communication between the policy and decision makers in health and users of health services (Imoh, 2007).

Health communication campaign strategies can help foster positive health practices individually and institutionally, and contribute to sustainable change towards healthy behaviours. In Northern Nigeria, for instance, the attitude of parents and guardians towards polio immunization campaigns has been very lukewarm despite the efforts of government, non-governmental agencies and other groups such as the Rotary International (Eze, 2013).

If health communication campaigns are used appropriately, they will help to identify the relationship that health workers have with the beneficiaries (parents, guardians, patients) because the individual approach will assist in making polio campaigns successful. There are instances where health workers were driven away on the suspicion that they were agents of some multinational bodies, which were accused of spreading contaminated vaccines. Communication is a persuasive tool that could be used purposely to alter the behaviour of the recipients in the direction desired by the communication source. Therefore, health communication campaigns need not be restricted to only the mass media. Macauley and Salter (1995), and Eze (2013) note the importance of churches, schools, opinion leaders and parents in health campaigns. They observe that information obtained from the media is often incomplete, inaccurate and perhaps not convincing enough. A good health communication campaign strategy can be used to penetrate

areas of high resistance to polio immunization, especially in Northern Nigeria. It could suggest targeted use of other media forms to get the messages across to hard – to - reach, and the hard - to -convince parents and guardians.

Immunization campaigns are not uncommon in Nigeria, where both governments and health agencies have been active in promoting better health for children and pregnant women through the National Programme on Immunization. Although the national coverage levels increased from 15% in 1986 to 36% in 1988, these still fell far short of the target objectives of 80% coverage (Imoh, 2007). Traditional/religious leaders and other stakeholders have also been involved in polio campaign, but the desired result is yet to be achieved. The Sultan of Sokoto Alhaji Abubakar Sa'ad is the goodwill ambassador of polio in Nigeria and he has been involved in consistent campaign for polio eradication. Recently, he hosted Bill and Melinda Gates who visited him in Sokoto to share ideas on how to combat polio. Many reasons have been adduced for the low success rate of polio eradication in Nigeria. (Imoh, 2007).

Jegede (2007) noted that the right message on polio immunization was not delivered. The messages were ineffective in the sense that they were not properly couched so as to convince parents who are yet to come forward because of the misconception they have about oral polio vaccines. Evidently, these communication efforts yielded fragile results as the programme recorded continuous rejection of polio vaccination by parents and consequently transmission of polio virus among children under five-years especially in northern Nigeria. A knowledge, attitudes and practices (KAP) study sponsored by UNICEF to assess impact of social mobilization activities for polio eradication in Nigeria showed that among the reasons for refusal, fear of side effects accounts for 52% while lack of confidence in vaccination is responsible for 30%. The survey also found that of possible barriers to immunization, lack of vital information about immunization accounts for 27% while spouse disallowing immunization for children accounts for 22% (KAP survey 2008-Quantitative Report). Again, Onuekwe (2013) notes that several communication and social mobilization strategies were adopted to convince adamant parents about the importance of polio vaccination but little was achieved. These strategies include advocacy to political, religious and community leaders, community dialogues especially to non-compliant communities, film to drive home the message of polio vaccination through

entertainment, and even house to house sensitization, social mobilization, programme communication among others. As rightly observed by Njelesani (1998), this information is not reaching the target audience because of weaknesses or gaps in the information and communication systems in our various countries. The mass media too have been involved in polio campaigns. Radio, television and of course the print media have been massively used to promote polio immunization. (Eze, 2013).

2.10 Examples of Health Communication Campaigns

Many campaigns traditionally rely on mass communication (such as public service announcements on billboards, radio, and television) and educational messages in printed materials (such as pamphlets) to deliver health messages. Other campaigns integrate mass media with community-based programmes. And yet, others use social marketing techniques. Increasingly, health improvement activities are taking advantage of digital technologies and the World Wide Web that can target audiences, tailor their messages, and engage people in interactive, ongoing exchanges about health. Health communication campaigns take many forms, and use many channels. Regardless of the forms and channels, they must adopt strategic planning methods. In this regard, they must involve some variations on these steps, which are common to most campaign methodologies:

1 Identify the problem and determine whether communication should be part of the intervention. The health problem may be polio infection.

2 Identify the audiences for the communication program and determine the best ways to reach them. The audience for the health communication programme may be the parents, guardians, policy makers, staff of agencies, etc

3 Develop and test communication concepts, message and materials with representatives of the target audiences. This could be done to determine the efficacy of the jingles, advertisements, and other communication content.

4 Implement the communication program based on results of testing. Having tested the communication program such as Expanded Programme on Immunization (EPI), or the polio immunization campaigns, ways of implementing it is very important. Many programs have collapsed because of poor implementation.

5 Assess how effectively the messages reached the target audience and modified the communication programme if necessary. A communication audit is important to determine how effective the messages have been (Schultz, Martin & Brown, 1984).

The use of the above five–step strategic communication campaign planning process is illustrated in some exemplary health communication campaigns that shed light on the polio immunization efforts in Nigeria.

2.11 Examples of Successful Communication Campaigns in Nigeria

An example of a successful communication campaign in Nigeria is NAFDAC campaign. It is a well packaged communication campaign against fake and adulterated drugs and other consumables in Nigeria. The communication campaign has succeeded in reducing the incidence of fake and adulterated drugs in Nigeria and it has created awareness among Nigerians about original drugs. The communication campaign was successful because the message was tailored to suit all the segments of the Nigerian society. It was also successful because, in addition to the mass media, opinion leaders, traditional rulers and religious leaders were involved in disseminating appropriate information to the populace (Onuekwe,2013).

The second successful communication campaign in Nigeria is the HIV/AIDs campaign. Since the first reported case of HIV and AIDS in Nigeria in 1986, the epidemic has continued unabated, with about 2.9 million Nigerians infected as at 2005 (FMH Technical Report, 2005). To respond to this epidemic, the Federal Government of Nigeria has put in place various programmes aimed at controlling and mitigating its impact. One of these interventions is the AIDS campaigns on radio, television, print and other formal and informal settings such as churches, schools, families, etc. The HIV/AIDS awareness campaign has permeated all segments of the society on such a magnitude that everybody has become very well informed and careful about it. Other illustrative health communication campaigns are as follows:

UNICEF-Global Children's Campaign: UNICEF has made concerted efforts at improving the welfare of children worldwide. In Nigeria, the Accelerated Child Survival and Development Strategy is an intensive combination of life saving interventions, such as promotion of antenatal care, vaccination and breastfeeding, and the distribution of insecticide- treated mosquito nets. It is estimated that the entire programme is preventing about 18,000 child deaths per year (UNICEF Annual Report, 2006).The success of the approach is predicated on strengthening outreach, communication and support to families and communities. The campaign has been translated into many local languages and broadcast on radio and television.

WHO-Global TB or AIDS Campaign: The global AIDs campaign under the auspices of the WHO has received a lot of support in the campaign for AIDS/HIV. In an aptly titled document, the joint United Nations Programme on HIV/ AIDS declared HIV/AIDS as a danger to the world. The campaign particularly puts premium on follow-ups at the national, regional and global levels. Its priorities, as spelt out in the document, include: ensuring that people everywhere, particularly the young people, know what to do to avoid infection, to provide treatment to all those infected; to redouble the search for vaccine, as well as a cure (UNAIDS, 2003).

World Bank or UNFPA-Women's Health Campaign: UNFPA campaign is aimed at improving women's reproductive health. Such campaigns include fistula or female genital mutilation, access to good medicare and pre-natal and post-natal care. In Africa, especially sub-Saharan Africa, campaigns have been mounted by several Non-Governmental Agencies (NGOs) against violence against women and all sorts of practices that prevent women from improving their reproductive health. In Nigeria, UNFPA campaigns are aimed at educating women on pre-natal and post-natal care in addition to issues such as child spacing.

Expanded Program on Immunization (EPI) Campaign: In Nigeria, EPI campaigns have been mainly targeted towards the eradication of polio, measles, neonatal tetanus, and how to sustain immunization coverage of at least 90 percent of children under five years. The campaign which began in 1980 has been successful and exemplary in many ways. Worldwide, the immunization rate is high with the exception of India, Afghanistan, and Nigeria where many

parents and guardians, opinion and religious leaders have mistrust for the campaign. The strategies for achieving these goals have been as follows: increasing routine immunization coverage, conducting supplemental immunization coverage; conducting supplemental immunization campaigns; carrying out effective disease surveillance (UNICEF Communication Handbook for Polio Eradication and routine EPI, 2000).

2.12 The Problems/Controversy Surrounding Polio Immunization in Nigeria

Although the polio vaccination is the best way to prevent the polio disease, not everyone accepts this, as was the case in Nigeria in 2003, when certain segments of the society decided to boycott polio immunization for their children.

Before 1988, more than 350,000 children were reported paralyzed annually by polio worldwide. However, after the launch of the Global Polio Eradication Initiative (GPEI) in 1988, the figure has reduced drastically. As earlier observed, twelve years later, precisely in 1999, the GPEI succeeded in reducing polio cases by 99%, thereby providing the possibility of complete eradication largely through communication campaigns and community mobilization efforts (WHO, 2003). Unfortunately, 16 years into the global eradication campaign which was started in Nigeria, in mid-2003, two northern states unexpectedly suspended oral polio vaccination, following insinuations by some religious and community leaders that the vaccines were poisoned. This suspension led to a resurgence of new polio cases in Nigeria and other countries where polio had nearly been completely eradicated. Some hold the view that it is too simplistic to argue that some religious and community leaders were responsible for the suspension of immunization in some northern states of Nigeria. Even though there may be some evidence to support the view of culpability on the part of religious and community leaders, there are other reasons. Some of these other reasons are connected to the tragic incident of 1996, when an outbreak of bacterial meningitis claimed many lives in parts of northern Nigeria. It began in 1996 between Kano State Government and the giant American drug company, Pfizer. (Renne, 1996).

During the public health emergency of 1996 involving the treatment for a meningitis outbreak, Pfizer, the pharmaceutical giant, obtained permission from the Nigerian Government and the U.S Food and Drug Administration (FDA) agency to test the then experimental oral form

of antibiotic, Trovan (the trade name for troval floxacin) in Nigeria. American and Nigerian medical teams from Pfizer and John Hopkins University Medical School in Baltimore, U.S.A. administered the drug to about 100 children randomly selected from a population of sick children. An equal number of patients received a proven efficacious drug ceftriaxone in the control group (Malakoff, 2001). In a complaint filed at a federal district court in New York City following the epidemic and research on the antibiotics, families in Kano asserted that "eleven of the enrolled children in the Trovan study died and others became paralyzed or deaf (Achebe, 2004:4)". They accused New York-based Pfizer Inc. of using an experimental meningitis drug on patients without fully informing them of the risks. The plaintiffs alleged that Pfizer researchers violated international law by failing to obtain informed consent from the families. The families alleged that Pfizer increased the risk of death and injury by failing to provide the proven treatment of patients who did not improve after swallowing Trovan, and by giving control patients a weakened version of the standard therapy (Achebe, 2004).

Pfizer rejected the statement, saying it was proud of the way the study was conducted. It was clear that Pfizer believed that its actions were altruistic and utilitarian. However, Pfizer accepted responsibility and paid compensation recently. Some medical experts agree, while other medical ethicists and skeptics have a different view. The consensus among the second group is that Pfizer ignored several medical and ethical research codes, such as the Nuremberg Code of 1947 and the Declaration of Helsinki, drawn after medical experimentation on Jews during the Second World War. As a result of the Pfizer incident, many parents were easily persuaded to agree with their local leaders who, in 2003 advised them against immunizing their children against polio.

David Heyman, former chief of the WHO's Polio Eradication points out that the Nigeria epidemic had placed approximately 74 million children at risk of polio (Achebe, 2004). Communal resistance against public programmes is not common in Nigeria, and the 2003 boycott of immunization was of historic importance because of the consequences of missing out on polio immunization. As a result of the suspension of immunization, seven states in northern Nigeria, which are Bauchi, jigawa, Kaduna, Kano, Katsina, Yobe and Zamfara developed new cases of polio. This new resurgence of polio cases created an unusual problem not only for the

government, health agencies, and the public in Nigeria, but also for other countries within and outside Africa.

2.13 Types of Polio Eradication Strategies used in Northern Nigeria

Recently, health communication has evolved into what one can call the strategic era. Onuekwe (2013) submits that strategic design is the hallmark of successful health communication programmes and Nigeria's polio communication strategic design took after this design. In this regard therefore, polio communication is categorized into three main strategy namely advocacy, social mobilization and programme communication.

Advocacy: As a strategy for polio eradication, advocacy is geared towards mobilizing stakeholders, policy makers and other prominent and influential leaders so that they will keep polio on the public agenda in relation to the policy and policy objectives. In Nigeria, advocacy as a strategy is directed towards the President and the Commander-in-chief of the armed forces and other members of the federal executive council, members of state and national assembly down to the local government functionaries. Political leaders on their part are expected to make policies that are favourable to polio eradication initiative, release funds for implementation of polio campaign and make statements in public ceremonies through the mass media while the community leaders are expected to mobilize their subjects. The local government area mobilization committees work with the health education Officers as the focal officials overseeing advocacy at the local level (Onuekwe, 2013).

Social Mobilization: It is a process which strategically blends a variety of communication interventions intended to engage individuals and families in considering recommended behaviours and encouraging the adoption of those behaviours (Onuekwe, 2013). To Ogden (2006), social mobilization is a communication process of bringing together all feasible inter-sectoral and societal partners and allies to identify and raise awareness of, and demand for, a particular development objective. It involves enlisting the participation of such actors (including institutions, groups' networks and communities) in identifying, raising and managing human and material resources, thereby increasing and strengthening self-reliance and sustainability of achievement made. As a communication strategy, social mobilization is usually carried out in the

rural and urban communities in Northern Nigeria through various approaches such as Intensified Ward Communication Strategy, Volunteer Community Mobilization Networks, Community Dialogue, and Compound Meetings.

The intensified Ward Communication Strategy: This strategy was introduced in 2010 and it is a highly localized evidence-based communication planning and action approach which uses social data generated through independent monitoring of previous polio campaigns. The focus is to engage communities and target messages addressing specific reasons for non- compliance, including low polio-threat perception or doubts about OPV safety and efficacy. This approach, as observed by Onuekwe (2013), isolates high-risk wards based on campaign performance indicators and prescribes a package of communication interventions that rely heavily on interpersonal contacts. Although the Federal Government supports the programme, it relies on Local Government Area (LGA) level teams for local planning and implementation. According to the Independent Monitoring Board (IMB, 2013), the polio programme saw a reduction in non-compliance in 2011/2012 suggesting that the evidence-based communication planning at ward level and LGA level is working very well. Some of the approaches used include traditional rulers, compound meetings with women led by women's group, Majigi film showings with structured dialogue, town crier and campaign "flag offs" aimed at mobilizing entire communities to support the campaigns.

Compound Meetings (FOWMAN): Since it has been observed that women do not have much say in immunization of their children, a forum has been organized to empower them to understand the importance of vaccinating their children. An association knows as Forum for Muslim Woman in Nigeria and other groups has been working to organise compound meetings specifically targeted at women.

Sensitization Meetings: In order to further sensitise non-compliant parents, a forum of Northern Traditional Leaders Committee (NTLC) was created to engage traditional leaders in polio eradication efforts and reduce refusals based on religious beliefs as well as to solicit the support of Koranic schools to advocate for polio vaccination activities. In the understanding of Onuekwe (2013), in the May 2012 campaign, 30% of non-compliance cases were resolved by traditional

leaders in the most- risk states, indicating that this is an effective means of reducing the number of refusals in high- risk areas. However, he reiterated that this modest achievement still leaves much to be achieved in the process of eradicating polio from Nigeria.

Volunteer Community Mobilization Network (VCM Net): This is still a component of the Intensified Ward Communication Strategy. According to the independent Monitoring Board (2012), in eight of the most high-risk states in Northern Nigeria (Kebbi, Kano, Sokoto, Zamfara Jigawa, Borno, Katsina and Yobe), an extensive network of 2,150 VCMs were recruited and trained to operate as "change agents" within their communities to mobilize families for the next polio immunization campaign. VCM aims at generating acceptance of oral OPV through house to house mobilization for polio and routine immunization. It is usually targeted at settlements with high numbers of missed children. The job of these female volunteers is to identify, characterize and facilitate the vaccination of the children in their defined catchment areas. They also mobilize non-compliant parents using a community based approach and through networking and partnerships. Onuekwe (2013) says that interpersonal counseling on implementation is the main focus of their work, but there is scope for volunteers to promote other child survival interventions as the VCMs mature. The scholar also observes that despite these communication approaches, community based resistance to immunization, and the challenges related to social mobilization and communication issue remain a leading cause of children who miss polio vaccine. Resistance to polio in the studied states still remains intractable. According to Independent Polio Monitoring Board, "Even if every other problem with the programme could be sorted out, the refusal issue alone is sufficient to undermine success (IMB, 2012).

Programme Communication: Programme communication like any other communication strategy aims at impacting participants' knowledge, attitudes, and behaviour through a mix of communication strategies in polio eradication initiative. Since health workers involved in polio campaign have often times been confronted by people who do not want their children vaccinated, it has become imperative to train the vaccination team members on interpersonal communication to enable them negotiate and convince parents during immunization sessions. Activities involved in programme communication include announcement of campaign dates through the mass media and community town announcers, media appearances to create awareness and monitoring during

campaign periods by media health reporters.

As observed by Onuekwe (2013) and Eze (2013), none of these communication strategies in conjunction with other approaches have been able to completely eradicate polio in the said states. Furthermore, Onuekwe (2013) attributed it to the fact that the communication strategies are deficient and inefficient in impacting the desired behaviour change among the intended programme beneficiaries. He reiterated that Nigeria's polio communication strategic approaches lack the sensibilities of the native intelligence and local cultures of the intended beneficiaries. Often, polio programme implementers decided what was best for the beneficiaries in terms of date of the campaign, where to conduct the campaign, who to employ and how much to pay without due consultation. Perhaps, all these short comings may have in one way or the other contributed to the issue of non-compliance still witnessed in the study states.

2.14 Review of Empirical Studies

There are plethora of studies around the world which are geared toward evaluating health communication campaign strategies adopted for the ameliorating of health and social phenomenon in the society (DeJong, 2014).

In a study, De Dejong (2014), looks at the role of mass media campaigns in reducing high-risk drinking among college students. The work identifies and describes three types of media campaigns on student drinking: information, social norms marketing, and advocacy. The work also highlight key principles of campaign design from work in commercial marketing, advertising, and public relations adopted in strategizing on health communication campaign. The result found that information campaigns on the dangers of high-risk drinking are common, but none has been rigorously evaluated. It was then recommended that future campaigns should integrate information, social norms marketing, and advocacy approaches to create a climate of support for institutional, community and policy changes that will alter the environment in which students make decisions about their consumption of alcohol.

Still on health communication campaign, Freimuth, Cole and Kirby (2000) examine issues in evaluating mass media-based health communication campaigns. They discussed issues that are important to consider in the conduct of formative, process, and summative evaluations of

mass media, health communication campaigns. These issues involve conducting research to assist in developing the most effective communication strategy and then testing that mix to forecast how effective it will be in reaching communication objectives. They concluded by recommending the application of the principles of theory-based evaluation to construct models that explicitly state how the programme will bring about intended effects in order to have a basis for comparing how the programme actually worked.

Blacher's (2013) thesis was on evaluating health communication campaign to increase blood pressure screening among high risk community residents in the U.S.A. The survey research technique was adopted to investigate the relationship between health communication processing variables and subsequent blood pressure check; and to also determine whether individualizing the message was effective in motivating behaviour change. The result analysis indicated that some information process, including how much the participant liked the mailing and how useful he or she found the mailing, were associated with reporting a repeat blood pressure check.

In a similar vein, Hanan (2012) critically analyse HIV/AIDS prevention campaigns' communication models in India. The purpose was to analyse various communication models and steps that play a pivotal role in making successful communication campaigns for shaping public attitudes related to social stigmas and issues about HIV/AIDS. About 10 models were analysed-health belief model, theory of reasoned action, social cognitive theory, theories of emotional response, cultivation theory of mass media, diffusion of innovations theory, hierarchy of effects, social marketing, entertainment-education for behaviour change and AIDS risk reduction and management. On the basis of the mentioned theories and models, he identifies the following steps which can play an important role in behaviour change for HIV/AIDS prevention. These steps are: knowledge, approval, intention, practice and advocacy. These steps involved in communication design are highly interrelated. The success of the campaign depends upon the extent to which the communicators are able to address the needs of the audience for behaviour change towards the prevention of HIV/AIDS' spread in the target area.

Brown, Fraser, and Kirusa (2004) conducted a similar study on the lessons from Tanzania and Kenya from promoting HIV/AIDS prevention through dramatic film. The study was carried out using a pre-test and post-test survey in a field research design. Several Tanzanian Military bases in the cities of Dar Es Salaam and Arusha were chosen as study sites. All the participants were divided into four groups, two treatment groups and two control groups. All the variables were measured with single questionnaire item. The result of the study showed that the films effectively increased knowledge of HIV/AIDS and concern about its spread. The findings are consistent with previous studies that show that entertainment-education and health interventions are quite effective in increasing knowledge and raising health concerns. However, the study did not establish why people make belief and behaviour changes based on viewing the film.

Ryerson (2006) noted that there is strong evidence that mass media, particularly broadcast media, have massive effects on audience attitudes and behaviour with regard to HIV/AIDS avoidance and adoption of family planning methods. He pointed out that one of the advantages of using serial dramas, as opposed to documentaries or single-episode dramas, is that they allow time for the audience to form bonds with the characters and allow characters to evolve in their thinking and behaviour at a gradual and believable pace.

Melanie, Barbara, and Robert (2013) concluded that mass media campaigns can produce positive changes or prevent negative changes. Over the past few decades, media campaigns have been used in an attempt to affect various health behaviours in mass populations. Such campaigns have mostly been aimed at tobacco use and heart disease prevention, but have also addressed alcohol and illicit drug use, cancer screening and prevention, sex related-health issues. Polio communication reviews at international, national, and sub-national levels have supported improvements in the collection, analysis and use of data for a consensus building process about communications and inclusion of communication expertise in some of the polio technical advisory groups. These reviews provide useful spaces for step back periodically to review communication programmes and develop recommendations to further strengthen polio communication work. Campaign messages can fall short and even backfire. Exposure of audiences to the messages might not meet expectations if such is hindered by inadequate funding, the increasing fractured and clustered media environment, and use of inappropriate or

poorly researched format. e.g. boring factual messages or age – inappropriate content or a combination of these features; homogeneous messages might not be persuasive to heterogeneous audiences and campaigns might address behaviours that audience lack the resources to change. In response to apparent obstacles to interruptions in the three remaining polio endemic countries (Nigeria, India, Pakistan), Polio Eradication Initiative's (PEI's) Technical Consultative Group (TCG) met in April 2002 to raise questions about the nature, structure, conduct and impact of polio eradication initiative on Social Mobilization/Communication (SM/C) activities. As Taylor (2002) notes, the group observed that mass media and mass distribution of IEC materials have been well established in all three countries (Nigeria, India, and Pakistan) involving: Production of high quality mass media, TV and radio Spots (Nigeria, India, Pakistan), high profile celebrities (Nigeria, India, Pakistan), Production of improved distribution of high quality print materials (India, Pakistan), Mobilization of resources from international and local private partners (Pakistan), the expanded use of regional local private sector partners (Pakistan) and the expanded use of regional/local broadcast channels and stations; all increased focus on evaluating media and products.

According to the report, the following were found: Communication between international agencies within polio partnership has improved in some cases dramatically since 2001. However, there are remaining issues. A persistent and potentially damaging ambiguity in the political and strategic prioritization of Polio Eradication initiative (PEI) and Expanded Programme on Immunization) (EPI) and non-existent joint technical and social monitoring and evaluation (Taylor, 2002).

The programme remains fundamentally divided into "social and technical sides". They observed that complimentarily between the two programmes components has by no means been fully exploited. Poor data circulation, management and analysis can lead to social mobilization and communication activities that are not directly field-data led, resulting in activities which relation (or contribution) to the overall Polio Eradication Initiative's goal of successful vaccine delivery cannot be directly attributed and properly evaluated. Among other issues, they noted that the current epidemiological profile of polio is characterized by diverse reservouir-based patterns of relatively small scale local circulation. While Supplementary Immunization Activity

(SIA) coverage averages are increasing in most cases and in many data show a persistent coverage gap of up to 15% and in some instances more, it is this gap that supports continuing Wild Polio Virus (WPV) transmission and on which social mobilization and communication should concentrate. Emphasis should shift from social mobilization and communication strategy from the existing and completed intensive, mass awareness approach to a new intensive approach addressing the specific conditions of the local groups in which children continue to be missed. Finally, the Technical Consultative Group (TCG) noted that poor Oral Polio Vaccine (OPV) coverage is attributed to refusal of households to accept vaccine and that refusal is attributed, fundamentally to religious belief, fatigue, and or ignorance. Furthermore, there is increasing limited evidence that the repetitive communication strategy used is effective.

2.15 Theoretical Framework

In line with the objective of the study, three theoretical frameworks were adopted, namely; the Health belief model by Irwin M. Rosenstock, Multi-step flow theory by Paul Lazerfeld and Elihu Katz and Knowledge-Gap hypothesis by Philip J. Tichenor, George A. Donohue and Clarice N. Olien. However, these theories were useful for this study because they gave explanations on communication dynamics and health information values. The whole essence of theoretical triangulation of the phenomenon under investigation was for the purpose of in-depth understanding of communication strategies used in Polio immunization campaigns in Kaduna and Sokoto states, Nigeria.

2.15.1 The Health Belief Model (HBM)

The Health Belief Model (HBM) developed by Rosenstock (1974) proposes that beliefs in causes, prevention and cure of illness, acting together with people's perception of vulnerability to health problems, form a set of related elements which can influence health behaviour in individuals. The model has four major components, health motivation, value of illness threat reduction, probability that compliant behaviour will reduce the threat and locus of control. More recently, other constructs have been added to the HBM; thus, the model has been expanded to include cues of action, motivating factors, and self-efficacy. The key to the application of health information is motivation.

The motivational variables which can hasten the adoption of health innovation include: (i) A readiness to act which is determined by the individual's (ii) perceived severity – one's opinion of how serious a condition and its sequence are (iii) perceived benefits – one's opinion of the efficiency of the advised action to reduce risk or seriousness of impact. (iv) perceived barriers – one's opinion of the tangible and psychological costs of the advised action. (v) Cues to action – events, that motivate people to take action and (vii) Self-efficiency – confidence in one's ability to take action. (Strecher and Rosenstock, 1997).

With regard to the polio immunization campaigns in Nigeria, the health belief model is a valuable tool for exploring such important aspects as the people's readiness to act or not, their perceived severity of the situations, perceived benefits of immunization and perhaps confidence in their ability to take action. The goal of this study was to explore the favourable circumstances that surround successful campaigns and the constraining factors that lead to campaign failure. This is an important study to undertake because whereas some campaigns are effective in some circumstances, there are also other circumstances where campaigns are ineffective. It is useful to know how health communication campaigns can be designed and implemented to maximize the chances of successful operations and the realization of the desired objectives.

2.15.2 The Multi-Step Flow Theory

The two-step theory was propounded by Lazerfeld, Berelson and Elihu Katz in 1955 as an attempt to provide explanations on the dynamics in the flow of information from radio, television and print media to opinion leaders and from this to the less active sections of the population. Multi-step theory is a combination of the two theories- the one-step flow and two-step flow theory. It assumes that information flows from the media to the audience through multi-steps or stages has comprises elites and opinion leaders (Defleur, & Ball-Rockeach, 1982). The theory states that the first step in information flow consists of active information seekers who are generally well educated, have access to media resources, are influential on others and act as sources of guide to others. Therefore, the paradigm innovation-diffusion in health campaign information transfer requires the service of opinion leaders, health practitioners, and religious leaders and media experts. Since they play an active role in the adoption process, they need full integration into the information exchange network in polio immunization campaign.

In mass communication, the media are the first step, and others the second and multi-step. The theory states that information from the media moves through distinct stages, for examples there are those who listen to health programmes on radio, or viewers on television programmes. They are generally well informed people. They pass their information to others in the multi stage through informal or interpersonal means. By so doing, information on polio can be channeled to parents/guardians through the opinion leaders and also, same information can circulate among parents and peers in the market in social gathering. Motivation is the key factor here; in the sense that parents/guardians will be influenced by the people they trust with information on polio immunization. Personal influence becomes immediately recognized as an important intervention process that operates between the mass communication message and the responses made to that message.

2.15.3 The Knowledge-Gap Hypothesis

This theory was propounded by Tichenor, Donohue and Olien in 1970 with the intention to state the inequalities that exist among a given population with regard to information accessibility. It also explains how social structure affects communication process. As media output grows in a given society, so will the knowledge gaps between privileged and underprivileged social groups. The theory maintains that increase in media output, rather than even out differences between the information-rich and the information-poor, actually accentuates those differences, since those at higher socio-economic levels acquire information much faster and much more easily than those at the lower levels.

Nevertheless, Evers (2002) has argued that researchers conducting knowledge-gap studies should be sure the information they are testing with surveys is useful and relevant for the audience being studied as the case of this study. The problem of inequality is explained by the differences in the socio-economic status and other demographic characteristics of various segments of a population. Several variables associated with these differences include: literacy level, income, racial, ethnic, religion, rural-urban and residence status. According to Yahaya (2003), researches have shown that those who are better educated take more advantage of new sources of information than those who are less educated. For example, if radio or newspapers should emphasize and carry more stories on the control of polio in Northern Nigeria, the better

educated will learn more even though it is the less-educated who are in greater need of the information.

This phenomenon has continued to result in "knowledge-gap" among the audiences of mass media. The situation is quite unpleasant in polio health improvement circles. The situation of the information status of members of a given social system poses a great challenge to polio campaign stakeholders who are expected to narrow existing knowledge-gap in information transfer. Several explanations have been advanced for the existence of a knowledge gap. Some researchers have attributed the knowledge-gap to basic communication skills and other factors associated with socio-economic status. Another group of researchers has suggested that the gap is due to differences in motivation and that individuals of low socio-economic status might acquire information just as rapidly as those of higher socio-economic status when they are motivated to do so (Severin and Tankard, 1992; Baran and Davis, 2012). The bottom line of this observation is that motivation is a major factor in knowledge-gap hypothesis.

In northern Nigeria, the current socio-economic situation is not favourable for the procurement of new technologies that are quite expensive. Because of the cost, these technologies may be more available to the well-to-do than the less well-off. For this reason, the desire to effectively utilize these technologies for enhanced communication in polio immunization campaign process could lead to a further widening of the knowledge-gap. The implication of this to polio immunization campaign strategies is that inequality in access to information services between the already "information-buoyant" and "information marginalized" members of the society may result in the former reaping the benefits while the latter gets relatively poorer. Particularly, reference can be made to parents in seclusion (purdah) who are often difficult to reach by polio health campaigners. The digital divide in the issue of access to information is a big problem to the eradication of polio in northern Nigeria. While some are privileged to have access to information on health related issues such as polio and how to take action pertaining it, majority of the parents and guardians do not have. If this is not checked, it will be difficult for polio immunization campaigns to reach the rural and urban parents, guardians and nursing mothers that are in dire need of this information.

The Health Belief Model was able to point out the issue of "motivation" as a key factor in influencing behavioural change among the audience of a given communication message. In order for parents/guardians to accept and eventually put polio vaccine information to use, they have to be motivated to believe the health information. They can be motivated when opinion leaders and other influential persons are involved in the campaign process which is the cardinal of multi-step flow theory. If parents or guardians in the rural northern society are reached with viable information on polio immunization, then the knowledge-gap that exists between the educated and uneducated of the virus will be bridged.

Health belief Model, Knowledge Gap and Multiple Step Flow theories are very essential because a good understanding of these theories will help the health communication intervention planner in drafting messages and mapping out strategies to address the issue of polio campaign. These models provide a framework for identifying, assessing and understanding pre-existing public perceptions of the risk issue of concern. This framework is important for the integration of experts' relevant knowledge and quality information to bridge the information gap and correct the misperceptions. There are a lot of myths and misconceptions about polio in Northern Nigeria. Some exist at the level of the individual, culture, religion, economic status and family background. Individuals have their differing perspectives of what causes polio. These perceptions are products of external influences from the larger society – friends, family, religion and culture. Cultural variations, ethnicity and socioeconomic class have been identified as factors in the public's causal beliefs, perceptions of severity and treatment or management practices for polio. Some of the shortcomings or weaknesses of the Health Belief Model has been identified. Although the model has the power to predict health behaviour, it lacks the sufficient framework in changing perceptions and attitudes of individuals. Important determinants of health behaviour, such as the effects of negative behaviours and social influence, are not included (Stroebe, 2000)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the procedure employed in gathering and analyzing data for the study. It also presents the methods that were adopted to provide answers to the research questions formulated for the study.

3.2 Area of Study

This study was conducted in Kaduna and Sokoto states. In Kaduna state, Kwarbai ward which is an urban area in Zaria city, Zaria Local Government Area and Biye, a rural settlement in Giwa Local Government were studied. The Emir of Zaria resides in Zaria city while Biye is a rural settlement in Giwa Local Government Area, Kaduna State. Biye is situated just a few kilometers from the Ahmadu Bello University Teaching Hospital, Shika. Also, Sokoto Municipal Area and Dange Shuni village in Dange Shuni Local Government Area were studied in order to evaluate the communication strategies in use.

The significance of these aforementioned areas is that polio was still endemic until middle of 2014 when World Health Organization declared that Nigeria was no longer among the endemic countries. Prior to the declaration, polio was still ravaging children aged one to five despite the considerable efforts made through various communication strategies. In four affected states (Borno, Kano, Sokoto, Yobe) and recently Kaduna, less than 65% of children had oral polio vaccine (Global Polio Emergency Plan, 2012-2013:11).

3.3 Study Design

The underlying objective of this study was to evaluate the communication strategies used in polio immunization campaigns in Kaduna and Sokoto states. To achieve this objective, the study adopted survey (questionnaire), In-depth interview (IDI) and Focus Group Discussion (FGD) in order to gather quality data from the population. Krueger and Nueman (2006) assert

that use of three or more approaches is the process of observing something from different angles or view-points in order to get a fixed or true picture of the issue. When this is applied to social research, it means that it is better to look at something from several angles than look at it from one way. Hence, quantitative and qualitative designs were adopted for this study.

3.3.1 Quantitative Research Design

Trochim and Land (1982) define quantitative research as the glue that holds the research project together. A design according to them, is used to structure the research to show how the major parts of the research project such as the samples or groups, measures, treatments or programmes and methods and assignments work together to address the central questions. Quantitative research aims to determine the relationship between one thing (an independent variable) and another (outcome variable) in a population.

Quantitative research design is either descriptive (subjects usually measured once) or experimental (subjects measured before and after a treatment) (Hopkins, 2008). In this study, the survey method was adopted to evaluate the communication strategies used in polio immunization campaigns in Kaduna and Sokoto states. Some of the strategies were advocacy, social mobilization, intensified ward communication strategy, sensitization meetings, compound meetings and drama. According to Wimmer and Dominick (2000), the strengths of quantitative research design include precision through reliable measurement, control through sampling and design, ability to produce causality, inferences, statistical technique and ability to replicate experiments. This study adopted the survey method to sample the views of selected stakeholders, parents and guardians. In addition to the quantitative approach, this study also used qualitative method.

3.3.2 Qualitative Research Design

Qualitative research has the aim of explaining experiences of people through narratives and descriptions. In order to provide perspectives on the views, beliefs, opinions and expectations of people, this study adopted Focus Group Discussion (FGD) and In-Depth Interview (IDI) research strategy to gather a variety of qualitative data. The advantage of these two designs is that it allowed the researcher to gain an insider's view of the phenomenon because

of closer involvement. This allows the researcher to find issues that are often missed (such as subtleties and complexities) (Onuekwe, 2013). The designs do not involve statistics as qualitative research uses a more descriptive, narrative approach (Sherman and Webb, 1988).

3.4 Study Population

This study's population comprised nursing mothers, parents, guardians, health workers such as nurses, midwives and immunization officers, UNICEF/WHO officials and media health workers involved in the design and implementation of polio immunization campaigns.

3.5 Study Period

The time frame for this study was between 2003 and 2012. In 2003, two northern states (Kano and Kaduna) in Nigeria unexpectedly suspended oral polio vaccinations on the suspicion that the vaccines were contaminated and deliberately poisoned by western countries. Since 2003, polio has continued to resurge and become intractable. This period is significant because Nigeria became the greatest exporter of polio viruses in Sub Saharan Africa. Between 2012 and 2013, even after repeated efforts by both national, state government and international organizations, polio still remained a very serious health challenge (WHO, 2013).

3.6 Sampling Technique and Sample Size

Respondents for the study were selected using the purposive sampling technique. Wimmer and Dominick (2000) define a purposive sample as when participants are selected on the basis of specific characteristics or qualities and thus eliminating those who fail to meet the criteria. In this study therefore, particpants were selected based on their level of participation in the polio immunization programme in the two study states of Kaduna and Sokoto. The respondents for the in-depth interview comprise health workers, media men and women involved in health reporting, parents/guardians, UNICEF/WHO officials and opinion/religious leaders from the two states. However, eligibility for participation in the in-depth interview depended on their level of involvement in polio immunization. Two sets of Focus Group discussions were conducted with nursing mothers within the age range of 17-40 years in each of the study states. The justification for using this age range is because in Northern Nigeria, girls marry as early as 17 years and usually stop child bearing when they are 40 years old (Eze, 2013). Also, copies of

the questionnaire where administered on nursing mothers and parents within the age range of 17-40 years and these were interpreted to them in Hausa language for those who were not fluent in English.

3.7 Methods of Data Collection

Data were collected using three types of instruments which are the In-depth Interview guide, Focus Group Discussions (FGDs) guide and the Questionnaire schedule.

The questionnaire, the interview guide and the Focus Group Discussions guide were used for collecting data. Research assistants and interpreters were trained on how to administer the questionnaire on the respondents.

For the Focus group Discussions (FGDs), nurses and health workers assisted in organizing and conducting the sessions. The reason was that they were familiar with the parents/guardians and because they had already created rapport during the immunization days. This helped in facilitating easy conduct of the sessions. The sessions were held in the various wards in the two states where the study was conducted: Biye, Kwarbi wards in Kaduna State, Sokoto Municipal, Dange Shuni wards in Sokoto States. The discussions were recorded using a reliable audio-recording equipment and the recordings were later transcribed. The FGD sessions were conducted for a period of four weeks. Ethical guidelines and approval were obtained from the Ethics Committee of Ahmadu Bello University Teaching Hospital (ABUTH), Zaria and the guidelines were strictly adhered to. In-depth interviews were conducted with health workers, radio health workers and other officials in their offices and consulting rooms. The interview was recorded in a reliable audio equipment and each was transcribed later.

3.7.1 In-depth Interview (IDI) Guide

The researcher designed two separate interview guides. The key informants for the interview included opinion/religious leaders, health workers, UNICEF/WHO officials and media health workers and one Federal Ministry of Health's official in Abuja involved in the design and implementation of polio programmes. Therefore, a total of five IDIs were conducted with these five groups of respondents. Since UNICEF/WHO officials have their office in Kaduna and most messages are designed by them in conjunction with media workers in Radio Nigeria, Kaduna for

onward distribution to other stations, the In- depth interview with these officials was held in Kaduna. The interview session with the Federal Ministry of Health's official was conducted in Abuja. However, one interview session with one opinion/ religious leader was held in Zaria city where the Emir resides and one health worker was interviewed in Dange Shuni ward in Sokoto state. The purpose of the interview was to ascertain some vital details on polio immunization campaigns which the questionnaire did not address. Ndagi (1984) stated that in social sciences, interviews can be structured or unstructured. In this study, the interview schedule involved the use of structured questions to address all the objectives and research questions. for example, ways in which literacy level leads to acceptance of polio immunization, ways in which gender issues can affect polio immunization, ways in which culture affects the acceptance of polio immunization, how access to, knowledge and awareness of immunization campaigns affect acceptance of polio immunization, extent to which exposure to polio immunization campaign will lead to acceptance of polio vaccine and ways in which interpersonal/group communication will lead to acceptance of polio immunization. The interview was carried out in order to have a comprehensive account of the problems besetting polio immunization in Kaduna and Sokoto states. The researcher had established contacts with the interviewees in the respective study states.

3.7.2 Focus Group Discussions (FGD)

In addition to the in-depth interviews, Focus Group Discussion was used for collecting data to complement the quantitative data generated through survey method. The participants at the Focus Group Discussions were selected based on type of participation in the immunization campaign. The purpose of FGD is to provide deeper insight into the subject matter of the research. A total of four FGDs sessions with ten participants in each ward in the study areas were conducted. It involved ten participants for each of the four sessions. In Kaduna State, two locations, namely Zaria city (Kwarbai ward) and Sabon Fegi in Biye village of Giwa Local Government Area were selected as study areas. This was done during the National Immunization Days (NIDs) which is held once every month in each ward or district of the study areas.

However, as Onuekwe (2013) notes, FGD is not completely free from complications. One of such is that some groups became dominated by a self-appointed leader who monopolised

the conversation and attempted to impose his or opinions on other participants. However, the moderator of the FGD controlled the quality.

Focal Points for FGD

The following are the key points that were used in the Focus Group Discussions.

Gender as it affects polio immunization

Gender is a very sensitive issue, especially as it concerns health care in Northern Nigeria. In some families in Northern Nigeria, women are not allowed to take decisions.

Culture as it affects polio immunization

The culture of a people affects the way they perceive many health campaign messages. Therefore, campaign messages should be culturally sensitive to the people's feelings and aspirations.

Knowledge of polio disease

Some parents and guardians are familiar with polio immunization, while others are totally ignorant about the disease and the treatment available. Some are aware but do not know how to go about solving the problem.

Perceptions/Beliefs about polio

Ignorance and suspicion which are based primarily on rumours are some of the major problems associated with polio immunization in Northern Nigeria. These factors go a long way in hindering the success of polio immunization in Nigeria (Babalola, et al. 2004).

Issues pertaining to acceptance of polio vaccination

Communication among spouses on polio and their information seeking behaviours is a major issue to contend with. In families, exchange of knowledge and information on, causes and prevention of, polio is very crucial in solving the scourge of polio in Northern Nigeria. While some parents, guardians and spouses share information on polio, others do not. Communication between spouses on vital issues concerning polio will go a long way in mitigating the scourge of polio in the aforementioned study areas and generally.

3.7.3 Questionnaire Guide

The questionnaire guide consisted of close- ended questions ranging from demographic status to cause, belief, perceptions, preventions, information -seeking behaviour, and means or channel of receiving information on polio.

3.7.3.1 Sampling Procedures/Sample size

Focus Group Discussions were used for parents/guardians who were familiar with, and knowledgeable about, polio. FGD has been noted to have a maximum of 8 participants and a minimum of 3 participants in a group (Adams and Cox, 2008). Similarly, Severin and Tankard (2000) advocate a minimum of 6 and a maximum of 12 participants.

In the light of this, four FGD sessions were held with 10 participants for each session in each of the four wards bringing the total number of participants to 40. They were selected based on informed consent. Participants for the FGD were selected using convenient sampling technique to give room for those who might decline due to some personal reasons or health constraints. As it pertains survey research method, purposive sampling technique was used in selecting those who were familiar with polio.

Multi-stage sampling method was adopted in selecting the sample size. At the first stage, the states were grouped into four clusters, using the four senatorial districts as the criteria. One local government area was selected from each senatorial district through a simple random technique. At the local government level, all the parents/guardians in the selected Local Government (4 Wards) constituted the population for the study and a sample size of 25 respondents were selected.

This was done in two stages. The first stage was the selection of a homestead or a family house in each of the wards selected in the aforementioned areas of the study. However, the number of homestead in the ward was divided into two equal sections and due to the nature of the study states, especially as it pertains to culture, the researcher hired the services of a local representative as research assistant. The researcher purposively selected twenty five respondents (25 respondents) from each of the two selected homesteads in the ward, thereby bringing the total number of respondents in each ward in the aforementioned areas to fifty. In addition, snow-

ball technique was used to supplement the purposive sampling during the interview. Snow-ball is a sampling technique that allows the researcher to ask a respondent during an interview to suggest another affected person for interview. During the Immunization Plus Days, nursing mothers, parents /guardians attend clinics for immunization. With the assistance of health workers, these respondents were purposively selected. Each ward or villages had its immunization days.

Eligibility to participate in the survey depended on the following: mothers/parents having children aged between 1 day and 2 years; participation in polio immunization, willingness to participate and residency in the ward for at least a year. Fifty respondents (50) were selected in each ward for the survey. Therefore, a total of 200 respondents were selected in all the four wards of the study areas in the two study states. In-depth Interview (IDI) was used to collect data from the health professionals such as nurses, immunization officers and media health officers who are familiar with polio immunization.

3.8 Methods of Data Analysis

Both quantitative and qualitative methods of data analysis were used for the study. The data generated with the survey method were analysed using frequency, percentage and chi - square. The chi-square was used in this study to test and measure the relationships between and among variables (or put succinctly, chi-square was used to test regression of variables). The results were presented, using tables, charts and figures.

The data gathered through the FGDs and IDIs were transcribed and coded into categories, using the thematic approach and explanation building for qualitative content analysis. These approaches provided answers to the research questions and the hypothetical statement.

3.9 Validity and Reliability of Instrument

Validity

Validity and reliability for data collection is very important in any research. Reliability is aimed at ascertaining the consistency of research instruments in future investigation(s). In the same vein, validity establishes the appropriateness of the measurements to decide whether the instruments actually measure what they are expected to measure (Rosnow and Rosenthal,

1999:21). The whole essence of validity and reliability is to reduce the incidence of error to the barest minimum. To validate the research instrument in this study, a pilot test was conducted in Kaduna and Sokoto in the months of January –February 2014 with an upward approximate 10% of the 200 copies of the questionnaire administered in the two states. A 10% of 200 arrived at 20. Based on the benchmark identified in the literature (Maidabino, 2011; El-Nawawy and Powers, 2008 in Ozuhu-Sulaiman 2013), the research instruments used in this study was subjected to reliability test using Cronbach's alpha.

Reliability

The researcher conducted a pilot study first in Zaria, Kaduna State and all errors observed were corrected before data gathering commenced. The pilot study was conducted in another community with respondents who met the requirements for participation in the main study. These participants were later exempted from the main study. After the pilot study, the lessons learnt were incorporated in the final instruments for the main study. Cook and Campbell (1979) identified three procedures that can be used to increase external validity of a research study: (1) random sampling that are representative of the population under study; (2) heterogeneous sampling and replication of study over several times; (3) selection of a sample that is representative of the group to which the results will be generalized. The researcher ensured that these principles were followed.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This study evaluated the communication strategies used in polio immunization campaigns in Kaduna and Sokoto states, Nigeria. To achieve this aim, the research employed Survey, In-depth Interview (IDI) and Focus Group Discussion (FGD) to elicit answers for the research questions posed earlier. A total of 197 respondents were sampled with questionnaire for the survey, four groups were organized for the focused group discussion and five key informants were interviewed. For easy comprehension and presentation of research findings, the chapter is divided into seven sections.

4.2 Socio-Demographic Profile of Respondents

This segment focuses on the socio-demographic characteristics of parents and guardians in the local government areas under study.

Table 1: Socio-Demographic Characteristics of Respondents

VARIABLE	FREQUENCY	PERCENTAGE (%)
Male	34	17.3%
Female	163	82.7%
Total	**197**	**100%**
Age		
17-20	24	12.2%
21-25	41	20.8%
26-30	45	22.8%
31-35	51	25.9%
36 -40	36	18.3%
Total	**197**	**100%**
Education		
No Formal Education	41	20.8
Arabic Education	43	21.8
Primary Education	61	31%
Post Primary Education	31	15.7
Higher Education	21	10.7%
Total	**197**	**100%**
Occupation		
Farming	8	4.1%
Trading	42	21.3%
Government Employee	25	12.7%
Others	122	62%
Total	**197**	**100%**

Field survey, 2014

Table 1 indicates that female respondents are more with 82.7% compared to male (17.3%). The reason may be connected to the fact that female-mothers or parents are more or else concerned about the issue of polio immunization.

On the age distribution, the table indicates that age bracket 31-35 represents the highest proportion of respondents with 25.9%. This is followed by age bracket 26-30 years with 22.8% and age 21-25 with 20.8% of respondents. This clearly shows that most respondents that have children that need to be vaccinated with polio immunization vaccine are within child bearing age. On the educational status of the respondents, the table shows that respondents with primary education are mostly represented. They constitute 31% of the total sample. That means parents that participated in immunization are mostly semi-literate. From the occupation of the respondents, it is obvious that most of the respondents are housewives as 62% of the respondents indicated that they are house-wives under the column of 'others'. This was followed by traders, 21.3% and government employees have 12.7%. It shows that most parents in the states are house-wives. In summary the socio-demographic attributes of the sampled population shows that most of the respondents are semi-literates and house wives.

4.3 Knowledge and Awareness of Polio Immunization

Table 2 provides information on the respondents' level of knowledge and awareness of polio. It provides part of the information needed to answer the fourth research question set for this study; which is to document how knowledge and awareness of polio immunization campaign influence the acceptance and use of polio vaccine in Kaduna and Sokoto states. In order to determine this, the researcher decided to first know the knowledge and awareness of polio immunization among the respondents. In this aspect, table 2 below provides information on the respondents' level of knowledge and awareness of polio.

Table 2: Respondents Level of Knowledge and Awareness of Polio

Variables	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
A Natural Occurrence	3 (6.00)			1 (2.00)	4 (2.02)
A disease inflicted by spirit	8(16.00)	4(8.16)	2 (4.16)	6 (12.00)	20 (10.15)
A disease that affects limbs, fever leading to the death of children aged 0-4 years	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
A disease purportedly manufactured by western countries aimed at reducing the population of Muslims	5 (10.00)	**7**(14.28)	16 (33.33)	7 (14.00)	35 (17.76)
Sickness similar to any tropical disease such as malaria, dengue fever	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Total	**50 (100.00)**	**49 (100.00)**	**48 (100.00)**	**50 (100.00)**	**197(100.00)**

Field survey, 2014 $X^2 = -73.4$, Alpha level $\alpha = 0.05$, df 12, X^2 critical = 21.026

Table 2, shows the respondent's knowledge and awareness level on polio immunization. The respondents (60.91%) agreed that polio is a disease that affects limbs and which brings fever leading to the death of children aged 0-4 years. This was followed by a significant (17.76%) respondents that saw polio as a disease purportedly manufactured by western countries aimed at reducing the population of Muslims. 10.15% respondents viewed polio as a disease inflicted by evil spirit and 9.13% respondents viewed polio as a sickness similar to any tropical disease such as malaria and dengue fever. Worthy of note here is that most respondents in these areas were aware of polio as a disease that affects limbs, which also causes fever that can lead to the death of a child aged 0-4 years.

The table shows that different understanding was given on what polio is, but most respondents viewed polio as a disease that affects limbs, bringing fever, which leads to the death of children aged 0-4 years. (Dange Shuni (70%), Sabon Fagi,Giwa (64.30%), Kwarbai, Zaria (56.00%) and Sokoto Municipal (52.08%).This however, did not suggest that there are no other dissenting views on what polio is as 33.33% in Sokoto municipal viewed polio as a disease

purportedly manufactured by western countries aimed at reducing the population of Muslims around the world. In the same reaction, the Chi-square showed conformity among the respondents across Dange Shuni, Sabon Fagi,Giwa, Kwarbai, Zaria and Sokoto Municipal and their knowledge and awareness on polio immunization (X^2 = -73.4, Alpha level α = 0.05, df 12, X^2 critical =21.026).This shows that most respondents viewed polio as a disease that affects limbs, bringing fever, which leads to the death of children aged 0-4 years.

From the Focus Group Discussions (FGD) in one of the sessions in Dange Shuni Local Government Area of Sokoto State, the participants equally had similar views that polio is a disease that affects limbs, bringing fever, which leads to the death of children aged 0-4 years. There are those with the opinion that polio is a disease that is inflicted by spirit. This shows that it was not everyone in the community that was fully aware or knowledgeable on poliomyelitis disease. But, it can be concluded that most parents in Kaduna and Sokoto states were aware of what polio immunization is all about. This can be attributed to rigorous polio campaigns being engaged upon by various stakeholders in the country. This was emphasized by Onuekwe (2013), who observes that in Nigeria, advocacy strategies entails high level sensitization of policy makers in government and private sectors to promote immunization policies. Polio immunization campaign is highly relevant in raising the consciousness of parents and guardians to always see the need for immunizing their children.

Table 3: The Mode of Transmitting Polio

Variable	**Kwarbai (Zaria) (%)**	**Sabon Fagi (Giwa) (%)**	**Sokoto Municipal (%)**	**Dange Shuni (%)**	**Total (%)**
Inheritance (hereditary)	5 (10.00)	**7**(14.28)	16 (33.33)	7 (14.00)	35 (17.76)
By Offending Spirit (sha inna)	8(16.00)	4(8.16)	2 (4.16)	6 (12.00)	20 (10.15)
Shaking hands with infected people	3 (6.00)			1 (2.00)	4 (2.02)
Through Oral Fecal route	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Contracted through well water or through sunset	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Total	**50(100.00)**	**49 (100.00)**	**48(100.0)**	**50 (100.00)**	**197(100.00)**

Field survey, 2014 X^2 = -73.11, Alpha level α = 0.05, *df* 12, X^2 critical = 21.026

The respondents' knowledge of the mode of polio transmission among children was also examined. Data on table 3 shows that most (60.91%) respondents were aware that polio is being transmitted through Oral Fecal route. The parents/guardians in Dange Shuni had a relatively large proportion of respondents (70.00%) who indicated that polio is transmitted through Oral Fecal route, while in Sabon Fagi Giwa (64.30%), Kwarbai Zaria (56.00%) and Sokoto Municipal (52.08%) respectively, it was believed that the disease is being transmitted through Oral Fecal route. Notwithstanding, a high proportion of respondents in Sokoto Municipal (33.33%) indicated that polio transmission is hereditary. This indicates that there are parents in Kaduna and Sokoto States that still had other perception on the mode of contacting polio virus among children. Some believed that polio is transmitted through well water or dirty water, through spirit or perhaps inheritance can be removed from the people's mind.

The Chi-square shows that the result is less than the critical value (X^2 = -73.11, Alpha level $\alpha = 0.05$, *df* 12, X^2 critical = 21.026). This means that most parents/guardians have similar understanding on the mode of transmitting or contacting polio among children. They believed that polio is transmitted through Oral Fecal route. Data from FGD session in Kwarbi, Zaria, shows that participants were not aware of the mode of transmission of polio; all they know is that children that are not immunized are at risk of contracting polio.

The Person at Risk of Polio Infection

Table 4 below provides a vivid graphics of the perception of parents in Dange Shuni, Sokoto Municipal, Sabon Fagi and Kwarbai on the person that is at risk of polio immunization. In respect of the person at risk of polio infection, the data reveal that all the respondents in Dange Shuni (100%), Sokoto Municipal (100%), Sabon Fagi (100%) and Kwarbai (100%) were indifferent on the issue of the person at risk of polio infection. They all agreed that only children are at the risk of polio infection. This study shows that Parents/Guardians in Kaduna and Sokoto states were very much aware that polio is an infection that affects children below the age of four in the community.

Table 5: Respondents Knowledge on whether or not Polio can be prevented

Variables	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni(%)	Total (%)
Yes	41(82.00)	38(77.55)	48(100.00)	46(92.00)	173(87.81)
No	2(2.00)	5(10.20)	0(0.00)	2(4.00)	9(4.56)
Don't Know	7(14.00)	6 (12.24)	0 (0.00)	2(4.00)	15(7.61)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**

Field survey, 2014 $X^2 = -82.1$ Alpha level $\alpha = 0.05$, *df 6*; X^2 critical = 12.592

Data in Table 5 indicate that majority of the respondents (87.81%) were aware or knowledgeable that polio can be prevented through immunization with polio vaccine. This can be seen as respondents in Sokoto Municipal (100%), Dange Shuni (92%), Kwarbai Zaria (82%) and Sabon Fagi Giwa (77.55%) across the four LGAs of the two states under investigation concurred that they are aware that polio can be prevented. Findings from the focus group discussion equally provided further explanation on the knowledge of polio in Kaduna and Sokoto states. One of the participants in Sabo Fegi stated that:

> Polio is a disease which is inflicted by spirit (Shan'inna) and is a disease which is transmittable to children. Children should be immunized at early stage as a preventive measure. The children that are not immunized are at the risk of exposure to the polio disease.

This view was corroborated by other participants in the Focus Group Discussions. They were insinuating that polio which is locally referred to as 'sha inna' is a disease inflicted on children by a spirit however they all believed that the virus is transmittable to children and it can be prevented through vaccination. The result of the Chi-square computed to determine the relationship that existed among the four local governments studied on their knowledge of how polio can be prevented are also presented. The chi-square result shows conformity between the two states ($X^2 = -81.1$ Alpha level $\alpha = 0.05$, *df 6*; X^2 critical = 12.592). That is, the people in Sokoto Municipal (100%), Dange Shuni (92%), Kwarbai Zaria (82%) and Sabon Fagi Giwa (77.55%) were aware of how polio can be prevented through the administration of polio vaccine to children below the age of 4.

There was similar reaction in Sokoto Municipal duringan in-depth interview with the Chief Immunization Officer in Sokoto who stated thus:

> Poliomyelitis, popularly called polio is an acute infectious disease occurring sporadically and caused by a virus called poliovirus and characterized clinically by fever, sore throat, headache, vomiting and often with stiffness of the neck and back. It is also characterized by diarrhea, by involvement of the central nervous system, stiff nick, and paralysis.

Looking at the adverse nature of Poliomyelitis, it should not be taken lightly by all and sundry. In essence, a relentless advocacy campaign aimed at nipping polio finally in the bud should be continued by using various communication channels.

The researcher also sought the opinions of the respondents on the way(s) polio can be prevented in the society. This is to determine the extent at which the people of Kaduna and Sokoto states are aware and knowledgeable about polio immunization.

Table 5: The way Polio can be prevented

Variables	**Kwarbai (Zaria) (%)**	**Sabon Fagi (Giwa) (%)**	**Sokoto Municipal (%)**	**Dange Shuni (%)**	**Total (%)**
By Doing the right thing God wants	5 (10.00)	**7**(14.28)	16 (33.33)	7 (14.00)	35 (17.76)
By Praying	8(16.00)	4(8.16)	2 (4.16)	6 (12.00)	20 (10.15)
By Giving Alms	3 (6.00)			1 (2.00)	4 (2.02)
Immunization of Children from 0-59 months	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Don't Know	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**

Field survey, 2014 $X^2 = 23.05$ Alpha level $\alpha = 0.05$, *df 12* X^2 critical = 21.026

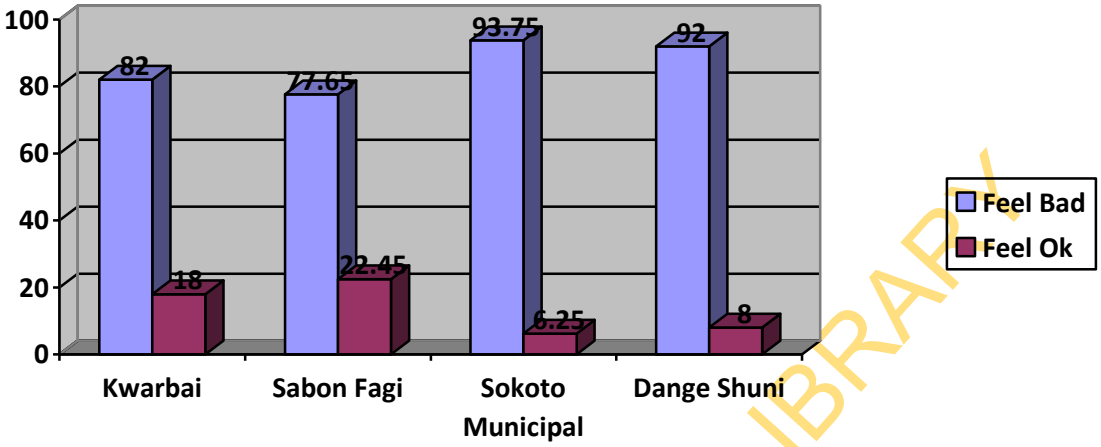
The Chi-square was computed to examine whether or not there is conformity between the respondents studied in the respective states and their knowledge on the ways polio can be prevented. The views of respondents in the two states are similar on their knowledge of polio prevention (X^2 = -82.1 Alpha level $\alpha = 0.05$, *df 12* X^2 critical = 21.026). This shows a significance relationship between the two states and their knowledge on ways polio can be

prevented. They all affirmed that polio can be prevented through the immunization of children from 0-59 months. As indicated in table 6, most respondents (60.91%) are of the opinion that polio can be prevented by immunization of children from 0-59 months. Respondents mostly at Dange Shuni in Sokoto (70%), followed by Sabon Fagi, Giwa (64.30%), Kwarbai Zaria (56%) and Sokoto Municipal (52.08%), were of the view that polio can be prevented through immunization of children from 0-59 months of birth. It can be deduced that polio can be prevented through the immunization of children below 5 years. It is also important to note that there are other views on how polio can be prevented apart from immunization as the respondents have believed. Also, 33.33% of respondents in Sokoto Municipal believed that polio can be prevented by being faithful to God. In addition, 16% of respondents in Kwarbai Zaria were of the view that polio can be prevented through prayers. Participants in the focus group discussions also agreed that immunization can prevent polio in children aged between 0-59months. In the same sessions, there were few dissenting voices as some respondents still believed that it is the will of God and only through prayers polio can be prevented.

4.4 Attitude towards Polio Infection

This section examines attitude of parents/guardians towards polio infection. The data provide valid information in answering research questions four and five of the study. The results are shown below:

Figure 2: Respondents' Feelings if their Child is not immunized with Polio Vaccine



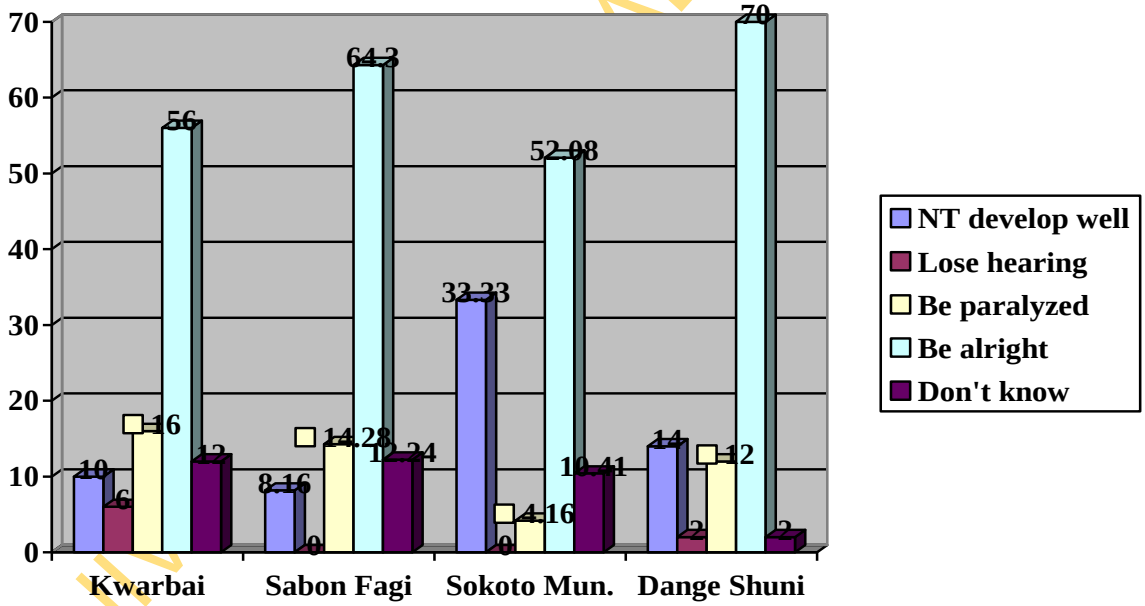
Field survey, 2014 X^2 = -78.68 Alpha level α = 0.05, *df 3*, X^2 critical = 7.815

The bar chart above presents result from the four LGAs on feelings and reactions of the respondents what would happen if their children are not immunized with polio vaccine. It shows that 86.29% out of 197 respondents sampled would feel bad if their child is not immunized with polio vaccine. This means that majority of the parents/guardians in the four local governments would have bad feelings or would not be happy if their child misses polio immunization. It can be observed that 22.45% of respondents in Sabon Fagi Giwa and 18% in Kwarbai Zaria said that nothing is wrong if their child is not immunized of polio vaccine. This means that some parents do not worry about what would happen to their children if they fail present their children for immunization against polio. This presents a worrisome situation as there are still few individuals that are not keen in making sure that their children are immunized.

Nevertheless, the result from the Chi-square proved a significant conformity among the four local governments under study. They mostly agreed that they will feel bad if their kids are not immunized (X^2 = -78.68 Alpha level α = 0.05, *df 3*, X^2 critical = 7.815). That means the general mode of parents in Kaduna and Sokoto states are bad when their children are not immunized with polio vaccine. The change of attitude can be attributed to the health belief they have on the benefits of polio immunization. They have been provided with information and now they are knowledgeable on polio immunization.

The intense skepticism and refusal of parents to immunize their children even led to official suspension of immunization campaigns in Kano State (Renne, 2006; Yahaya, 2007). Consequently, polio immunization advocacy has been playing a key role in mobilizing communities towards getting their children immunized while also securing increased commitments from national and local policy makers. Advocacy for polio immunization in Nigeria also entails dispelling rumours and various conspiracy theories about the oral polio vaccine. Also, through traditional leaders, religious leaders, opinion leaders, health experts and interventionist-personnel, viable information on how polio can be prevented in the society can easily reach parents with understanding and persuasion. This is what the two-step flow idea is emphasizing- that is using the hierarchy that exists in social strata in the community to pass enlightenment and educative information to the last strata which happens to be households.

Figure 3: Respondents' Views on what will happen to their child when he or she misses Oral Polio Vaccine during NIDS.

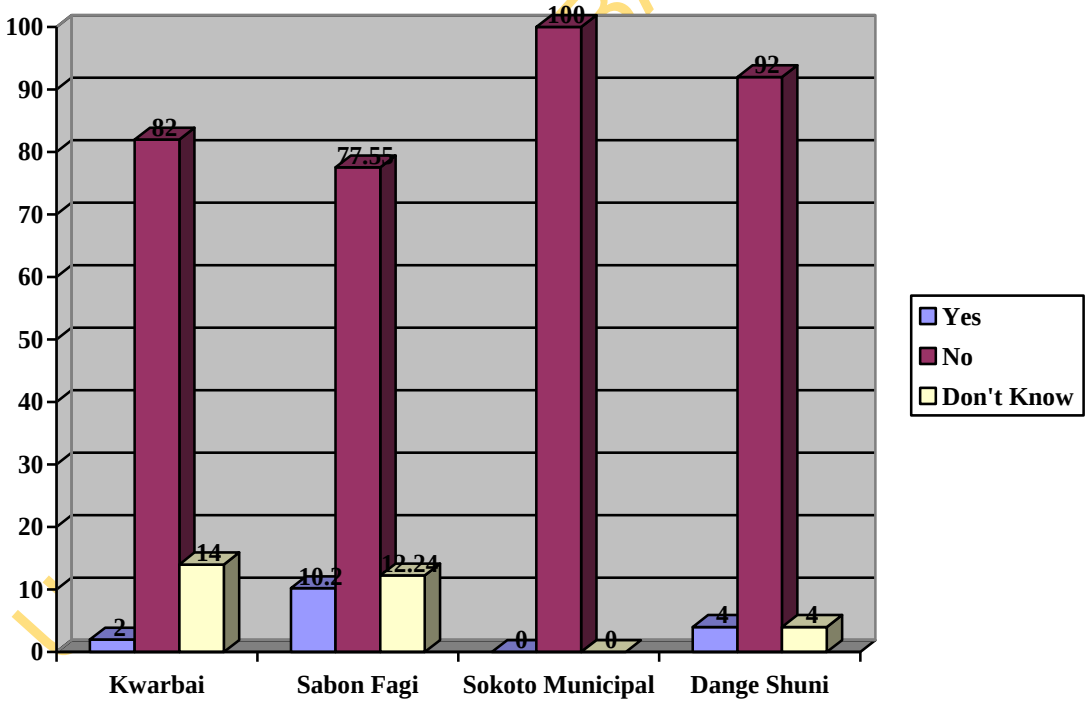


Field survey, 2014

Figure 3 depicts respondents' views on what will happen to their children when they miss oral polio vaccine during National Immunization Days (NIDs). A total of 120 respondents, representing 60.91%, said their children would be alright even though they (children) miss oral

polio vaccine during National Immunization Days (NIDs). Also, 33 respondents representing 16.24% opined that their children will not develop very well when they (children) miss oral polio vaccine during National Immunization Days (NIDs). Therefore, 23 respondents, representing 11.66%, said their child may be paralyzed if he or she misses oral polio vaccine during National Immunization Days (NIDs). It can be seen that though most respondents wish their child well if he or she misses oral polio vaccine during National Immunization Days, notwithstanding, there is great need to get their child vaccinated as prevention is better than cure. Also, the chi-square result shows the conformity that exists among the four communities studied on what will happen to their children when they miss oral polio vaccine. The respondents (X^2 -70.72, Alpha level α = 0.05, *dF 12*, X^2 critical = 21.026) agreed that their children will be alright when they misses oral polio vaccine during National Immunization Days. This indicates that more education on polio immunization is needed in the northern states of Nigeria.

Figure 4: Respondents' views on whether a paralyzed child can become a risk to other children



Field survey, 2014

From figure 4, it is clearly stated that most parents do not wish their children to be paralyzed through interpersonal contact with a paralyzed child. Most of the respondents (87.81%) believed that a paralyzed child cannot become a risk to other children in their area.

4.5 Awareness of Polio Immunization Campaigns

The results under this section answered the first, second and third research questions of this study. The first question was to know the extent of peoples' participation and involvement in the design and implementation of the communication campaign for polio in Kaduna and Sokoto states. The second question was to know the way demographic factors such as age, sex, ethnicity, family or household status influence the participation and involvement in the design of communication strategies used in polio campaign in the respective states under investigation. The third question was to know how socio-cultural variables such as language, religious beliefs, traditional values and urban/rural background influence the contents of polio immunization campaigns in the states under study. Also, the awareness level of polio immunization campaigns among the people of Kaduna and Sokoto communities were examined. The responses provided answers to the fourth and fifth research questions of the study. While the study sought to determine the rate at which people are aware of the various campaigns done to create awareness on polio immunization in the society, the most preferred channel that give maximum result on polio campaign was also determined.

Respondents' knowledge/ Awareness of Polio Immunization Campaign

The data clearly showed that all the respondents sampled (100%) are aware of polio immunization campaign. It can then be deduced that most people in Kaduna and Sokoto states are aware of polio immunization campaign carried out by respective bodies in the states. There was significant conformity ($X^2 = 0$ Alpha level, $\alpha = 0.05$, *df 3*, X^2 critical = 7.815) among the four local governments under study on their awareness of Polio Immunization campaigns.

To ascertain the parents' level of awareness of polio in Dange Shuni Local Government Area, a participant in FGD said:

> We are very much knowledgeable about polio. In fact, we do allow our children to be given polio vaccine. Radio serves as the main source of our information on polio. We are sometimes briefed by our traditional and religious leaders on polio. But there are some parents that don't allow their children to be immunized because they are ignorant of the disease.

Similarly, in Sabon Fagi Giwa Local Government Area, a participant in the FGD who is a traditional leader observed that:

> Some parents refuse their child from being immunized as they are ignorant of the disease, which in turn makes them hate polio immunization programme. This can also be attributed to false information about polio provided to them by mischief makers in the society.

In Nigeria, we still have some individuals who do not trust any programme initiated by some agencies aimed at eradicating polio. Effective communication strategies can ameliorate this problem. Njeleseni (1998), Imoh (2007), and Jegede (2007) have stressed that information is not reaching the target audience because of weaknesses or gaps in the information and communication systems in our various countries. The health situation in Nigeria is further aggravated by lack of access to information which could help people avoid common, preventable diseases and health problems. It is with this in mind that the media need to give priority to health matters so that people can make rational decisions concerning their health.

Issues concerning polio are broadcast daily on radio and television either as news, or paid adverts, jingles and drama. Use of celebrities is on the increase yet the desired result is still a phantom. A multi- dimensional approach is needed to solve the problem associated with non-compliance to polio immunization. This can only be achieved through well designed, effective information and communication campaigns with the assistance of stake holders, parents and guardians, traditional and religious leaders.

Table 6: Respondents' Sources of Information on Polio

Variables	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Health worker	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Wife/Husband	3 (6.00)	0 (0.00	0 (0.00)	1 (2.00)	4(2.03)
Prayer/worship center	8(16.00)	**7**(14.28))	2 (4.16)	6 (12.00)	23 (11.66)
Radio	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Television	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Opinion/religious leaders	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 26.53$, Alpha level $\alpha = 0.05$, *df* 24, X^2 critical = 36.415					

Field survey, 2014

The sources of information on polio immunization in Kwarbai Zaria, Sabon Fagi Giwa, Sokoto Municipal and Dange Shuni are presented in table 8. It was found that parents get their information on polio mostly from radio with 60.91%, while 16.24% get their information from health workers and 11.66% get theirs from prayer and worship centres. Opinion leaders/religious leaders serve as the source of information on polio for 12.24% in Sabon Fagi, 12% in Kwarbai and 10.41% in Sokoto Municipal. It can therefore be deduced that radio served as the most potent tool to reach out to people in Kaduna and Sokoto states. Notwithstanding, other channels can be used.

On this note, in an In-Depth Interview with a media health worker, she observed thus:

> It was a combined strategy. We did one for the policy makers, both the male/female parents. For the Radio and TV series we did on polio, we did where a child that has polio came out from a house to admire other children playing on the football field. He couldn't participate because he has polio. So, we told parents to learn from what happened to the child.

This reveals that multiple communication campaign strategies could yield positive result in the long run. That was why Onuekwe (2013) stated that issues concerning polio are broadcast daily on radio and television either as news, or paid adverts. Jingles and drama involving celebrities have been on the increase yet the desired result is still a phantom. A multi - dimensional approach is needed to solve the problem associated with non-compliance to polio

immunization as emphasized by Freimith and Taylor (1993). This can only be achieved through well designed effective information and communication campaigns with the assistance of parents and guardians, traditional and religious leaders and other stakeholders.

Also, the health belief model laid emphasis on motivation as an instrument to persuade individual or group of people toward accepting a remedy to their illness. Through effective communication campaigns, the people will understand the importance of polio immunization thereby reducing the knowledge gap that exists among them. Through effective communication, traditional, opinion and religious leaders will feed the people with motivational information that will sensitize them about polio immunization. To achieve maximum success in polio immunization campaigns in Northern Nigeria, similar multi-dimensional channels should be adopted as this study found a conformity (X^2 = 26.53, Alpha level α = 0.05, *df* 24, X^2 critical = 36.415) among the channels that serve as a source of information among the respondents across the four communities investigated.

Table 7: Respondents most Preferred Source of Information on Polio

Variables	**Kwarbai (Zaria) (%)**	**Sabon Fagi (giwa) (%)**	**Sokoto Municipal (%)**	**Dange Shuni (%)**	**Total (%)**
Health worker	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Wife/Husband	3 (6.00)	0 (0.00	0 (0.00)	1 (2.00)	4(2.03)
Prayer/worship center	8(16.00)	**7**(14.28))	2 (4.16)	6 (12.00)	23 (11.66)
Radio	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Television	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Opinion/religious leaders	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
X^2 = 26.53,Alpha level α = 0.05, *df* 24, X^2 critical = 36.415					

Field survey, 2014

The data in table 7 evidently show that most respondents preferred radio as their source of information on polio as 60.91% of the respondents chose radio as source of information on polio. This was followed by 16.24% that preferred health workers as their source of information on polio; while 11.66% preferred information on polio from prayer and worship centres and 18 respondents representing 9.13% preferred opinion/religious leaders to supply them with information on polio.

Elitist media like television, newspaper and magazines, together with handbills, might not be suitable in communicating to people in Kaduna and Sokoto states regarding polio sensitization. The In-depth Interview with a Media Health Worker in Sokoto revealed the advantages in adopting some media for communicating polio eradication:

> For the TV, the weakness is that is not everybody gets to see the TV, but the strength is that you see, you believe it. It is not a stage managed thing because you really have a child that is suffering from polio infection.

The chi-square result revealed a significant conformity (X^2 = 26.53, Alpha level α = 0.05, *df* 24, X^2 critical = 36.415) among the preferred channels of sourcing information on polio across the two states under investigation. Though radio is the most preferred channel, a multi-dimensional approach is recommended to achieve maximum result across all levels of individuals and communities. This was also observed by Thacker and Shendurnicar (2005), Laulajainen (2012) and Onuekwe (2013) that advocacy activities through traditional leaders, public health workers, international agencies and the media will go a long way in achieving successful polio immunization campaign in Nigeria.

Table: 8 Why Respondents will prevent their child from taking Polio Vaccine

Variables	**Kwarbai (Zari) (%)**	**Sabon Fagi (Giwa (%)**	**Sokoto Municipal (%)**	**Dange Shuni (%)**	**Total (%)**
Contains anti-fertility agents	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Not good for children wellbeing	6 (12.00)	6 (12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Anti- Islam	8(16.00)	**7**(14.28))	2 (4.16)	6 (12.00)	23 (11.66)
Not aware of Time and Date of Vaccination	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Refusal of my spouse	3 (6.00)			1 (2.00)	4(2.03)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
X^2 = 26.9, Alpha level α = 0.05, *df* 21, X^2 critical = 32.671					

Field survey, 2014

Table 8 aggregates the views of respondents on whether they could prevent their child from taking polio vaccine because of some obvious reasons. It can be clearly seen that majority (60.9%) of the respondents will surrender their children for vaccination if they are aware of time and date of the vaccination. In this sense, 70% of the respondents in Dange Shuni affirmed that they will surrender their child for polio immunization only if they are aware of the time and date of the vaccination. The same position was maintained by respondents atSabon Fagi Giwa (64.30%), Kwarbai Zaria (56%) and Sokoto Municipal (52.08%). A good proportion (33.44%) of the respondents in Sokoto Municipal and 14% in Dange Shuni would deliberately refuse to surrender their child for vaccination against polio because of their perception that it contains anti-fertility agents, while 10% of the respondents in the same local government will not let their children to be given polio vaccine because it is not good for children's wellbeing. On the other hand, 16% from Kwarbai Giwa, 14.28% from Sabon Fagi, and 12% from Dange Shuni will not surrender their child for vaccination against polio because it is anti-Islam.

On the issue of parents preventing their children from receiving polio vaccine, below is the experience of a media health worker (an employee of Sokoto State Government) in an In-depth Interview:

> I remembered there was a village we went to: Do you know when we sent message that we are (were) coming, we had visited another community, and all the people, the Hakimi, Mai Anguwa, the health personnel were all waiting for us. So, they would show up around. So, we were in that village from morning till evening. And nobody complained. So, this show that people were really determined to kick polio out of the country.

It means that when there is proper and adequate advocacy and enlightenment among the people, they have no reason to refuse their children from being immunized. Similarly, the In-depth Interview with a UNICEF health officer corroborated this idea:

> We engage (into the) use of house-to-house social mobilization sensitization; involve the whole community in our campaign; engaged on polio survival group rally; sensitizing doctors against polio; sensitizing journalists against polio; we also involve religious and local Malams in our campaign strategies. This is

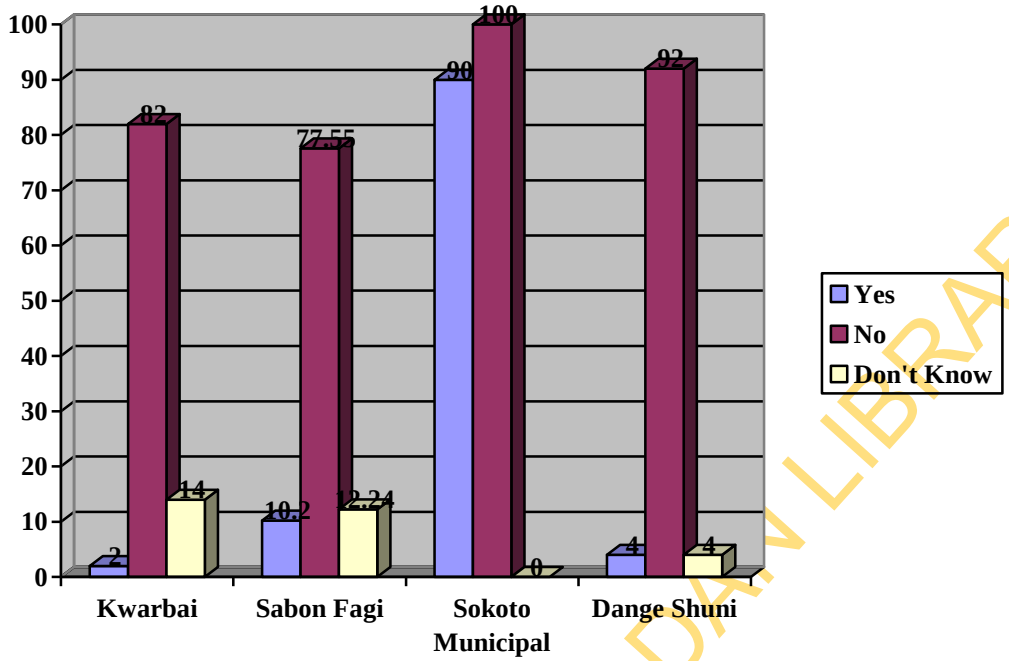
making us to record good success in the fight against the spread of polio.

Many strategies have been used in polio immunization campaigns in northern Nigeria but the certainty of their effectiveness has not been determined. Some of the strategies are adverts, jingles, drama, documentary, and indigenous news through the mass media. Other strategies include using traditional/religious leaders, Information, Education and Communication Materials (IEC), faith-based organizations and sometimes house to house campaign. One of the strong strategies is the traditional/religious leaders because they wield a lot of influence on their people. Such noted traditional/religious leaders include the Sultan of Sokoto, the Emirs, the Imams or religious clerics. During Friday Jumat prayers, Koranic schools, village meetings, and in churches and mosques, parents and guardians are sensitized about polio. All these are subsumed under three strategies namely advocacy, social mobilization and programme communication. According to Babalola (2004), if these strategies are adequately utilized, countries such as India and Pakistan that are still ravaged by polio will eradicate polio.

The usage of traditional/religious leaders to influence their people to accept polio vaccine is a potent motivational variable as emphasized by the proponents of the health belief model, knowledge- gap theory and two-step flow theory. The motivational variables hasten the adoption of health innovation by influencing behavioural changes.

There is conformity ($X^2 = 26.9$, Alpha level $\alpha = 0.05$, *df* 21, X^2 critical = 32.671) among the two states under study. In this case, the alternative hypothesis is accepted. The respondents will surrender their children to be given polio immunization and this can be attributed to intense campaign.

Figure 5: Involvement of Respondents in the Design of communication campaign on Polio



Field survey, 2014

In getting respondents' opinion on whether or not they were involved in the design of communication campaign on polio, the response clearly showed that majority of the respondents (87.81%) are not aware of their involvement in the design of communication meant for the campaign. This information suggests that the stakeholders that are involved in the design of communication strategies on polio campaign did not involve the local individuals or parents during the design of the campaign strategies.

However in Sokoto, the In-depth Interview revealed that stakeholders were involved in the design and implementation of communication strategies as one of the interviewees observed thus:

> We did one with the wife of the executive governor coming out to call on parents to please bring out their children. Then we deal with religious leaders telling people there is nothing wrong Islamically for a child taking immunization. Such are the combined strategies we use

This is the response of a traditional/opinion leader in the FGD in Dange Shuni in Sokoto state, on their involvement in the campaign against the spread of polio in the society. He said that:

> Government and health officials have assured us that polio vaccine is safe. We encourage our people to accept it by allowing our children to be administered the vaccine. We use to have this belief that the vaccine has some substance in it, which can cause infertility, so as to reduce the level of our child bearing. This is totally against our culture and religion. Now that it has been tested and proved that it is purely for polio eradication, we support the call for it to be given to our children. My children were given the vaccine and there is no problem with that. This will go a long way in ensuring that our children grow healthy.

There are empirical studies that emphasized the need to employ stakeholders in the design of communication on health related issues to achieve the desired aim. Koening (2001), and Woldehanna (2006) stated respectively the need to use religious leaders, traditional leaders, health experts and opinion leaders in health campaign.

Also, the result in the chi-square showed non-conformity. The people were not aware of their involvement in the design of the communication meant for the campaign on polio (X^2 = 15.9, Alpha level α = 0.05, *df* 6, X^2 critical = 12.592). This shows that the people were not involved in polio immunization campaign. For a campaign of such to succeed, the people affected have to be involved in the design and implementation of polio immunization campaign. There are empirical studies and theoretical framework that have proved the potency of involving the locals in ensuring success in health campaign. Studies by Koening (2001) and Salem (2006) have equally proved the same result.

The Extent to which Respondents were involved in the design of communication campaign on Polio

Considering the level at which parents are involved in the design of communication campaign on polio, it is obvious that it was very low, going by the assertion of most respondents. Respondents

attested that they were involved to little extent in the design of communication campaign on polio. These invariably depict lapses in the design of acceptable campaign on the side of the beneficiaries who happen to be the respondents. Similarly, in the FGD, a Christian participant in Giwa Local Government Area in Kaduna state, observed:

> Polio vaccine is ideal for every new born child up to the age of five in every society. So, our society should not be an exception. The problem is fear; this fear has to be cast out of parent. Health officials have to engage on through test to make sure that the vaccine is safe and not for ulterior motives by mischief makers. When it has been certify (ied) that the vaccine is absolutely safe; then every parent should adhere to government call by allowing their children to be given the vaccine. On this note, I admonish everyone to support government in making sure that polio does not ravage our society.

This further buttresses the point that when the people are involved in the communication campaign, success will be recorded as they will all accept it in good faith without any iota of doubt.

The issue of advocacy is paramount in the campaign process. Just like the studies of Wallack et al (1993), Shama (1997), Kar, Alcalay and Alex (2001), Chartuverdi (2008) and Pervanta et al (2011), views are correlating that advocacy provides a fertile ground for a growing multi-players and multi-dimensional strategies for polio immunization in Nigeria en route a complete interruption of transmission of wild polio in human communities in the world.

Table 9: Respondents' Views on whether Demographic Factors such as Age, Sex, Ethnicity status Influence the Acceptance of Communication Strategies used in Polio Campaigns

Variables	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Strongly Agree	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Agree	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Undecided	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Disagree	3 (6.00)	0 (0.00)	0 (0.00)	1 (2.00)	4 (2.03)
Strongly Disagree	8(16.00)	**7**(14.28)	2 (4.16)	6 (12.00)	23 (11.66)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067					

Field survey, 2014

There is a need for demographic factors such as age, sex, ethnicity, family status to be considered in the design of communication strategies used in polio campaigns for it to yield desired effective result. Table 9 shows that demographic factors influence the acceptance of communication strategies used in polio campaigns in the states.

Freimith and Taylor (1993), Imoh (2006), Yahaya (2007) and Hanan (2012), have all affirmed the influence of socio- demographic factors on health campaigns. Hanan (2012) identify the important role of knowledge, approval, intention, practice and advocacy as steps behaviour change for HIV/AIDS prevention. These steps involved in communication design are highly interrelated. The success of the campaign depends upon the extent to which the communicators are able to address the needs of the audience for behaviour change towards HIV/AIDS. This strategy invariably can be adopted for polio campaign. Data in this study showed a significant conformity ($X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067) between Kaduna and Sokoto states in the influence demographic factors such as age, sex, ethnicity, and family status on the acceptance of communication strategies used in polio campaigns. This is to ensure that everyone in the society that is concerned with the issue of polio immunization is carried along in the campaign process. This will make them to adopt the information and consequently implement it in as and when due.

Table 10: Respondents Views on whether Demographic Factors such as Age, Sex, Ethnicity, Family are considered in the Design of Communication Strategies used in Polio Campaigns

Variables	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Strongly Agree	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Agree	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Undecided	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Disagree	3 (6.00)			1 (2.00)	4 (2.03)
Strongly Disagree	8(16.00)	**7**(14.28)	2 (4.16)	6 (12.00)	23 (11.66)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067					

Field survey, 2014

Data in table 10 show that majority of the respondents in Dange Shuni (70%), Sabon Fagi Giwa (63.30%), Kwarbai Zaria (56%) and Sokoto Municipal (52.08%) in the local governments under study strongly agreed that demographics like age, sex, ethnicity, family or household status are considered in the design of communication strategies used in polio campaigns. This reveals that the designers of communication strategies for polio campaign did consider the demographic composition of their target audience. This is because it is what will guarantee the success and acceptability of the message among the end users who are the parents and their children. There is a form of agreement ($X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067) across the two states under investigation. The respondents had a clear understanding of the content of the communication campaign on polio. The contents of the message were designed and implemented in such a way that women that are traditionally inclined understood it. Also, both parents were educated in the language they understood. Most of the campaigns were designed in Hausa language, which is the dominant spoken dialect in northern Nigeria. Also, messages were designed to target family and household. Through traditional, religious and opinion leaders, information on polio got to household through the parents especially the head of the household who incidentally is the father. Also, radio programmes were designed and implemented bearing in mind the listener's sex, age, ethnicity, family values and household styles. Renne (2010), Ozuhu-suleiman (2010) and Wisbord (2010) have all attested to the relevance of considering the sex, age, ethnicity and household system of northern Nigeria in the

design and implementation of a successful polio immunization campaign.. Also, audience of a message will be motivated when such message has appeal to their sex, age, ethnicity and family values. This is the dictate of both multi-step flow theory and health belief model.

Table 11: Respondents' Views on whether Socio-cultural variables such language, religious beliefs, traditional values and urban/rural background influence the acceptance of Polio Immunization Campaigns

Variables	**Kwarbai (Zaria) (%)**	**Sabon Fagi (Giwa) (%)**	**Sokoto Municipal (%)**	**Dange Shuni (%)**	**Total (%)**
Strongly Agree	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Agree	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Undecided	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Disagree	3 (6.00)	0 (0.00)	0 (0.00)	1 (2.00)	4 (2.03)
Strongly Disagree	8(16.00)	**7**(14.28)	2 (4.16)	6 (12.00)	23 (11.66)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067					

Field survey, 2014

Looking at the effect of socio-cultural variables on individuals in the society or community, there is a need for socio-cultural variables such as language, religious beliefs, traditional values, urban/rural background influence in the content of the communication strategies used in polio campaigns for it to yield desired, effective result. Table 11 shows that majority of the respondents (60.91%) agreed that socio-cultural variables such as language, religious beliefs, traditional values, and urban/rural background have influence on the content of the communication strategies used in polio campaigns. This is also in consonance with the result of the chi-square. There is conformity ($X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067) between Kaduna and Sokoto states on the effect of socio-cultural variables such as language, religious beliefs, traditional values, urban/rural background influence in the acceptance of the communication strategies used in polio campaigns for it to yield desired, effective result.

On the issue of socio-cultural variables that affect polio campaign, the In-depth Interview with a Health Officer for polio with Kaduna State Government has this to say:

> The problem we face is the same with health practitioners which are lack of education, ignorance, religion and some traditional inclination among the locals and these have been constraints to polio eradication campaign. So, it is very difficult to educate these kinds of people because of false knowledge they have about family planning and infertility. This is because of brainwashing they have received from their leaders. I think the best approach is to also employ religious leaders who are properly grounded in both Islamic and western education who apparently know the benefits of polio immunization.

The findings showed that communicators should engage health practitioners, religious leaders, opinion leaders, traditional leaders, victims and parents in the fight against socio-cultural Implications of polio immunization campaign. Media should disseminate relevant information regarding polio immunization; Media should engage victims of the scourge; media should dramatize their message and social media should be used to pass information on polio. Also, there should be proper enlightenment on polio immunization and its necessity and the continuous use of different media to disseminate information on polio immunization should be highly encouraged. One of the best approaches is for media to also employ religious leaders who are properly grounded in both religious and western education and who apparently know the benefits to their followers.

Socio-cultural issues impact the effectiveness of health information transmission and its possible application among end users. Geist-Martin, Ray and Sharf (2003), Kabir (1998), Woldehanna (2006), Ahmed, Stewart, Dell and Chen, (2008) and Babalola et. al (2004), all recognized the significance of traditions, culture, religion and environmental factors to the success of health behaviour change and most especially that of polio immunization.

Table 12: Respondents' Views on whether Socio-cultural variables are considered in the Design and Implementation of the Communication strategy used for Polio Immunization Campaigns

Variable	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Strongly Agree	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Agree	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Undecided	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Disagree	3 (6.00)	0 (0.00)	0 (0.00)	1 (2.00)	4 (2.03)
Strongly Disagree	8(16.00)	**7**(14.28)	2 (4.16)	6 (12.00)	23 (11.66)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067					

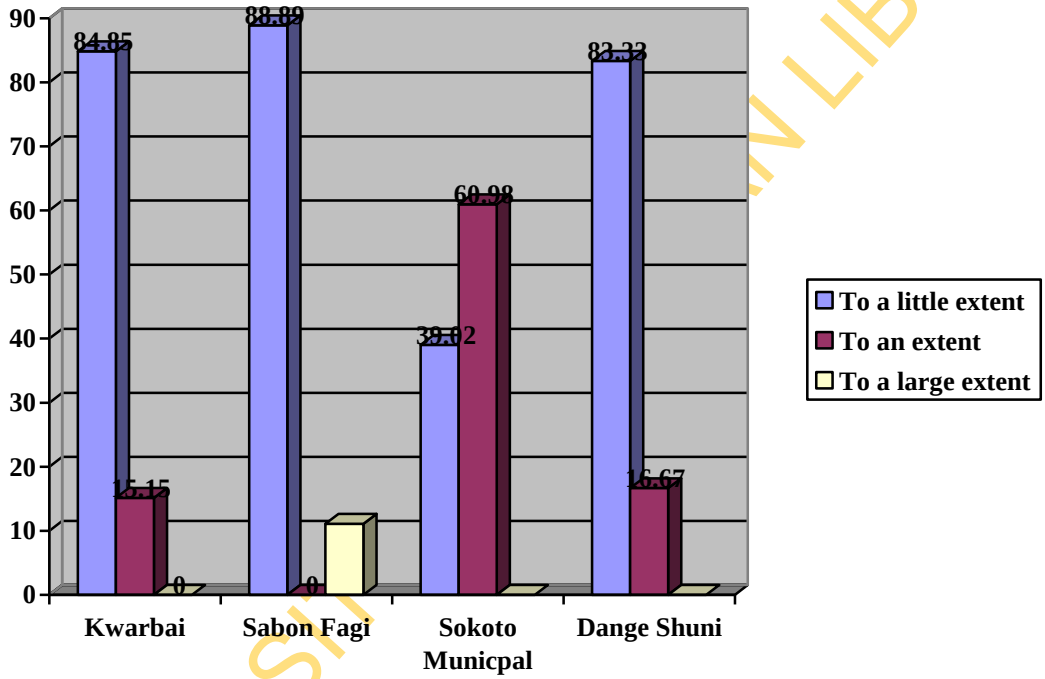
Field survey, 2014

Data in table 12 show that majority of the respondents in Dange Shuni (70%), Sabon Fagi (63.30%), Kwarbai Zaria (56%) and Sokoto Municipal (52.08%) in the local governments under study, households strongly agreed that socio-cultural variables are considered in the design of communication strategies used in polio campaigns. This reveals that the designers of communication strategies for polio campaign did consider the socio-cultural composition of their target audience in the design of their communication content. This agreed with the position of Belcher et al. (1978), who stated eight factors affecting participation in mass immunization campaign in rural Ghana. These factors are social circumstances, superstitions, literacy level, public trust, socio economic, urban/rural issues, and communication/transportation and gender issues. This proved that these factors must be considered in the design of communication strategies used in polio campaigns. The result of the Chi-square of the data ($X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067) showed that the two states had agreed that social cultural variables are important to be considered in the design and implementation of polio immunization campaign.

In considering the importance of socio-cultural factors in acceptance of media message, Tichenor, Donohue and Olien (1970) presented five reasons for justifying the knowledge gap. (1) People with higher socioeconomic status have better communication skills, education, reading, comprehending and remembering information. (2) People with higher socioeconomic status can

store information more easily or remember the topic. (3) People who posses higher socioeconomic status might have a more relevant social context. (4) People with higher socioeconomic status are better in selective exposure, acceptance and retention. (5) The nature of the mass media themselves is that they are geared toward persons of higher socioeconomic status. So, through people with high socio-economic status in the society, viable information can reach family, household and parents.

Figure 6: The Extent at which the Design of communication strategy used for Polio Immunization campaign considered the socio-cultural values of the people



Field survey, 2014

In figure 8, it is apparent that socio-cultural instincts of the people were considered in the design of communication contents of polio immunization campaigns. The aggregate results across the four Local Government Areas that made up two states under study revealed that the socio-cultural variables of the people were considered in the design of communication contents of polio immunization campaign to an extent. The response from the FGD and interview shows that polio communication campaigners did consider the socio-cultural antecedent of parents and

caregivers in the design of communication strategies for polio immunization campaign. This is to win the confidence of the people.

4.6 Evaluation of the Effectiveness of Communication Campaign Strategies used and its influence on Acceptance and Use of Polio Vaccine

The communication strategies used in polio immunization campaign by various stakeholders in Kaduna and Sokoto states were categorized into three by Onuekwe (2013). These strategies are advocacy, social mobilization and programme communication. Advocacy involves the use of health workers, opinion leaders, traditional leaders, religious leaders, political leaders or prominent and influential leaders in the society. Social mobilization has to do with the use of international and local networks like intensified ward communication network, volunteer community mobilization network, compound dialogue, sensitization meetings and compound meetings. Polio programme communication is the adoption of various channels to exchange information on polio during immunization days. This section highlights how these different campaign strategies fared among the parents/guardians in Sokoto and Kaduna states.

Table 13: Respondents' views on the Effectiveness of Advocacy communication strategy such as prominent and influential leaders on acceptance and use of polio vaccine

Variable	**Kwarbai (Zaria) (%)**	**Sabon Fagi (Giwa) (%)**	**Sokoto Municipal (%)**	**Dange Shuni (%)**	**Total (%)**
Strongly Agree	23 (46.00)	32 (65.31)	25(52.08)	35 (70.00)	115 (58.37)
Agree	15 (30.00)	9(18.37)	16 (33.33)	11 (14.00)	51 (25.88)
Undecided	6 (12.00)	5(10.20)	5 (10.41)	1 (2.00)	17 (8.62)
Disagree	3 (6.00)			1 (2.00)	4 (2.03)
Strongly Disagree	3(16.00)	3(6.12)	2 (4.16)	2 (4.00)	10 (5.07)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067					

Table 13 indicates that 84.25% of respondents across the two states agreed that the use of prominent and influential leaders for advocacy on polio campaign is effective in influencing them to accept and use polio vaccine. The data show that the four studied areas Dange Shuni (84%), Sabon Fegi (83.68%), Kwarbai Zaria (76%) and Sokoto Municipal (85.41%) agreed with

the effectiveness of advocacy as communication campaign strategy that influences them to accept and use polio vaccine. Advocacy as strategy for polio eradication involves mobilizing policy makers, various stakeholders, prominent and influential leaders from national to local level and it is an effective communication campaign strategy in Northern Nigeria.

This is why participants in the FGD sessions were enthusiastic about the use of President of the Federal Republic of Nigeria and his eminence, the Sultan of Sokoto as a Polio Ambassadors. Political and religious leaders usually make emphatic statements in public ceremonies to crave the indulgence of their followers to recognize the need for vaccination of their children.

The results of the in-depth interview with opinion leaders, health official, UNICEF officials and media health workers stressed the need for involving stakeholders in the community in polio advocacy. They stated that community leaders do play a great role in mobilizing their subjects. When influential people advocate for a polio free Nigeria, it goes a long way to create positive impression not only on parents and guardians, but on all and sundry. Advocacy for polio immunization in the country is a collaborative effort among multi-actors consisting of foreign and local stakeholders. These stakeholders, according to Yahaya (2007) and Chartuverdi (2008), will dispel rumours and various conspiracy theories about the oral polio vaccine. In Nigeria, these stakeholders include UN specialized agencies (e.g. WHO, UNICEF), public health institutions, political/ traditional/religious and opinion leaders, international development agencies, foreign NGOs and foundations and local NGOs.

The result of Chi Square anallysis showed (X^2 = 0.1, Alpha level α = 0.05, *df* 7, X^2 critical = 14.067) a conformity on the acceptability of advocacy as an effective communication campaign strategies in Kaduna and Sokoto states on polio vaccination. This means that if advocacy for polio immunization in Nigeria is properly utilized, it will yield a positive result in ensuring the success of polio immunization campaign. This will go a long way in ensuring that Nigeria will go beyond being delisted as an endemic country but polio will be eradicated completely. By so doing, the socio-cultural challenges attached to polio campaign can be minimized completely.

Table 14: Respondents' views on the Effectiveness of social mobilization networks as communication strategy for Acceptance and use of polio vaccine

Variable	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Strongly Agree	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Agree	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Undecided	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Disagree	3 (6.00)	0 (0.00)	0 (0.00)	1 (2.00)	4 (2.03)
Strongly Disagree	8(16.00)	**7**(14.28)	2 (4.16)	6 (12.00)	23 (11.66)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067					

The data in Table 14 show the level of acceptability of social mobilization activities for polio campaign among the respondents. The results show conformity ($X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067) in opinions among the respondents on the effectiveness of social mobilization as a communication campaign strategy that will influence the acceptance and use of polio vaccine in the two states. The data show that majority of the respondents in Dange Shuni (84%), Sabon Fagi (72.46%), Kwarbai Zaria (66%) and Sokoto Municipal (85.41%) agreed that social mobilization influence their acceptance and use of polio vaccine. On this note, the respondents (77.15%) affirmed the effectiveness of social mobilization and how it influenced them to accept and use polio vaccine in Kaduna and Sokoto states.

The participants in the FGD sessions were able to recognize the existence of social mobilization networks like intensified ward communication network, volunteer community mobilization network, compound dialogue, sensitization meetings and compound meetings in polio campaign in their respective communities. They alluded to their significant role in influencing them to change their mind or misconception they had about polio immunization, and consequently making them to accept and allow their children to be immunized.

One of the opinion leaders in Sokoto state said this during the interview session with him::

> Social mobilization is carried out in the rural and urban communities in Sokoto state through the use of volunteer mobilizers from the community. These volunteer mobilizers are usually part of the communities. So the locals are familiar with them thereby making them to have confidence on the efficacy of polio vaccine.

Onuekwe (2013) emphasizes the potency of using interpersonal contact in influencing behavioural change. Social mobilization networks provide avenue for inter- personal communication in polio campaigns. It can be deduced from the statement of the opinion leader in Sokoto state that interpersonal approaches break community resistance and challenges related to social issues emanating from polio immunization. Though the study by Onuekwe states that volunteer workers are still faced with resistance, this study found that social mobilizers were very much accepted in Kaduna and Sokoto states.

The activities of Forum for Muslim Women in Nigeria (FOWMAN), Northern Traditional Leaders Committee (NTLC), Volunteer Community Mobilization Network (VCM Net) and a host of others have made the campaign on polio immunization to leap frog almost from a state of being comatose to a state of success. As a result of this, parents/guardians are now familiar with and trust polio vaccine. They have contributed immensely to the efforts being made by the government and other agencies aimed at eradicating polio. They are strong advocates of polio vaccination in northern Nigeria. These communication strategies will close knowledge-gap existing among parents, guardians and caregivers. It even has the potency of influencing the recalcitrant parents to have a change of mind about the misconceptions and other erroneous beliefs they have about polio vaccine.

Table 15: Respondents' views on the effectiveness of media programmes on polio in influencing Parents/Guardians to accept and use polio vaccine

Variable	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Strongly Agree	22 (44.00)	22 (44.89)	25(52.08)	25 (50.00)	94 (47.71)
Agree	16 (32.00)	14(28.57)	16 (33.33)	17 (34.00)	63 (31.97)
Undecided	6 (12.00)	6(12.24)	3 (10.41)	1 (2.00)	16 (8.12)
Disagree	3 (6.00)	5 (10.20)	2 (0.00)	4 (8.00)	14 (7.10)
Strongly Disagree	3(6.00)	2(4.81)	2 (4.16)	3 (6.00)	10 (5.07)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067					

Polio programme communication is a communication campaign strategy that has received wide acceptance. Majority of the respondents (79.68%) acknowledged the effectiveness of polio communication campaign programme and how it influenced them. Data distribution across the 4 local governments show that respondents in Dange Shuni (84%), Sabon Fagi (73.46%), Kwarbai Zaria (76%) and Sokoto Municipal (85.41%) agreed on the effectiveness of polio programme communication strategy such as announcement of campaign dates and awareness creation through the media and other local means of passing information in influencing their acceptance and use of polio vaccine.

There was conformity across the two states as the chi-square shows ($X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067) agreement on the effectiveness of polio programme communication in influencing their perception on polio vaccine. Programme communication strategy is aimed at impacting on the knowledge, attitude and behaviour of participants in polio eradication. These activities involve announcement of campaign dates through the mass media and community town announcers, media appearances to create awareness and monitoring during campaign periods by media health workers and other interventionists. This is in line with what Melanie et al. (2013) said that mass media campaigns for behavioural change is critical in changing the attitude of people especially in a health campaign such as polio. This can be done through the use of media appeals and other familiar communication campaign mix such as announcement during Jumat prayers on Fridays.

Nevertheless, this study has debunked the findings of Onuekwe (2013) that the several communication strategies adopted to convince adamant parents about the importance of polio vaccination achieved little result. This is because this study found that the continuous use of multidimensional communication strategies such as advocacy, social mobilization and polio programme communication have made parents in Kaduna and Sokoto states to change their existing predisposition about polio vaccine and consequently accept the use polio vaccine for their children.

Table 16: Respondents' views on the most effective Strategy

Variable	**Kwarbai (Zaria) (%)**	**Sabon Fagi (Giwa) (%)**	**Sokoto Municipal (%)**	**Dange Shuni (%)**	**Total (%)**
Advocacy	24 (48.00)	22 (44.89)	19(39.58)	22 (44.00)	87 (44.16)
Social Mobilization	11 (22.00)	14(28.57)	18 (37.50)	13 (26.00)	56 (28.42)
Programme Communication	12 (24.00)	13(26.53)	11 (22.91)	14 (28.00)	50 (25.38)
Others	3 (6.00)	0 (0.00)	0 (0.00)	1 (2.00)	4 (2.03)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 314.7$, Alpha level $\alpha = 0.05$, *df* 6, X^2 critical = 12.59					

Field survey, 2014

The information in Table 16 shows the distribution of respondents' views on the various communication strategies used for polio campaign in Northern Nigeria. Majority of the respondents (44.16%) across the four local governments agreed that advocacy which is geared towards mobilizing stakeholders, policy makers and other prominent and influential leaders had the highest level of approval rating for effectiveness, although it is not the only potent strategy as the table indicates. Data also proved that social mobilization network (28.42%) was also adopted as a communication campaign strategy aimed at influencing parents to accept polio vaccine.

The In-depth interview data from a health official corroborated this position:

> VCM aims at generating acceptance of oral OPV through house to house mobilization for polio and routine immunization. It is usually targeted at settlements with high numbers of missed children during immunization days. The job of these female volunteers is to identify, characterize and facilitate the vaccination of the children in their defined catchment areas.

To further corroborate this point, Independent Monitoring Board (2012) observes that in eight of the most high-risk states in Northern Nigeria (Kebbi, Kano, Sokoto, Zamfara Jigawa, Borno, Katsina and Yobe), an extensive network of 2,150 VCMs were recruited and trained to operate as "change agents" within their communities to mobilize families for the next polio immunization campaign. Some of the participants in the FGD across the four local governments confirmed that they once volunteered to spread the good news of polio in their neighbourhood. But, Onuekwe (2013) observes that interpersonal counseling and implementation of polio campaign strategy are their work in addition to promoting other child survival interventions.

The third communication campaign strategy is programme communication in which respondents (25.38%) agreed that the strategy influenced their acceptance of polio vaccine. Also, FGD participants confirmed that they were knowledgeable and aware of the use of media and other local means of information dissemination on polio use and the vaccination periods as a result of programme communication strategy.

The chi-square result shows no conformity with the acceptance of the strategies in the four local governments areas thus: $X^2 = 314.7$, Alpha level $\alpha = 0.05$, *df* 6, X^2 critical = 12.59. Onuekwe (2013) and Eze (2013) note that none of these communication strategies in conjunction with other approaches have been able to completely eradicate polio in the aforementioned states. They also noted that polio was still ravaging many children in the northern states despite the efforts made by government, non-governmental agencies and other stakeholders. Furthermore, Onuekwe (2013) attributed it to the fact that the communication strategies were deficient and ineffective in impacting the desired behaviour change among the intended programme beneficiaries, calling for a concerted approach towards solving it.

The solutions here is the adoption of multi-dimensional approach as a communication strategy for polio campaign. In this instance, advocacy programmes bytraditional/religious and political leaders; national and public health institutions, United Nations agencies such as UNICEF, WHO and other concerned bodies should actively be involved in creating a robust and viable initiatives aimed at optimal performance for polio eradication. For social mobilization, it is pertinent to recognize the power and efficacy of social networks such as the Intensified Ward Communication strategy, the Volunteer Community Mobilization Network and others in mitigating the scourge of polio in northern Nigeria. There is a large followership of people who are trusted within their community much more than even government functionaries; therefore, there is the need to cultivate these groups to effectively tackle the problem of suspicion, mistrust and misconception. This can only be achieved through the use of social mobilizers who will convince the hard to reach, hard to convince and the hard to retain. Finally, in programme communication, it is important to recognize the need for programmes that tailored towards providing adequate information for National Immunization Days (NIDs) proper health education on polio vaccine, and its importance and use for children. These could be achieved through the media and other means such as town criers, village meetings, churches and mosques.

On this note, advocacy, social mobilization and polio programme communication are the main communication strategies used in polio immunization campaign in Kaduna and Sokoto states. This study has affirmed the effectiveness of the aforementioned communication campaign strategies in influencing the acceptance and use of polio vaccine in northern Nigeria.

Table 17: Respondents' views on whether the information they received on polio immunization from social advocacy areeffective communication strategy for polio campaign

Variable	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Strongly Agree	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Agree	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Undecided	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Disagree	3 (6.00)	0 (0.00)	0 (0.00)	1 (2.00)	4 (2.03)
Strongly Disagree	8(16.00)	**7**(14.28)	2 (4.16)	6 (12.00)	23 (11.66)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067					

Field survey, 2014

The information provided in Table 17 shows that the information about polio immunization provided by social advocacy workers from both local and international organizations were seen to be part of effective communication strategy in polio campaign. Majority of the respondents across the four local governments in the study areas strongly agreed that advocacy campaigns by NGOs were effective communication platforms in spreading the message of polio immunization to them. In this respect, 70% of the respondents from *Dange Shuni* believed on the information received from NGOs on polio immunization.

Similarly, data gathered through the in-depth interview with the health worker show that NGOs advocacy efforts on polio immunization campaign yielded positive results and FGDs participants in all the 4 sessions affirmed this. These data indicate that advocacy for polio immunization in the country was a collaborative effort among multi-actors consisting of foreign and local stakeholders. These stakeholders include UN specialized agencies such as WHO, UNICEF, public health institutions, traditional/religious and opinion leaders, International Development Agencies et cetera.

The WHO and UNICEF still remain the most powerful advocate of polio immunization in the world. To affirm this view, Shendurnicar & Thacker, (2005) state that the World Health Organization provides technical direction, coordination and strategic planning for polio immunization worldwide. So also is UNICEF which is deeply involved in the supply of polio

vaccination, advocacy, training, and social mobilization. Public health institutions comprises federal and state owned Ministries of Health, National Primary Health Care Delivery Agencies (NPHCDA), and other public healthcare delivery bodies. These agencies are also at the forefront of advocacy for polio immunization in Nigeria. Government interventions are routed through these bodies and they are also responsible for Expanded Programme on Immunization (EPI), implementation, advocacy and social mobilization (Sorungbe, 1989).

Table 18: Respondents' views on whether the information they received on polio immunization from traditional and religious leaders are effective communication strategy for polio immunization

Variables	**Kwarbai (Zaria) (%)**	**Sabon Fagi (Giwa) (%)**	**Sokoto Municipal (%)**	**Dange Shuni (%)**	**Total (%)**
Strongly Agree	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Agree	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Undecided	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Disagree	3 (6.00)	0 (0.00)	0 (0.00)	1 (2.00)	4 (2.03)
Strongly Disagree	8(16.00)	**7**(14.28)	2 (4.16)	6 (12.00)	23 (11.66)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
X^2 = .12, Alpha level α = 0.05, *df* 12, X^2 critical = 21.026					

Field survey, 2014

Data in table 18 show that there was high acceptance of polio campaign strategy involving traditional, religious and opinion leaders as respondents in Kwarbal (56.00%), Sabon Fagi (64.30%), Sokoto Municipal (52.08%) and Dange Shuni (70.00%) all indicated their acceptance of the effectiveness of the information they received on polio immunization from their leaders mentioned above.

Traditional and religious leaders have also become one of the leading advocates for polio immunization in Nigeria. This is because people tend to listen to them even more than the political leaders. This was the view of most discussants in the FGDs conducted in the four local governments under study. The chi-square result shows a high level of significant conformity across the four study areas in their recognition of the role of traditional, religious and opinion

leaders in polio immunization campaign (X^2 = .12, Alpha level α = 0.05, *df* 12, X^2 critical = 21.026).

In Nigeria, religion plays a big role in polio immunization campaign especially in the northern Nigeria. Islamic scholars and some opinion leaders in the area are generally opposed to western medicine. However, immunization, which requires the injection or ingestion of disease-laden substances (either killed or attenuated viruses) may be seen as unclean or harmful practice which threatens their children's health (Renne, 2010). So, it is only through these same spiritual leaders that the people can be convinced on polio immunization realities.

To prove the extent of involving opinion leaders in polio campaign, the Sultan of Sokoto Alhaji Abubakar Sa'ad is the goodwill ambassador of polio in Nigeria and he has been involved in consistent campaign for polio eradication in Nigeria. A few years ago, he hosted Bill and Melinda Gates who visited him in Sokoto to share ideas on how to combat polio. There are many strategies that can be used in polio immunization campaigns in Northern Nigeria. One of the strong strategies is the traditional/religious leaders. They wield a lot of influence on their people. Such noted traditional/religious leaders include the Sultan of Sokoto, the Emirs, the Imams or religious clerics. During Friday Jumat prayers, Koranic schools, village meetings, in churches and mosques, they preach and tell parents and guardians what they should do and how they should respond to polio immunization. This avenue is in addition to the campaign that is broadcast either on radio or television adverts (celebrity) from the traditional/religious leaders. Through this outlet, socio-cultural barriers to media campaign can be broken easily.

Table 19: Respondents views' on whether the information they received on polio immuniaation from health workers is an effective communication strategy for polio campaign

Variables	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Strongly Agree	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Agree	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Undecided	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Disagree	3 (6.00)	0 (0.00)	0 (0.00)	1 (2.00)	4 (2.03)
Strongly Disagree	8(16.00)	**7**(14.28)	2 (4.16)	6 (12.00)	23 (11.66)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = .12$, Alpha level $\alpha = 0.05$, *df* 12, X^2 critical = 21.026					

Field survey 2014

The data in the table 19 show that health officials have a great role to play in the success of polio immunization. Majority of the respondents in the four local governments also corroborated this as respondents in Kwarbal (56.00%), Sabon Fagi (64.30%), Sokoto Municipal (52.08%) and Dange Shuni (70.00%) observed that using health officials in polio campaign will make people to accept polio vaccine. Nowadays, a lot of people are demanding information and communication on what they can do, how they can access, and how they can treat diseases or ailments affecting them. It is health officials that can provide this information to people. People also want to know the causes of various illnesses and their prevention. This can only be solved by providing effective communication to people who need them and this can be done through health officials.

Data from FGD in Sabon Fage community in Giwa Local Government area revealed that the parents/guardians were curious in seeking information regarding polio, having known the devastating problem it can cause to their children. A female participant noted thus:

> Our initial belief was that traditional healers will have idea on the disease since it is initiated by spirit. We believe strongly that our traditional healers, traditional leaders, health workers can give us information we need on the issue of polio in our society.

One of the FGD participants in Dange Shuni in Sokoto State said this on their information seeking behaviour regarding polio:

> We suggest village meetings for information sharing on polio. Also, health workers, we prefer them to be our source of information on polio eradication campaign. Through the town crier, our society can be reached with information.

Also, a health officer for polio said this on the strategies they used to convince the non-compliant parents:

> We engage ten women as community volunteers for each ward. We also engage women that are community--based health workers sponsored by Targeted State Health Impact Project. We also engage religious leaders to preach during five daily prayers and also during Juma'at prayer to allow children to be immunized. Also, we immunized children during school hours in school. Through all these strategies, parents that were complaining before are beginning to allow their children since they are assured of the safety of the vaccine on their children.

In responding to the question on what strategy they used in addressing non compliant parents/guardians, one of the media health officials in Sokoto said this:

> When we reported the issue to UNICEF and Ministry of Health, the message will now be different, government will now get Local Government Chairman or the wife of a Local Government Chairman to come and educate their people for them to accept polio (sic). Usually, when we engage their people in the communication, the non-complaint parents do yield.

For instance, Datti Ahmed, a physician who headed a prominent Muslim group, the Supreme Council for Sharia in Nigeria and a respected opinion leader, advised his people to boycott the polio vaccines (Jegede, 2007). This advice was accepted by many people in Northern Nigeria leading to a massive boycott in 2003.

Table 20: Respondents' views on whether the information they received on polio immunisation from radio are effective communication strategies for polio immunisation campaign

Variable	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Strongly Agree	28 (56.00)	28 (57.14)	31(64.58)	33 (66.00)	123 (62.44)
Agree	5 (10.00)	8(16.33)	10 (20.83)	9 (18.75)	29 (14.72)
Undecided	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Disagree	3 (6.00)			1 (2.00)	4 (2.03)
Strongly Disagree	8(16.00)	**7**(14.28)	2 (4.16)	6 (12.00)	23 (11.66)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 12, X^2 critical = 21.026					

Field survey, 2014

This data prove the potency of polio campaigns via radio. Overwhelming majority of the respondents Dange Shuni (66%), Sokoto Municipal (64.58%), Sabon Fagi Giwa (57.14%) and Kwarbai (56%) believed on the role radio played in providing them with information on polio immunization.

In an in-depth interview with a media health practitioner, the interviewee said this in respect to radio as a communication strategy in polio immunization campaign:

> Mass media have been engaged to enlighten people on Oral Polio Vaccine. It is no doubt that it has not been an easy task; as there were situation whereby commuters engaged in chasing away vaccinators from their community. So, media engaged in educating such people on the importance of polio vaccine to their children. As a media practitioner, I am hundred percent confident on the vaccine. Experts have been engaged to ensure that there are no impurities in it. It is good for parents to allow their children to be administered the vaccine. Particularly the northern states, this is the area where the problem is more pronounced. So there are campaign, mobilization by traditional rulers, religious leaders, the media, health officials and people in the NGOs to communities. These campaigns are geared toward sensitizing people about the importance of polio vaccine. Also, the campaigns are geared to dispel all the lies been fabricated by those that don't want people to embrace the Oral Polio Vaccine. These campaigns are done in local language for people to comprehend easily. We the media are enlightened because of the nature of our work. We came to realize

that Oral Polio Vaccine is very important to the health of the young ones.

Lack of education, ignorance, religion and some traditional inclination among the locals have been the constraints to polio eradication campaign. These reasons have been the major problems against effective polio immunization in many rural and urban areas of Nigeria. Consequently, this has made it almost impossible to educate parents/guardians on the need for polio vaccine for their children.

The result of chi-square also shows a significant conformity ($X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 12, X^2 critical = 21.026). Radio can be used to dispel every form of rumour in respect to potency of polio immunization. It is easy to pass information via radio using local language in northern part of Nigeria.

Table 21: Respondents' views on whether television news, adverts and jingles are another medium that polio immunisation sensitization is been actualized as an effective communication strategy for polio campaign

Variable	**Kwarbai (Zaria) (%)**	**Sabon Fagi (Giwa) (%)**	**Sokoto Municipal (%)**	**Dange Shuni (%)**	**Total (%)**
Strongly Agree	8(16.00)	7(14.28)	2 (4.16)	6 (12.00)	23 (11.66)
Agree	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Undecided	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Disagree	3 (6.00)	0 (0.00)	0 (0.00)	1 (2.00)	4 (2.03)
Strongly Disagree	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 12.72$, Alpha level $\alpha = 0.05$, *df* 12, X^2 critical = 21.026					

Field survey, 2014

Data in table 21 show that most respondents in Kwarbal (56.00%), Sabon Fagi (64.30%), Sokoto Municipal (52.08%) and Dange Shuni (70.00%) were not so conversant with the use of television as a communication strategy for polio campaign and acceptance. Many parents/guardians did not have television in their homes. The result of the chi-square indicates conformity among the four local governments on their rejection of television as a medium to convince parents and guardians to accept polio vaccine.

Table 22: Respondents' views on whether the campaigns produced in form of drama/ documentary and talk shows are effective communication strategy for polio Campaign

Variable	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Strongly Agree	5 (10.00)	6(12.24)	25(52.08)	35 (70.00)	32 (16.24)
Agree	28 (56.00)	32 (64.30)	16 (33.33)	7 (14.00)	120 (60.91)
Undecided	6 (12.00)	4 (8.16)	5 (10.41)	1 (2.00)	18 (9.13)
Disagree	3 (6.00)	0 (0.00)	0 (0.00)	1 (2.00)	4 (2.03)
Strongly Disagree	8(16.00)	**7**(14.28)	2 (4.16)	6 (12.00)	23 (11.66)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 12, X^2 critical = 21.026					

Field survey, 2014

Through drama, documentary, talk shows and folk tales, salient information on health issues can have long lasting effect on the audience. The result across the four studied area showed a significant conformity ($X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 12, X^2 critical = 21.026) among respondents on their acceptance of the idea that the information they received about polio through drama and other programmes made them to accept polio vaccine. As rightly observed by Njelesani (1998), this information is not reaching the target audience because of weaknesses or gaps in the information and communication systems in our various countries. The mass media too have been involved in polio campaigns. Radio, television and of course the print media have been massively used to promote polio immunization. If the rightful medium is utilized and a well defined communication strategy is adopted, the information will reach the people and it will have a long lasting effect.

Table 23: Respondents' views on whether polio immunisation campaign through printed materials like newspaper, magazine, leaflets etc are effective communication strategy for polio campaign

Variable	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Strongly Agree	8(16.00)	**7**(14.28)	2 (4.16)	6 (12.00)	23 (11.66)
Agree	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Undecided	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Disagree	3 (6.00)	0 (0.00)	0 (0.00)	1 (2.00)	4 (2.03)
Strongly Disagree	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 12.72$, Alpha level $\alpha = 0.05$, *df* 12, X^2 critical = 21.026					

Field survey, 2014

Printed materials are not so viable in passing messages to the rural and even some urban centres in northern Nigeria. Here, the reason may not be unconnected with the literacy level of the public. Majority of the respondents strongly disagreed with using printed material as a communication strategy in passing information on polio immunisation to them.

The mass media have been a key strategy for creating awareness for parents/guardians to take action. All the state owned radio stations in northern Nigeria including the television stations were involved in the campaign. Newspapers and other printed materials were not very much effective in creating awareness or sensitizing the public on health related issues. Often times, there are panel discussions on radio and television with experts on polio and even stakeholders, in addition to announcements for polio campaign days, interviews with health workers et cetera. Again, series of community sensitization activities were conducted with parents/guardians and traditional and religious leaders. In order to impart interpersonal communication skills to the vaccination teams, vaccinators were trained and re-trained just before every round of Immunisation Plus Days (WHO Nigeria, 2011). However these communication efforts yielded very poor results because parents/guardians kept rejecting polio in its entirety.

Table 24: Respondents' views on whether interpersonal communication at local government ward is an effective communication strategy for polio campaign

Variable	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Strongly Agree	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Agree	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Undecided	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Disagree	3 (6.00)	0 (0.00)	0 (0.00)	1 (2.00)	4 (2.03)
Strongly Disagree	8(16.00)	**7**(14.28)	2 (4.16)	6 (12.00)	23 (11.66)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 0.1$, Alpha level $\alpha = 0.05$, *df* 7, X^2 critical = 14.067					

Field survey, 2014

Data in table 24 indicates that inter-personal communication has a high approval rate among parents as regards polio vaccine use and acceptance. This form the reason a majority of respondents in Kwarbal (56.00%), Sabon Fagi (64.30%), Sokoto Municipal (52.08%) and Dange Shuni (70.00%) agreed with information provided to them in their house on polio immunization.

In Nigeria, most of the mass media outfits are largely urban-based. The implication therefore is that reaching rural audiences is a big challenge. The belief among the majority of Nigerians is that rural areas are inhabited by poor and illiterate people who are generally backward and have limited access to information; the reverse is the case for the urban areas. So, any information the rural inhabitants received through inter-personal communication will have a long lasting effects.

Table 25: Respondents' views on the Different Sub-communication strategies under Advocacy, Social Mobilization and Programme Communication

Variable	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Advocacy					
Policy Makers	5 (10.00)	4(8.16)	2 (4.16)	7 (14.00)	18 (9.13)
Religious/ opinion leaders	8(16.00)	**7**(14.28)	5 (10.41)	6 (12.00)	26 (13.19)
Health Workers/NGO	6 (12.00)	6 (12.24)	16 (33.33)	1 (2.00)	29 (14.72)
Social Mobilization					
Intensified Ward Campaign	10 (20.00)	9 (18.36)	4(8.33)	6 (12.00)	29 (14.72)
Sensitization Meetings	3 (6.00)		3(6.25)	11 (22.00)	17(9.49)
Inter-personal Communication	7(14.00)	6 (12.24)	5 (10.41)	9(18.00)	27(13.70)
Programme communication					
Adverts/jingles/Drama/Documentary	7(14.00)	5(10.20)	8(16.66)	4(8.00)	24(12.18)
Local announcement	4(8.00)	10(20.40)	2(4.16)	11(22.00)	27(13.70)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 20.77$, Alpha level $\alpha = 0.05$, *df* 21, X^2 critical = 31.671					

Field survey, 2014

Table 25 provides data on parents'/guardians' views about the different communication campaign strategies used in polio campaign. As the table indicates, the involvement of policy makers attracted 9.13%, religious/opinion leaders 13.19%, while health workers/NGOs has 14.72% approval rating of effectiveness among parents/guardians. The communication strategies that fall under advocacy had significant influence on the parents' acceptance and use of polio vaccine in Kaduna and Sokoto states. Most respondents (33.33%) saw the activities of UNICEF, WHO, and other NGOs as having significant influence in Sokoto Municipal. This shows that communication strategies under advocacy such as the use of notable personalities, policy makers, prominent and influential leaders, health workers, international, national and local NGOs are yielding positive result in influencing the parents to accept and use polio vaccine in northern Nigeria.

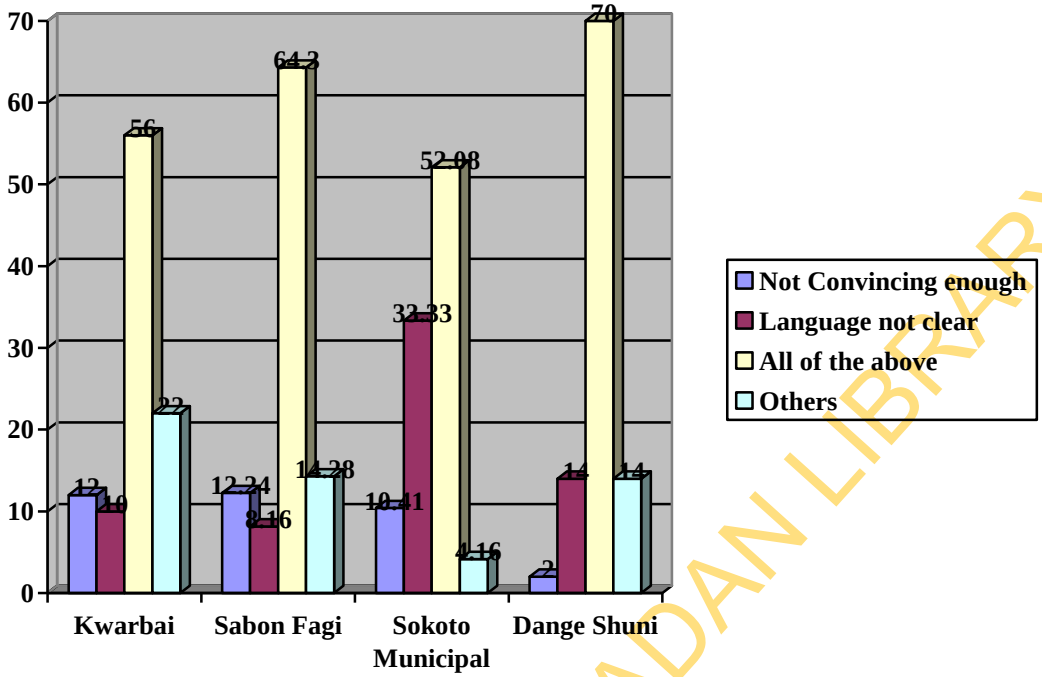
Similarly, respondents agreed that social mobilization network activities such as Intensified Ward Campaign (14.72%), sensitization meetings (9.49%) and interpersonal communication (13.70%) had significant influence on the parents' use and acceptance of polio vaccine. The use of programme communication in polio campaign was well accepted in the studied area. Data show that radio/television adverts, jingles, drama and documentary (12.18%), local announcement (13.70%) had a high level of influence on parents in accepting polio vaccine. The result of the data obtained from the field underscores the need for adopting a multiple communication campaign strategies in polio immunization campaign in Northern Nigeria.

In responding to the question on what strategy they use in addressing non-compliant parents/guardians, an interviewee, a media a health official in Sokoto, explained:

> When we reported the issue to UNICEF and Ministry of Health, the message will now be different, government will now get Local Government Chairman or the wife of a Local Government Chairman to come and educate their people for them to accept polio. Usually, when we engage their people in the communication, the non-complaint parents do yield.

This among other interviews and focus group discussions indicate that with persistent and continuous involvement of different communication strategies even at the local level, the hardened or non-complaint will subtly change their attitude towards polio immunization. Using a multi-dimensional approach strategy is acceptable among researchers in this field (Sharma, 1997; Shavio, 2002; Chartuverdi, 2008 and Laulajainen, 2012). Through multi-dimensional approach strategy, the people that are hard to be convinced will be persuaded to begin to accept the new idea. That is why Katz (1957) in his Multi-step flow hypothesis states that ideas often flow from radio, television, print media to opinion, traditional and religious leaders and from these to less active sections of the population.

Figure 7: What respondents detest about the strategies



Field survey, 2014
$X^2 = 23.38$, Alpha level α = 0.05, *df* 9, X^2 critical = 16.919.

Figure 7 reveals what respondents detest about the strategies involved. The data show that respondents saw communication strategies as not convincing enough to woo parents or guardians to accept the information passed to them about polio due to reasons such as clarity in language.

Table 26: Advantages of Polio Immunization

Variable	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal (%)	Dange Shuni (%)	Total (%)
Healthy children	39 (78.00)	39 (79.59)	27(56.25)	42 (84.00)	147 (74.62)
No gain at all	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Don't Know	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = .77$, Alpha level α = 0.05, *df* 6, X^2 critical = 12.592					

Field survey, 2014

The information in table 26 shows that polio immunization has an enormous advantage when it is given to children aged 0-59 months of birth. A total of 147 parents/guardians representing 74.62% of the respondents said that polio immunization makes children to be healthy. But, a significant proportion of respondents still have reservations regarding the advantages of polio immunization on their children. Also, 16.24% claimed that there is no gain at all in giving their child polio immunization, while 9.13% did not know whether there is advantage or not in polio immunization. This revealed that there is still more work to be done in sensitizing the parents on the need to accept polio vaccine for the healthy being of their children.

On the advantages of polio immunization, the Chief Immunization Officer, Sokoto State says:

> Polio is a disease that affects children aged zero to five. It is a vaccine which is administered on children every one to two months or as directed by World Health Organization (WHO). The IPDs (Immunization Period Days): during this period, health officials do house to house to administer the vaccine on children. This is the only way our children can be prevented from contacting the disease. The disease is deadly and if contacted, it destroys the body by paralyzing the legs. The symptoms are high fever, leg paralysis. It is after a test it can be known if a child has contracted polio. The reason people are not very much interested in ensuring that it is given to their children is that; they complained of government neglecting more common dangerous disease such malaria, measles that kill and focus on polio only which is not even rampantly seen like those other diseases.

For polio immunization campaigners to continue to record high level of success, a multi-dimensional approach strategy has to be adopted at all level of the campaign process. As knowledge gap hypothesis indicates, the increase of information in society is not evenly acquired by every member of society; people with higher socio-economic status tend to have better ability to acquire information. One of the reasons people in northern Nigeria detest any information regarding polio immunization campaign is because of their low socio-economic status. So, to close this gap in knowledge, more communication strategies need to be adopted in order to reach all and sundry.

Table 27: Inter-Spousal Communication on Polio Vaccination: Discussion among husband and wife

Variable	Kwarbai (Zaria) (%)	Sabon Fagi (Giwa) (%)	Sokoto Municipal(%)	Dange Shuni(%)	Total (%)
Yes	41(82.00)	38(77.55)	48(100.00)	46(92.00)	173(87.81)
No	7(14.00)	6 (12.24)	0(0.00)	2(4.00)	15(7.61)
Can't remember	2(2.00)	5(10.20)	0 (0.00)	2(4.00)	9(4.56)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
X^2 = .9, Alpha level α = 0.05, *df* 6, X^2 critical = 12.592					

Field survey, 2014

In respect of the benefit of inter-spousal communication on polio vaccination, the data reveal that most of the respondents, especially those from Sokoto Municipal (100%), Dange Shuni (92%), Kwarbai Zaria (82%) and Sabon Fagi Giwa (77.55%), were of the same view on the benefits of inter-spousal communication on polio vaccination. In the two states, all the respondents strongly agreed that inter-spousal communication is very high on the issue of polio vaccination. One thing to note is that 14% of the respondents in Kwarbai Zaria and 12.24% respondents in Sabon Fagi Giwa did not see the benefit of husband and wife discussing issues pertaining to polio immunization. Notwithstanding, the importance of inter-spousal communication on polio vaccination cannot be ruled out. This will invariably create understanding among parents at home so as to make sure that their children do not miss the polio immunization during the NIDs.

4.7 Information Seeking Behaviour on Polio

Data under this section will provide results on the information-seeking behaviour on polio by parents and guardians in Kaduna and Sokoto states. This is meant to provide information on the level at which communication campaign strategies used to fight polio have achieved its goals. The information gathered provide ideas on the objectives of this study which is to evaluate the communication strategies used in the campaign against polio in Kaduna and Sokoto states.

Table 28: Channel to seek Information on Polio Availability

Variables	**Kwarbai (Zaria) (%)**	**Sabon Fagi (Giwa) (%)**	**Sokoto Municipal (%)**	**Dange Shuni (%)**	**Total (%)**
Traditional healers	6 (12.00)	6(12.24)	5 (10.41)	1 (2.00)	18 (9.13)
Religious leaders	5 (10.00)	4(8.16)	16 (33.33)	7 (14.00)	32 (16.24)
Village meetings	11 (22.00)	**7**(14.28)	2 (4.16)	7 (14.00)	27 (13.71)
Internet					
Others	28 (56.00)	32 (64.30)	25(52.08)	35 (70.00)	120 (60.91)
Total	**50(100.00)**	**49 (100.00)**	**48(100.00)**	**50 (100.00)**	**197(100.00)**
$X^2 = 23.12$, Alpha level $\alpha = 0.05$, *df* 12 , X^2 critical = 21.026					

Field survey, 2014

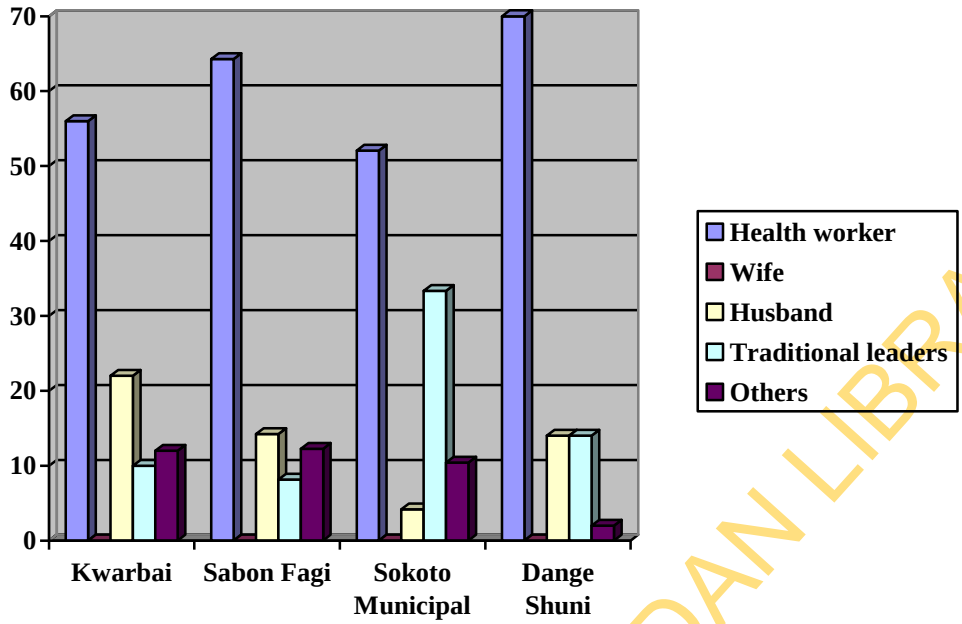
Data oninformation seeking behaviour of parents about polio vaccine availability reveal that majority of the respondents (60.91%) across the four Local Government Areas indicated that the people prefer to seek information about polio availability from radio (media), health workers and opinion leaders mostly. This depicts the significance of media, opinion leaders and health workers in the provision of information to parents on polio vaccine and immunization. It has been noticed that the use of internet to pass information on polio to people in Kaduna and Sokoto states may not yield the desired result because of the digital divide. Traditional and religious leaders are also very important in passing information to parents on polio as parents also seek for clarification from this set of individuals in the community on any disturbing issue. The chi-square result shows that there is no association among the people of Kaduna and Sokoto on the best channel for disseminating information on polio ($X^2 = 23.12$, Alpha level $\alpha = 0.05$, *df* 12, X^2 critical = 21.026). The embracing of multi-dimensional approach is relevant in this scenario.

While one of the FGD participants in Dange Shuni in Sokoto state have this to say on their information seeking behaviour regarding polio:

> We suggest village meetings for information sharing on polio. Also, we prefer health workers to be our source of information on polio eradication campaign. Through the town crier, our society can be reach with information.

This among other interviews and focus group discussions indicated that the involvement of different local channels which the communities are familiar with will make every strategy in communication regarding polio to record success

Figure 8: Most preferred source of Information on Polio



Field survey, 2014

$X^2 = 23.12$, Alpha level $\alpha = 0.05$, *df* 12, X^2 critical = 21.026

Figure 7 depicts that respondents mostly preferred health workers as their source of information on polio (60.91%). This shows the importance of health personnel in providing valid information for parents on polio immunization. Furthermore, the result of Chi Square shows no association between the two states on the most preferred source of information on polio. The null hypothesis is therefore accepted ($X^2 = 23.12$, Alpha level $\alpha = 0.05$, *df* 12, X^2 critical = 21.026).

4.8 Answers to Research Questions

This study sought to address a number of research questions to achieve the objectives of the research. This section of the study answers the research questions:

RQ1: What is the extent of peoples' participation and involvement in the design in the design and implementation of the communication campaign for polio in Kaduna and Sokoto states?

Three questionnaire items bordering on assessing people's participation in the design and implementation of the communication campaign for polio were designed. Findings from the focus group discussion and in-depth interview show that locals were involved in some of the campaign strategies, most especially when the initiators are encountering some difficulties in the campaign.

Data from figure 5 and table 11 reveal that respondents from the survey were not fully aware whether or not they were involved in the design and implementation of the communication campaign for polio. Majority of the respondents attest that they were not involved in the communication process on polio campaign. *See figure 5 and table 11*

This assertion has been debunked by the data gathered in the FGDs and In-depth Interviews across the four local government areas under investigation. Participants and experts have revealed that they did involve the local individuals in the campaign against the spread of polio in their community. They used different communication outlets through which they can reach the people affected by polio. Traditional leaders, health workers, village heads, village meetings, town cries, local forms of focus group discussion are the various outlets the people were directly and indirectly involved with in the design and implementation of communication campaign for polio immunization.

RQ 2: In what ways do demographic factors such as age, sex, ethnicity, family or household status influence the acceptance of communication strategies used in polio campaigns in Kaduna and Sokoto States?

Table 12 shows that majority of the respondents (60.91%) agreed that demographic factors affect the acceptance of communication strategies used in polio campaigns. It was found that there is a need for demographic factors such as age, sex, ethnicity, family or house hold

status to be considered in the design of communication strategies used in polio campaigns for it to yield desired, effective result.

Also, demographic factors such as age, sex, and ethnicity, family or household status are considered in the design of communication strategies used in polio campaigns. This reveals that the designers of communication strategies for polio campaign considered the demographic composition of their target audience because, that is what will guarantee the success and acceptability of the message among the end users who are the parents and their children (*see table 12 and table 13).* The data gathered through interviews and FGDs affirmed that demographics have an influence on the acceptance and use of polio vaccine among parents and caregivers in Kaduna and Sokoto states.

RQ3: How do socio-cultural variables such as language, religious beliefs, traditional values and urban/rural background influence the acceptance of polio immunization campaigns in Kaduna and Sokoto States?

It was found that socio-cultural variables such as language, religious beliefs, traditional values, and urban/rural background influence the acceptance and use of polio vaccine. The findings show that communicators should engage health practitioners, religious leaders, opinion leaders, traditional leaders, victims, and parents in the fight against socio-cultural impediments to success of polio immunization campaign. Communicators should disseminate relevant information regarding polio immunization. They should engage victims of the scourge, dramatize their message, target people in rural and remote areas with their message and engage the parents and guardians in the mobilization drive. One of the best approaches is for communicators to employ religious leaders who are properly grounded in both religious and western education. (*See table 14 and table 15).*

Also, findings show that majority of the respondents in Dange Shuni (70%), Sabon Fagi Giwa (63.30%), Kwarbai Zaria (56%) and Sokoto Municipal (52.08%) agreed that socio-cultural variables were considered in the design of communication strategies used in polio campaigns. This reveals that the designers of communication strategies for polio campaign considered the

socio-cultural composition of their target audience in the design of their communication content. (*See figure 6).* On the issue of socio-cultural variables that affect polio campaign, Health Officer for polio working with Kaduna State Government observed thus in an in-depth interview with him:

> The problem we faced is the same to that of health practitioners which is lack of education. Ignorance, religion and some traditional inclination among the locals have been constraints to polio eradication campaign. So it is very difficult to educate these kinds of people virtually because of false knowledge they have about family planning and fertility. This is caused through brainwashing they have received from the people they consider as their leaders. I think the best approach is to also employ religious leaders who are properly grounded in both Islamic and western education who apparently know the benefit to help educate their followers.

Media should engage victims of the scourge,dramatize their message and social media should be used to pass information on polio. Also, there should be proper enlightenment on polio immunization and its necessity; and the continuous use of different media to disseminate information on polio immunization should be highly encouraged.

RQ 4: How effective are the communication campaign strategies in influencing the acceptance and use of polio vaccine in Kaduna and Sokoto States?

The data garnered show that communication campaign strategies used in polio immunization campaign in Sokoto and Kaduna states were effective in influencing respondents to accept and use polio vaccine. The data across the two states show that advocacy (84.25%), social mobilization (77.15%) and programme communication (79.68%) were approved by the respondents as effective communication campaign strategies. A breakdown of the data according to states shows that in Kaduna, on advocacy in Sabon Fagi (83.68%), Kwarbai Zaria (76%), social mobilization: Sabon Fagi (72.46%), Kwarbai Zaria (66%) and programme communication: Sabon Fagi (73.46%), Kwarbai Zaria (76%) worked well. While in Sokoto, advocacy: Dange Shuni (84%), Sokoto Municipal (85.41%); social mobilization: Dange Shuni

(84%), Sokoto Municipal (85.41%) and programme communication: Dange Shuni (84%), Sokoto Municipal (85.41%) were prominent (*See table 16, 17 and 18).*

Data from the FGD and interviews affirmed the effectiveness of advocacy, social mobilization and programme communication in influencing parents and caregivers to accept and use polio vaccine in northern Nigeria. This shows a form of agreement and harmonization of the communication strategies in persuading the ardent parents towards accepting polio vaccine.

Majority of the respondents (44.16%) across the four local government areas agreed that advocacy which is geared towards mobilizing stakeholders, policy makers and other prominent and influential leaders has yielded positive result. In this case, advocacy has been a potent polio communication campaign strategy in influencing parents to accept and allow their children to take polio vaccine. Data also prove that social mobilization network (28.42%) was also adopted as communication campaign strategy in influencing parents on polio vaccine. They mobilized non-compliant parents using a community based approach and through networking and partnerships. The third communication strategy is s programme communication (25.38%) which was also used to convince parents and caregivers on the importance of polio vaccine. The participants in the FGD also confirmed their knowledge on the use of media and other local means of disseminating information on the dates of polio campaign and the vaccination periods (*See table 19).*

The chi-square result indicates non-conformity among the respondents (X^2 = 314.7, Alpha level α = 0.05, *df* 6, X^2 critical = 15.507). As observed earlier, no single strategy can achieve a hundred percent success without other strategies. The adoption of multi-dimensional approach as a communication strategy for polio campaign is probably a better option. This entails the involvement of advocacy activities which are anchored by the National Social Mobilization Working Group at the national level with oversight functions at the state level. A state Social Mobilization Committee with the State Health Education Officer as the technical adviser plans and executes all advocacy programmes at the state levels, while the Local Government Social Mobilization Committees with the LGA Health Education Officer as the focal person oversees advocacy activities at the local government levels. On this note, advocacy,

social mobilization and polio programme communication are the main communication strategies used in polio immunization campaign in Kaduna and Sokoto states. This study has seen the effectiveness of the aforementioned communication campaign strategies in influencing the acceptance and use of polio vaccine in northern Nigeria.

RQ 5: How do knowledge and awareness of polio immunization campaign influence acceptance and use of polio vaccine?

Data from the questionnaire, FGD and In-depth Interview provide information on the concept of polio, its mode of transmission, population at risk of polio infection, how polio can be prevented and parents' level of awareness concerning polio, immunization campaigns and efforts made to influence the acceptance of polio vaccine

The study found that most respondents saw polio as a disease that affects limbs; bringing fevers which lead to the death of children aged 0-5 years rank high 60.91% (120). Table 2 shows the disaggregation of results across the four LGAs of sample in Kaduna and Sokoto states. Different understanding were given on what polio is, but most respondents view polio as a disease that affects limbs, bringing fever which lead to the death of children aged 0-5 years- Dange Shuni (70%), Sabon Fagi (64.30%), Kwarbai Zaria (56.00%) and Sokoto Municipal (52.08%). This however, did not suggest that there are no other dissenting views on what polio is as 33.33% in Sokoto Municipal viewed polio as a disease purportedly manufactured by western countries aimed at reducing the population of Muslims around the world as the chi-square showed no conformity ($X^2 = 23.06$, Alpha level $\alpha = 0.05$, df 12, X^2 critical = 21.026) among the respondents in the two states.

Findings show that in Dange Shuni, a relatively large proportion of respondents (70.00%) indicated that polio is transmitted through Oral Fecal route, while in Sabon Fagi (64.30%), Kwarbal Zaria (56.00%) and Sokoto Municipal (52.08%), polio was seen as being transmitted through oral fecal route mostly. Notwithstanding, a high proportion of respondents in Sokoto Municipal (33.33%) indicated that polio is being transmitted through inheritance. Data from the focus group discussion show that participants were not aware of the mode of transmission of

polio; all they knew was that children that are not immunized are at risk of contacting polio. (*See table 3).*

In respect of the persons at risk of polio infection, the data reveal that all the respondents in Dange Shuni (100%), Sokoto Municipal (100%), Sabon Fagi (100%) and Kwarbai (100%), were of the same view on the issue of the persons at risk of polio infection. They all agreed that is only children that are at risk of polio infection. (*See table 4)*

The table (4) shows that 87.81% of the respondents were aware that polio can be prevented through immunization with polio vaccine. This can be seen as respondents from Sokoto Municipal (100%), Dange Shuni (92%), Kwarbai Zaria (82%) and Sabon Fagi (77.55%) across the four LGAs of the two states under investigation concurred that they were aware that polio can be prevented. Findings from the focus group discussion equally provided further explanation on the knowledge of polio in Kaduna and Sokoto states. One of the discussant made a statement which all the participants concurred to:

> Polio is a disease which is inflicted by spirit (Shan'inna) and is a disease which is transmittable to children. Children should be immunized at early stage as a preventive measure. The children that are not immunized are at the risk of exposure to the polio disease.

There was similar reaction in Sokoto Municipal from the in-depth interview with the Chief Immunization Officer Sokoto state. He stated that:

> Poliomyelitis popularly called polio is an acute infectious disease occurring sporadically and caused by a virus called poliovirus characterized clinically by fever, sore throat headache, vomiting and often with stiffness of the neck and back. It also characterized by diarrhea, by involvement of the central nervous system, stiff neck, paralysis. (*See table 4)*

Table 5 presents results on the way polio can be prevented. It was found that most respondents (60.91%) were of the opinion that polio can be prevented by immunization of children from 0-59 months. The data clearly show that all the respondents sampled (100%) were aware of polio immunization campaign. It can then be deduced that most people in Kaduna and

Sokoto were aware of polio immunization campaigns carried out by respective bodies in the society.

Findings revealed that majority of the respondents were now accepting polio vaccine. This success achieved can be attributed to the various communication campaign strategies initiated to educate people on polio. Majority of the respondents (60.91%) will not surrender their child for polio immunization if they were not aware of the time and date of the vaccination. In this sense, 70% of the respondents in Dange Shuni affirmed that they will surrender their children for polio immunization only if they were aware of the time and date of the vaccination. The same opinion was expressed at Sabon Fagi Giwa (64.30%), Kwarbai Zaria (56%) and Sokoto Municipal (52.08%). Significant proportion of the respondents (33.33%) in Sokoto Municipal and 14% in Dange Shuni would deliberately refuse to surrender their children to take polio vaccine because of the perception they had that it contained anti-fertility agents. About10% of the respondents in the same local government would not let their children be given polio vaccine because it is not good for children's wellbeing. On the other hand, 16% from Kwarbai Zaria, 14.28% from Sabon Fagi, and 12% from Dange Shuni won't surrender their children for polio vaccine because it is anti-Islam. (*See figure 2)*

RQ 6: Which of the polio communication strategies used significantly influenced acceptance of polio vaccine in Kaduna and Sokoto States?

In trying ascertain the most significant communication strategies used in influencing parents/guardians to accept polio vaccine in Kaduna and Sokoto states, this study revealed that a multi-dimensional approach is much better so as to reach out to the non-compliant parents and guardians for their eventual acceptance.

The data gathered show that respondents views varied across the various strategies used in the four Local Government Areas under study in Kaduna and Sokoto states. The involvement of traditional/religious/opinion leaders as leading advocates was seen as the most important strategy for convincing parents/guardians on polio vaccine. The involvement of health workers in the campaign was also seen as an important strategy in winning the confidence of parents.

Social mobilization efforts, advocacy by NGOs and other groups and individuals and programme communication further reinforce the fact that the utilization of multiple strategies in the campaign on polio was paramount for its success. (*See table 16 and table 25)*

Similarly, a health officer for polio who worked with Kaduna State Government spoke on the strategies they use to convince the non-compliant parents:

> We engage women voluntary community mobilizers sponsored by UNICEF. Ten percent (10 per) ward of LGA. We also engage women that are community based health workers sponsored by Targeted State Health Impact Project also 10 per ward of LGA. We also engage religious leaders to preach during five daily prayers, juma'at prayer to allow children to be immunized. Also, we immunize children during school hours in school. Through all these strategies, parents that were complaining before are beginning to allow their children since they were assured of the safety of the vaccine on their children.

In responding to the question on what strategy they use in addressing non- compliant parents/guardians, a Media Health Official in Sokoto State said:

> When we reported the issue to UNICEF and Ministry of Health, the message will now be different, government will now get Local Government Chairman or the wife of a local Government Chairman to come and educate their people for them to accept polio. Usually, when we engage their people in the communication, the non-compliant parents do yield.

This, among other interviews and focus group discussions, indicates that with continuous involvement of different communication strategies even at the local level, the hard to reach, hard to convince or non-compliant parents will subtly change their attitude towards polio immunization. (*See table 18)*

The involvement of policy makers 9.13%, religious/opinion leaders 13.19%, and Health workers/NGOs 14.72% had approved rating of effectiveness among parents/guardians. The communication strategies that fall under advocacy have significant influence on the parents' acceptance and use of polio vaccine in Kaduna and Sokoto states. Most respondents (33.33%) saw the activities of UNICEF, WHO, and other NGOs as having significant influence in Sokoto

Municipal. This shows that communication strategies under advocacy such as the use of the notable personalities, policy makers, prominent and influential leaders, health workers, international, national and local NGOs were yielding positive results in influencing the parents to accept and use polio vaccine in northern Nigeria.

Similarly, respondents agreed that social mobilization network activities such as Intensified Ward Campaign (14.72%), sensitization meetings (9.49%), inter-personal communication (13.70%) had significant influence on the parents' use and acceptance of polio vaccine. The use of programme communication in polio campaign was well accepted in the studied area. Data show that radio/television adverts, jingles, drama and documentary (12.18%), local announcement (13.70%) have a high level of influence on parents in accepting polio vaccine (*See table 25)*. Figure 8 depicts that respondents preferred health workers as their source of information on polio (60.91%). This shows the importance of health personnel in providing valid information for parents on polio immunization.

In summary, polio communication campaign strategy is anchored on a multi-dimensional approach and this will go a long way in ensuring that polio is completely eradicated in Nigeria. The socio-cultural challenges affecting polio eradication will also be minimized using the approach. On the aspect of social mobilization, bodies like Forum for Muslim Women in Nigeria (FOWMAN), Northern Traditional Leaders Committee (NTLC), Volunteer Community Mobilization Network (VCM Net) and a host of others have made the campaign on polio immunization successful. They have contributed to the global efforts at eradicating polio and reducing refusals based on religion, tradition and socio economic reasons. These communication strategies will probably close the knowledge-gap among parents and caregivers. It is also a good step towards understanding the idea of multi-step flow of information regarding polio campaign. There is a need for a proactive campaign plan that will take care of all the problems that are affecting the success of the major communication strategies such as advocacy, community mobilization and programme communication.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This study evaluated communication strategies used in polio immunization campaigns in Kaduna and Sokoto states, Nigeria. This study, therefore, investigated the communication strategies used in polio immunization campaigns in Kaduna and Sokoto states, the extent to which community people participate in the design and implementation of these strategies, the influence of demographic and socio-cultural variables on knowledge about, and acceptance and use of polio vaccine.

5.2 Summary

A good knowledge of health communication strategies is pertinent to achieving a successful health campaign. The relevance of persuasive communication to health educators lies ultimately in its proposed effect: change in an individual's attitudes toward specific behaviours (Simons, 1976).

The background to the study focused on concept of communication and how it is essential for any health campaign. This is because persuasive messages designed to influence attitude, behaviour, beliefs and knowledge need to be strategically designed to achieve the desired objective. The background study noted some of the functions of good communication strategies and how they are very essential in achieving a successful health campaign.

Some of the sub-topics in the literature reviewed include a brief synopsis of poliomyelitis, health communication promotion campaign, attributes of health communication campaigns; why communication campaigns/information is important in health campaign, persuasive communication campaigns and advocacy for polio immunization. Other topics discussed include social cultural challenges to health communication campaign, health communication campaigns in polio eradication, examples of health communication campaigns and examples of successful communication campaigns in Nigeria. Finally, the literature review

covered such topics as problems and controversy surrounding polio immunization in Nigeria, types of polio eradication strategies used in northern Nigeria, relevant empirical studies and theoretical framework. This allowed for critical review of research works that have been done on some of the sub-topics enumerated above. This helped the researcher to have a full grasp of the current issues in polio immunization campaigns and the strategies involved.

The research methodology was discussed under the following topics: Area of study, study design, study population, study period, sampling technique and sampling size, methods of data collection, and methods of data analysis. This study adopted three research approaches: survey research design, In-depth Interview (IDI) and Focus Group Discussion (FGD). The questionnaire, In-Depth Interview guide and FGD guide were the instruments used in data collection. The purposive sampling was used to select respondents for the interview on the basis that they are parents and guardians, familiar with polio immunization and have children aged 0-59 months. The interview was carried out with the following: one opinion /religious leader, one media health worker, one Federal Ministry of Health's worker and one parent.

Data gathered using questionnaire, the in-depth interview guide and focus group discussion guide were analysed and discussed. Quantitative data were analysed using descriptive and chi-square statistics while qualitative data were content analysed to support empirical evidence generated as quantitative data. The research questions asked were: What is the extent of parents and guardians' participation and involvement in the design and implementation of the communication strategies for polio in Kaduna and Sokoto States; in what way do demographic factors such as age sex, ethnicity, and family status influence the acceptance of communication strategies used in polio campaigns in Kaduna and Sokoto states? Furthermore, other questions are how do socio-cultural variables such as language, religious beliefs, traditional values and urban/rural background influence the acceptance of polio immunization campaigns in Kaduna and Sokoto States; how effective are the communication campaign strategies in influencing the acceptance and use of polio vaccine in Kaduna and Sokoto states; how do knowledge and awareness of polio immunization campaigns strategies influence the acceptance and use of polio vaccine in Kaduna and Sokoto States? The last question was to determine which of the polio

communication strategies used significantly influenced the acceptance and use of polio vaccine in Kaduna and Sokoto states?

Samples for the survey were selected using purposive sampling. A total of 197 respondents were sampled, while 5 key informant interview were conducted in addition to 4 focus group discussion (10 each) comprising 40 participants. The period of study was between 2003 and 2013.

5.3 Findings in the Study

(a) The first objective was to determine the extent to which the people were involved in the design and implementation of communication strategies for polio eradication in the two states. The study found that focal individuals such as opinion leaders and health workers were involved in the campaign against the spread of polio. They utilized different communication outlets such as advocacy, social mobilization and programme communication to reach the people affected by polio. Traditional leaders, health workers, village heads, village meetings, town cries, and local form of focus group discussions were the various outlets that the parents and guardians were directly or indirectly involved in the design and implementation of communication campaign strategies for polio immunization. These, findings were corroborated by the participants in FGD and IDI in the two states under investigation. In essence, findings from the study have confirmed that parents and guardians were involved in the design and implementation of communication strategies for polio in Kaduna and Sokoto states.

(b) The second objective was to determine the way(s) in which demographic factors such as age, sex, ethnicity, family or household status affect the acceptance of communication strategies used in polio campaigns in Kaduna and Sokoto states. The study found that 60.91% of the respondents strongly agreed that demographic factors influenced acceptance and use of polio vaccine. It was found that there is a need for demographic factors such as age, sex, ethnicity, family or house hold status to be considered in the design of communication strategies used in polio campaigns.

(c) Also, demographic factors such age, sex, ethnicity, and family are considered in the design of communication strategies used in polio campaigns. This revealed that the designers of communication strategies for polio campaign do consider the demographic composition of their target audience. Consequently, demographic factors influenced people's acceptance and use of polio immunization as there was conformity in response across the two states.

(d) Pertaining to objective number three of the research which is to determine how socio-cultural variables such as language, religious beliefs, traditional values and urban/rural background influenced the acceptance of polio immunization campaign strategy (ies) in Kaduna and Sokoto states, the study revealed that socio-cultural variables such as language, religion beliefs, traditional values, urban/rural background influenced the acceptance of the communication strategies used in polio campaigns. The findings showed socio-cultural variables influenced acceptance and use of polio vaccine. The study stressed the need for communicators to engage health practitioners, religion leaders, opinion leaders, traditional leaders, victims, and parents in the design of polio campaign messages. They should also disseminate relevant information regarding polio immunization; engage victims of the scourge; dramatize their message; and target people in rural and remote areas with their messages. Also, there should be proper enlightenment about polio immunization by using different media. One of the best approaches is for communicators to employ religious leaders who are properly grounded in both religious and western education.

(e) Again, findings revealed that advocacy, such as the use of prominent and influential leaders; social mobilization networks such as intensified ward communication, compound meetings, sensitization meetings and volunteer community mobilization network; programme communication through radio/tv announcements and local announcements, were the major communication strategies adopted for the polio immunization campaign in Sokoto and Kaduna states. The study found that these strategies were effective in influencing parents to accept and use polio vaccine in the studied areas.

It was found that most respondents saw polio as a disease that affects limbs andbrings fever which leads to the death of children aged 0-4 years, indicated that they were knowledgeable about polio.

Most people in Kaduna and Sokoto states were aware of polio immunization campaign carried out by respective agencies in the society. Issues concerning polio have been broadcast daily on radio and television either as news, or paid adverts. Also, it was observed that traditional/religious leaders including the Sultan of Sokoto, the Emirs, the Imams or religious clerics preach and tell parents and guardians how they should respond to polio immunization during Friday Jumat prayers, Koranic schools, village meetings, and meetings in churches and mosques, In essence, the communication campaign strategies such as advocacy, social mobilization and polio programme communication employed by interventionists made the people of the Northern Nigeria to be aware of polio and the issue of immunization.

(f) The study revealed that a multi-dimensional approach is much better so as to reach out to the non-compliant parents and guardians. Though advocacy proved to be a communication strategy to be reckoned with, respondents did not agree that one singular strategy is better. Rather, they accepted the use of different communication strategies. The findings revealed that respondents' views varied on the various strategies used in the four Local Government Areas in Kaduna and Sokoto states. For instance, the use of prominent and influential political/ traditional/religious/opinion leaders as leading advocates was the most important strategy for convincing parents/guardians on polio vaccine. Also, the involvement of health workers in social mobilization and polio programme communication in the campaign was also seen as an important strategy across the four local governments. These findings further reinforced the fact that the utilization of multiple strategies in the campaign on polio was paramount for its success.

5.4 Assumptions

The following assumptions were made at the beginning of the study. It was assumed that:

1. People participate in the design and implementation of the communication campaign for polio.

2. Demographic factors such as age, sex, ethnicity, family or household status affect the design of communication strategies used in polio campaigns in Kaduna and Sokoto States.

3. Socio-cultural variables such as language, religious beliefs, traditional values and urban/rural background influence the contents of polio immunization campaigns in Kaduna and Sokoto states.

4. Communication campaigns strategies used are effective in influencing the acceptance and use of polio vaccine in Kaduna and Sokoto states.

5. Knowledge and awareness of polio immunization campaign influence the acceptance of polio vaccine.

6. The most significant polio communication strategies used influenced acceptance of polio vaccine in Kaduna and Sokoto States.

To verify the stated hypotheses at the beginning of the study, the following conclusion were reached:

The first hypothesis has been affirmed using figures 5 and table 11. In essence, parents/guardians were involved in the design and implementation of the communication campaign for polio.

The second hypothesis has been affirmed using tables 12 and table 13 that demographic factors such as age, sex, ethnicity, family or house hold status should be considered in the design of communication strategies used in polio campaigns for it to yield desired and effective result.

The third hypothesis has been affirmed through tables 14, 15 and figures 6; and the findings showed that communicators should engage health practitioners, religion leaders, opinion leaders, traditional leaders, victims, and parents in the fight against socio-cultural implications of polio immunization campaign.

The fourth hypothesis has been affirmed by data in tables 16, 17, 18 and 19; the findings showed that advocacy, social mobilization and programme communication were the effective

communication campaign strategies used in influencing the acceptance and use of polio vaccine in northern Nigeria.

The fifth hypothesis has been affirmed with tables 2, 3, and 4. In essence, knowledge and awareness of polio immunization campaign influenced the acceptance and use of polio vaccine among the people of Kaduna and Sokoto states.

The last hypotheses have been affirmed with tables 19, 28 and figure 7. Findings proved that the most significant polio communication strategies used influenced acceptance of polio vaccine in Kaduna and Sokoto states.

5.5 Conclusion

Enlightenment, information, education and mobilization are effective apparatus for behaviour change. They serve as campaign strategies by governments, non-governmental organizations and other stakeholders in public health towards the complete eradication of polio virus worldwide.

From the findings of this study, it can be concluded that communicators have a substantial role to play in the fight against socio-cultural implication of polio immunization campaign. Media, health practitioners, opinion/religious/traditional leaders, town criers, village meetings, film makers, NGOs, CBOs, Governments (Federal, State and Local Governments) etcetera have been engaged in enlightening, educating, mobilizing and informing people on oral polio vaccine. It is good for parents to allow polio vaccine to be administered on. Essentially, the campaign should be continuous as the aforementioned communication media are suitable channels to reach various segments of people in the Nigerian society.

It was found that advocacy through the use of prominent and influential leaders, social mobilization, such as intensified ward communication, compound meetings, sensitization meetings, Volunteer Community Mobilization Network and polio programme communication through Radio/TV announcement and local announcements are the major adopted communication strategies use for polio campaign in Kaduna and Sokoto states. These strategies were effective in influencing the acceptance and use of polio vaccine in northern Nigeria.

It has been noticed that a multi-dimensional approach is the best communication strategy to reach all and sundry with information on polio immunization. Communicators should give cognizance to the demographic and socio-cultural variables of their target audience as they plan to design communication campaign strategies in order to ensure success at all levels in the society.

The findings show that communicators need to engage health practitioners, religious leaders, opinion leaders, traditional leaders, victims, and parents in the fight against socio-cultural implications of polio immunization campaign. Communicators should disseminate relevant information regarding polio immunization; engage victims of the scourge; dramatize their message; target people in rural and remote areas with their message; engage in people mobilization; andengage the use of social media to pass messages on polio immunization. Also, there should be proper enlightenment about polio immunization and its necessity. The continued use of different communication strategies to disseminate information about polio immunization should be highly encouraged.

Through these methods, hard-to-convince parents/guardians can eventually be convinced. When local media that they are familiar with are continually used in disseminating information on polio to them, sooner or later the issue of polio will become a fairy tale in Northern Nigeria and in fact, Nigeria as whole.

5.6 Recommendations

The problem communicator's face in the design of effective and persuasive message for attitudinal change in the area of health is the same with what health practitioners face where illiteracy, ignorance, religion and some traditional inclinations are high among the populace. These issues have been the constraints to polio eradication in Nigeria. Therefore, communicators should engage in persuasive communication strategies in the preparation of their messages so that it will have effect on the target audience.

On the issue of safety, the vaccine is hundred percent safe as medical experts have attested that it has no problem (UNICEF, 2011). There should be adequate sensitization and education of parents about the necessity of the Oral Polio Vaccine. Parents should make use of

every opportunity to make sure their children are given the vaccine in the hospitals or during the routine immunization period as the vaccine is free of disease-causing elements. Therefore, media practitioners should always echo this aspect when preparing messages for their audience.

All polio interventionists should adopt the use of advocacy by using prominent and influential leaders. Social mobilization in respect of intensified ward communication strategy, compound meetings, sensitization meetings, volunteer community mobilization network and programme communication through various channels are also effective campaign strategies on polio immunization in northern Nigeria. In essence, the adoption of advocacy, social mobilization and programme communication are paramount to the success of polio immunization campaign in northern Nigeria.

Lastly, the continued use of different media to disseminate information about polio immunization should be highly encouraged by all stakeholders.

Contribution to Knowledge

The relevance of this study to knowledge cannot be overemphasized. This study has been able to highlight the synergy between communicators, health workers and medical sociologists. Communication is very essential for any health intervention to succeed. Without adequate sensitization of the populace, many laudable health programmes will fail. The Federal Government applied many strategies to fight polio, but the role and function given to communication and information might have been infinitesimal when compared to other strategies. Communication and information is a potent force when it comes to the issue of health and attitudinal change can only be successful through effective information and communication.

REFERENCES

Abraham, C., Sherran, P., & Abraham, D. 1992. Health Beliefs and Promotion of HIV-Preventive Intentions among Teenagers: A Scottish Perspective. *Health Psychology, Vol.2*, 363-370.

Achebe, C. C. 2004. The Polio Epidemic in Nigeria: A Public Health Emergency. In http://www.nigerialinks.com/Articles/CCAchebe/2004/07/polio-epidemic-in-nigeria.html (Retrieved October 11, 2013)

Adams, A. & Cox, A. L. 2008. Questionnaire, In-depth Interviews and Focus Groups In Cairns, Paul and Cox, Anna, L. *Research Methods for Human Computer Interactions*. Cambridge, UK: Cambridge University Press, 17-34.

Adlaf, E. M., & Smart, R. G. 1985. Drug Use, Religious Affiliation, Feelings and Behaviour. *British Journal of Addiction, Vol. 80*, 163-171.

Ahmed, F., Stewart, D. E., Dell, D. L. and Chen, H. 2008. Adults' Knowledge and Behaviours Related to Human Papillomavirus Infection. In American *Journal of Health Education* — January/ February 2008, Volume 3, No. 2.

Aliede, E. 1986. Attitudes of Nigerian Journalist Towards the New World Information and Communication Order. Mass Communication Department, University of Nigeria, Nsukka.

Ajzen, I. & Fishbein, M. 1980. *Belief, Attitude, Intention and Behaviour: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.

Amonini, C., & Donovan, R. J. 2006. The Relationship between Youth's Moral and Legal Perception of Alcohol and Marijuana and Use of these Substances. *Health Education Research, 21*(2), 276-286.

Atkin, C. and Wallack, L. 1990. *Mass Communication and Public Health Complexities and Conflicts*. California: Sage Publications Inc.

Audi, R. 1974. A Cognitive-Motivational Theory of Attitudes. *Southwestern Journal of Philosophy,5*(1), 77–88.

Babalola, S. & Aina, O. 2004. Community and Systematic Factors Affecting the Uptake of Immunization in Nigeria: A Qualitative Study in Five States National Report, John Hopkins University, Bloomberg *School of Public Health Centre for Communication Programmes*, Baltimore, USA.

Bagui, J. G. 2004. The Substance of Health Communication. Archieve.lib.msu.edu/ dmc/African%20journals/pdfs/Africa%media%20rweview/vol19no2/jan

Bagozzi, R. P. 1978. The construct Validity of the Affective, Behavioural and Cognitive Components of Attitude by Analysis of Covariance Structures. *Multivariate Behavioural Research, 13*, 9–31.

Bagozzi, R. P., Tybout, A. M., Craig, C. S., & Sternthal, B. 1979. The Construct Validity of the Tripartite Classification of Attitudes. *Journal of Marketing Research, 16*, 88–95.

Baran, S. J. & Davis, D. K. 2012. *Mass Communication Theory: Foundations, Ferment and Future*. 6th Ed. United States: Thomson and Wadsworth.

Balcher, D. W. 2005. A Mass Immunization Campaign in Rural Ghana: Factors Affecting Participation. *Public Health Rep* 1978; 93:170-176.

Blacher, K. S. 2013. *Evaluation of a Health Communication Campaign to Increase Blood Pressure Screenings among High Risk Community Residents*. University of Washington.

Breckler, S. J. 1984. Empirical Validation of Affect, Behaviour and Cognition as Distinct Components of Attitude. *Journal of Personality and Social Psychology, 47*, 1191–1205.

Bree, M. B., & Pickworth, W. B. 2005. Risk Factors Predicting Changes in Marijuana Involvement in Teenagers. *General Psychiatry. , 62*(3), 311-319.

Burkett, S. R., & Warren, B. O. 1987. Religiosity, Peer Association, and Adolescent Marijuana Use: A Panel Study of Underlying Causal Structure. *Criminology, 25*, 109-131.

Chrisoffel, K. K. 2000. Public Health Advocacy: Processes and Product. *American Journal of Public Health.* A**.** Vol.90, No. 5

Chartuverdi, G. 2008. The *Vital Drop: Communication for Polio Eradication in India***.** New Delhi: Sage publication India Pvt Ltd.

Cline, W. 2003. Everyday Interpersonal Communication and Health. In Thompson T.L, Dorsey, A. M., Miller, K.I. and Parrott R. (Eds.) *Handbook of Health Communication*. Pp. 141-161. Mahwah, NJ: Erlbaum.

Cook, T. D & Campbell D. T. 1979. *Quasi-experimentation: Designs and Analysis for Field Studies*, Skokie, IL: rand Mc Nally.

David, M. 2001. *Science Now*. New York: American Association for the Advancement of Science.

Defleur, M.L and Ball-Rockeach, S.T 1982. *Theories of Mass Communication*, New York, Longman Inc pp. 233-255

De Jong, W. 2014. The Role of Mass Media Campaigns in Reducing High-Risk Drinking among College Students. website: www.collagedrinkingprevention,gov/supportingresearch/journal

Donohue, G. A., Tichenor, P. J., & Olien, C. N. 1975. Mass media and the knowledge gap: A hypothesis reconsidered. *Communication Research*, 2, 3-23.

Elegbe, O. 2009. Effects of Sources of Information about HIV and AIDS on the Knowledge, Attitude and Sexual Practices of Public Senior Secondary School Students in Oyo State, Nigeria. Thesis. Department of Communication and Language Arts, University of Ibadan, Ibadan.

Eze, C. I. 2013. Factors Affecting the Uptake of Polio immunization Campaigns in the Urban/Rural Areas of Kano and Kaduna States. *Zaria Journal of Communication (ZAJCOM), Vol.2 No.1 119-132.*

Evers, H. 2002. Knowledge Society and the Knowledge Gap. In *Dept. of Southeast Asian Studies.*University of Bonn, Germany. Pp. 1-15

Foege, W. 2000. The Power of Immunization. Rollins School of Public Health Atlanta Emory University.

Freimuth, V. S., Edgar, T., & Fitzpatrick, M. A. 1993 The Role of Communication in Health Promotion. *Communication Research, 20*(4), 509-516.

Freimuth, V., Cole G. and Kirby, S. 2000. *Issues in Evaluating Mass Media-Based Health Communication Campaigns.* WHO Monograph 2000

Imoh, G. (1991). Communication for Social Mobilization: An Evaluative Study of Expanded programme on Immunization in Nigeria. Thesis Communication and language Arts department, University of Ibadan.

Imoh, G. (2007). Communicating Change in Health Behavior: Determinants of Compliance at the implementation level. Paper presented at African Council for Communication Education (ACCE) conference Zaria

Gage, A. J, Elizabeth S. and Andrea, L. P 1997. *Household Structure and Childhood Immunization in Niger and Nigeria*. *Demography*, 1997, Vol. 34, No. 2 P.295.

Geist-M, Sharf R. 2003. Communicating Health: Personal, Cultural and Political Complexities. In *Journal of Health Communication*. Vol. 8, Issue 6, 2003.

Glanz, K., Rimer, B. K. & Lewis, F. M. 2002. The Scope of Health Behaviour and Health Education. In Glanz K. Rimer B.K. and Lewis F.M. (Eds), *Health Behaviour and Health Education: Theory, Research and Practice* (3ed., PP3-21). San Francisco: Jossey –Bass.

GPEI 2010. Mobile Phones help Assess Quality of Polio Campaigns Research , Polio Pipeline, No.7

Hanan, M. A. 2012. HIV/AIDS Prevention Campaigns: A critical Analysis. *In Canadian Journal of Media Studies* Vol: 5 (1) Pg 129 -158

Hanlon, P., Byess, P., Yamuah, M., Hayes, R., Bennet, S., and M'Boge, B. H. 1988. Factors Influencing Vaccination Compliance in Peri-Urban Gambian Children". *Journal of Tropical Medicine Hygiene* 91 (1): 29-33.

Harold, K., Dana, K., Verna, B. C. 2005. *The Handbook of Religion and Health Influence of Religious Affiliation on time to first Treatment and Hospitalization.* Authority-related Conformity as a Protective Factor against Adolescent Health Risk Behaviours. *Journal of Adolescent In Campus: A Collection of Critical Essays* Brentwood, (Ed) Englewood, NJ: Prentice-Hall. Vol: 2 59-64.

Hopkins, W. G. 2008. Quantitative Research Design. *Sport science* 4(1), sportsci.org/jour/0001/wghdesign.html, 2000

IMB 2013. Independent Monitoring Board of the Global Polio Eradication Initiative

Janz, N. K., Champion, V. L., & Strecher, V. J. 2002. The Health Belief Model.In K. Glanz, B. K. Rimer & F. M. Lewis (Eds.), *Health Behaviour and Health Education: Theory, Research and Practice* (3rd. ed.). San Francisco, CA: Jossey-Bass.

Jegede, A. S. 2007. What Led to the Nigerian Boycott of the Polio Vaccination Campaign? *PLoS Med* 4(3): e73. doi:10.1371/journal.pmed.0040073

Jibo, O. 2010. An Assessment of the Impacts of Polio Immunization Campaigns in Maradi Metropolis of Niger Republic (2004-2008). Thesis, Mass Communication Department, Ahmadu Bello University, Zaria.

Kar, S. B. Alcalay, R. & Shane, A. 2001. *Health Communication: A Multi-cultural Perspective*. London: Sage Publications Inc.

Kagimu, M., Marun, E., Wabwire-Mangen, E., Nakyanjo, N., Walakira, Yer and Hogle, L. (Eds) 1998. Evaluation of the Effectiveness of AIDS Health Education Intervention in the Muslim Community of Uganda. *AIDS Education and Prevention*, 10(3), 215-228

Kabir, M., Iliyasu, Z., Abubakar, I. S, Gajida, A. V. 2005. Knowledge, Perception and Beliefs of Mothers on Routine Childhood Immunization in a Northern Nigerian Village. *Annals of Nigeria Medicine*, Vol. No 1, January – June 2005 . 21-26.

Kabir, M. Abubakar, I.S, Illiyasu, Z. & Nwosu, I. 2004. Immunization Coverage in Children Below 2 Years of Age in Fanshekara, Kano State. *Nigeria Journal of Basic and Clinical Sciences*: Vol. 1 No 1, 2004 10-13.

Kelman, H. C. 1961. "Processes of Opinion Change." *Public Opinion Quarterly, 25*, 57–78.

Koenig, H. G., Mc Cullough, M. E and Larson, D. B. 2001. Handbook of Religion and Health. Oxford University Press.

Kreps, G. L. 1988. The Pervasive Role of Information in Health Care: Implications for Communication Policy In: J, Anderson (ed) *Communication Yearbook* 11 (238-276) Newbury Park, C A: Sage

Kreuger, W. K. & Neuman, W. L 2006. *Social Work Research Methods: Qualitative and Quantitative Approaches*. Boston USA: Pearson Education Inc.

Lalljee, M., Brown, L. B., & Ginsburg, G. P. 1984. Attitudes: Disposition, Behaviour, or Evaluation? *British Journal of Social Psychology*, *23*, 233–244.

Laulajainen, T. 2012. Journalist Initiatives against Polio. A UNICEF Nigeria News note. Retrieved on 13/2/2013 from http://reliefweb.int/sites /reliefweb.int/files/resources/NEWSNOTE_Journalists_Against_Polio_Nigeria.pdf

Lugoe, W. L., & Biswalo, P. M. 1997. Self Restraining and Condom Use Behaviours: The HIV/AIDS Prevention Challenges in Tanzania School. *International Journal of Adolescence and Youth, 7*, 67-81.

Macaulay,A.P & Salter C. 1995. Meeting the needs of Young Adults, Population Report Series. John Hopkins University, pp.12-20

McGuire, W. J. 1989. Theoretical Foundations of Campaigns. In R. E. Rice & C. K. Atkin (Eds.), *Public Communication Campaigns* (p. 416). Newbury Park, CA: Sage.

McGuire, W. J. 1978. The Communication/Persuasion Matrix." In B. Lipstein & W. J. McGuire (Eds.), *Evaluating advertising* (pp. xxvii–xxxv). New York: Advertising Research Foundation.

Melanie, A. W., Barbara, L. and Robert, C.H. 2013. *Use of Mass Media Campaigns to Change Behaviour*. Centre for Behavioural Research. Carlton: Australia

Mendelsohn, H. 1973. Some Reasons Why Information Campaigns Can Succeed," *Public Opinion Quarterly*, 37 (Spring, 1973), 50-61.

Mwenesi, H. A. 2003. Socio-Cultural and Behavioural Issues in the Treatment and Prevention of Malaria Paper Presented for the WHO/TDR Scientific Working Group on Malaria, Geneva, Switzerland, 24-27 March, 2003.

Ndagi, O. J. 1984. *The Essentials of Research Methodology for Nigerian Educators*. University Press Limited.

Njelesani, E. 1998. Broadcasting and Health Care Delivery in Africa. Paper presented at the 2nd International Conference of African Broadcasters (AFRICAST) Abuja October 2nd

NPHCDA 2010. National Primary Health Care Development Agency. Report on Polio Immunization Plan.

Nwuneli, 1986. *Mass Communication in Nigeria: A Book of Reading, Fourth Dimension.* Enugu:

Nigeria.

Onuekwe, C. E. 2013. Entertainment-Education and Behaviour Change: An Impact Assessment of a Polio Documentary Film in Northern Nigeria. Thesis Drama Department Ahmadu Bello University, Zaria, Nigeria.

O'Keefe, D. J. 1990. *Persuasion*. Newbury Park, CA: Sage.

Ozohu-Suleiman, Y. 2010. Media and Interpersonal Communication in Polio in the Polio Eradication Campaign in Northern Nigeria. *Journal of Public Health in Africa*. Vol 1. No.1

Oziohu-Suleiman, Y. 2013. *Media and Peace Building in Israeli/Palestine: An Empirical Study*. Kaduna: Richvalues Concept Ltd.

Pervanta, C. 2011. Essential of Public Health Communication Sudbury: Jones & Barthlett.

Renne, E. P. 2010. *The Politics of Polio in Northern Nigeria.* Bloomington, Indiana: Indiana University Press.

Renne, E. P. 2006. Perspectives on Polio and Immunization in Northern Nigeria. *Social Science and Medicine 63*, No. 7: 1857–1869.

Resnicow, K., T. & Baranowski, 1999. Cultural sensitivity in public health: Defined and demystified. *Ethnicity & Disease* 9: 10-21.

Rogers, E. & Storey, D. 1988. Communication campaigns. In: Berger C, Chaffee H, (Eds.). *Handbook of communication science*. Newbury Park, CA: Sage, 1988.

Rosenstock, I. M. 1974. The Health Belief Model of Preventive Health Behaviour. *Health Education Monograph* vol. 2, p. 354.

Rosenstock, I. Strecher, V. & Becker, M. 1994. The Health Belief Model and HIV Risk Behaviour Change. In R.J. Di Clemente and J.I Peterson (Eds.) *Preventing AIDS: Theories and Methods of Community Interventions* (pp. 2-24) New York: Plenum Press

Ryerson, W. N. 2006. Effect of Mass Media in Changing Behaviour. Population Media Centre website: pm@populationmedia.org

Salem, M. O. 2006. Religion, Spirituality and Psychiatry. Royal College of Psychiatrists *SIG Newsletter* 21, 1-15.

Schultz, D. E., Martin, D., & Brown, W. P. 1984. *Strategic Advertising Campaigns.* Chicago: NTC Business Books.

Sebastian,T.2002. Social Mobilization and Communication for Polio Eradication Documentation in Nigeria, India, Pakistan. Retrieved from www.comminit.com on 11 August, 2013.

Severin, W. J. and Tankard, J. W. 2000. *Communication Theories: Origins, Methods and Uses in the Mass Media.* 3rd Edition. New York: Longman.

Sharma, R. R. 1997. An Introduction to Advocacy: Training Guide.Retrieved on 11/2/2013fromhttp://www.globalhealthcommunication.org/tool_docs/15/an_introducti on_to_advocacy_-_training_guide_(full_document).pdf.

Sharma, H. and Bar-llans J. .2010. Sources of Health Articles in Israel News Site. Medriat (6) 46-64.

Sherman, R. R. & Webb, R. B. 1988. *Qualitative Research in Education: Focus and Methods-Exploration in Ethnography Series*. UK: Routledge Fermer Press Oxon UK.

Shehu, M.S. , Thairu, Y., Nasir I.A and Yahaya F. 2016. Isolation and Public Health Significance of Non-Polio Enteroviruses in Healthy Nigerian Children. *American Journal of Infectious Diseases*, Pp 33-37

Shendurnikar, N. & Agrawwal, M. 2005. *Immunization for Children*. Hyderabad, India: Dirvesh A Kolthari Publishers.

Shiavo, R. 2000. *Health Communication from Theory to Practice.*New jersey*:* A Wiley imprints.

Simons, H. W. 1976. *Persuasion: Understanding, practice and analysis*. New Jersey. MA: Addison-Wesley.

Smah, O. S. 2001. Crime and Crime Control in Plateau State, Nigeria: A Sociological Analysis Thesis, Department of Sociology, University of Jos

Smith, M. J. 1982. *Persuasion and Human Action: A Review and Critique of Social science Theories*. Belmont, CA: Wadsworth.

Snyder, L. B. 2007. Meta-Analyses of Mediated Health Campaigns. In R. W. Preiss, B. M. Gayle, N. Burrell, M. Allen & J. Bryant (Eds.), *Mass media effects research: Advances through meta-analysis*. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Sorungbe A. O. O . 1989. Expanded Programme on Immunization. *Journal of review on infectious diseases*. Vol. 2, Supplement 3 May/June University of Chicago.

Stretcher, V., and Rosenstock, I. 1997. The Health Belief Model" In Baum, A., Newman, S., Weinman, J., West, R. and McManus, C. (Eds) *Cambridge Handbook of Psychology, Health and Medicine*. Cambridge: Cambridge University Press pp. 113-116.

Stroebe, W. and de Wit, J. 1996. Health Impairing Behaviours In *Applied Social Psychology*. Edited by Semin, G.R. and Fiedler, K. London: Sage, 113-143.

Soola, E.O. 1988. An Evaluative Study of the Dissemination of Family Planning Information in Ogun State. Thesis Communication and Language Arts, Arts, University of Ibadan.

Surur, F. and Kaba, M. 2000. The Role of Religious Leaders in HIV/AIDS Prevention, Control and Patient Care and Support: A Pilot Projects in Jimma Zone. *Northeast Africa Studies*, 7 (special issue 2): 59-79.

Thacker, N, Shendurniker, N. 2004. Current Status of Polio Eradication and Future Prospects *Indian Journal of Pediatrics* 71(3):241-5.

Trochim, W. M. K and Land D. A. 2006. Designing Designs for Research. *The Researcher*, 1-6.

United Nations Development Programme, 2004. Human Development Report, Nigeria 2004 and AIDS, a Challenge to Sustainable Human Development(Abuja),UNDP Nigeria.

UNICEF, 2006. Annual Report 1946-2006.Unite for Children.www.unicef.org/unite for children.

UNICEF Nigeria, 2011. Polio Communication 2011 Summary Report**:** Addressing Communication challenges. Retrieved on 13/2/2013 from http://www.poliofreenigeria.com/publication/2011%20Polio%20Communication%20Summary%20Report.pdf

UNICEF 2012. *Report on Global Polio Communication Indicators*. [Online] Available from: http://www.polioeradication.org/Portals/0/Document/AboutUs/Governance/IMB/deliberations/UNICEF_IMB_REPORT_MAR_2011.pdf. [Accessed 15 May 2013].

Uwakwe, O. (2004) Communication Strategy/Technique for dealing with Northern Stigmatization of the Polio Vaccine. *Nsukka Journal of Mass Communication* Enugu: Afrik Link Books

Waisbord, S. 2004. *Assessment of Committee Programs In Support of Polio Eradication: Global Trends and Case Studies. The Change Project.* Washington DC. Academy for Educational Development/Manoff Group.

Waisbord, S., Lora S., Ellyn, W. O. and Chris, M. 2010. Communication for Polio Eradication: Improving the Quality of Communication Programming Through Real-Time Monitoring and Evaluation. *Journal of Health Communication*. London, Taylor& Francis. http//www.information world.com/smpp/title-content=t71366566 retrieved May 1, 2013.

Wallace, J. M., & Bachman, J. G. 1991. Explaining Racial/Ethnic Differences in Adolescent Drug Use: The Impact of Background and Lifestyle. *Social Problems, 38*(3), 333-357.

Wimmer, R. D. and Dominick, J. R 2000. *Mass Media Research: An introduction.* (5th Ed).Belmont: Sage Publication.

Witte, K., Meyer, G., Casey, M. K., Kopman, J., Maduschke, K., Marshall, A., Morrison, K., Ribsil, M. K. and Robbens, S. 1996. Bringing Order to Chaos: Communication and Health. *Journal of Communication and Health Studies*. Vol.47, Issue 3.

World Health Organization 2000, 2006. Multicentre Growth Reference studies in Brazil, Ghana and India Urban/Rural Areas.

World Health Organization 2002. Global Polio Eradication Initiative: Annual Report 2002. Geneva. World Health Organization Press.

World Health Organization, 2003. Poliomyelitis Fact Sheet No 114.

World Health Organization, 2003. Global polio Eradication Initiative. A Global Race for a Global Victory Facts, Figures and Highlights.

World Health Organization 2006. *Africa seizes chance against polio: More than 72 million children to be immunized across 15 countries to tackle remaining risks*. [Online] Available from: http://www.who.int/mediacentre/news/releases/2010/polio_20101026/en/index.html. [Accessed 02 May 2011].

World Health Organization, 2010. Polio Report.

World Health Organization 2011. International Travel and Health. 2011 ed. Geneva: World Health Organization.

World Health Organization .2012. Country Cooperation Strategy – Federal Republic Of Nigeria 2002–2007, Geneva: World Health Organization.

Woldehanna, S., Ringhein, K., Murphy, C., Clerisme, C., Uttekar, B. P. and Nyamongo, I. K., (Eds) 2006. *Faith in action: Examining the role of faith-based organizations in addressing HIV/AIDS*. Washington: Global Health Council.

Yahaya, M. 2007. Polio Vaccines—'No Thank You!' Barriers to Polio Eradication in Northern Nigeria, *African Affairs* 1067, Vol. 423 (2007): 185–204

Yahaya, M. 2003. *Development Communication: Lesson from Change and Social Engineering Projects*. Ibadan: Corporate Graphics Ltd.

Yankah, K. 1992. Traditional Lore in Population Communication: The Case of the Akan in Ghana"*In African Media Review*. Vol. 6 No 1. pp. 15-24

APPENDIX I

Focus Group Discussion (FGD) Guide for the Evaluation of communication strategies used in polio immunization campaigns in Kaduna and Sokoto states, Nigeria

Issues for Discussions

1. What do you know about Polio Immunization?
2. How is Polio Transmitted?
3. What are the possible prevention methods?
4. What is the impact of Polio Paralysis on the child, family and the entire society?
5. What are the benefits derived from having your child fully immunized.
6. What are the factor s that make you accept or reject Polio immunization?
7. In which medium did you hear or know about Polio
8. So far, which medium do you think has been most effective for mobilization (radio.tv, town crier, traditional ruler, health worker?
9. Why do you think so?
10. Are you involved in the design and implementation of communication for polio immunization campaign?
11. Do demographic factors such as age, sex, ethnicity, household or family influence your acceptance of communication strategies used in polio campaign?
12. In your opinion, how do socio-cultural factors such as language, religious beliefs, traditional values and urban/rural background etc influence the acceptance of polio immunization campaigns in your area?
13. Are you highly aware of polio immunization campaign? if yes, in which regard?
14. 14. Do your knowledge and awareness of polio immunization campaigns influence your acceptance and use of polio vaccine?
15. 15. How do you perceive the use of religious leaders, the president and other opinion / influential leaders in the campaign for polio immunization?

16. How do you see the advocacy by health officials, NGOs, and other health organization in the campaign on polio immunization?

17. There has been social mobilization carried out in your locality through approaches such as intensified ward communication strategies, volunteer community mobilization networks, sensitization meetings, compound meetings and community dialogue on polio immunization. How do you view these communication strategies used in polio campaign?

18. Does these communication strategies mentioned influence your acceptance and use of polio vaccine?

19. There is also polio programme communication campaign such as announcement of campaign dates through the mass media, community announcement in mosque or in the market etcetera. How do you view these strategies in influencing you for acceptance and use of polio vaccine?

20. Also, part of polio programme campaign is the use of media like radio, television to create awareness and monitoring by health officials on the campaign progress. How do you perceive these communication strategies in influencing your acceptance and use of polio vaccine?

21. Which of the polio communication strategies used significantly influenced your acceptance and use of polio vaccine?

22. State the various communications outlet at which you hear or come across polio immunization campaigns'?

23. Who gives the order for vaccine to be administered in your house?

24. What constraints do you have in your area?

APPENDIX II

QUESTIONNAIRE GUIDE FOR THE EVALUATION OF COMMUNICATION STRATEGIES USED IN POLIO IMMUNISATION CAMPAIGNS IN KADUNA AND SOKOTO STATES, NIGERIA

Part A. Socio Biographic

1. Sex Male ( ) Female ( )
2. Age 17-20( ) 21-25 ( ) 26-30 ( ) 31- 35 ( ) 36-40( ).
3. Educational Status

   No formal Education ( )

   Arabic Education ( )

   Primary Education ( )

   Post Primary Education ( )

   Higher Education ( )
4. Occupation ( )

   Farming ( )

   Trading ( )

   Government Employee ( )

   Others. ( )

Part B. Knowledge and Awareness of Polio Immunization

5. What do think Polio is?

   a) A natural Occurrence ( )

   b) A disease inflicted by spirits (sha inna) ( )

   c) A disease that affects limbs, fever leading to the death of the children aged 0-4years. ( )

   d) A disease purportedly manufactured by western countries aimed at reducing the population of Muslims ( )

   e) A sickness similar to any tropical disease such as malaria, dengue fever ( )

6. What do you think is the mode of transmission?

a) Inheritance ( )

b) By offending sha inna ( )

c) Shaking hands with infected people ( )

d) Through oral fecal route ( )

e) Contracted through well water or through sunset ( )

7. Who is at the risk of polio infection?

a) Virtually everybody ( )

b) Only children ( )

c) Only Adults ( )

d) Nobody ( )

8. Do you know if polio can be prevented?

a) Yes ( )

b) No ( )

c) Doesn't know ( )

9. How can Polio be prevented?

a) Immunization of children 0-59 months at the same time ( )

b) By praying ( )

c) By giving alms 9 (zakat) ( )

d) By doing the right thing God wants ( )

e) Doesn't Know ( )

Part C: Attitude towards Polio Infection

10. How do you feel if your child is not immunized with polio Vaccine?

a) Feel bad ( )

b) Feel ok ( )

11. When your child misses oral Polio vaccine during National Immunization Days (NIDS).what do you think will happen to him or her?

a) He will not develop very well ( )

b) He will lose his hearing ( )

c) He may be paralyzed ( )

d) He will be alright ( )

e) Doesn't know ( )

12. Can a paralyzed child become a risk to other children in your area?

a) Yes ( )

b) No ( )

c) Doesn't know ( )

Awareness of Polio Immunization Campaigns

13. Have you heard about polio?

a) Yes ( )

b) No ( )

14. Can you remember the source of your information?

a). Newspaper ( )

b) Magazine ( )

c) Leaflets ( )

d). Radio ( )

e) Prayer/worship centers ( )

f) Opinion/religious leaders ( )

g) Health workers. ( )

15. Which source is the most preferred?

a). Newspaper ( )

b) Magazine ( )

c) Leaflets ( )

d) Radio ( )

e) Prayer/worship Centre's ( )

f) Opinion/religious leaders ( )

g) Health workers ( )

Acceptance of Polio Vaccine

16. Why would you refuse your child from taking polio vaccine?

a) Contains anti-fertility agents ( )

b) Not good for children's wellbeing ( )

c) Refusal of my spouse ( )

d) Timing not ok ( )

e) Has adverse reaction on children ( )

f) Not aware of the time and date of the vaccination ( )

g) Anti- Islam ( )

i) Suspicion/Rumour ( )

Communication Strategies in Polio Campaign and Acceptability

17. Were you involved in the design and implementation of the communication campaign on polio?

a) Yes ( )

b) No ( )

c) Don't know

18. If yes, to what extent were you involved in the design and implementation of the communication campaign on polio?

a) To a little extent ( )

b) To an extent ( )

c) To a large extent ( )

19. Do you agree that demographic factors such as age, sex, ethnicity, family or household status affect the design of communication strategies used in polio campaigns?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

20. Do you agree that demographic factors such as age, sex, ethnicity, family or household status influence your acceptance and used of polio vaccine?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

21. Do you agree that socio-cultural variables such as language, religious beliefs, traditional values and urban/rural background influence the acceptance and use of polio vaccine?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

22. Do you agree that socio-cultural variables are considered in the design of the communication strategy in polio immunization campaign?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

23. If agreed, to what extent does the design of polio immunization campaign consider the socio-cultural values of the people?

a) To a little extent ( )

b) To an extent ( )

c) To a large extent ( )

24. Do you agree that advocacy communication campaign strategy such as the use of prominent and influential leaders is and influence acceptance and use of polio vaccine?

a) Strongly agree ( )

b Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

25. Do you agree that social mobilization networks are effective and influence acceptance and use of polio vaccine?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

26. Do you agree that programme communication such as it is in Radio/TV announcement is effective in influencing acceptance and use of polio vaccine?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

27. Which polio communication strategy listed below is more acceptable to you

a) Advocacy ( )

b) Social Mobilization ( )

c) Programme Communication ( )

d) Others ( )

28. Do you agree with the information you received on polio immunization from social advocacy groups like NGOs as an effective communication strategy for polio campaign?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

29. Do you agree that the information you received on polio immunization from traditional and religious leaders is an effective communication strategy for polio campaign?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

30. Do you agree that the information you received on polio immunization from health workers is an effective communication strategy for polio campaign?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

31. Do you agree that the information you received on polio immunization from radio news, adverts and jingles are an effective communication strategy for polio campaign?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

32. Television news, adverts and jingles is another medium that polio immunization sensitization is been actualized as an effective communication strategy for polio campaign?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

33. What about the campaigns produced inform of drama/ documentary and talk shows, do you agree that they are effective communication strategy for polio campaign?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

34. Do you agree that polio immunization campaign through printed materials like newspaper, magazine, leaflet; flyers etc are effective communication strategy for polio campaign?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

35. Do you agree that house-house campaign at local government ward is an effective communication strategy for polio campaign?

a) Strongly agree ( )

b) Agree ( )

c) Undecided ( )

d) Disagree ( )

e) Strongly disagree ( )

36. What do you think is the most important strategy for convincing parents/guardians?

a) Policy Makers ( )

b) Religious/ opinion leaders ( )

c) Health Workers/NGO ( )

d) Intensified Ward Campaign ( )

e) Sensitization Meetings ( )

f) Inter-personal Communication ( )

g) Adverts/jingles/Drama/Documentary ( )

h) Local announcement ( )

37. What do you detest most in the above strategies?

a) Not convincing enough ( )

b) Language not clear ( )

c) All of the above ( )

Advantages of polio immunization for children

38. Do you know of any benefits of immunizing your children against polio?

A) Healthy children ( )

B) No gain at all ( )

C) Don't know ( )

Inter-Spousal Communication on Polio vaccination

39. Do you discuss issues of polio with your husband or wife?

A .Yes ( )

B. No ( )

C. Can't remember

40. After seeing, viewing or hearing about polio through any of the aforementioned strategies, do you discuss polio with your spouse.

A. Yes ( )

B. No ( )

Information Seeking Behaviour on polio

41. Which channel of information on polio is available to you?

A. Traditional healers/religious leaders ( )

B. Health workers ( )

C. Village meetings ( )

D. Inter-personal ( )

E. All of the above ( )

42. Who is your most preferred source of information on polio among these groups of people?

A) Health worker ( )

B) Wife ( )

C) Husband ( )

D) Traditional leader ( )

E) Others ( )

43. What are other issues affect polio immunization in your area?

APPENDIX III

IN-DEPTH INTERVIEW (IDI) GUIDE ON EVALUATION OF COMMUNICATION STRATEGIES USED IN POLIO IMUNISATION CAMPAIGNS IN KADUNA AND SOKOTO STATES, NIGERIA

Department of Language and Communication Arts,
University of Ibadan, Ibadan, Nigeria

Dear Respondents,

This study titled "an evaluation of Communication Strategies used in Polio Immunization Campaigns in Kaduna and Sokoto States, Nigeria" is in partial fulfillment for the award of a Doctoral Degree in Communication and Language Arts. It is strictly for Academic purpose and your responses will be treated with utmost confidentiality.

Thank you.

Researcher

1. What is your assessment of polio campaign in Kaduna/ Sokoto States so far?
2. What strategies have you been using to convince the non-compliant parents?
3. What has been their strength and weakness
4. So far, which is the most successful and why?
5. In Kaduna/ Sokoto states, did the strategy lead to decline or resurgence in polio?
6. In designing a strategy what factors do you consider?
7. Are people involved in the designing of the communication strategies?
8. Do demographic factors such as age, ethnicity etc affect the design of the communication strategies used in polio campaign?
9. Which language has been most successful so far?
10. Despite the campaigns, why do you think polio still persists?

11. What efforts have you made in changing your strategy?
12. How do you handle the issue of culture and religion in designing your strategy?
13. What role do traditional/religious leaders play in the design and implementation of polio campaign strategy?
14. Who is the most preferred source of information on polio (Parents/guardians, health workers etc?
15. What role does advocacy from prominent and influential leaders plays in polio campaign?
16. Social mobilization is another communication strategy for polio campaign. How do you view the activities of social mobilization networks like intensified ward communication strategy, volunteer community mobilization networks, sensitization meetings, community dialogue and compound meetings in the acceptability and use of polio vaccine?
17. Polio programme communication is a communication strategy which involves the use of mass media and other platforms to announce immunization days create awareness and monitor campaign period. Do you think the use of this platform influences the acceptance and use of polio vaccine?
18. Which among the aforementioned communication strategies is the most effective in influencing the acceptance and use of polio vaccine?
19. What do you think should be added to the strategy to make it effective?
20. How do you address the issue of misconception in the design and implementation of polio messages?
21. Through which strategy do you reach non-compliant parents/guardians?
22. Since women in the northern Nigeria do not often take decisions on their own, what strategy is used?

23. What constraints do you have with regard to polio in Sokoto State?

24. What is your role in polio health campaign?

25. Sir, what is your name and designation in UNICEF?

26. Besides these questions, what do important issue do you want to add?