Entertainment-Education and Behaviour Change:

An Impact Assessment of a Polio Documentary Film in Northern Nigeria

By

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DECLARATION

I hereby declare that this study titled "Entertainment-Education and Behaviour Change: An Impact Assessment of Polio Documentary Film in Northern Nigeria" was carried out by me in the , Department of Theatre and Performing Arts, Ahmadu Bello University, Zaria under the supervision of Professor Samuel Ayedime Kafewo, Professor Jenkeri Zakari Okwori and Professor Oga Steve Abah.

Information derived from other sources has been duly acknowledged in the references. No part of this dissertation has been submitted previously in application for another degree of ABU or any other university.

....

Chima E. Onuekwe Date

CERTIFICATION

This dissertation titled "Entertainment-Education and Behaviour Change: An Impact Assessment of a Polio Documentary Film in Northern Nigeria" by Chima E. Onuekwe meets the regulations governing the award of Doctorate Philosophy (PhD) in Ahmadu Bello University, Zaria, Nigeria, and it is approved for its contribution to knowledge and literary appreciation.

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DEDICATION

This dissertation is primarily dedicated to the memories of my late father and mentor, Mr. Anthony O. Onuekwe whose courage, vision, perseverance and determination spurred me to pursue greater heights in life.

And secondly to my mother, Christiana; my wife, Chinwe; and my children, Nony, Chi-boy, Bekee and Ohamadike, the loves of my life.

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ABBREVIATIONS

EE – Entertainment- Education

JHU – Johns Hopkins University

PCS – Population Communication Services

DPT – Diphtheria, Pertusis and Tetanus

KAP – Knowledge, Attitude and Practice

Unicef – United Nations Children's Fund

FOMWAN –Federation of Muslim Women Association of Nigeria

NTLC – Northern Traditional Leaders Committee

SIA – Supplemental Immunisation Activity

VCM – Volunteer Community Mobilisers

IMB – Independent Monitoring Board

GPEI – Global Polio Eradication Initiative

CDC – Centre for Disease Control

WHO – World Health Organisation

RMS – Research and Marketing Services

HIV – Human Immune Virus

AIDS – Acquired Immune Deficiency Syndrome

LGA – Local Government Area

OPV – Oral Polio Virus

IPDs – Immunisation Plus Days

NTA – National Television Authority

TFD – Theatre for Development

STDs – Sexually transmitted Diseases

SCSN – Supreme Council for Sharia in Nigeria

DS – Dangerousness Scale

OR – Odds Ratio

SDS – Social Distance Scale

MANOVA – Multivariate Analysis of Variance

SLT – Social Learning Theory

SCT – Social Cognitive Theory

HBM – Health Belief Model

PAPM – Precaution Adoption Process Model

FGD – Focus Group Discussion

ABSTRACT

Communication for polio eradication has been an integral part of the national effort to interrupt polio transmission in Nigeria. The communication approaches can be broadly categorized into advocacy, social mobilisation and programme communication. The cardinal objectives of the communication approaches are to sensitize and mobilize the populace to embrace polio vaccination for children aged 0-59 months.

Although, these efforts have yielded varied results across the country, cases of noncompliance to polio vaccination are still high especially in Northern states of Nigeria. The resultant effect of this is that polio continues to transmit especially among children who have been inadequately protected through vaccination.

The aim of this study was to assess the impact of an entertainment-education documentary film for communicating polio vaccination to noncompliant households to accept polio vaccination and to recommend the methodology or suggest improvements in polio communication in Nigeria. A total of 1688 participants randomly selected from the northern states of Nigeria participated in the study. The study adopted a field experimental survey to gather quantitative data and focus group discussion for qualitative data. Participants for the study were grouped into treatment (exposed to the documentary film on polio) and control (not exposed to the documentary). Findings of the study from both the field experimental survey and the focus group discussion indicated that participants that watched the documentary film demonstrated better understanding of polio, developed a higher sense of knowing the severity of polio infection, and were more likely to accept polio vaccination than those who were not exposed to the documentary film.

Based on these empirical findings, this study therefore, recommends the following:

i. that entertainment-education be adopted as an alternative communication strategy for impacting behaviours of noncompliant parents to accept polio vaccination in northern Nigeria;
ii. that active participatory communication approach be adopted for involvement of stakeholders at all levels of polio eradication initiative;
iii. that a bottom-up communication approach be applied to engender a sense of ownership of polio programmes in the families and the community at large.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The Global Polio Eradication Initiative (GPEI) was established in 1988, after polio had been identified as a disease that can be eradicated. The eradication programme was initially planned that by 2000, polio would be eradicated by a large-scale immunisation campaign. This was to be achieved by conducting several immunisation days to reach a maximum number of children worldwide with oral polio vaccine. It was thought that since humans are the virus' only reservoir and the disease could be prevented by an effective and affordable vaccine that requires little or no technical know-how to administer, eradication within such a time was possible.

The successful results that were recorded in the smallpox eradication were also an incentive. In 1979, smallpox was eradicated after a 10-year global vaccination effort. However, polio eradication endeavour has not been entirely successful, but, nonetheless, the number of poliomyelitis cases dropped from 350,000 in 1988 to 2,917 in 2000 and out of 125 countries, only 3 were endemic (Nigeria, India, Pakistan, Afghanistan) as at 2012. The program has had many challenges that prevented it from meeting its goal. The projected year of eradication has been pushed back several times. (WHO 2003; www.polioeradication.org)

There are several reasons why polio has been much more difficult to eradicate than smallpox. These can be broadly categorized into epidemiological and sociological. Unlike the small pox, polio cases are high mainly because of the high number of subclinical cases of polio.

Smallpox infections show obvious clinical symptoms, but for every case of polio, there are 100 to 200 subclinical polio cases (who all excrete the virus). This makes surveillance and control of polio extremely difficult. In contrast, since smallpox has easily identifiable signs of infection everyone surrounding the infection would be targeted for immunization and the virus could quickly be under controlled. Hence, it required minimal behaviour change communications to persuade acceptance of the vaccination. (http://whqlibdoc.who.int/hq/2002/WHO_POLIO_02.06.pdf (English)

The second reason categorized as sociological has to do with the people, the intended beneficiaries of polio eradication. Beyond medical reasoning, how polio eradication fits into the culture and religious sensibilities of the intended beneficiaries, their perceptions, attitudes, understanding of the benefits of the programme and even the political priorities of the people are issues that require succinct analysis and interpretation. But above these, to what extent does polio eradication communication impact on the perception of the target audience. What is the place of communication in the realm of polio eradication initiative? Does communication play a critical or passive, central or peripheral role in the whole efforts to stop polio transmission in Nigeria?

Polio eradication initiative is undoubtedly a development oriented project, designed to benefit the Nigerian child but communicated like many other development projects of the past through the ubiquitous mass and interpersonal media. Its three pronged communicative approaches: advocacy, social mobilization and programme communication, intend to inform and mobilize the populace for acceptance of a programme that is meant to benefit them. Advocacy efforts target policy makers and leaders to elicit their endorsement and support for polio eradication while social mobilization entails galvanizing the communities to subscribe

to the programme. Through programme communication, the negotiation capacity of health workers is built to engage in families to accept vaccination.

Communication in this sense, therefore, is used as a supportive service merely to create awareness about polio eradication. It hardly involves stakeholders in the planning, implementation and evaluation of the programmes. Consistent with this line of thought, Versoza and Mitchell (2002) as cited in Jegede (2010) observe that:

> Reformers often assume that the purpose of communication is merely to raise awareness of the reform programme after the programme has been conceived and formulated by the technocrats and policy advisers and approved by government officials. They believe people will be prepared to support reforms once they become aware of the programme.

Although, lately there seem to be a slight shift from the dominant approach to participatory communication approach with the involvement of traditional leaders, which in itself has been passive. Mefalopulos (2003) categorizes participatory communication as follows: (1) passive participation, when stakeholders attend meetings to be informed; (2) participation by consultation, when stakeholders are consulted but the decision making rests in the hands of the experts; (3) functional participation, when stakeholders are allowed to have some input, although not necessarily from the beginning of the process and not in equal partnership; and (4) empowered participation, when relevant stakeholders take part throughout the whole cycle of the development initiative and have an equal influence on the decision-making process.

Current communication approaches to polio eradication is merely supportive, top-down in approach or at best passively participatory. Therefore, this section of the study will review the concept of development and communication in order to properly contextualize entertainment-

education strategies using polio documentary film as an alternative communication approaches to polio eradication.

1.1.1. Development and Communication: An Overview

Worsley (1984) states that the history of development is as old as human history, however, the current conception of international development is usually traced back to the immediate past World War II period. It was President Truman's January 1949 inaugural speech that marked the beginning of the modern conception of development (Esteva 1992), and it synthesized the emerging vision of the world divided between richer and poorer countries. He stated, "We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas." Since then, the issue of development has been highly debated- a debate with many different perspectives and voices, broadly classified until recently into two school of thoughts.

In one school of thought, there were those who view development as an effort, and as a mission, under the guidance of the richer countries, to defeat poverty and ignorance. The mission was to help poorer countries achieve steady economic growth in order to emerge from their "underdeveloped" condition. This perspective became the dominant position in development.

In the other school of thought, there are thinkers and practitioners highly critical of such a conception of development. Even though they are not unified under a single alternative model, they tended to consider the dominant approach to development as an attempt by the rich countries to maintain hegemony over developing countries through political and

economic predefined models, often ignoring local knowledge, needs, and realities. Each of the paradigms, however, attributed certain roles to communication as a vehicle for shaping the practical application of the development strategies towards betterment of the developing countries.

This section of the study provides a brief overview of the main paradigms that characterize the field of development and the role attributed to communication by each of them. It should be noted that, in this context, the term "paradigm" is used in its general sense to denote a set of theoretical beliefs that, by trying to explain the world around us, shapes the practical applications in the everyday struggle toward betterment (Guba 1990). Since World War II, there have been three theoretical approaches dominating the development context and, consequently, the field of development communication:

i. the modernization paradigm also referred to as the dominant paradigm;

ii. the dependency theory, including the subset of world-system theory; and recently;

ii. the participatory paradigm.

i. The Modernization Paradigm

The modernization paradigm arose soon after World War II, along the lines of Truman's inaugural speech of 1949. It envisioned development as a challenge to bring the "underdeveloped countries" out of their conditions of poverty by modernizing them and by promoting economic growth spurred by free-market approaches. The best way, if not the only way, to achieve these goals consisted in the diffusion and adoption of the values, principles, and models that ensured the success of the way of life in wealthier countries.

The origin, principles, and applications of this paradigm situates within the historical context of the post-war years, also known as the Cold War period. Then, world influence was polarized by two superpowers: the United States and the Soviet Union. Their influence impacted on every aspect of life, including development. In this context, the modernization paradigm promoted by political scientists and scholars of Western countries became so strong and so pervasive in every dimension of social life that it became also known as the "dominant paradigm."

Culturally, modernization advocated for a change in the mindset of individuals in poor countries to abandon traditional beliefs, considered an impediment toward modernization. They were to embrace attitudes and behaviours favourable to innovation and modernity (Lerner 1958). At the technocratic level, modernization required people with inquisitive minds who were guided by faith in the scientific method and rooted in the principles of enlightenment. In politics, it required staunch advocates of the doctrine of liberalism based on political freedom and the adoption of democratic systems. Finally, at the economic level, it required blind faith in the virtues and power of the free market, with no or minimal government intervention.

Thus development concept maintained a linear shape based on trust in science, reason, technology, and the free market. Communication was to persuade people to embrace the core values and practices of modernization with its inherent principles, strategies and values. To its credit, the modernization paradigm succeeded in establishing a more systematic and rigorous approach to development initiatives. However, this theoretical approach to development, with its related bag of practical tools, did not deliver the expected results.

Critics of this paradigm attacked its predominant, if not exclusive, economic focus. In its quest to develop, modernization neglected the relevance of other socio-cultural variables. It failed to take into account a number of historical and broader socio-political factors (Servaes 1991) that impeded the autonomous development of many developing countries. By providing ready-made recipes emphasizing what a country should do to develop itself, modernization's proponents overemphasized the power of individual countries and ignored elements, such as colonization, past exploitation of resources, and, more recently, globalization, all of which greatly affect and limit the individual capacities of countries in the political and economic arena.

Gradually, the criticisms of this paradigm became so intense that even some of its stronger supporters began revisiting some of its hitherto strong theoretical assumptions and practical underpinnings. For instance in the mid-1970s, Rogers (1976), a renowned scholar associated with modernization, announced "the passing of the dominant paradigm." In reality, this passing never materialized completely, because the principles of this paradigm still permeate many of the theories and concepts of current development practices.

In the communication field, modernization theory led to the first systematic and rigorous attempts to research communication applications in the development context. A few scholars like Lasswell (1948), Katz and Lazarfeld (1955), and Klapper (1960), began to devote increasing attention to communication processes and effects, while others, such as Lerner (1958), Rogers (1962), and Schramm (1964), became particularly interested in studying how communication could be used to foster national development, which at that time was conceived predominantly in economic terms. Hence, communication was expected to help modernize people's attitudes and ways of thinking, which would support the economic model

already adopted successfully by the West, in accordance with the belief that individuals had to change before development could truly take place (Melkote and Stevens 2001).

Communication in the dominant paradigm is basically associated with the linear, mass media model aimed at transmitting information and messages from one point to another or many others, usually in a vertical or top-down fashion. This idea was rooted in the strong belief in the persuasive power of the media, especially until the 1970s. Development communication was associated with the use of the media to persuade people to achieve, maintain, and strengthen development goals, and media's role was paramount. UNESCO, for example, considered media to be a crucial means for promoting change, and in the 1960s, it provided guidelines about a country's desirable per capita consumption of television sets, radio receivers, newspapers, and cinema seats. This heavy emphasis on media was hinged on the belief that, when used properly, the mass media was capable of changing people's attitudes and perceptions. Lasswell (1948) provides a blueprint for decision-makers and managers on how to use communication to persuade audiences to change behaviours. Its model can be summarized in the following five questions: WHO says WHAT, in WHICH channel, to WHOM, with what EFFECT. Over time this basic model was refined and changed by other communication specialists, but it did not lose its linear flow from a central source to many (passive) receivers, as indicated by the renowned Berlo's formula (1960) that illustrated the process of communication as Source- Message-Channel-Receivers, or SMCR.

The failures attributed, directly or indirectly, to modernization caused a rethinking of the theoretical models of reference for communication. Thus, it became increasingly evident that media alone could not change people's perceptions and behaviours. Theories such the "the hypodermic needle theory" or "the bullet theory," which overemphasized the power of media

over people, became questionable. With time, it became progressively more evident that media impact was not as direct and as paramount as commonly believed, and that audiences were not as passive, either.

Situating polio communication in Nigeria in this context, it can be said that the approaches have been largely top-down in nature. Programme implementers relied heavily in the mass media especially radio for creating favourable environment for polio vaccinations. It assumed that all the people needed were information as to when and where to get their children vaccinated. Unfortunately, this approaches have left much too be desired like the dominant paradigm.

It was during the late 1970s and early 1980s that new perspectives in development communication emerged and grew stronger. The Latin American school of thought was very influential in promoting the new communication conception, based on the two-way horizontal model. Beltran Salmon (2006) and Juan Bordenave Diaz (2006) were some of the most influential scholars working on this idea.

ii. Dependency and World-System Theories

Dependency theory is another example of a major alternative theoretical framework that is rooted in a political-economy perspective. It originated in Latin America, at the beginning of the 1970s. One of its founding fathers, A. G. Frank (1969), reflected critically on the assumptions of modernization, which placed full responsibility and blame on developing countries for their conditions of underdevelopment. On the basis of a structural analysis of the international capitalist system, he posits that development and underdevelopment are two faces of the same coin, shaped by specific historical, economic, and political factors. Hence,

neither the causes nor the solutions of underdevelopment should be sought exclusively, or even mostly, within the poorest countries, but within the broader international scenario and forms of exploitation such as the richest countries' colonial past.

Dependency theory claims that the imbalances in the world's state of affairs were mainly owing to the international division of labour and to the continuation of past patterns of domination. According to this perspective, the world was separated into two blocs: the core composed of a few rich countries, and the periphery, composed of many poor countries. Core countries took advantage of their technological know- how, superior infrastructure, and economic power to strengthen their lead while the main role of the peripheral countries was restricted to that of supplying raw materials and cheap labour to the richer ones, making it impossible for them to ever catch up.

To address this problem, dependency advocates proposed a plan that works on two levels. Nationally, developing countries on the periphery were to become economically self-reliant and less dependent on foreign imports. Internationally, they would form alliances among themselves to create a stronger political presence. The ultimate goal would be to change the overall international set of relationships by forming a bloc of many countries with similar aspirations.

Consequently, dependency theory had a significant impact in the economic and development policies of a number of Third World countries, especially in the 1970s and early 1980s, resulting in the adoption of import-substitution policies by many of those countries (Escobar, 1995). This strategy aimed to protect national industries from external competition by subsidizing them and putting high tariffs on imported products. The main idea was to

stimulate growth of domestic industrialization and to reduce or sever dependent ties with richer countries (McMichael, 1996).

However, the overall results of import-substitution policies have been rather unsatisfactory, (Jaffee 1998). Even though this strategy appeared to be partially successful in a few countries especially Brazil, it failed to achieve its goals in most other countries. Protecting and supporting local industries did not produce the expected objectives, and it often resulted in poor-quality products and inefficient processes. Many poorer countries were forced to borrow more, a situation that led to a refined version of financial and political dependency (Servaes 1991). By ascribing causes of underdevelopment exclusively to the centres of international capitalism, dependency theorists paid inadequate attention to other relevant internal causes contributing to the problem such as the roles played by national elites (Worsley 1984). These elites often form strategic alliances with those of the developed world, and play significant roles in shaping, often in negative ways, the development process of their countries (Servaes 1991). Dependency theories are also criticized for according little attention to the differences in political-economic status among developing countries, resulting in big and potentially rich countries such as Brazil or India being put in the same category as much smaller and poorer ones.

The major contribution of the world-system theory consists in elevating the unit of analysis from the national to the international level, thus allowing a better comprehension of the global scenario. However, it does not provide practical recipes to successfully address development challenges. Moreover, similar to modernization models, the dependency theory has been accused of being largely economically focused and of paying little attention to social and cultural factors. Communication is not given more attention than in modernization

theory, which is still focusing on the key but narrow role of media and information flows in the overall international scenario.`

iii. The Emerging Participatory Paradigm

The search for a different and better vision of development practices continued until the emergence of participatory paradigm. Participation is a concept that has been gaining increasing recognition in the development discourse and its practices. Participatory approaches require a shift in the way individuals are considered, from passive recipients to active agents of development efforts. Ascroft and Masilela (1994) posit that "If peasants do not control or share control of the processes of their own development, there can be no guarantee that it is in their best interest that is being served."Nowadays, most development programs seem to carry the participatory mark, as a sign of purification from the mistakes of the earlier paradigms. The wide convergence in participatory approaches, nonetheless, has not resulted in a unified paradigm. Rather, it generated a number of theoretical approaches still seeking a unified and common framework. The following are some of the most renowned: the multiplicity paradigm (Servaes, 1991); the empowerment approach (Friedmann, 1992); another development (Melkote, 1991; Jacobson, 1994), derived from the conception of former UN Secretary General Dag Hammarskjold and further promoted in the Cocoyoc Declaration; the autonomous development (Carmen 1996); and other conceptions of participatory, people-based development.

In contrast to the proponents of modernization and dependency theories, most of the advocates of the participatory theoretical perspective do not seem particularly interested in defining a grand theory to provide a universal analysis and interpretation of the world. They seem more interested in identifying and analyzing drawbacks and limitations of current

development practices, especially at project and community level, and in attempting to identify normative approaches that could provide operational guidelines in the field. Common features of this perspective are the emphasis on people, the endogenous vision of development, and the attention to power and rights issues.

Development efforts have been refocused to increasingly engage stakeholders and pay attention to aspects of social life previously neglected (culture, education, religion and so forth). The new priorities, well beyond the economic dimension, are reflected in the Millennium Development Goals, or MDGs, adopted in the 1990s by the United Nations and other development organizations as key challenges to be addressed successfully. In addition to poverty reduction, they include objectives in education, gender equality, and health issues.

There are many reasons for the adoption of participation in development, some of which relate directly to the enhancement of project results. As early as 1982, White (as cited in McKee 1994) summarized the major reasons for the adoption of this approach in development initiatives, maintaining that (1) services can be provided at a lower cost; (2) participation has intrinsic values for participants, alleviating feelings of alienation and powerlessness; (3) participation is a catalyst for further development efforts; (4) participation leads to a sense of responsibility for the project; and (5) participation ensures the use of indigenous knowledge and expertise.

Despite these and other benefits, participation has remained a highly subscribed approach, but a poorly adopted one. This is largely due to the fact many development practitioners and managers have their own understanding of participation, leading at times to divergent views

on what it truly entails and how it should be applied. The richness, or "broadness," of the concept of participation is not considered a problem by everybody.

Servaes et al (1996) argue that in dealing with participation, rigidly defined theoretical structures are neither feasible nor desirable (Servaes, Jacobson, and White 1996). He claims that participation's strength derives from its flexibility in adapting its strategic approach according to the situation. Other scholars tend to differ: they believe that this adaptability constitutes a major weakness of participatory approaches, which can be easily modified and used in a number of ways, often not consistent with a genuine participatory philosophy.

Huesca (2000) confirms that participation has been embraced by development scholars who have incorporated this notion into modernization practices, such as message development and social integration. The pluralistic spirit of the participatory turn in development communication has had the ironic effect of redeeming the dominant paradigm from its critics. This statement is a further indication of the complexity and ambiguity that this concept implies. That participation is not an absolute concept, and that it can be conceived and applied in different degrees, is part of the problem.

Pretty et al (1995) devises a typology of seven types of participation as interpreted and applied by various development organizations. This taxonomy ranges from passive participation, where people are simply told what is happening and their participation is conceived as a mere head-counting, to self-mobilization, where people not only have the power to make decisions but can also initiate the process. In between these two extremes, there are other kinds of participation with varying degrees of people's involvement. The full categorization, starting from the least participatory, includes passive participation,

participation in information giving, participation by consultation, participation for material incentives, functional participation, inter- active participation, and self-mobilization.

The World Bank (1995) identified four types of participation: (1) information sharing, (2) consultation, (3) collaboration, and (4) empowerment. Information sharing and consultation are considered low-level forms of participation, while other two are considered high-level forms. These types are consistent with others, such as the classification derived by a literature review by Mefalopulos (2003), which includes (1) passive participation, when stakeholders attend meetings to be informed; (2) participation by consultation, when stakeholders are consulted but the decision making rests in the hands of the experts; (3) functional participation, when stakeholders are allowed to have some input, although not necessarily from the beginning of the process and not in equal partnership; and (4) empowered participation, when relevant stakeholders take part throughout the whole cycle of the development initiative and have an equal influence on the decision-making process.

The emphasis on participation in development also implies increased attention to communication, because there can be no participation without communication, at least without a certain type of communication. In other words, the added emphasis on participation helps to mainstream communication in many initiatives, and at the same time promotes a more dialogic and two-way conception of communication. The model of reference is significantly different from the traditional one, since it is now characterized by dialog and by a horizontal flow, enabling the balanced sharing of perceptions and knowledge. In this perspective, the top-down features rooted in the modernization paradigm gets diluted, and communication acquires a more interactive connotation aimed at facilitating participation and

empowerment. Even when using mass media, messages can be expected to originate from people themselves rather than from "outside experts" (Mody 1991).

The emphasis of polio communication in Nigeria has been largely pro-innovation, deriving from the tenets of diffusion of innovation approach with its inherent pitfalls. Hence, this attempt to understudy alternative strategies for communicating polio in a credible that will elicit acceptance.

1.1.2. Overview of Entertainment –Education

Although, the use of entertainment-education (EE) to promote health and social behaviours is not entirely new, it has increased tremendously in the past decades or so. Entertainment-education (EE) involves the process of purposively designing and implementing a media message through a means in which the audience is both entertained and educated, in order to increase audience members' knowledge about an educational issue, create favourable attitudes towards an issue, and change behaviour (Singhal & Rogers, 1999).

It is a communications strategy; not a theory of communication. Its general purpose is to contribute to the process of directed social change, which can occur at a number of levels (individual, community, society). Yet, it has seldom been applied, to the knowledge of the researcher, in communicating polio eradication to Nigerians.

There is strong evidence that entertainment-education (EE) programmes get people talking - not only about exciting storylines, and interesting characters, but also about the issues that are woven into the programmes. It is also often easier to speak about certain issues, such as AIDS or sex in the third person. Entertainment-education (EE) allows one to do this thus

stimulating constructive public discourse on sensitive issues which is thought to be a powerful change agent in development communication.

Singhal and Rogers (1994) postulate that the purpose of entertainment-education (EE) programming is to contribute to directed social change, defined as the process by which an alteration occurs in the structure and function of a social system. The change can occur at the level of the individual, community or some other system. Entertainment-education (EE) can influence audience members' awareness, attitudes and behaviour towards a socially desirable effect. Secondly, entertainment-education (EE) can influence audience's external environment to help create the necessary conditions for social change at the group or system level. In other words, entertainment-education (EE) focuses on people, how to affect their behaviours on issues interwoven into the edutainment packages. (Singhal and Rogers 1999)

Hence, radio and television soap operas in Kenya, Tanzania and indeed Nigeria have been documented by independent research (Penn et al, 2003; Brown et al, 2004; Rogers, 1999; Poindexter, 1984) to have had massive effects on audience attitudes and behaviour with regard to HIV/AIDS avoidance and adoption of family planning methods.

In Kenya, for example, the systematic use of entertainment-education (EE) to address sexual responsibility issues like family planning and sexually transmitted infections began during the 1980s. Hence, Ushikwapo Shikamana *(Hold on to He who holds on to you)* was aired on television and radio in Kenya from 1987 to 1989. The programme reached an estimated 7 million people, about 40 percent of the population of Kenya in 1987. By 1989, the series had reached about 60 percent of the population, of which a projected 75percent reportedly understood what family planning was all about. (Singhal & Rogers, 1999)

Tanzania began using entertainment media, particularly, radio to address problem relating to sexual behaviours in 1993. In recognition that many health related behaviours, especially sexual behaviour, are driven by emotions, the government launched *Twende Na Wakati* (Lets go with the Times) in 1993. Broadcast in Kiswahili, more than 1000 episodes were aired between 1993 and 1998. An evaluation of the series by Rogers and Singhal (1999) indicated that listeners of the programme demonstrated an increase in self efficacy with regards to protecting oneself against HIV/AIDS and STDs, reduced risky sexual behaviours and increased their use of condoms. The series particularly generated discussions about sexual practices among partners.

In Nigeria, Population Media Centre's radio serial drama, *Gugar Goje* (Tell It To Me Straight) aimed to promote education for girls, the delay of marriage and pregnancies and the adoption of family planning and maternal health services to both prevent and treat obstetric fistula in Kaduna and Kano states. The programme went on air in June 2006 and after two and half months later; the Population Media Centre in collaboration with Planned Parenthood Federation of Nigeria conducted a preliminary monitoring in order to assess the effects of the serial drama on demand for reproductive health services. The assessment exercise which used participatory sketching and participatory photography, aimed to assess how frequent listeners engaged with the radio programme, and how they derived personal meanings from its plot, characters and educational messages. Data collected from 663 clinic exit interviews showed that 44% of all clients had listened to the programme. In all, 30% of the reproductive health clients and 47% of the fistula clients claimed that the serial drama primarily motivated them to seek for services. *(Shelburne 2006)*

Also in Mexico, when the first soap opera dealing with family planning issues was created in 1977, the Mexican government's national population council, CONAPO, reported that more than 2,000 women registered as voluntary workers in the national programme of family planning - an idea suggested in the television soap opera; contraceptive sales increased by 23 percent in one year; and more than 560,000 women enrolled in family planning clinics. Similar responses to serial dramas can be found in India, Kenya and Tanzania *(Ryerson et al 2000).*

From the foregoing, it is evident that literature on the effectiveness of entertainment-education as a communication strategy for influencing behaviour abound. Hence, this study will assess the impact of a documentary film among noncompliant parents in Northern Nigeria. Will the polio documentary film improve the knowledge of target audience on the importance of polio vaccination as compared to those who will not be exposed to it? Will it create positive attitude towards polio vaccination in northern Nigeria? Will rejecters of polio vaccine now accept it as a result of watching the polio documentary film? The study will attempt to address these questions in order to establish whether entertainment-education is effective in changing health behaviours towards polio vaccination as evidenced in other health and social interventions.

1.1.2.1. Entertainment-Education in Developing Countries

Originally developed in Mexico in the mid-1970s, the entertainment-education approach has been used in 75 countries, including Gambia, India, Nigeria, Pakistan, the Philippines, and Turkey. Paradigmatic examples of this approach have been soap operas in Latin America (*telenovelas*) and in India that were intended to provide information about family planning,

sexual behaviour, and other health issues. Literacy and agricultural development have also been central themes of several entertainment-education efforts

Drawing from the fact that populations around the world are widely exposed to entertainment media content, the heavy consumption of media messages suggests that the media, more than any other tool, can effectively persuade how people think, feel, and behave. Most entertainment programs, however, tend to dramatize anti-social messages such as aggression, violence, and sexual promiscuity. But as Miguel Sabido has shown, entertainment programs can be redirected to communicate positive messages that can help people solve their problems, instead of glorifying antisocial themes (Singhal and Rogers, 1999).

In some instances, it takes the form of songs and dances. In 1989, King Sunny Ade and Onyeka Owenu recorded "*Choices*", a song aimed at adult men and "*Wait for Me*" targeted at adolescents. The video of the songs were recorded in Nigeria and shown on national television stations across the country. Listeners learned the importance of making decisions about contraception and responsible sexual behaviour. Evaluating the audience effects at end of the musical campaign, JHU/PCS found that 64% of men and women aged 15-35 (intended audience) in Lagos, Enugu and Kano recalled the songs, while 61% comprehended family planning. About 49% liked the song; 34% talked to someone about it; 16% talked with spouse about family planning.

Kincaid et al (1992) found out that contraceptive usage increased from 16% to 26% after the campaign. However, it was not clear whether the increase was due entirely to the musical campaign or there were other extraneous factors that contributed to the increase in contraceptive usage which of course will include availability of services, qualified personnel to offer family planning services among others.

But this does not foreclose the fact the entertainment education can be effective in inducing attitudinal changes. Kafewo (2008) explores the use of drama for school based adolescent sexuality education in Zaria, Nigeria. The project entitled "For Tomorrow" was carried out by two civil society organisations:, Nigerian Popular Theatre Alliance and Second Chance Organisation. The basic premise of the strategy was the need for sustainability engendered through participation. Hence, the issues discussed which included abortion, premarital sex and pregnancy, teacher-student relationships and lesbianism were initiated by the group of 15 girls that participated in the project. This allowed the students the opportunity to explore, generate discussion and freely advance their view points.

Entertainment education is one of the oldest forms of traditional means of sharing information, creating awareness and encouraging positive behavioural changes. It is known to attract large audience patronage without sacrificing the intended objective whether commercial or social. Creating an entertainment campaign can be complex. It requires an integrated multimedia approach, involving government leaders, communication researchers, health officials, entertainment education industry practitioners, commercial sponsors and infrastructure.

1.1.2.2. Entertainment-Education, Theatre and Society

The idea of combining entertainment and education dates back in human history as the timeless art of storytelling, theatrical acting, music, dance, songs and drama. Theatre has through the ages been applied as a communication tool to identify, analyze, generate discussions, and also seek solutions on issues through the art of acting a part on the stage. In countries where rich oral traditions persist, folktales with morals and large than life heroes

are integral part of a child's non-formal socialization and education. (Griswold, 1918; Ryder, 1949). For instance, two well known epic poems in India, Miharishi Valmiki's Ramayana and Ved Nyas's Mahabharata, written several thousand years ago combined the art of storytelling with social and moral undertones. In the past decades, both epics were broadcast as television programmes in India and earned record ratings (Bhargava, 1987; Bhatia 1988). Similarly for thousands of years, music, drama, dance and various folk media were used in many countries for recreation, devotion, reformation and institutional purposes (Murdock, 1980; Parmar, 1985; Thomas, 1993).

In the ancient times, drama was basically to entertain but there is always an intrinsic message usually embedded in the drama, dance or folklore. The universal popularity accorded playwrights during their lifetimes attests to the significance which this dramatic form can have. The popularity of their work, and the diminishing appeal of tragedy to the audiences of the time, can also be interpreted as a comment on the role which theatre plays in society at large. Tragedy was at its height in Greek society when that society was at its height, while comedy - an outlet for the frustrations of society as well as a diversion for the masses - was most popular during the decline of Greek government.

In medieval times, the early churches were noted for the use of drama to establish itself in a community that was still steeped in pagan ritual and superstition which manifested itself in seasonal festivals. The Church ultimately linked its own religious holidays with these seasonal festivals and began to use dramatic form to illustrate the stories underlying these holidays so as to reinforce their religious connotation and to better communicate the stories to an illiterate congregation.

At first the parts played in these simple religious re-enactments of the nativity and adoration of the Magi were played by priests in the sanctuary of the church. However, as the repertoire of the Church grew to include the passion and crucifixion of Christ, the Church was confronted with the dilemma of how a priest should portray Herod. While division of opinion in the Church continued as to the worth of dramatic interpretations, the members of the congregation clearly enjoyed and were moved by them. Today, the modern day churches like the Roman Catholic Church and the protestant churches are still clouded in theatrical demonstration as a way of worship. And this has survived from one generation to another pointing to the fact that the secularization of theatre emerged from the influence of the Medieval Church. In the past 25 years or so, the use of entertainment strategies to educate the populace became popular on radio, television, comic books and rock music. The first well known illustration of EE on radio occurred in 1951, when the British Broadcasting Corporation (BBC) began broadcasting *The Archer,* a radio soap opera that carried educational messages about agricultural development. It was not until 1969, that entertainment education on television was discovered more-or-less by accident in Peru, when *telenovela* soap opera, *Simplemente Maria* was broadcast. The main character in the soap opera, Maria was faced with the challenge of single parenthood. In order to make ends meet, she worked in the day and enrolled for adult literacy classes in the evening. She was able to climb to the upper socioeconomic echelons of the society through her hard work, determination and perseverance. *Simplemente Maria* enjoyed tremendous audience patronage and with a resultant increase in the number of girls who enrolled in adult literacy classes as well as number of singer machines that were sold because she was using the machine to train and work.

1.1.3. Overview of Polio Eradication Initiative in Nigeria

Launched in 1988, the Global Polio Eradication Initiative has become the largest on-going public health initiative in the world led by the World Health Organisation, Rotary International, US Centre for Disease Control and Prevention (CDC), and UNICEF. The alliance with national, regional and local governments and other private institutions has made it possible to immunise over two billion children worldwide since the programme began in 1988. It was believed that by applying a combination of strategies, namely; routine immunisation; supplementary immunisation activities (SIAs); disease surveillance and mop-up campaigns, that polio would be eradicated by year 2000. Polio, it was believed, is one of a small limited number of diseases that can be eradicated. The reasons why polio can be eradicated are as follows:

- polio only affects humans and there is no animal reservoir
- an effective and inexpensive vaccine exists, called Oral Polio Vaccine (OPV)
- immunity against polio is life-long
- the virus can only survive for a very short time in the environment.

Although tremendous progress was made soon after the initiative was launched, 350,000 children who were hitherto paralysed each year in 125 countries declined to 677 in 2002. In fact, in 18 years, the number of reported polio cases had fallen by 99%. Polio was last seen in the Americas in 1991 in Peru, Western Pacific which includes China in 1997 and Europe in 1999(WHO Data Base, 2002)

Polio eradication campaign was first launched in Nigeria in 1996. Since then over 100 campaigns have been conducted targeting children 0-59months for vaccination. By then, polio was pervasive in almost all the parts of the country but through the concerted efforts of Government of Nigeria especially from 1999 and with encouragement and support from

World Health Organization (WHO) giant strides were made. In fact until 2002, most of the states in the south were polio free.

But, the gains of the earlier campaign were almost wiped out with the politicization of the vaccination campaign arising from a misunderstanding of the content of the vaccine which was erroneously believed to contain family planning elements and was therefore seen as a ploy to control the population of the north. Hence, a number of northern states suspended polio immunization campaigns in August 2003, following concerns by some public figures regarding the safety of the polio vaccine.

The target year for eradication was, therefore, shifted to 2005. But this date became even more distant when the political leaders of Kano, Zamfara, Bauchi and others brought the immunisation campaign to a halt. They called on parents to boycott the vaccination programme, cautioning that the vaccine could be contaminated. The early cries against the vaccines by a number of religious leaders in Northern Nigeria found a platform when taken up in 2003 by the chairman of the Supreme Council for Sharia in Nigeria, (SCSN) *Dr. Ahmed Datti.* He claimed that his suspicions about the vaccine did not originate from Nigeria but reliable documents including internet sources. "We believe that the modern day Hitlers have deliberately adulterated the oral polio vaccines with anti-fertility drugs and contaminated it with certain viruses which are known to cause HIV and AIDS"(Shekarau, 2004)

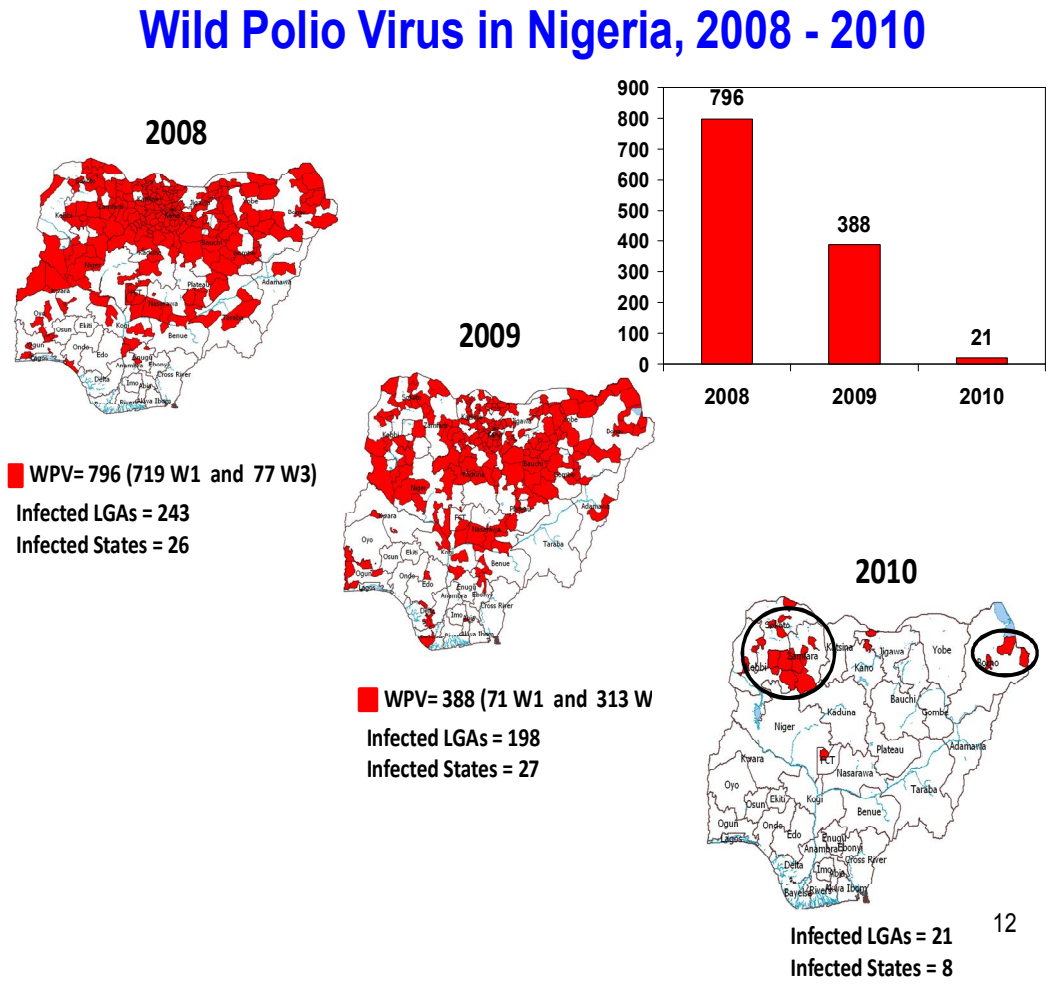
Northern Nigeria is inhabited mostly by Muslims and the polio campaign is concentrated in the north because this is where most of the polio cases circulated. In fact, WHO (2002) reported that more than 40% of the 677 new cases of polio recorded worldwide in 2002 were

in Nigeria. Of these, 50% of the Nigerian cases were in the north. Strains of the polio virus according to WHO reports were traceable to other parts of the country as well as several west and central African countries raising great concerns among international health experts that "the world was slipping in its efforts to wipe out polio by 2005". By coincidence, this helped to create a perception that Muslims were being deliberately targeted. Despite this, the Governor of Kano, Ibrahim Shekerau, in an interview in February 2004, stated that he viewed boycott as"... a lesser of two evils, to sacrifice two, three, four, five even 10 children to polio than allow hundreds of thousands or possibly millions of girl children likely to be rendered infertile." (Shekarau, 2004)

It was not difficult convincing the suspicious northerners. The controversy was also shaped by past incidents concerning alleged malpractices in the meningitis vaccine delivery in 1996, when families in Kano accused New York based Pfizer Incorporated Company of using an experimental meningitis drop on patients without fully informing them of the risks.

Consequently, the polio campaign was suspended in several northern states particularly Kano, Kaduna, Katsina, Zamfara and Jigawa. Hence, the virus which was already circulating in the area found a fertile ground to multiply in the growing number of unimmunized children. Subsequently, a new outbreak occurred, originating in the state of Kano, and re-infecting previously polio-free areas within Nigeria (including Lagos), as well as eight previously polio-free countries across west and central Africa. Nigeria then had the pitiable record of accounting for 1,122 cases of polio out of the 1,997 in the world. Other major contributors were India, Pakistan and Afghanistan. (www.polioeradication.org)

Figure 1 shows Wild Polio Virus in Nigeria 2008 – 2010.



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This development came at a point that countries like Niger and Egypt were being officially removed from polio infected countries list in 2006. Thus, even with the re-introduction of immunization campaigns by 2004 in some northern states that hitherto suspended it, there were new infections.

Several years later, the seeds of doubt sown in the recent past have not completely disappeared with a number of isolated cases of resistance and ignorance still affecting the

elimination of the preventable scourge especially in the north of Nigeria. Between years 2000 – 2010, a total of 4,748 children were paralyzed by polio in the northern states alone. The Nigerian Television Authority "AM EXPRESS" magazine programme of 25/09/08, reported that 600 new cases of polio broke out in Nigeria. By the end of 2004, the number of reported cases had doubled to about 800 with the northern states contributing over 50%. Albeit, Northern Nigeria resumed vaccination campaign about a year later, after intense lobbying and repeated tests to confirm the safety of the polio vaccine, large numbers of families still refuse polio vaccination for their children and as such the virus still rages out of control. Recent analyses show that in the five states in Northwest Nigeria, the immunization campaigns are missing 40% of eligible children due to refusals and incidence is four times higher than that at the same time in 2006. (17th ERC Report, March, 2009)

In order to quickly sensitize the public, mobilise resources and increase the publics' knowledge on the importance of immunisation against polio to contain the spread of the virus, a number of communication strategies were adopted by the polio programme implementers. Hence, advocacy, social mobilisation and programme communication were adopted as core strategies to increase awareness, improve knowledge, combat noncompliance, and correct misconceptions regarding polio immunisation in order to increase acceptance of polio vaccine.

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 agree that multiple doses of oral polio vaccine is safe;
- to reach 95% of children with oral polio vaccine in each round of Immunisation Plus Days;

- to have 50% of parents state the number of diphtheria, pertusis and tetanus (DPT) doses a child requires before their first birthday;
- to have 75% of children receive three doses of DPT.

Advocacy strategies entailed high level sensitisation of policy makers in government and private sectors to promote immunisation policies. One of the outcomes of the advocacy efforts was that the late President of the Federal Republic of Nigeria Alhaji Umaru Yaradua endorsed polio eradication initiative and publicly committed to ensuring that polio is finally and totally eradicated from Nigeria. The thirty six state governors on the other hand committed in writing in what is popularly known as 'Abuja Commitments' to provide necessary support and leadership to fast track polio eradication efforts in Nigeria. The northern traditional leaders also formed a primary health care delivery committee with special focus on polio eradication.

In order to entrench polio on the front burner of public discourse, the mass media was a key strategy for increasing awareness of the process and importance of vaccination and mobilising parents to take action. National and state owned radio and television stations were engaged in activities like panel discussions, announcements of polio campaign days, recorded/live interviews with health workers and influencers. Joint press releases were also issued through the mass media to create adequate awareness. A series of community sensitisation activities were also conducted. These were community dialogues involving traditional and religious leaders, 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 Immunisation Plus Days.

Hence, it can be concluded that the programme adopted the participatory paradigm elucidated in the background of this study. Yet the participatory strategies falls within the first two categories as posited by Mefalopulos (2003), which includes passive participation, when stakeholders attend meetings to be informed; and participation by consultation, when stakeholders are consulted but the decision making rests in the hands of the experts. This is at the expense of the third and fourth categories which includes functional participation, when stakeholders are allowed to have some input, although not necessarily from the beginning of the process and not in equal partnership; and empowered participation, when relevant stakeholders take part throughout the whole cycle of the development initiative and have an equal influence on the decision-making process. Besides, there has been heavy reliance on mass media as a instrumental for disseminating information and also in mobilizing the public to action.

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 5-years especially in Northern Nigeria. A 2008 KAP study sponsored by UNICEF to assess impact of social mobilization activities for polio eradication in Nigeria showed that some of the reasons were refusal, fear of side effects and lack of confidence in vaccination 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).

Several communication and social mobilisation strategies were adopted to convince adamant parents about the importance of polio vaccination but little was achieved. These strategies include advocacy to political, traditional and religious leaders, community dialogues

especially in noncompliant communities, a Majigi film to drive home the message of polio vaccination through entertainment, and house to house sensitisation visits.

1.1.4. Nigeria's Polio Eradication Communication Strategy

Prior to the era of strategic communication, , health communication in the 1990's was largely characterized as the medical era. It operated under the assumption that once there is medical or health services, that clients will come or what O'Sullivan(2003) described as "*If we build it, they will come"* (O'Sullivan et al, 2003). This medical monologue model is often represented by the image of a physician lecturing or talking to patients.

However, since the 1990's, health communication has evolved into what can be called the strategic era. Strategic design is the hallmark of evidence based health communication programme and Nigeria's polio communication strategic design took after this design. O'Sullivan et al (2003) identified seven components of a comprehensive communication strategy as follows:

- Introduction: Background and context of the strategy, rationale , important principles; etc.
- Scope: Time frame and scope of the strategy.
- Objectives: The behavioural and communication objectives of the strategy - and how these will contribute to achieve the overall goal of the vaccination programme.
- Target groups: Stakeholder groups and target groups for different communication activities, including priority groups for vaccination, mass media, decision makers etc.
- Main activities: Communication action areas and concrete activities, if possible in the form of an implementation plan.
- Messages: Key messages for different target groups

- Monitoring and evaluation: How can we monitor if the interventions are working or if they need to be adapted? And, once the vaccination campaign is over, how can we evaluate if the objectives were reached and learn for the future?

Hence, Nigeria's polio communication is strategically categorized into three main approaches: advocacy, social mobilization and programme communication.

Advocacy: Unicef (2005) 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.

Advocacy for polio eradication programmes in Nigeria entails mobilization of the policy makers and influential stakeholders by placing and keeping polio immunization on the public agenda in relation to the policy and public objectives. This is usually targeted at political leaders: the President of the Federal Republic of Nigeria, Ministers, and other functionaries at the national level; State Governors, Honorable Commissioners and state actors at state level; LGA chairmen, Honourable Councilors and other influencers at the Local Council levels. At the community levels, traditional and religious leaders are also advocated to. While political leaders at all levels are usually expected to formulate and endorse policies favourable to polio eradication initiative, release funds for implementation and make public statements in public ceremonies or through the mass media, community stakeholders are expected to mobilize their subjects for mass campaigns.

These activities are anchored by the National Social Mobilisation Working Group at the national level with oversight functions at the state level. A State Social Mobilisation 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 Mobilisation Committees with the LGA Health Education Officer as the focal person oversees advocacy activities at the local government levels.

Although, advocacy activities like any other communication intervention should be well planned in advance with clear cut objectives, implementation 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. Thus, advocacy activities are haphazardly done and tied to polio campaign timelines.

Social Mobilisation: WHO (2002) defines social mobilization as "the process of mobilizing all societal and personal influences with the aim of prompting individual and family action". It is a process which strategically blends a variety of communications interventions intended to engage individuals and families in considering recommended behaviours and to encourage the adoption and maintenance of those behaviours.

Ogden (2006) looks at social mobilization as a typical communication activity. She states that social mobilization is:

> a communication process of bringing together all feasible inter-sectoral and social 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.

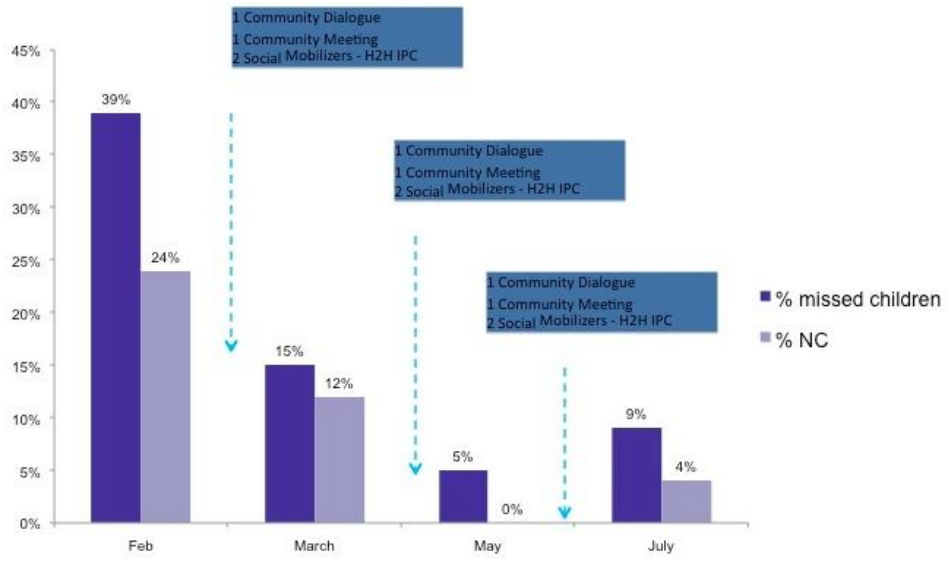
Social mobilisation for polio eradication initiative in Nigeria is a community oriented activity. It is executed at the community levels through various community approaches as deemed acquiescent with the communities. Activities include Intensified Ward Communication Strategy, Volunteer Community Mobiliser Networks, Community Dialogue, Compound Meetings, Sensitisation Meetings, among others.

The Intensified Ward Communications Strategy

The Intensified Ward Communication Strategy was introduced in Nigeria's polio Communication curriculum in 2010. It is a highly localized evidence-based communications planning and action approach which uses social data generated through independent monitoring of previous polio campaigns to engage communities and target messages to address specific reasons for non-compliance, including low polio threat perception or doubts about OPV safety and efficacy. The approach isolates high-risk wards based on campaign performance indicators and prescribes a package of communication interventions that rely heavily on interpersonal contacts.

This strategy receives planning and monitoring support from the federal team, but relies upon Local Government Area (LGA) level teams for local level planning and implementation. as a result of the implementation of the Intensified Ward Communication Strategy, the polio program saw a reduction in non-compliance in 2011/12 suggesting that the evidence-based communication planning at Ward and LGA level is having impact.

Chart 1 Shows Impact of the IWCS and VCMs on Non-Compliance and Missed Children



Source: Independent Review of Communication Research in Nigeria (2012)

The intervention packages include community dialogues led by traditional leaders, compound meetings with women led by women's groups, Majigi film showings with structured dialogue, town crier involvement and campaign "flag offs"' intended to mobilize entire communities to support campaigns. Increasingly, efforts are being made to engage faith-based mobilizers, journalist organizations and members from state associations of polio victims in behaviour change and mobilization efforts.

Compound Meetings: Women are often the main custodians of child care but have less access to mass media and interpersonal contacts than men. They also play inactive part in decision making regarding the health care, especially immunization of the children. To further engage and empower women to understand the importance for vaccinating their children, FOMWAN (a coalition of Muslim women's organizations) and other women's groups have been working to organize compound meetings specifically targeted at women.

Sensitization Meetings: Traditional leaders play a key role in community mobilizations, role modelling and resolving refusals to polio immunization. The Northern Traditional Leaders Committee (NTLC) was created to better 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 May SIA 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, this modest achievement still leaves much to be achieved to eradicate polio from Nigeria.

Volunteer Community Mobilisers Network (VCM Net): The Volunteer Community Mobiliser Network (VCM Net) is a component of the Intensified Ward Communication Strategy. In eight of the most high-risk states in northern Nigerian (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 mobilise families for the next polio immunization campaign. Through targeted communication interventions at the settlement level, VCMs aim to generate demand for and acceptance of OPV through house-to-house mobilization for polio and routine immunization. Selected from settlements with high numbers of missed children, these female volunteers are tasked with identifying, characterizing and facilitating the vaccination of children in their defined catchment areas, mobilizing non-compliant parents using a community-friendly approach and through networking and partnerships. Interpersonal counselling on immunization is the main focus of their work, but there is scope for volunteers to promote other child survival interventions as the VCMs mature. Preliminary results from Sokoto State show some

encouraging trends and reductions in missed children and non-compliance: 15 out of 47 settlements recorded a significant reduction in the proportion of missed children, in the March 2012 campaign were reached during the May 2012 campaign and 183 cases of non-compliance were resolved.

Despite these communication approaches, community resistance to immunization, and the challenges related to social mobilization and communication issues remain a leading cause of missed children. Resistance to polio vaccination is still evidently high. The Independent Monitoring Board has summarized the possible impact of noncompliance on Nigeria's Polio eradication effort succinctly: "Even if every other problem with the programme could be sorted out, the refusal issue alone is sufficient to undermine success." (IMB 2012:20)

Programme Communication:

Programme communication is a research-based consultative process of addressing knowledge, attitudes and practices through identifying, analysing, and segmenting audiences and participants in programmes and by providing them with relevant information and motivation through well defines strategies using an appropriate mix of interpersonal, group and mass media channels, including participatory methods. (Unicef 2006)

Programme communication is one communication approach that aims at impacting participants' knowledge, attitudes and behaviour through a mix of communication strategies in polio eradication initiative. Activities under programme communication for polio eradication include but not limited to training of vaccination team members on interpersonal communication to enable them negotiate and convince parents during immunisation sessions, 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. It is evidently clear from the foregoing that polio communication strategies are deficient and ineffective in impacting desired behaviour change among the intended programme beneficiaries.

First, Nigeria's polio communication approaches have pro-innovation or pro-persuasion bias taking a cue from the concept of diffusion of innovation theory. The goal of diffusion is persuasion and behavioural changes for acceptance of a new idea at the expense of what may be classified as old, uncivilised, out modelled or archaic. The mass media and interpersonal channels as observed in the three strategic approaches to polio communication are adopted to either create awareness about the wisdom in the new idea or convince target audience through local change agents.

In other words, Nigeria's present polio communication strategic approaches has pro-innovation bias, and lacks 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 dates of the campaign, where to conduct the campaign, who to employ and how much to pay without due consultation.

The second deficiency of the present polio communication strategies in Nigeria is its pro-media bias which emphasizes the role of the mass media in creating awareness about the benefits of vaccination thus neglecting the reality that the mass media has its inherent limitations in impacting knowledge, attitudes and behaviour in individuals. Several communication scholars (Maibach, 1993; Roberts & Maccoby, 1985; Wallack, 1990) as quoted in Southwell and Yzer (2007) have questioned the causality effects of mass media effects.

They contend that media campaigns have been conducted around the globe in the past century for a variety of persuasive purposes. "In fact, during the last five decades, the prevailing view of the impact of campaigns has evolved from a so-called limited effects view to a period of renewed confidence in campaigns and, more recently, to a view of likely effects as moderate and nuanced". (Southwell and Yzer 2007: 1-65)

1.2. Statement of the Research Problem

Although, the importance of polio vaccination has been communicated to the populace since the beginning of polio eradication initiative in Nigeria through advocacy, social mobilization and programme communication targeting policy makers, community members and health workers, cases of noncompliance to polio vaccination still abound especially in the states in northern Nigeria. The Independent Monitoring Board of Global Polio Eradication Initiative (IMB 2012) reported that: "The issue of refusals has historically been a great concern for Nigeria and remains so. Of all missed children in 2011, 24% were missed because their parents refused the vaccine. Even if every other problem with the programme could be sorted out, the refusal issue alone is sufficient to undermine success."

Other studies (Centre for Disease Control, CDC 2010, Independent Monitoring Report February 2012) suggest that noncompliance to polio vaccination is still significant. Nigeria's current polio communication approaches are largely pro-innovation or at best passively participatory and as such ineffective to impact behaviours of noncompliant parents. In other words, the current communication strategies are yet to achieve expected behavioural changes among the target audience.

It is, therefore, imperative to explore alternative communication strategies for informing, educating and convincing stakeholders on the importance of polio vaccination to elicit desired behavioural changes. This study will, therefore, explore the application of entertainment-education strategy using a polio documentary film as a tool for impacting behaviours desired for improved knowledge, perception and acceptance of polio vaccination among noncompliant parents in the northern states of Nigeria.

1.3. Aim of Study

The aim of this study is to assess the impact of an entertainment-education documentary film for communicating polio vaccination to noncompliant households to accept the vaccination and to recommend the methodology or suggest improvements in polio communication in Nigeria.

1. 4. Objectives of study

This study was guided by the following specific objectives:

- To ascertain the extent to which a polio documentary film can impact on the knowledge of parents who are noncompliant for polio vaccination of the children aged 0-59months in the northern states of Nigeria;
- To determine the extent to which a polio documentary film can impact on the attitude and perception of noncompliant parents regarding polio vaccination of their children;
- To ascertain the extent to which watching a polio documentary film can induce/generate spousal communication on polio vaccination among noncompliant parents in the northern states of Nigeria.

1. 5. Research Questions

Based on the aforementioned objectives, the study sought to provide answers to the following questions:

RQ1: To what extent does exposure to a polio documentary film impact on knowledge about polio vaccination among noncompliant parents than those who were not exposed to the film?

RQ2: To what extent do noncompliant parents exposed to a polio documentary film have a positive attitude of polio vaccination than those who did not watch the polio documentary film?

RQ3: Would those exposed to the polio documentary film accept to vaccinate their children aged 0-59months against polio infection as against those who did not watch the film?

RQ4: To what extent would exposure to the polio documentary film motivate interest to seek further information regarding polio vaccination among those that watched it than those who did not watch the documentary film?

RQ5: Are those who watched the polio documentary film likely to engage in inter-spousal communication on polio vaccination than those did not watch it?

1. 6. Justification of Study

Since 1996, Nigeria had embarked on nation-wide and sub-national campaigns to stop polio transmission. Several communication and mobilisation strategies broadly categorized as advocacy, social mobilization and programme communication have been adapted to communicate the importance of polio vaccination to the public. These communication strategies have left thousands of parents and guardians still refused to allow their children to be vaccinated against polio. Thus, several thousands of children remain missed during polio vaccination campaigns due largely to noncompliance. The resultant effect is that many children missed end up with infection due to polio. In 2012, 181 children were infected by

polio in Nigeria (WHO Data base 2012). More than half all children infected by polio in Nigeria were those who had received inadequate doses of polio vaccine because their parents refused at one time or the other. In fact, 75% of infected children have had less than three or zero doses of oral polio vaccine because their parents have denied them polio vaccination despite all forms of communication and mobilization strategies employed to convince them. In 2008, 786 Nigerian children were paralyzed due to polio virus infection and 388 in 2009. (WHO power point presentation: 2010)

Hence, this study is justified to the extent that it will explore the extent to which a polio documentary film strategy will improve the knowledge, perception, attitude and acceptance of vaccination of eligible children against polio infection in the northern states of Nigeria. It will, therefore, fill this obvious gap in the continuum of search for effective communication strategies for polio eradication. The study will provide research evidence on the effectiveness of entertainment-education approach to achieving desired behaviour necessary for acceptance of polio vaccination.

Although, this is essentially an academic activity, it is hoped that policy makers and polio programme implementers will have access to the findings of this study and apply it to improve polio communication in Nigeria.

1. 7. Scope of Study

Polio eradication is a global initiative as well as a national programme in Nigeria. It is being implemented in all the nooks and crannies of Nigeria. But this study will be restricted to only the states in northern Nigeria.

Firstly, states in northern Nigeria account for over 75% of all polio cases in Nigeria from 2003 till date. (WHO Data 2010). In fact in 2010, 20 cases out of the 21 total cases were from states in the north.

Secondly, available data showed that the states in Northern Nigeria have high number of noncompliance to polio vaccination and invariably higher children with marginal doses of oral polio vaccine due largely to rejection of polio vaccination for their eligible children. Thirdly, there are inadequate resources to conduct a country-wide study of this magnitude.

However, results from the study in this region of the country can be conveniently extrapolated to other parts of the country given that adequate care will be applied to ensure validity and reliability of methodology for sampling, data collection, instrumentation and analysis.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMWORK

2.1. Development Communication

The two most prominent approaches to development communication (Diffusion of Innovations and Participatory Communication) provide different definitions for the concept of development communication. Everett Rogers (1995) viewed development communication as the process by which messages are transferred from source to a receiver and that this communication causes the receivers to change an existing behaviour. Melkote and Steeves (2001) provided an alternative definition of communication as a complex process, inseparable from culture, which is sustained and challenged by global and local economic, political, and ideological structures and processes

These definitions suggest that development communication is "empowerment of marginalized individuals, groups, and organizations. They view communication as a "dialogic process" through which community members learn "self- management". Mahmud (1981) cited in Jacobson & Servaes, (1999) believed that the communication aspects of development involve "the articulation of social relations between people". It can be deduced therefore that development communication is viewed as a social activity with a goal to "improving the living conditions of society" (Melkote & Steeves, 2001).

Okwori (2010) defined development communication as a means by which communities/human beings mutually exchange and share ideas, skills and experiences, through the active participation of people, using a combination of available media that is

accessible to the people. Nora Quebral sees it as "the art and science of human communication applied to the seedy transformation of a country and the mass of its people to a dynamic state of economic growth that makes possible greater social equality and the larger fulfilment of human potentials. (FAO: 1987)

Therefore, development communication is culturally contextual, people oriented, empowering, and egalitarian yet it entails a process of transferring (diffusion) of a new idea (innovation) from the encoder (source) to the decoder (receiver) with an intention to impact desired behaviour on the receiver.

2.1.1. Diffusion of Innovations

Diffusion of innovations is an interdisciplinary social science theory that can be traced back to the World War II era. It is a modernization theory that has been employed in communication, rural sociology, marketing, education, agricultural economics, general economics, political science, geography, and public health (Rogers & Singhal, 1996).

Rogers 2003 states that diffusion of innovations is founded on two main concepts—diffusion and innovation. According to him Social change is a three step process—invention of a new idea, diffusion of this idea among the members of a social system, and consequences that consist of acceptance or rejection of the new idea. He further explained that *diffusion* is a "process by which an innovation is communicated through certain channels over time among members of a social system. Diffusion results in changes within the social system that are characterized as "a collectivity of units which are functionally differentiated and engaged in joint problem solving with respect to a common goal". . The concept of "*innovation*" is "an

idea, practice, or object perceived as new by an individual or other unit of adoption" (Rogers & Singhal, 1996.).

Rogers (1995) identified five characteristics that determine the rate of adoption of innovations. The first characteristic is the relative advantage or the degree of improvement that the new idea offers over the old one. The second characteristic is compatibility. Compatibility entails and describes how consistent the innovation is with the "existing values, past experiences, and needs of the receivers." The third characteristic is complexity, a measure of how comprehensible the new idea is to the receivers of the innovation message. The fourth characteristic, trial-ability of new ideas, permits people to try out an innovation before they make a final decision about adopting or rejecting it. The fifth characteristic, observability, describes the extent to which other members of the social system can observe the results of an innovation after it is adopted by the first innovators within the system.

Rogers postulate that diffusion occurs when development information and knowledge is transmitted from the developed world to the developing world. The transmission of information results in new awareness and knowledge that lead to attitude changes and acceptance or rejection of new behaviour models. The goal of diffusion is persuasion and behavioural changes in people of the non-industrial world. Mass media and interpersonal channels are employed to deliver the development message from the change agents—"professionals who influence innovation-decisions in a direction deemed desirable by a change agency" to the people expected to adopt the changes.

The mass media is used to create awareness and knowledge about the new idea, whereas, interpersonal channels are employed when the goals of communication is attitude and

behaviour changes about the innovation. Often the change agents engage local opinion leaders, i.e., people who are in a formal or informal authority positions to influence the other members of the social system, in order to achieve the desired development goals.

Critique of the Diffusions of Innovations Approach

The diffusion of innovations approach has been widely criticized by scholars within the development communication community (e.g., Colle, 1989; Melkote & Steeves, 2001; Servaes, 1999). First, Melkote and Steeves (2001) believe that the diffusion of innovation approach *lacks sensitivity about the local cultures* in which innovations are implemented. The diffusion approach is based on Western principles of development and progress. Such successes of diffusion as the Marshall Plan in Europe after World War II are not relevant to the non-Western world. The implementation of the Marshall Plan required only financial and material resources for reconstruction; post-war Europe already had the necessary expertise and Western socio-cultural values. The non- Western world situation is different because innovation causes "masses of people . . . to have their traditional life styles changed radically. Development involves not simply the transfer of capital and technology, but also the communication of ideas, knowledge, and skills to make possible the successful adoption of innovations". The diffusion of innovations approach overlooks the cultural context in which the diffusion process occurs.

The second deficiency of the diffusion approach is its *pro-media bias* which emphasizes the role of the mass media in creating awareness about innovations in the early stages of diffusion (Colle, 1989, cited in Melkote & Steeves, 2001). The diffusion of innovations neglects the reality that the media are not widely available to many citizens in the developing world and many of them are illiterate. Melkote and Steeves (2001) argued that because of the

limited access to the media, later diffusion studies (Boserup, 1970; Staudt, 1985) have demonstrated that the information about innovations reached only a small proportion of the developing world populations—the wealthiest and most educated.

Third, Colle (1989) believed that the diffusion approach also has a *pro- persuasion or pro-innovation bias*. Melkote and Steeves (2001) agreed with Colle (1989) by suggesting that the change agents "decide what innovations were best for their clients and implemented campaigns to convince the clients of the wisdom of the change agent's choices" (Melkote & Steeves, 2001). Decisions about innovations are not made by local people. Changes are initiated and implemented by Western donor agencies without engagement or involvement of the local people in the decision-making process. Diffusion is a "top-down communication" that employs "a one-way flow of influence to deliver messages from change agencies at the top to the rural peasantry at the bottom".

Fourth, Servaes (1999) suggested that the diffusion of innovations approach does not address the issue of power. Melkote and Steeves (2001) argued that diffusion of innovations does not distinguish between the elites and ordinary citizens. Diffusion does not reach the least powerful members of society and, therefore, increases the power gap and social inequalities. Power must be re-distributed to ensure social changes and development.

2.1.2. Participatory Communication

The participatory approach to development communication emerged as an alternative to diffusion of innovations. The goal of participatory communication is to empower local communities to manage their own development. Participatory communication is not a theory;

it is an umbrella concept for different perspectives that view communication as a people-oriented activity.

Agunga (1997) identified several different perspectives on participatory communication—development support communication (e.g., Ascroft & Masilela, 1994; Childers, 1976), empowerment (Nair & White, 1993, Melkote & Steeves, 2001); participatory communication (Servaes, 1990), and emancipatory communication (Mowlana, 1992).

No generic definition exists for the concept of participatory communication. Several scholars have tried to define it. Capriles (cited in Jacobson & Kolluri, 1999) suggests that participatory communication is "the permanent dialogue, the spontaneous and relevant participation, never arbitrary or conditional, generating collective decisions and the socialization of production and its fruits"

Nair and White (1993) believed that participatory communication is "the opening of dialogue, source and receiver interacting continuously, thinking constructively about the situation, identifying developmental needs and problems, deciding what is needed to improve the situation, and acting upon that".

Morris (2003) suggested that participatory communication "empowers people to have greater control over decisions that affect them, and, in this way . . . fosters social equity and democratic practices". Communication is a "horizontal process of information exchange and interaction".

Servaes (1999) described the process of participatory communication as an activity that "no longer attempts to create a need for the information one is disseminating, but . . . rather disseminates information for which there is a need". Contrary to the persuasive goals of the diffusion of innovations approach, true participation encourages the development of a country "within its cultural and environmental framework".

Servaes (199) identified five principles of participatory communication. First, ordinary people, rather than change agents or formal power structures, are the "key agents" of change. Communication is employed to encourage self-reliance and independence of local people from donor agencies.

Secondly, the goals of development are education and activation of people towards self and community improvements; development means lifting up the spirits of the local community to take pride in its own culture, intellect, and environment.

White (2004) called for rejection of the modernization thesis, which according to him defines development in terms of an implementation of western rationality and entrepreneurial values. He argues that development requires "awareness of unique cultural values".

Morris (2003), who reviewed research in participatory communication, suggests direct involvement of local people in management and evaluation of development programs, education about empowerment rather than technical know-how instructions, and learning by participation rather than passive processing of directions about innovations.

The third principle of participatory communication is the re-shifting of the focus from the nation state to local communities (Servaes, 1999). Participation does not mean just one metropolitan centre; true participation consists of "many local and regional poles of development with regional media, educational facilities, professional services, and cultural expressions" (White, 2004).

The fourth principle involves the re-distribution of power from the elites to local communities (Servaes, 1999). In order to encourage changes, development communicators must support local communities in their efforts to resist the obstacles set by those in formal power who want to maintain the status quo.

The fifth principle requires implementation of a new research tradition or so-called "participatory research" (Servaes, 1999). The effectiveness of empowerment cannot be measured in terms of empirical social science tradition. Participatory development communication must employ studies that allow "the researched to do their own research" rather than rely on the findings of academics or change agencies. Participatory research "believes in the knowledge and ability of ordinary people to reflect on their oppressive situation and change it.

Participants are more capable than 'experts' because they best know their situation and have a perspective on problems and needs that no outsider can fully share". Participatory research must engage local communities in developing an understanding about their situations and in becoming confident about their abilities to change situations. (Servaes 1999)

In addition to Servaes' five principles, of the researcher believes that participatory communication revealed two other principles that must guide development communication. These are the need to view empowerment in the "framework of universal human rights" (White, 2004). Respect for universal human rights ensures that when one group is empowered other groups that also need empowerment do not lose it. White explained that "no right is secure unless it is universally respected and implemented".

The other principle of participatory communication involves appropriate communication channels through which participation can occur. White (2004) suggested that community or citizen media is different from mass media. He pointed out that: Community media "celebrates local culture and local people allow all to become producers of media discourses and to affirm their perception of reality to themselves and to others in the community. Less powerful groups express their oppressions and bring the Community Theatre, oratory, poetry, puppet shows, music, praise singing, wedding rituals, political rallies, and so forth. (Rensburg, 2003).

Critique of Participatory Communication

Similarly to diffusion of innovations, the participatory approach has been criticized by the community of development communication scholars. First, White (2004) believes that scholars of participatory research have failed to explain how grassroots communities are created and "reach the stage of being ready for catalyst action". He suggests that scholars of participatory communication should learn from those social movement studies that view relationship building within and among families, friendship groups, churches, neighbourhoods, workplaces, towns, and cities as starting points for empowerment.

The second critique of participatory communication involves *ethnocentricity of empowerment*. Brunt, Lindsey, and Hopkinson (1997, cited in Morris 2005) argued that equality and participation are Western values. For example, a study of a religious Hutterite community in Canada revealed that the "emancipatory grassroots approach runs counter to community norms, expectation, and desires" (Brunt et al., 1997). The researchers concluded that the participatory approach "may unwittingly undermine Hutterite cultural and spiritual values" that include respect for authority and high tolerance for inequality between the members of the community.

The third critique of participatory communication involves the *lack of instruments to measure the outcomes of participation* (Morris, 2003); "the typical participatory outcomes of empowerment and equity do not have generally accepted conceptual and operational definitions. Consequently, they are less amenable to measurement than such [diffusion] outcomes as the percent change in vaccinations before and after a campaign or even slippery hypothetical such as the intention to use contraception".

The fourth critique of participatory communication focuses on the *lack of* explanations for levels of participatory behaviour. Jacobson and Storey (2004) argued that participatory scholars do not explain "the full range of participatory behaviour" i.e., whether participation exceeds the limits of one community and involves larger social movements. Jacobson and Storey suggests that scholars of participatory communication could integrate Habermas' (1990, 1996) concepts of the "public sphere" and "ideal speech situation" into the participatory body of knowledge.

Participants must, therefore, be free to call into question any proposal, to introduce any proposal, and to express any attitudes, wishes, and needs". Jacobson and Storey believe that Habermas' public sphere and ideal speech situation help to explain the levels of participatory communication. Participation involves all levels of the public sphere from a village - to global-level; symmetrical distribution of opportunities for participation by everyone; and tolerance for diversity of opinions. In summary, Morris (2003) suggests combining both approaches—diffusion of innovations and participatory communication—to achieve the goals of development.

Diffusion of innovations views communication as a transmission of information from a source to recipients. The goal of communication is awareness, persuasion, and behavioural changes. The four main weaknesses of the diffusion approach are its lack of understanding about diversity of cultural contexts, pro-media bias, pro-persuasion and pro-innovation focus, and the lack of discussion about power.

The participatory approach focuses on the empowerment of local people to address their own development needs. The main weaknesses of this approach include: failure to explain the ways local communities become ready for change, its focus on Western values of equality and participation, a deficiency of measurement instruments to evaluate the successes of participatory communication, and the lack of explanations for levels of participatory behaviour.

Despite the weaknesses, both approaches offer elements that are essential for development. A new approach that integrates these two perspectives is needed. The proposed integrated approach to development communication suggests new areas of exploration for the

community of communication scholars. First, an empirical study that inquires whether and how the four dimensions of public relations describe development communication needs to be conducted. Second, development communication scholars need to focus their research efforts on local communities and ask them about their communication and development needs. Third, it is necessary to understand the ways in which contextual elements—culture, the media, the political system, the level of economic development, and the extent of activism—affect development communication.

2.2. Entertainment –Education

Entertainment-education is a terminology of choice that emerged in the 1990s and since then has been called several names including enter educate, edutainment, and infotainment. However, everyone irrespective of academic orientation and profession agrees that the key idea is to combine entertainment and education to obtain certain advantages from each (Singhal & Rogers 1989).

Scholars have defined the concept of entertainment differently (e.g., as an activity that provides fun, amusement, arousal, pleasure, and so on. (Tannenbaum, 1980). Singhal (1990) defines entertainment as a performance or spectacle that captures the interest or attention of individuals, giving them pleasure and/or amusement. Scholars have also conceptualized education in various ways: formal versus non-formal education, classroom versus distance education, individual awareness versus public consciousness, and so on. On the other hand, he defines education as either a formal program of instruction and training that has the potential to develop an individual's skill to achieve a particular end by boosting his or her mental, moral, or physical powers.

But Singhal and Rogers (2002) offered a succinct definition of entertainment-education as the process of purposely designing and implementing a media message to both entertain and educate, in order to increase audience members' knowledge about an educational issue, create favourable attitude, shift social norms and change overt behaviour. They argue that the general purpose of entertainment-education interventions is to contribute to the process of directed social change, which can occur at the level of an individual, community or society. Albeit, entertainment education is not a theory, it is communication strategy which intentionally incorporates educational messages into entertainment format with the purpose of changing audience members' behaviour (Nariman1993, Piotrow et al 1997, Singhal and Rogers 1999).

According to Rogers et al., (1999) can be achieved in two ways. First, it can influence members' awareness, attitudes and behaviour toward a socially desirable end. An example is the Tanzanian popular soap opera: "Twende Na Wakati" (Let's Go with the Times) which convinced several hundred thousand sexually active adults to adopt HIV prevention behaviours such as using condom and reducing their number of sexual partners. Second, it can influence the audience's external environment to help create the necessary conditions for social change at the system level.

Fischer and Melnik (1979) state that when used deliberately, entertainment-education can be as effective in realizing political, social and economic aims as conventional tools of persuasion. In the early days of entertainment-education, the biggest challenge facing entertainment-education producers was to determine the effects on audience individuals. However, during the 1990s, scholars and producers of entertainment-education programmes began studying and revealing the effects of entertainment-education programmes on intended

audience's knowledge, attitudes and overt behaviours. Research and theorizing in recent years suggest that entertainment-education has certain of its effects as a catalyst for triggering interpersonal peer communication leading to changes in the social discourse of the audience to motivate audience members in socially supporting behaviour change (Sood and Rogers, 1996; Vaughan and Rogers 1996).

The effects of the entertainment-education strategy occur particularly as a result of para-social interaction and role modelling by audience individuals with positive and negative characters. Singhal and Rogers (1999) opine that six factors determine the effectiveness of entertainment-education. These are; audience characteristics, organisational factors, media environment, audience research, programme specific factors and infrastructural factors.

Audience Characteristics: socio-cultural, environmental and psychological variables such as norms, values, beliefs, degree of interpersonal interconnectedness, and selective interpretation determine the outcomes of entertainment-education programmes. Audience members of any entertainment-education programmes are not passive but active participants and as such actively negotiate the meanings they perceive when processing the messages therein. While some viewers arrive at oppositional or undesirable conclusions (Malwade-Rangarajan, 1992; Rogers et al., 1994; Ram, 1993; Sherry, 1997), resulting in Archie Bunker effect, others may arrive at the desired outcome. However, formative and summative audience research, including pretesting of messages, can facilitate a dominant perception of entertainment-education programmes (Rogers et al., 1998; Singhal and Brown, 1996).

Although, some studies on effects of EE programmes suggest that EE is more effective in creating knowledge of an educational issue than in changing overt behaviour. Singhal and Rogers (1999) note that EE messages are interpreted selectively by audience members

through a process of exposure, perception and retention. A message in rock music, a soap opera or a comic book informs a considerable portion of the audience about an educational issue. But a fraction of the target audience actually changes overtly. However, this fraction may still constitute a large number of people. For example, a 25% of target audience that adopted family planning after listening to *Twende Na Wakati* actually constitutes 440,000. (Rogers et al., 1997)

Organisational factors: The presence of professionals, start-up funding, and stakeholders' collaboration among others usually determine the effectiveness of an EE. In other words, the effective implementation of EE often depends on the ability to leverage status, power and resources. For, example, Hum Log was implemented in India because PCI's Pointexter convinced India's Prime Minister and Secretary of Ministry of information and Broadcasting to champion the project.

Media Environment: The degree of media saturation, credibility, acceptance, and penetration of the target audience influence the effectiveness of EE. Hence, exposure to an EE message competes for attention with other media messages impacting strongly on the audience member's exposure to the programme. Therefore, to achieve desired impact of EE, it is important to integrate the messages with other campaign communication messages.

Audience Research: The degree and quality of audience research – formative and summative evaluations, needs assessment participation and collaboration between audience and EE producers determine its effectiveness.

Programme specific factors: Choice of language, the degree of situational realism depicted, the use of celebrity, programme scheduling, and the degree of repetition can also influence the effectiveness of EE.

Infrastructural factors: For an EE to achieve desired impact it must have adequate infrastructure for providing services or it will not have strong effects in changing behaviour. Research has shown that behaviour change does not occur in a vacuum. Singhal and Rogers outline six variables that influence effectiveness of EE projects. They did not include an important factor which is the part played by others (peer group, family ties, class consciousness) which could to impact on behaviour change.

2.2.1. Entertainment-Education, Soap Opera and Behaviour Change

SIDA dans la cite' is a television soap opera on AIDS which describes the life a family touched by HIV/AIDS, with the objective of educating the public. It ran two series. The first series of 11 episodes was broadcast in 1995 while the second of 20 series was broadcast on Thursday evenings, immediately following the 8'oclock news. The second series was broadcast from October 1996 to February 1997. Shapiro et al (2003) undertook a study which assessed the factors associated with viewing the soap opera. The purpose of the study was to assess the impact of SIDA dans la cite' on AIDS in Cote d'Ivoire. Specifically, it used a survey of 2, 150 individuals to examine factors associated with exposure to SIDA dans la Cite', the relationship between exposure to the soap opera and risky sexual behaviour, and the effect of the opera on condom use.

The survey was conducted only in locations with electricity. It was estimated that about 40% of households in Cote d'Ívoire are electrified. The survey took place in three locations: Abidjan, the village of Boude'pe' and N'Douci. The three locations were purposively selected. In each of the three locations, respondents were randomly selected *(Zoungranaet al., 1999).* The respondents were made up of 1,382 from Abidjan, 368 from Boude'pe'and 400 from N'Douci. In order to be able to generalize from the sample to that portion of the population served by electricity, which is the maximum potential audience for SIDA dans la Cite' the data was weighted. The weighing was based on information from the 1994 Demographic and Health Survey (DHS) (Sambo et al. 1995), and estimates of the degree of urbanization in Cote D'Ivoire. Since survey was restricted to electrified areas, the sample differs from other survey. Radio ownership and secondary education among women were both higher in the SIDA dans la Cite' survey than the DHS data. (Shapiro and Meekers, 2000).

The results indicate that 65% of the sample had seen at least one SIDA dans la Cite' episode. Among viewers, 27% of males and 41% of females had seen at least ten or more episodes. Respondents who had risky sexual partners were particularly likely to watch the soap opera. Women who had seen ten or more episodes were 1.4 times more likely than non-viewers to have used condom in their last sex. Men who had seen ten or more episodes were 2.7 times more likely to have used condom. However, the effect on condom use is partially explained by the fact that viewers have socioeconomic characteristics associated with higher use of condom.

In summary, the results showed that television soap operas can be an important tool for promoting condom use. Although, the televised programme was restricted to electrified

locations, it had wide reach. Besides it was most appealing to viewers who tend to engage in risky sexual behaviours, which implies that it had good reach among those who are most likely to spread HIV.

The fact that this study was restricted to only areas that have access to electricity suggests that the results may be skewed, thus making its extrapolation difficult or even faulty. Since, those involved in the study have electricity, they must have passed the awareness stage and may be at different other adoption stages unlike those who do not have electricity and so may not even be aware of the issue.

A similar study was conducted by Rogers et al (1999) in Tanzania to evaluate the effects of an entertainment-education radio soap opera, *Twende na Wakati (Lets Go with the Times),* on the adoption of family planning methods. The experimental design compared the effects of the soap opera in a treatment and a comparison area. The project used a field experimental design, pre- and post intervention measurement of dependent variables and measurement triangulation using independent data sources to provide more definitive evidence of the effects of the strategy on family planning behaviour.

Broadcast of "Twende na Wakati" began in 1993 on Radio Tanzania in the national language, Swahili. It ran twice weekly during early prime time (6.30pm) for 30 minutes in seven mainland radio stations. The radio station at Dodoma instead broadcasts locally produced programmes at this same time, and this region served as the comparison area in the field experiment. The soap opera was subsequently broadcast nationwide from 1995-1997. Data about the effects of the soap opera were gathered in five annual surveys of about 2,750 households in the comparison area and the treatment area and from a sample of new family

planning adopters in 79 health clinics. Hence, a multiple triangulation approach was adopted which provided a wider scope for data quality checks and consequently higher degree of validity. These approaches include personal interview surveys, review of ministry of health clinic data, script content analysis, analysis of listeners' letters, and demographic and health survey. Ideally, the respondents interviewed in both the comparison and treatment should be similar in terms of socioeconomic and demographic variables prior to the soap opera broadcasts.

The result of the study, however, showed that most listeners perceived the soap opera as "*very entertaining*" (between 64 and 77percent) and *very educative* (between 70 and 85 percent). But comparison of listeners and non-listeners was subject to self selection bias, nonetheless such comparisons helped to better understand the process through which exposure to the radio soap opera had its effects. From 1995 -97, between 48% and 63% of listeners told someone, usually their spouse, about the soap opera. Hence, couples who listened to Twende Na Wakati discussed about it and so were much more likely to adopt a family planning method (49%) than were non-listeners (19%). Furthermore, the study also found out that non listeners were half more likely to talk with their spouses about family planning 32% than were listeners (66%).

This goes to support the hypothesis that exposure to the soap opera stimulated spousal communication about family planning which in turn was related to the adoption of family planning method. The radio soap opera contributed to these changes through intervening variables, including self-perception of risk of contracting HIV/AIDS; interpersonal communication about HIV/AIDS; and identification with the primary characters and their role models in the radio opera.

However, in this study, the respondents in the comparison area had central station electricity, were more educated and were much more likely to live in a village in which family planning services were available. They were also more likely to own a radio and be exposed to at least one other radio programme with family planning content. Hence, exposure to the radio programme is likely to be skewed due largely to these extraneous factors.

Radio and television soap operas in Mexico, India, Tanzania, Kenya and Nigeria have been documented by independent researchers to have played significant roles in bringing about changes in reproductive health behaviour and in promoting adoption of other health interventions.

Ryerson (2006) noted that there is strong evidence that mass media, particularly broadcast media, have massive effects on audience attitudes and behaviour with regard 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.

In Mexico, Miguel Sabido created the first soap opera to promote family planning named *Acompaname* which means *Accompany me.* The programme showed for over nine months exploring the personal benefits of planning one's family by focusing on family harmony. At the end of the nine months course, the Mexican government's National Population Council CONAPO reported that: phone calls to the CONAPO requesting family planning information increased from zero to an average of 500 a month as a result of the television soap opera.

More than 2,000 volunteers registered to work in the national family planning programme. This idea was suggested in the soap opera; Contraceptive sales increased to 23 percent in one year, compared to a seven percent increase the preceding year. More than 560,000 women enrolled in family planning clinics, an increase of 33 percent compared to one percent decrease the previous year. During the decade 1977 – 1986, when many other Mexican soap operas went on air, the country underwent a 34 percent decline in its population growth rate. As a result, in May 1986, the United Nations Population Prize was presented to Mexico as the foremost population success story in the world.

Similarly *Tushauriane, (Let's Talk about it)* a television series and *Ushikwapo Shikamana (If Assisted, Assist yourself)*, a radio serial, went on air in 1987 in Kenya with the aim of opening the minds of men to allowing their wives to seek family planning. The series also effectively linked family size to land inheritance and the consequent ability or inability of children to support their parents in their old age. By the end of the series, contraceptive use in Kenya increased to about 58percent and desired family size had fallen from 6.3 to 4.4 children per woman. While many factors undoubtedly contributed to these changes, a study conducted by the University of Nairobi School Of Journalism at rural health centres showed evidence of women employing one family planning method or the other saying that the radio soap opera had caused their husbands to allow them to come for family planning.

In India, David Poindexter and Miguel Sabido facilitated India's first social content soap opera, *Hum Log* (We People) in July 1984). The soap opera included promotion of family planning and elevation of the status of women through the words and actions of key characters.

After 17 months of broadcasting the soap opera, Everett M Rogers and Arvind Singhal found through a survey that 70 percent of the viewers indicated they had learned from Hum Log that women should have equal opportunities, 68 percent had learned that women should have the freedom to make their personal decisions in life, and 71 percent had learned that family size should be limited. Besides this, the soap opera stimulated over 400,000 viewers to write to the Indian Television Authority and to various characters in the soap, expressing their views on the issues presented and asking questions and seeking further advice and information.

The second soap opera produced by Roger Pereira of Bombay, *Humraahi* (Come Along with Me) went on air in January 1992. It presented issues on the status of women regarding age of marriage, age of first pregnancy, gender bias in childbearing and child rearing, equal education opportunities , and the right of women to choose their own husbands. In the series a servant girl dies in childbirth at age 15 after being forced into an arranged early marriage at 14 by her parents. Following the key episodes, the other characters lamented the fate of women in India and the tragedy if early marriage and consequent pregnancy.

Ryerson (2006) found in a study sponsored by Rockefeller Foundation that viewers contrasted with non-viewers, changed their attitudes regarding ideal age of marriage and the acceptability of women in the work place. These were two prominent issues explored in the soap opera. Four months later, Humraahi's estimated audience rose to 230 million viewers.

Papa et al (2000) undertook a multi-method case study to investigate the processes by which dwellers of an Indian village initiated system level changes as a result of exposure to entertainment-education messages between 1997 and 1999. The researchers explored how

listeners of a radio soap opera reflected and acted upon dowry eradication, small family size, women's empowerment, and community development over a three year period. They employed surveys, focus group discussions and interviewees. The study started with archiving materials and a collective poster-letter sent by the radio soap opera listeners to the radio station. They explored the process of designing and collectively producing the poster-letter by conducting 25 individual in-depth interviews and four focus groups with 20 individuals. A year later, they included 20 in-depth interviews and six focus groups with 40 participants. Data collection relied on participant observation, note taking and photo and video documentaries. At third year, further observations were made and 20 in-depth interviews were conducted with key informants of the village.

At end of three year period, the study found that entertainment-education initiated the process of behaviour change by directing audience members' attention to new patterns of behaviour. However, identification with the soap opera characters who displayed pro-social behaviours did not necessarily lead directly to behaviour changes by audience. Behavioural changes were associated with the extent to which pro-social relationships prompted conversations among listeners.

Ahmed (2000) produced a 13-episode drama serial 'Shabuj Chhaya' (Green Shade) aimed at persuading men and women, as well as adolescents to take responsibility for their own health and to use the wide range of health services available at clinics displaying the green umbrella logo.

Messages about childhood immunisation, vitamin A, diarrhoea prevention and treatment, acute respiratory infection, family planning, HIV/AIDS among others were interwoven into

the vivid stories of Shikhanpur village life in Bangladesh. By the end of the 13-episodes, over 6,000,000 letters were received from enthusiastic viewers. A national survey of 7,299 men and women in rural and urban centre revealed a high level of health workers knowledge among those who watched the drama, compared to those who did not (59% vs. 23%). The HIV/AIDS episode had an especially strong impact as 74% of those of those who watched became aware of HIV/AIDS compared to 27% who did not. In addition, 63% were aware that condom protects against HIV/AIDS compared to 25% who did not watch the serial.

Smith et al (2007) explored the effects of a radio drama on behavioural intentions to limit HIV transmission in Ethiopia. The study investigated a model of entertainment- education that combined drama theory (Kincaid 2002) and social cognitive theory and tested it in a field study of a government-sponsored health campaign in Ethiopia. The authors studied the relationship between reported exposure to the *Journey of Life* radio drama and intentions to practice, at least, desired behaviour to prevent HIV transmission (abstinence, monogamy, or condom use) were mediated by emotional involvement, character identification and perceived efficacy.

The study found that listeners who listened more to the episodes of the radio serial drama identified more with the protagonist and felt more emotionally involved in the drama. They also reported stronger perceptions of personal efficacy in HIV prevention behaviours and consequently reported stronger intentions to practice prevention behaviours. Furthermore, identification with another character that contracted HIV due to noncompliance with preventive practices correlated positively with stringer behavioural intentions. The result of this study indicated that both drama theory and social cognitive theory explain behavioural intentions.

Music and music videos have also been used to promote health related behaviours. In the mid 1980's, a campaign was implemented to promote sexual restraint among Mexican teenagers. It consisted of songs and music videos featuring a male and female singer as well as public service announcements. Evaluation analysis concluded that the campaign had a number of positive consequences: teenagers felt to talk about sex openly, they became more sensitized to the relevance of sex, the messages reinforced the choices of teenagers who already practiced abstinences and the messages lead to modest increase in the demand for family planning services.

Supporting this, Rogers et al (1999) concluded that a soap opera radio broadcast in Tanzania played a key role in changing fertility rate of that country. The broadcast increased the listener's sense of self efficacy, the ideal marital age for women, and the rate of acceptance for contraceptive use, inter-spousal communication about family planning and the practice of family planning. A hierarchy of effects was observed in interventions in Mexico, Nigeria and the Philippines.

Singhal, Hurlburt and Vij (2007) conducted a participatory assessment exercise to gauge audience reception of Gugar Goge ("Tell It To Me Straight"), an entertainment-education radio soap opera produced by Population Media Center that sought to promote education for girls, the delay of marriage and pregnancies, and the adoption of family planning and maternal health services to both prevent and treat obstetric fistula. The assessment exercise, which used participatory sketching and participatory photography, aimed to assess how frequent listeners engaged with the radio programme, and how they derived personal meanings from its plot, characters, and educational messages report are not meant to be

generalised to the entire population of Gugar Goge audience members. Three research questions guided the study. These questions and their respective answers are provided below.

"Research Question #1: What is the radio drama Gugar Goge about? Participants' sketches and photos suggested that those who were regular listeners (1) comprehended the various intersecting plotlines of Gugar Goge, (2) could describe the attributes of its main characters, and, in so doing, (3) could articulate its various educational messages: that is, overcoming the harmful reproductive health practices of early marriage and multiple pregnancies; the importance of safe motherhood and the seeking of professional care, detection and treatment of obstetric fistula, and how youth can prevent infection with HIV, and stay away from vices such as drugs and alcohol.

Research Question #2: As a female (or male) listener, which scene from Gugar Goge was most meaningful to you and why? Participants' sketches suggest various degrees of emotional and personal resonance with the key plotlines and characters. Participants freely talked about the debilitating health consequences for a woman (1) if her husband does not get her the professional medical attention she needs at the time of delivering a child, (2) if she is withdrawn from school and married off at an early age. The overwhelming emotional sentiment of participants toward reproductive health of women was reflected in the pithy phrase: "Education as Protection".

Research Question #3: How has your life changed as a result of listening to Gugar Goge? The sketches, photos, and narratives of our participants, especially those of regular listeners of Gugar Goge, suggest that listening to the radio program affected their lives in various ways. Listeners emphasized that they learned about, or were reinforced in, the following: The importance of (1) educating girls, (2) delaying marriage until a woman's body is mature, (3)

having a small family, (4) pre and ante-natal care, (5) early treatment of obstetric fistula, and (6) male responsibility in not marrying young girls, and assisting their partner in seeking professional reproductive health services when she becomes pregnant."

The use of entertainment-education to achieve development objectives is not new. In the 1970s, the Academy for Educational Development documented numerous case studies of the effective use of soap operas, songs and theatre to convey health and nutrition messages in the developing world. (Piotrow et al, 1997). Its assumptions are drawn from socio-psychological and human communication theories and as such falls under the modernisation/diffusion theory. It is concerned with behaviour change through the dissemination of information. Most influenced by Bandura's social learning theory, entertainment-education draws on the fact that populations around the world are widely exposed to entertainment media content. The heavy consumption of media messages suggest that the media, more than any other tool, can effectively persuade people to think, feel, and behave in certain desirable ways

2.3. Review of Empirical Studies

2.3.1. Documentary Film and Behaviour Change

Penn et al (2003) studied the effects of a documentary film about schizophrenia on psychiatric stigma to determine whether viewing a documentary that depicts individuals with schizophrenia can reduce psychiatric stigma. One hundred and sixty three undergraduates at the University of North Carolina-Chapel were randomly selected. The sample consisted of 55.8 percent female and 81.5 percent Caucasian. The average age of participants was 18.85 years. The study adopted a Solomon-4 block design. The participants were assigned to one of four experimental conditions: no documentary film; documentary about polar bears;

documentary about fears of being overweight; and documentary about schizophrenia. The no-film category was included to establish a baseline assessment of participants' attitudes toward persons with mental illness in the absence of any experimental manipulation. The film on overweight individuals and the stigma they face served as a control for seeing a documentary about a non-psychiatric population. The film about polar bears served as a control for seeing a documentary film in general.

The films used for the study were *"I'm Still Here"*, a documentary about schizophrenia; *"Fear of Fat*", a feature about overweight individuals which originally was aired on PBS Frontline, and *"Great White Bear",* a feature about bears which was originally aired on Discovery Channel {Animal Film}. In order to determine whether the documentary films had a differential effect on participants 'mood, the Positive and Negative Affect Scale (PANAS; Watson et al 1988) was administered before and after each film which lasted 43-70 minutes. Participants in the no-film category rated their mood only once. The PANAS comprises 20 mood related adjectives e.g. – *irritable, proud*- that are rated on 5-point Likert scales to the extent to which the adjectives reflects the participant's current mood ranging from 1*{very slightly or not at all}* to 5 *{ extremely}.* These 20 items make up the positive and negative mood subscales, which had good internal reliability in the study.

Also assessed, in addition to mood, was how much participants liked the film or otherwise. Using a Film Rating Firm {FRF}, Penn et al developed a six item questionnaire, rated on 5-point Likert scale that asked participants to rate the film on the following dimensions: whether it was interesting (not at all interesting to very interesting); whether it provided valuable information (not at all informative to very informative); whether it was emotionally engaging (not at all emotionally moving to very emotionally moving); whether it evoked

feelings of sympathy (not at all sympathetic to very sympathetic); and whether it would be recommended to a friend (definitely would not recommend to definitely would recommend).
A number of stigma dependent measures were also used in this study. These measures were the Social Distance Scale, the Dangerousness Scale, an Affect scale, an attribution scale and an index of behavioural intentions.

Social Distance Scale (SDS; *Link et al. 1987).*The SDS comprises seven questions that relate to potential interactions with a hypothetical person with mental illness. It is considered a proxy measure of social avoidance. Each participant is asked to rate each item on a 4-point Likert scale (0=definitely unwilling to 3 = definitely willing) to interact with someone with schizophrenia.

Dangerousness Scale (DS; Link et al. 1987). The DS comprises eight items that test beliefs about whether a person with schizophrenia is dangerous to others. The participants were asked to rate each item on a 7-point Likert scale (1= strongly agree to 7= strongly disagree).
Affect Scale: The affect scale requires participants to rate their emotional reactions to persons with mental illness. It was made up of ten opposite pairs of adjectives pertaining to emotions; e.g. calm-nervous. The participants rated each adjective pair with respect to how he or she would react to interacting with someone with mental illness.

Attributions Scale: Participants were requested to respond to questions asking them to rate a target individual's degree of blame and responsibility for his or her illness as well as the likelihood that his or her condition would change. On a 7-point Likert scale, each question was rated between 1= not at all to blame to 7= entirely responsible.

Index of Behavioural Intention: Behavioural intention is often considered a precursor of behavioural outcomes. (Fishbein and Ajzen 1975). Participants were asked if they were interested in attending a focus group discussion at the University with persons who suffer schizophrenia. They were asked to indicate their intention by circling either "yes" or "no" and recording their telephone numbers if they wish to be contacted for the focus group discussion.

Results: To determine the effects of the documentary film on psychiatric stigma, two multivariate analysis of variance (MANOVAs), first on the three general stigma measures and second on the attribution variables. Finally, a chi-square analysis on the behavioural intention variable as function of group was conducted.

The descriptive statistics for the primary analyses, MANOVA conducted on the SDS, DS and affect scale was not significant, $F(9,462) = 1.35$, non-significant, (ns), indicating that the films did not differently affect the general measures of psychiatric stigma. A second one was (group) MANOVA conducted on the attribution variables was significant, $F(6,318) = 4.73$, $p<0.01$. It should be noted that because of the high inter-correlation between the blame and responsibility variables ($r=0.60$, $p<0.01$), these variables were combined into a single attribution variable. Changeability had only a small modest association with the blame ($r = 0.15$, ns) and responsibility variables ($r = 0.27$, $p<0.05$, so it was no combined with the other two attribution variables.

Finally, a chi-square analysis was conducted on the proportion of participants who agreed to participate in the focus group and provided their phone numbers. The results of this analysis

were not significant (x^2 =2.84, df = 3, ns) suggesting that the films did not have a differential impact on participants' behavioural intentions.

The schizophrenia study is similar to the proposed study on impact of documented film on it target audience. Both studies adopted the Solomon-4 block strategy. Standard data collection instrument will be used to ensure high reliability and validity.

Critique: The findings of the study indicated that a documentary about schizophrenia influenced participants' attributions about schizophrenia but affected neither general attitudes about the illness nor behavioural intentions to participate in a focus group with persons with schizophrenia. A possible critic of this study is the selection of only undergraduate students in the design. Therefore, the study needs to be replicated with a more diverse sample, especially individuals who have significant impact on the lives of persons with schizophrenia such as employees and landlords. Thus, the findings of the study are circumscribed, they are not trivial. Future research should examine the effects of media presentation about persons with schizophrenia on actual social behaviour not attitudes or behavioural intentions alone.

Adegoju (2010) evaluated the use of dramatic and persuasive techniques in the dissemination of HIV/AIDS messages in Abule Oloke Merin in Southern Nigeria. The study selected and analysed select episodes in the indigenous-produced radio drama series 'Abula Oloke Merin, exploring how the deployment of dramatic –cum-persuasive techniques in the media text underlie its communicative essence. Using 10 episodes for the study, it was found out that the respondents mimicked the introductory song of the serial drama and the epilogue which promotes preventive sexual behaviours against HIV/AIDS. Other studies (Adelore et al: 2006 and Sofowora: 2008) also evaluated the effectiveness of Abule Oloke Merin in impacting

knowledge and attitude of rural dwellers regarding HIV/AIDS. They found strong correlation between the serial drama and changes in HIV/AIDS preventive behaviours.

Brown et al. (2004) conducted a similar study on "Promoting HIV/AIDS Prevention through Dramatic Film: Lessons from Tanzania and Kenya. 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. A Solomon-4 block design was adopted in which all participants were divided into four groups, two treatment groups and two control groups. Group1, the first treatment group, received a pre-test survey, watched the film and completed a post test survey. Group 2, the first control group, received a pre-test and post test survey but did not watch the film between the two tests. Group 3, the second treatment group, watched the film and received the post test survey only. Group 4, the second control group, only received a post test survey. The total sample size was 787 participants, out of which 459 were in treatment groups that watched the film. All participants were members of the Tanzania Defence Force including enlisted personnel and officers. About 88% of the samples are men, less than 12% had completed a college, and 86% were Africans, 10% were Arab.

All variables were measured with single questionnaire item. The results 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 health interventions are quite effective in increasing knowledge and raising health concerns. The findings also indicated that knowledge was associated with increasing self efficacy. However, the study did not establish why people make belief and behaviour changes based on viewing the film.

A major limitation of this study is restriction of its sample to only military officers and listed personnel. Given that military personnel usually live in a regimented environment, usually separated from the rest of the society, it is unclear whether the findings of the study can be extrapolated to the larger society where life choices, beliefs and practices are more flexible.

To underscore the effects of entertainment-education strategies on women in Lagos state, Nigeria, Yahaya, Fadairo and Ogunele (2009) studied the effectiveness of entertainment-education as an alternative strategy for health care information delivery to the Nigerian populace and to provide future direction for other up-coming entertainment-education channels. The study sampled 408 women through a multi-stage sampling procedure and administered a combination of structured questionnaire and interview schedule to gather information on respondents' preferred listening time, attitude, and impact of entertainment-education programmes on knowledge and health behaviour.

Findings of this study indicated that 85.5% of the women preferred listening or watching to health programmes; 78% were favourably disposed towards the use of entertainment-education strategies for communicating health education and messages. The study concluded that entertainment-education was effective for communicating health and other development messages to women.

2.3. Review of Theories and Concepts

The theories behind entertainment-education represent diverse disciplinary fields and range from logical positivistic perspectives to critical theory and humanistic perspectives. Entertainment-education theorizing began when Miguel Sabido developed Simplemente

Maria, a 1969 Peruvian telenovela, which has often been referred to as having pioneered entertainment-education.

Although it was not intended to have pro-social effects, Sabido's formula for successful entertainment-education programmes included elements from: five perspectives:

a} the circular model of communication (Rovigatti, cited in Televisa's Institute of Communication Research, see Singhal and Rogers, 1999);

b} social learning theory (Bandura, 1977);

c} dramatic theory (Bentley);

d} Jung's theory of the collective unconscious (Jung, 1977); and

e} the concept of the triune brain (Nariman, 1993, Singhal, Rogers and Brown 1993)

Theories and theoretical constructs and models behind entertainment-education can be divided into broad categories:

I. Steps/Stage Models

The steps/stage models focus on steps or stages that individuals pass through in the process of adopting and maintaining a new behaviour. McGuire's hierarchy of effects, the stages of change model postulated by DiClemente and Prochaska (1985), Rogers's diffusion model (1995) and Rovigatti's circular model of communication are major theories that underpin entertainment-education effects. McGuire's hierarchy of effects model presents an X-axis comprising several input factors such as source, message, channel, and receiver and a Y-axis consisting of output factors such as the steps an individual must be persuaded to take in order to assimilate a desired behaviour.

These steps include exposure to the message, attention to the message, interest in or personal relevance of the message, understanding of the message, personalizing the message to fit

one's life, accepting the change, remembering the message and continuing to agree with it, being able to think of the message, making decisions based on the bringing the message to mind, behaving as decided, receiving positive reinforcement for behaviour and accepting the behaviour into one's life. While DiClemente and Proschaska suggest that changes in behaviour occur when an individual moves spirally through five distinct stages; viz: pre-contemplation, contemplation, preparation, action, and maintenance.

Another step or stage theory is the diffusion of innovation theory. Rogers defines it as the process by which an innovation is communicated through certain channels, over time among the members of a social system. The diffusion theory classifies individuals on the basis of their innovativeness that determines at what point in time an individual will adopt a new behaviour or idea.

The step models help researchers as well as programme managers determine where intended audiences are in the process of change and what stages or features of a communication situation need to be addressed.

Limitations: the Stages of Change Theory is a psychological construct that focuses on individuals without assessing the role that structural and environmental issues play on the person's ability to enact and maintain the desired behaviours. Besides, the theory presents a descriptive rather than causative explanation of behaviour. Finally, each of the stages may not be suitable for generalising a given population, no matter how small. However, behaviour change theories, models and constructs have gained enormous recognition for their possible effectiveness in explaining health-related behaviours and providing insight into methods that would encourage individuals to develop and maintain healthy lifestyles. It has become increasingly necessary for health programme experts to understand what informs individual's

behaviours; why people act or behaviour in a particular way; why people do not change even when they are aware of the dangers of their current behaviour and why people do not maintain positive behaviour overtime.

II. Social Psychological Theories

The social psychological theories of entertainment-education address individual's psychological beliefs and perceptions about the social environment and include social learning theory, the theory of reasoned action, the theory of planned behaviour, the health belief model and belief system theory**.**

III. Psychological Models

Cognitive processing models focus on the specific processes individuals undergo when exposed to an entertainment-education programme. Sheriff, Sheriff and Nebergall (1965) postulate that social judgement theory is based on the concept of latitudes or bandwidths of acceptance or rejection. The theory states that we all have certain comfort zones called latitudes, outside of which we will reject new ideas or behaviours. The key, therefore to successfully using social judgement theory in an entertainment-education campaign is to offer messages that suggest small to moderate discrepancies between an audience's initial position and the one being advocated. Although, this theory is very relevant to the topic of this study, it did not state what factors contribute to a new idea being accepted within the comfort zone and what external factors are relevant to the latitudes of an individual.

Another psychological model is the elaboration likelihood model proposed by Petty and Cacioppo (1986). Petty and Cacioppo suggest that there are two paths of information processing- the central path and the peripheral path. When people are motivated to process a message and able to process that message, they will process it centrally and critically evaluate the content. But when they are not motivated, they will process information peripherally, in

which case they will rely on cues when evaluating the content of the message. But like the social judgment theory, this theory did not explore factors that are contributory to either central or peripheral processing of information.

Psychological models offer important insights into the understanding and processing of entertainment-education programmes. They remind us to consider audience predispositions and brain biology as well as how an entertainment-education message fits into the pre-existing cognitive schemas and collective unconsciousness.

IV. Drama or Role Theories

Bentley (1967) examined five types of drama- tragedy, comedy, tragicomedy, farce and melodrama. He explained that structures and effects of each provide the framework for creating good and bad characters and various types of plots. The structure of melodrama was applied by Sabido in his *telenovela*. Drama theories offer insight into the creative development of entertainment-education programmes by suggesting that common legends and folktales occur within specified cultures which can be used in developing emotionally charged programmes that promote value, belief and behaviour change. Saunders (1979: 93) maintains that:

> Drama is an active method of learning with a high degree of participation. Whether taking part or watching, you enter into the experience of the characters and become emotionally involved with the message. Drama communicates meaning beyond that which the human intellect can grasp. It communicates trough feelings and emotions to the deepest places in a person's life.

V. Behaviour Change Theories/models

For several years, conceptual models of behaviour change such as Bandura's Social Cognitive Learning theory (1986); Becker's Health Belief Theory (1987); Azjen and

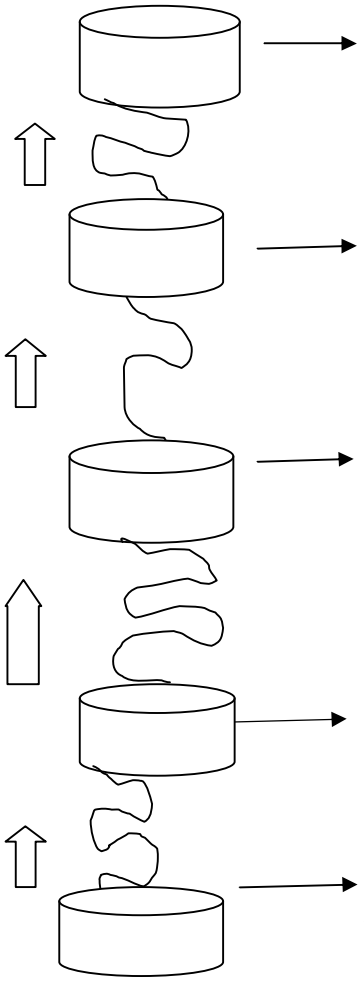
Fishbein's Theory of Reasoned Action (1975) have been applied across a wide variety of development changes.

Prochaska and DiClemente (1986) suggest that behaviour change occurs in stages and that movement through these stages is neither linear nor unitary but rather, cyclical, involving a pattern of adoption, maintenance, relapse, and re-adoption. They developed a trans-theoretical model which proposes that behaviour change occurs in five distinct stages through which people move in a cyclical or spiral pattern. These stages are:

- Pre-contemplation: at this stage, an individual has a problem, whether recognized or not, and has no intention of changing. The processes that lead beyond this stage are: consciousness raising; information and knowledge; dramatic relief and environmental revaluation.
- Contemplation: at this stage, the individual has recognized that he or she has a problem and intends to change the behaviour within a specified period of time. Some efforts along this process may be inconsistent. The process towards achieving this starts with self-liberation, commitment and belief in one's ability to change
- Preparation: at this stage, the person prepares to take the required change. It requires gathering more information, finding out how to achieve the change, ascertaining skills necessary, deciding when to act and may include talking with others to see what impact the change will likely have on the person's life.
- Action: the individual at this stage enacts consistent actions to change the undesired behaviour, for example, consistent condom use for at least six months. This stage requires overt and covert reinforcement management; helping relationships and counter-conditioning
- Maintenance: this is the stage where an individual maintains the new behaviour for at least six months or more.

Therefore, the decision to vaccinate or reject polio vaccination entails a behavioural spiral which individuals must pass through as prescribed by Prochaska and DiClement. They further suggest that behaviour change occurs in a cyclical process that evolves both progress and periodic relapse. In other words, people move forth and back between five and other stages of the behaviour change spiral. Individuals never remain at one stage even in successful behaviour change, but rather spiral upwards, until eventually they reach a state where most of their time is spent in the maintenance stage.

Fig. 2: Behaviour Change Spiral:



MAINTENANCE: practice required for the new behaviour to be consistently maintained, incorporated into the repertoire of behaviours available to a person at any one time.

ACTION: the person makes changes, acting on previous decisions, experience, information, new skills and motivation for making the change.

PREPARATION: the person prepares to undertake the desired action. This requires gathering of information, finding out how to achieve the change; ascertaining necessary skills; deciding when to act, talking with others about the possible effect of the change, its impact, benefits and costs

. CONTEMPLATION: something happens to prompt the person to start thinking about change-perhaps hearing that someone has made changes – or something else has changed – resulting in the need for further change

PRECONTEMPLATION: the person is not considering changing a behaviour at this stage; or might not even realize that change is necessary, possible nor of interest to him.

(*Source: The Behaviour Change spiral from "What do they want us to do now?" FAO 1986)*

i. Diffusion of Innovation

Diffusion of Innovations Theory addresses how ideas, products and social practices are perceived as news spread throughout a society from one area to the other. According to Rogers (1995) diffusion of innovation is the "process by which an innovation is communicated through certain channels over time among the members of a social system"

Diffusion theory has been applied in the study of several health promotion interventions including condom use, smoking cessation, and adoption of family planning methods. Table 7 describes the constructs that are central to this theory:

Table 1: Concepts in Diffusion of Innovations

Concept	Definition
Innovation	An idea, or practice that is thought to be new to an individual or community
Communication channels	The means of transmitting the new idea from one person to another
Social system	A group of individuals who adopt the new idea together
Time	How long it takes to adopt the desired behaviour

Rogers (1995) also developed a stage-based theory to explain how new ideas or innovations are disseminated and adopted at the community level. He identified five distinct stages in the process of diffusion of any new initiative or innovation. These are knowledge, persuasion, decision, implementation and confirmation. Rogers opined that adoption of a new idea is

enhanced when the perceived advantage of an innovation is compared with existing practice and when the innovation is perceived to be compatible with the existing social system.

Hence, an innovation is less likely to be adopted if the new idea is perceived to be less advantageous and in conflict with existing social system. One of the reasons given by noncompliant heads of households for rejecting polio vaccination is that polio is not their priority. Hence, this lends credence to Rogers' postulation that people are less likely to adopt a new idea if they feel it is less advantageous to them. Therefore, polio communication intervention requires an understanding of what stages the individual currently operates before appropriate messaging strategies can be recommended. It would be wasteful to apply an action stage to an individual who is still at pre-contemplation stage and hence is yet to even recognize that not vaccinating children with oral polio vaccine renders them vulnerable to polio infection. The stages of change theory have been explored by other researchers to study a variety of health behaviours, such as smoking cessation, weight control efforts and mammography screening in the U.S populations. More recently, the Centre for Disease Control and Prevention, CDC, has applied this theory in an HIV/AIDS counselling and testing study at sexually transmitted disease clinics. Counselling provided was based on the client's particular stage.

VI. Health Behaviour Models/Theories

i. Health Belief Model

The Health Belief Model (HBM) is one of the first theories of health behaviour and remains the most widely recognized in the field. It is a psychological model that attempts to explain and predict health by focusing on the attitudes and beliefs of individuals. It was developed in the 1950s as part of efforts by social psychologists in the United States Public Health Service

to explain the lack of public participation in health screening and prevention programmes. To find the answers, social psychologists examined what was encouraging or discouraging people from participating in the programmes. They theorized that people's beliefs about whether or not they were susceptible to disease, and their perceptions of the benefits of trying to avoid it, influenced their readiness to act.

Since then, HBM has been adapted to explore a variety of long and short-term health behaviours, including sexual risk behaviours and transmission of HIV/AIDS. Researchers eventually concluded that six main constructs influence people's decisions about whether to take action to prevent, screen for and control illness. Rosenstock et al (1994) outlined the key constructs of the HBM as follows:

Perceived Threat: Consists of two parts: perceived threats and perceived severity of a health condition.

Perceived Severity: feelings concerning the seriousness of contracting an illness or of leaving it untreated (including evaluations of both medical and clinical consequences and possible social consequences)

Perceived Benefits: The believed effectiveness of strategies designed to reduce the threat of illness.

Perceived Barriers: The potential negative consequences associated with taking particular health actions, including physical, psychological, and financial demands.

Cues to Action: Events, either bodily, e.g. physical symptoms of a health conditions) or environmental (e.g. media publicity) that motivate people to take action. Cues to action are aspect of the HBM that has not been systematically studied.

Self efficacy: Ones' belief in himself that he is capable of executing the recommended behaviour that will produce the desired outcomes.

Other variables: Diverse demographic, social and psychological variables that affect an individual's perceptions and thus indirectly influence health-related behaviour.

The six constructs of HBM provide a useful framework for designing both short term and long term behaviour change strategies. Hence, it is appropriate to consider this theory while designing polio communication interventions since an understanding of how susceptible the target audience feels to the problem, whether they believe it is serious or not and whether they believe action can reduce the threat at an acceptable cost will all bear on the outcomes of the intervention.

Applying the HBM to polio eradication communications suggests that caregivers may not follow a prescribed immunisation schedule for their children unless they accept that non-vaccination may predispose their children to polio infection. *(perceived susceptibility)*. Their perceptions of the fact that polio can cause paralysis or death will be a major determinant of the behaviours/actions. *(perceived severity)*. And that taking prescribed medication which is polio vaccination will prevent child from polio infection *(perceived benefits)* without negative side effects *(perceived barriers)*.

IEC materials and messages through various channels might consistently encourage caregivers to follow health workers recommendations *(cues to action)*. For those who were noncompliant to polio immunisation in the past, a behavioural contract might help to establish achievable, short term goals to build confidence in immunisation (*self efficacy)*.

See Table 2 below for summary of HBM constructs:

Table 2 below summarizes the HBM and potential change strategies.

Concept	Definition	Potential Change Strategies
Perceived susceptibility	Beliefs about the chances of getting a health condition	define what populations are at risk and their levels of risk; tailor risk information based on an individual's characteristics or behaviours; help the individual develop an accurate perception of his or her own risk
Perceived severity	Beliefs about the seriousness of a condition and its consequences	Specify the consequences of a condition and recommended action
Perceived benefits	Beliefs about the effectiveness of taking action to reduce a risk or seriousness	Explain how, where, when and why prescribed action should be taken and what the positive benefits will be
Perceived barriers	Beliefs about the material and psychological costs of taking action	Offer reassurance, incentives and assistance, correct misinformation
Cue to action	Factors that activate readiness to change	Provide "how to" information, promote awareness and employ reminder systems
Self efficacy	Confidence in one's ability to take action	Provide training and guidance in performing action Use progressive goal setting Give verbal reinforcement Demonstrate desired behaviours

Limitations of HBM

HBM has been adopted by several researchers (Rosenstock et al (1994), Becker (1974) to study health behaviours, yet it has many limitations. Most HBM-based researches to date incorporated only selected components of the model, thereby not testing the usefulness of the model as a whole. As a psychological model, it does not take in to account other factors such as environmental or economic that influence health behaviour.

Mcleroy et al (1988) identified five levels of influence for health related behaviours and conditions. These levels include; intrapersonal or individual level, interpersonal level, institutional or organizational level, community level and public policy level

Contemporary theories of health behaviours at the intrapersonal and interpersonal levels can be categorized as 'cognitive behavioural'. In this regard, three basic concepts cut across these contemporary theories; viz: behaviour is mediated by cognitions; that is, what people know and think affects how they act; knowledge is necessary for; but not sufficient to produce, most desired behaviour changes. Perception, motivations, skills and the social environment are key influences on behaviour.

Intrapersonal or Individual level

Health behaviour theories at this level focus on the intrapersonal factors (those existing or occurring within the individual self or mind). Individual level theories include the Theory of Reasoned Action (Fishbein et al., (1994), Health Belief Model (Rosenstock et al (1994), Trans-theoretical model Prochaska and DiClemente (1982), Theory of Planned Behaviour (Fishbein and Ajzen1975, Ajzen and Fishbein 1980) and Precaution Adoption Process model.

ii. Theory of Reasoned Action

Based on the premise that humans are rational and that behaviours are volitional, the Theory of Reasoned Action provides a construct that links individual beliefs, attitudes, intentions and behaviours. Fishbein et al., (1994) described the theory variables as follows:

Behaviour: a specific behaviour defined by a combination of four components: action, target, context and time. Applying this to polio vaccination, for e.g., accepting vaccination of

eligible children with oral polio vaccine (action), by caregivers (target), in the households or community (context) on routine schedule and or during mass campaigns (time).

Intention: the intent to perform behaviour is the best predictor that a desired behaviour will occur. In order to make it measurable, intent will be defined using the same components as that of behaviour.

Attitude: a person's positive or negative feelings toward performing the defined behaviour. If one is positively disposed toward polio vaccination, he is much more likely to accept oral polio vaccine than otherwise.

Beliefs: a combination of a person's beliefs regarding the outcomes of a defined behaviour and the person's evaluation of potential outcomes inform the person's behaviour.

The Theory of Reasoned Action is so critical to health behaviour changes and as such has been used to explore behaviours such as smoking, drinking, signing up for treatment programmes, using contraceptives, dieting, wearing seat belts or safety helmets, exercising regularly, voting and breastfeeding. Montana et al (1990) applied this theory in their study on condom usage by females and males in Zimbabwe.

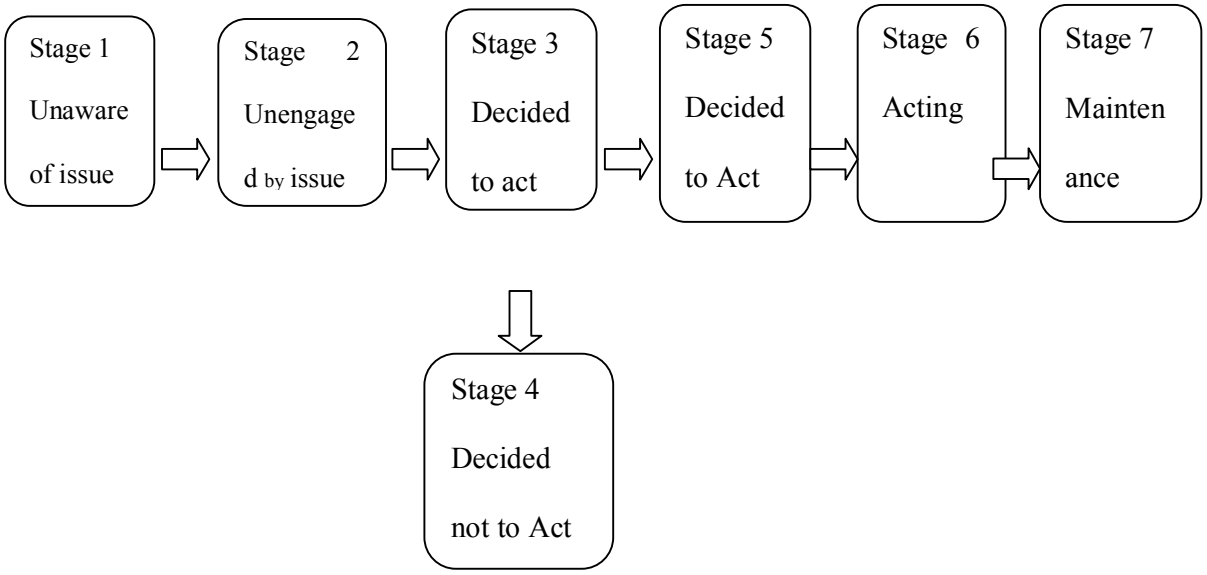
Limitations: Kippax and Crawford (1993) observed that some of the limitations of this theory include its inability to consider the role of environments and structural issues that affect behaviours. The theory, they explained, is individualistic and cannot be applied to general population since it does not consider extraneous factors that impact behaviours.

iii. Precaution Adoption Process Model

The Precaution Adoption Process Model (PAPM) specifies seven distinct stages in the journey from lack of awareness to adoption and /or maintenance of a desired behaviour. It is

a relatively new model but has been applied to several health intervention programmes like cancer screening, mammography screening, hepatitis B vaccination and home testing radon gas. In the first stage of the PAPM, the individual may be completely unaware of the hazard of his behaviour _e.g. not immunising ones child against poliomyelitis or engaging in unprotected sex). At the second stage, the person subsequently becomes aware of the issue but remains adamant. At the next stage, the person faces a decision about acting and at stage four may decide not to act or may decide act in stage five. At stage six, the person is acting but this needs to be followed up and maintained in stage seven. *(See figure 3 below):*

Figure 3: Stages of the Precaution Adoption Process Model.



Source: Theory at a Glance: A guide for Health Promotion Practice. (2nd Ed.) National Cancer Institute, US Department of Health and Human Services

According to PAPM, people usually pass each of these stages without skipping any. It is possible to move backwards but it is not possible to return to the first two stages once passed. In the first stage, an individual may be completely unaware of a hazard (e.g. the risk of not

vaccinating a child or the link between unprotected sex and HIV). At stage two, the person may become aware of the issue subsequently but remain unengaged by it. Next, the person faces a decision about acting at stage three; but decide at stage four not to act. At the fifth stage the person may decide to act and might actually act at stage six and maintain the actions at stage seven.

This model is relevant to the topic of this study to the extent that captures different stages of the adoption process. Recent KAP studies showed that a good number of caregivers were unaware of polio. These individuals will need to pass through the seven stages of the adoption continuum. But it will be critical to identify each individual's stage and tailor appropriate communication messages to fill the gaps.

The PAPM model is significantly similar to the Stages of Change model but differs in important aspects. The Stages of Change model offers insights into how to address hard to change behaviours such as cigarette smoking. On the other hand, the PAPM did not discuss internal and extraneous factors that may determine how an individual behaves at any stage of the adoption process. Nor did it suggest how long it takes an individual to move from one stage to another. Though, it recognised that an individual cannot skip any of the stages; on one hand; and cannot relapse to stages nor and two once passed, but it did not suggest any reinforcement mechanism against backsliding on the other stages.

Interpersonal Level

Theories of health behaviour at the interpersonal level assume that individual behaviours are affected by a nexus of social and environmental variables. It recognises that opinions, thoughts, behaviours, advice and support of family members, friends and professional

colleagues all impact on ones behaviour. One of such of the theories that focus on interpersonal level is Social Cognitive Theory.

iv. **Social Cognitive Theory** (SCT) describes an ongoing process in which personal factors, environmental factors, social variables, and human behaviour exert influence on each other. According to SCT, three factors affect the likelihood that a person will change certain health behaviour: self-efficacy, goals and outcome expectations. It postulates that an individual who has a sense of efficacy can change behaviours even when faced with obstacles. But if an individual feels incapacitated to exercise control over his health behaviour, such individual will not be motivated to adopt new behaviours or to persist through challenges. When an individual adopts new behaviours, this causes changes in the environment.

Table 3 below describes the Social Cognitive concepts:

Concept	Definition	Potential Change Strategies
Reciprocal determinism	The dynamic interaction of the person's behaviour and the environment in which the behaviour is performed	Consider multiple ways to promise behaviour change, including making adjustments to the environment.
Behavioural capability	Knowledge and skill to perform a given behaviour	Promote mastery through capacity building
Expectations	Anticipated outcome of a behaviour	Model positive outcomes of a healthful behaviour
Self-efficacy	Confidence in one's ability to take action and overcome challenges	Approach behaviour changes in steps to ensure success and be specific about desired behaviour
Observational models	Behaviour acquired by watching the actions and outcomes of other's behaviour	Offer credible role models to perform the targeted behaviour
Reinforcement	Responses to a person's behaviour that increase or decrease the likelihood of reoccurrence	Promote self initiated and incentives

In other words, both the individual and the environment are not static but dynamic and responsive to each other. SCT integrates concepts and processes from cognitive, behaviourist, and emotional models of behaviours change.

Community Level

Community level models explore how social systems function and how to mobilize human and material resources for change as identified by the community itself not as identified for it by external factors. Comprehensive health intervention programmes often use advocacy, community mobilisation and behaviour change communication strategies to support individual communities to identify health issues and proffer solutions. The conceptual frameworks at the community level include community organisation and participatory models; diffusion of innovations and communication theory. Community Organisation and Participatory Models:

Table 4: Summary Community Organizing Models

Stage	**Definition**	**Potential Change Strategies**
Empowerment	A social action through which people understand their lives and their communities better	Community members assume greater power, or expand their power from within to create desired changes
Community capacity	Communal ability to identify problems and solve them	Community members taking active leadership part in their own issues
Participation	Engagement of community members as equal partners in programme from problem identification to evaluation	Community members develop leadership skills, knowledge and resources through their involvement
Relevance	People centred approach to problem identification and solving	Community members create their own agenda based on needs and resources
Issue Selection	Identify and prioritize problems which available resources can solve	Community members participate in selecting issues
Critical consciousness	Awareness of socio-political and economic forces that contribute to social problems.	Community members discuss the root cause of their problems and plan actions to address to them

Community organizing is consistent with an ecological perspective in that it recognises multiple levels of a health problem. It can also be integrated with Social Cognitive Theory-based strategies that take into account the dynamics between personal and environmental factors.

Jack Rothman (2001) produced the best known classification of community organising models, viz; locality development which focuses on consensus building and capacity; social planning which stresses problem solving and usually relies heavily on experts; social action increases the community's capacity to solve its own problems. These approaches share common concepts that are critical to measuring change and achieving success.

2.5. Theoretical Framework: Social Leaning Theory

''Of the many cues that influence behaviour at any point in time, none is more common than the actions of others.'' (Bandura, 1986).

Based on the belief that human behaviour is determined by a three-way relationship among cognitive factors, environmental influences and behaviour, social learning theory is premised on the idea that individuals learn behaviour by observing and imitating role models.

Albert Bandura's Social Learning Theory forms the pivot around which this study revolves. This is so because entertainment-education strategies draw directly upon social learning theory which maintains that an individual learns by observing and imitating the overt behaviours of others, who serve as role models for the new behaviour, thereby gaining sense of self efficacy (an individual's belief that he or she is able to control certain outcomes of

life). The characters in entertainment- education programmes serve as positive, negative and transitional behavioural role models and the characters' fates serve as vicarious learning experiences about the realistic consequences of alternative behaviours.

Bandura identified three areas of weakness in behaviourism. These are the limited range of the behaviours possible for research in a laboratory setting; the fact that these theories are unable to account for the acquisition of new responses to situations, and; that it dealt with only one type of learning, direct learning, referred to as delayed matching where the learner observes reinforced behaviour and then later enacts the same type of behaviour.

Albeit, some learning and instruction theories were developed in the 1960s, Bandura and his researchers recognized that many of them overlooked an important aspect of learning, the observation of others. A major difference between Bandura's social cognitive theory of learning and earlier theories is his definition of learning. He noted that persons acquire internal codes of behaviour that they may or may not act upon later.

Therefore, he divided learning and performances as two distinct events. Learning, for him, is an acquisition on the internal symbolic representations in the form of verbal or visual codes, which could serve as guidelines for future behaviour. These memory codes of observed behaviour are referred to as representational systems and divided into two types of systems: visual and verbal. The first is concerned with abstractions of distinctive features of events instead of just mental copies while the second would be the verbal form of details for a particular procedure.

The modelled behaviour serves to convey information to the observer in one of the three different forms. One is by serving as a social prompt to initiate similar behaviour in others. The second is by acting to strengthen or weaken the existing restraints of the learner against performance of particular behaviours. The third influence is to transmit new patterns of behaviour.

In the health sector, entertainment-education is anchored on the idea that individuals learn by observing and imitating role models. Imitation and influence are the expected outcomes of interventions. Entertainment telenovelas were based on Bandura's model of cognitive sub-processes: attention, retention, production, and motivational processes that help researchers to understand why individuals imitate socially desirable behaviours. This process depends on the existence of role models in the messages: good models, bad models and transitional models.

Given the relevance of Bandura's theory to entertainment-education, Social Learning Theory was the pivot on which this study revolves. Hence, the entertainment-education polio documentary film which is the tool for this study is anchored on Bandura's postulation that the action of others is the most efficacious variable in influencing behaviours.

In accordance with the tenets of the Social Learning Theory, which specifies that modelled behaviour serves to convey information in one of three forms, first, the polio documentary film features two transitional non-fictional characters, who were hitherto noncompliant to polio vaccination until their children became paralyzed by polio. Their fates served as vicarious learning experiences about the realistic consequences of alternative behaviours (noncompliance to polio vaccination).

Secondly, the documentary film also featured devoted leaders and scholars of Islamic religion to serve as models (the Sultan of Sokoto, Sheik Dahiru Bauchi, Sheik Isa Waziri and Sheik Ahmed Gumi) to weaken the existing restraints of the viewer against performance of particular behaviours (noncompliance to polio vaccination due to religious reasons). Thirdly, it also features medical experts to build and reinforce the capacity of the viewers to take control of their own actions and outcomes.

Since documentary film is an audio-visual tool; it combines the benefits of internal symbolic representations in the form of verbal or visual codes, which could serve as guidelines for future behaviour in preference to just verbal communication which can easily get lost on the intended audience.

Therefore, Bandura's model of cognitive sub-processes: attention, retention, production and motivational processes are the ingredients for the production of the polio documentary. Thus, social learning theory provides the framework on which the polio documentary film is anchored given the idea that individuals learn behaviour by observing others. Hence, imitation and influence are the expected outcomes of the experiment.

In conclusion, this chapter has reviewed literature on development communication bringing the dominant perspectives – diffusion of innovation and participatory communication. In order to gain a deeper insight and contextualize the study reviews of relevant literature in entertain education was also done. Empirical studies on entertainment-education strategies, soap opera, and documentary films were also reviewed in order to provide a strong foundation and contextualize the study appropriately.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Research Design

Nworgu (1991) describes research design as a plan or blueprint which specifies how data relating to a given problem is collected, collated and analyzed in a study. Hence, research design provides the procedural as well as structural roadmap for the conduct of any study. It, therefore, defines the type of study being conducted, the type of data that will be generated using what instruments and how the data will be analyzed and measured.

This study adopted a triangulation approach in order to ensure high data quality and reliability. Kreuger and Neuman (2006) assert that triangulation is the process of observing something from different angles or viewpoints in order to get a fix or true picture of the issue. Applied to social research, it means it is better to look at something from several angles than to look at it from only one way. Hence, quantitative and qualitative research designs are adopted for this study.

Quantitative Research Design:

Quantitative research designs have a long history, dating to at least the 1930s, that has produced strong professional norms that impact research activities such as the criteria used for making decisions (What Works Clearing House, 2008) and kinds of studies and results to be published (Bozarth and Roberts, 1972, Leech, Morgan, Wang & Gliner 2010, Rosenthal, 1979).

Trochim and Land (1982) defined quantitative research design as the glue that holds the research project together. A design according to him is used to structure the research to show how all the major parts of the research project – the samples or groups, measures, treatments or programmes and methods of assignments - work together to try address the central questions.

Lincoln and Guba (1985) explained that quantitative research methods attempt to maximize objectivity and generalizability of findings and are typically interested in prediction. Key features of quantitative studies are the use of instruments such as the tests or surveys to collect data and reliance on probability theory to test statistical hypotheses that correspond to research questions of interest.

Suffice to say that quantitative research aims to determine the relationship between one thing (an independent variable) and another (a dependent outcome variable) in a population. Hopkins (2008) pointed out that quantitative research design is either descriptive (subjects usually measured once) or experimental (subjects measured before and after a treatment). Therefore, this study will adopted a field experimental survey to establish the relationship between exposure to a polio documentary film and knowledge, acceptance and perception of polio vaccination by non- compliant parents in northern states of Nigeria.

The study drew from the strengths of the quantitative research design as enunciated by Burns (2000) which include precision through reliable measurement, control through sampling and design, ability to produce causality inferences, statistical technique and ability to replicate an experiment.

The research also took cognizance of the limitations inherent in the quantitative research design. These include complexity to control all intervening variables; inability of the design to account for people's unique ability to interpret their experiences, construct their meanings and act on these; assumptions that facts are true and same for all peoples all the time among other.

3.2. Field Experimental Survey

Experiments conducted in a laboratory can be disadvantageous for many research studies because of certain problems they present. One, they are performed in a highly controlled conditions that are unlike natural settings; they are generally considered to lack external validity and they usually necessitate subject awareness of the testing situation. Because of these shortcomings, many researches prefer to use field experiments (Haskins, 1968). Field experiments are useful for studying complex social processes and situations. Study conditions in field experiments closely resemble natural settings and therefore provide room for high validity as opposed to laboratory experiments.

Wimmer and Dominick (1987) postulated that subjects in field experiments usually provide a truer picture of their normal behaviour and are not influenced by the experimental situation. Results from field experiments, therefore, have more relevance to reality; the degree of control involved is markedly less than in the case of laboratory experiment. Many researchers consider field and laboratory experiments to be on the opposite ends of a research continuum. Westley (1981) as quoted in Wimmer and Domnick (1983: 138) pointed out:

> The laboratory experiment is carried out on the experimenter's own turf; the subjects come into the laboratory. In the field experiment, the experimenter goes to the subject's turf. In general, the physical controls available in the laboratory are greater than those found in the field. For that reason, statistical controls are often substituted for physical controls in the field.

Field experiments are useful for studying complex social processes and situations. Their major advantage is their external validity; since study conditions closely resemble natural settings, subjects provide a truer picture of their behaviours and are not influenced by the experimental situation.

In their study of the effects of the arrival of television in an English community, Himmelweit, Oppenheim, and Vince (1958) recognized the advantages of the field experiment for examining such a complicated topic. Since television has an impact on several lifestyles variables, the researchers employed a wide range of analysis techniques, including diaries, personal interviews, direct observation, questionnaires and teachers' rating of students, to document this impact.

Qualitative Research Design:

Qualitative research methods focus on discovering and understanding the perceptions, experiences, perspectives, and thoughts of participants – that is, qualitative research explores meanings, purpose, or reality. (Hiatt 1986).

Denzin and Lincoln (2005) described qualitative research as a situated activity that focuses the observer in the world. It consists of a set of interpretive material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations photographs, recording and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret phenomenon in terms of the meanings people bring to them.

Qualitative research usually allows a detailed exploration of a topic of interest in which information is collected by the researcher through case studies, ethnographic work, interviews and focus discussions etc. Ely et al (1991) quoted from Shermann and Webb (1988) stated that qualitative research has the aim of understanding experiences as nearly as possible as its participants feel it or live it.

This study adopted a Focus Group Discussion to capture reliable qualitative data from study participants while drawing from the strengths inherent in qualitative research designs. In qualitative research design, the researcher gains from an insider's view of the field because of closer involvement. This allows the researcher to find issues that are often missed (such as subtleties and complexities) by the scientific, more positivistic enquiries.

Harwell (2005) stated that qualitative descriptions can play the important role of suggesting possible relationships, causes, effects and dynamic processes. In addition, because statistics are not used, but rather qualitative research uses a more descriptive, narrative style, this research might be of particular benefit to the practitioner as she or he could turn to qualitative reports in order to examine forms of knowledge that might otherwise be unavailable, thereby gaining new insight.

However, the researcher was not oblivious of the limitations of qualitative research: The problem of adequate validity or reliability is a major criticism. Because of the subjective nature of qualitative data and its origin in single contexts, it is difficult to apply conventional standards of reliability and validity. Contexts, situations, events, conditions and interactions cannot be replicated to any extent nor can generalisations be made to a wider context than the one studied with any confidence. Besides, the time required for data collection, analysis and

interpretation is lengthy and researcher's presence has a profound effect on the subjects of study. Finally, the viewpoints of both researcher and participants have to be identified and elucidated because of issues of bias.

3. 3. Focus Group Discussion

The Focus Group Discussion (FGD) or group interviewing is a research strategy for understanding audience attitudes and behaviours. The primary advantage of FGD is that it can be conducted very quickly for collecting large amount of data. It also allows the researcher some flexibility in question design and follow-up. Unlike conventional surveys, where interviewers work from a rigid series of questions and are instructed to follow explicit directions in asking questions, a moderator in an FGD works from a list of broad questions as well as more refined probe questions. Hence, follow-up on important points raised by participants in the group is easy.

Lindlof and Taylor (2002) highlighted the imperative of FGDs in a study of this nature. They pointed that FGDs are appropriate when you want to explore the depth and nuances of opinions regarding an issue; understand the differences in perspectives and what factors influence opinions or behaviour; and design a large study or understand its results. Focus Group Discussions, FGD, was also conducted in order to generate qualitative data to complement the quantitative data generated through the field experiment. The purpose of FGD was to gain knowledge about a particular topic or need by interviewing a group of people directly affected by the issue. In order to achieve this, every fourth participant selected in the course of sampling for the field experiment was earmarked to participate in the FGD. This was irrespective of whether the sample has participated in the treatment or the control

group in the field experiment. A total of three FGDs were conducted with 60 participants in each ward.

Nonetheless, FGD is not completely free from complications. One of such complications is that some groups become dominated by a self appointed leader who monopolizes the conversations and attempts to impose his or opinions on other participants. However, the moderator of the FGD controls this skilfully.

Thus, in accordance with the principles of FGDs as elucidated earlier in this study, six FGDs were conducted; two in each of the zones made up of one group each from among participants who already watched the documentary film and the other from those who did not watch the film. Each group consisted of 10 members randomly selected from the participants for the field experimental survey.

Selection Procedure of FGD Participants

All participants for the field experimental survey were made to pick a secret paper from a secret bag placed by the exit of the venue for the meeting. The secret papers contained 10 pieces of "*selected*" and hundreds of "*not selected*" options. Any participant who picks selected automatically becomes a participant for the FGD until 10 participants were selected. Hence, 10 participants each were selected from those who watched the documentary film as well as those who did not.

Areas of Focus Group Discussion

The FGDs focused on the following areas:

i. Knowledge of polio disease

ii. Perceptions/Beliefs about polio

iii. Benefits of polio vaccination

iv. Acceptance of polio vaccination

v. Inter-spousal communication on polio vaccination

vi. Polio Information Seeking Behaviours

Triangulation

In order to optimize the strengths inherent in the quantitative as well as qualitative research designs, a triangulation approach was employed for this study. Kreuger and Neuman (2006) assert that triangulation is the process of observing something from different angles or viewpoints in order to get a fix or true picture of the issue. Thus, both quantitative and qualitative data were generated in the course of this study.

Quantitative data was generated from experimental field survey while qualitative data came from a Focus Group Discussion in order to ascertain a balanced picture of issues under study. Although, qualitative and quantitative data differ significantly, they also complement each other.

Kreuger and Neuman (2006) opine that the different between qualitative and quantitative data is the nature of data. While qualitative data deals on soft data which includes impressions, words, sentences, photos, symbols and so forth, quantitative deals on hard data in the form of numbers.

Collins (1984) and Porter (1995) postulate that all social research endeavours have opportunities for bias, dishonesty and unethical approaches. But a quantitative approach will help to minimize these inherent gaps by adhering to standardized methodological procedures, measuring with numbers and then analyzing with statistics which is applied mathematics. While a qualitative approach provides opportunities for taking advantage of personal insights, feelings, and human perspectives to understand social life better qualitative research design emphasizes trustworthiness as a parallel idea to objective standards in quantitative social work research design. This ensures that research activities are dependable and credible (Schwandt, 1997; Swanborn, 1996; and Tashakkori and Teddlie1998).

Hence, this study used a field experimental survey and focus group discussion to underscore the impact of documentary film on behaviours towards polio vaccination in the northern Nigeria.

3. 4. Study Site

Following a three step selection procedure, the study is conducted in three wards that have the highest cases of children paralysed by polio between year 2000 and 2010 and invariably high rate of noncompliance to polio vaccination; one in each of Northwest, Northeast and North-central zones. Thus, based on a desk review of all children paralysed by wild polio viruses captured in WHO data base in each of the 19 Northern states between year 2000 – 2010, the three most high risk states were selected, one from each of the Northwest zone, Northeast and North-central. These states are Kano for the Northwest, Bauchi for the Northeast and Niger for the North-central. The seven states of the Northwestern Nigeria had 3591 children infected by polio between year 2000 and 2010. Out of these, Kano contributed 1,354. Dala LGA in Kano had 99 cases and thus the most at risk among the 44 LGAs in

Kano. In Dala LGA, Gobriwa ward had the highest number of children infected and the highest number of noncompliance within the period under study.

In the Northeastern six states, a total of 872 children were infected by polio between 2000 and 2010. Bauchi had a total of 390 being the highest with Katagum LGA contributing 52 cases. Ragwam ward in Katagum LGA had the highest number of polio cases and invariably noncompliance issues within the same period. (WHO Data Base 2000- 2010)

While in six states and FCT in the North –central, Niger state with 100 cases is the most at risk state with Kotangora being the LGA at most risk contributing 10 cases to the LGA. In Kotangora LGA, Kawo ward had three cases out of the total of ten cases that Kotangora LGA had over the same period. See table 1 below for details of wild polio virus cases reported between year 2000 and 2010 in some states of northern Nigeria.

Available information in WHO Nigeria Data base revealed that 50% of all children paralysed by polio were those who missed polio vaccination due to noncompliance, hence, this criteria for selection. (WHO Power Point Presentation, June 2010).

See Table 5 below for distribution of wild polio viruses in Northern Nigeria between year 2000 and 2010 as captured in WHO 2012 data at Abuja.

Table 5: Distribution of Wild Polio Virus between 2000 – 2010 in Northern Nigeria

Zone	State	Total WPV 2000 – 2010	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
N/Central	Kogi	33	0	0	2	9	4	3	0	1	8	6	0
	Niger	**100**	2	2	8	4	17	12	21	5	15	14	0
	Nasarawa	60	0	1	17	4	2	10	7	3	7	9	0
	Kwara	23	0	1	0	3	5	1	1	1	9	2	0
	Plateau	45	0	0	0	5	4	2	5	2	22	5	0
	Benue	34	2	6	0	9	2	5	0	1	2	7	0
	FCT	35	0	2	2	9	3	5	2	1	9	1	1
N/East	Borno	195	1	6	13	6	31	13	45	25	31	20	4
	Bauchi	**390**	2	1	16	36	50	58	100	28	55	44	0
	Yobe	142	0	1	9	8	20	21	21	18	29	15	0
	Adamawa	14	1	0	0	1	2	4	1	3	1	1	0
	Gombe	67	2	0	10	1	4	10	15	3	13	9	0
	Taraba	19	0	0	0	1	6	3	2	3	4	0	0
N/West	Kano	**1354**	3	9	51	89	185	228	357	59	270	102	1
	Kaduna	354	0	1	27	23	95	83	53	7	49	16	0
	Kebbi	330	1	8	2	43	53	93	72	27	9	18	4
	Jigawa	414	10	2	16	29	51	84	132	33	40	17	0
	Katsina	579	2	2	23	39	111	81	179	24	81	36	1
	Sokoto	231	0	9	3	10	42	53	41	25	28	16	4
	Zamfara	329	1	4	3	5	76	65	65	6	84	15	5
	Total	4,748	27	55	202	334	763	834	1119	275	766	353	20

Table 6: WPV 2000 – 2010 by LGA/Wards

Zone	Level	Location	Total WPV 2000 -2010
N/West	**State**	**Kano**	**1354**
	LGA	Dala	99
	Ward	Gobriawa	33
N/east	**State**	**Bauchi**	**390**
	LGA	Katagum	52
	Ward	Ragwam	33
N/central	**State**	**Niger**	**100**
	LGA	Kontagora	10
	Ward	Kawo	4

3. 5. Sampling Technique

In order to select a relevant participant in the field experimental survey, a 2-stage purposive random sampling was adopted. The first stage was election of the household. In each of the selected wards, the researcher identified a local representative to act as a guide to assist with the survey. The selected ward was divided into four equal sectors using the Immunisation Plus Days catchment area map. Using the *Table of Random Numbe*rs, the researcher went to the centre of the ward and spins a bottle/pen on the ground to determine the direction to move. Then the first household in the direction of the pen or bottle was selected as the direction of the sampling. In order to ensure that the sample was spread across the entire population, five houses were skipped in-between each other. A tally of all households visited in the ward (including where there was no eligible respondent or no access) was recorded. If the edge of the sector selected for sampling was reached before all respondents were sampled, we moved to the next sector in the same settlement. Once the male or female member of the first household was sampled, the next five households were skipped. In all

cases, if no eligible male or female household member was found in the selected household, the household was locked or household declined to participate; the next household immediately to the right was selected.

The second stage was the selection of the eligible participants. Selection of eligible participants for the purpose of this study was based on meeting the following conditions:

- Resident in the ward for the past 12 months starting from the month of survey backwards;
- Has a child or children aged between 0 – 59 months;
- Ever refused polio vaccination for child or children in the past 12 months;
- Willing to participate in the study or allow spouse to participate if selected.

Prior to being selected, participants were asked the following questions to ascertain whether they qualify for inclusion in the study:

a). How long have you lived in the ward consecutively?

b). Do you have any children less than 5 years of age?

c). Did you refuse polio vaccination for any of your child in the last 12 months?

d). Are you willing or allow your spouse to participate as a respondent in a study on polio vaccination?

Only respondents who certify the above four conditions were selected to participate in the study in each ward. A total of 568 participants were randomly selected from Bauchi consisting of 340 males and 228 females; 590 for Kano but 580 turned up consisting of 362 males and 218 females; and Niger had 540 participants consisting of 420 males and 120 females who certified the criteria stated earlier from each of the three high risk wards.. Thus, a gross total of 1714 participants were randomly selected for the study but 1688 turned up

resulting in a dropout rate of 1.5%. All respondents were assembled at the paramount traditional leader's house where orientation and randomized grouping was done.

3.5.1. Experiment Procedures – Randomized Solomon 4-Group Design

The randomized Solomon 4-Group approach was applied in the assignment of participants into groups. The Solomon 4-Group approach requires that all participants be assigned at random to any groups of four. The random assignment of groups makes it possible to assume that the pre-test scores for groups 3 and 4 would have been similar to the pre-test scores attained by groups 1 and 2. But since groups 3 and 4 were not pretested, no interaction between treatment X and the effects of pre-test T_1 can be reflected in their T_1 scores.

Isaac and Michael (1985) assert that the difference between the Pre-test T_1 and Post Test T_2 mean scores represents the effects of various combination of variables such as pretesting T_1, independent variable X, history H, maturation M in a Solomon 4-Group studies. To ensure the internal validity of the results of this experiment, the researcher made sure that participants were those who had a history of refusing polio vaccination at least once in the last 12months.

Van Dalen (1979) informed that sometimes subjects experience an event – in or out of the experimental setting- besides exposure to X, which may affect their dependent variable scores. Secondly, we selected adult parents who have eligible children to ensure that maturation processes do not confound the results of the experiment. Van Dalen (1979) suggests that biological and psychological processes within the subjects may change during the progress of the experiment which will affect their responses.

Given that all participants had similar contemporary history (H) of refusal and are all matured (M), adult parents, the internal validity of the processes was guaranteed. Thus, as in all rigorously controlled designs, prior to exposure to the polio documentary film, all participants were assigned at random to four experimental groups.

- Group 1 was randomly selected from matured adults M, who had same history H, of refusal of polio vaccination, pretested T_1, and exposed to a 15minutes documentary film on polio (treatment X) and post-tested T_2. The pre and post test contained questions bordering on the awareness, understanding as well as acceptance and importance of polio vaccination.
- Group 2 was randomly selected from matured adults M, who had same history H, of refusal of polio vaccination, pretested T_1, and but not exposed to the 15minutes documentary film X and post-tested T_2.
- Group 3 was randomly selected from matured adults M, who had same history H, of refusal of polio vaccination, were not pretested T_1, and exposed to the documentary film X and post-tested T_2.

Group 4 was randomly selected from matured adults M, who had history H, of refusal of polio vaccination, who were not pretested T_1, and not exposed to the documentary film X and but post-tested T_2.

Table 7: Distribution of Participants for Field Experimental Survery

Groups	**Pretest**	**Treatment**	**Post-test**	**Difference**
1- Pretested	T_1	X	T_2	1D= T_1, X, M, H
2- Pretested	T_1		T_2	2D= T_1, M, H
3- Unpretested		X	T_2	3D= X, M, H
4- Unpretested			T_2	4D= M, H

To find the effect of exposure to the documentary film alone, (Treatment X) we subtracted 4D from 3D. To find the effect of pretesting alone, we subtracted 4D from 2D. But to find the effect of the interaction of pretesting and exposure to the documentary film (Treatment X), we added 2D and 3D and subtracted the sum for 1D.

According to Isaac and Michael (1985), the Solomon 4-Group approach overcomes the external validity weaknesses of 2-Group – experimental and Control Group- in a field experimental survey. When pretesting in a two-group (experiment and control) experimental survey, subjects may become sensitized to treatment X in a way that they respond differently than "unpre-tested" subjects. In this case, external validity is compromised and the researcher cannot generalize the results from the sample population. The Solomon 4-Group approach overcomes the weakness by adding two "Unpre-tested" groups (3 and 4) to the study.

Rogers et al (1999) in studying the ''*Effects of an entertainment-Education Radio Soap Opera on Family Planning Behaviour in Tanzania'',* employed large scale field experiment using treatment and control design of this nature to evaluate *'Twende na Wakati.''* Like Rogers' et al Tanzanian study, this study design took a cue from Berelson and Freedman (1960*)* Taichung family planning experiment conducted in Taiwan. Both studies evaluated the effects of a communication intervention in changing behaviour using a field experimental design.

However, both Rogers and Berelson's study applied two group – treatment and control – design in their studies. Isaac and Michael (1985) contended that in a two group field experiment, pretesting sensitizes or alters the participants so that they respond to exposure differently than if no pretesting had taken place, thus compromising the external validity of

the results. They also consider the reactive effects of experimental procedures as a factor that may hamper generalization:

Interaction of exposure with such factors as history can compromise external validity. If an experiment coincides with a dramatic event or an atypical condition like war, depression, scandal etc, subjects may respond to treatment differently than during normal circumstances. Secondly, if subjects know they are in an experiment they may react differently (put forth unusual effort or cooperate to an unnatural degree).

Field experiment can pose practical problems that cannot be anticipated, it is however, the most appropriate method for studying a topic of this nature.

3. 6. Study Population

The study was conducted with a total of 1688 randomly selected participants resident in three most high risk wards in three most high LGAs in the three most high risk states in Northern Nigeria. One state each was selected from each of North Central, North East and North West regions that have the highest number of wild polio virus between year 2000 and 2010. Based on this Bauchi was selected from the North-East, Kano from the North-West and Niger from North-Central. The composition of the participants was 60% males and 40% females in Bauchi state, 62% males and 38% females in Kano and 77.7% males and 22% females in Niger state.

It could be noted that there were variations in the ratio of males versus females across the states. During the random sampling process, the researcher selected 60% males and 40% females but several of them declined especially the female population, hence the variations in

the ratio. The selection of higher number of males was informed by findings from previous studies which portrayed the males as the paramount decision makers in issues of polio vaccination of their children. Several studies in the past showed that the male heads of households determined whether children should be vaccinated or not.

Research and Marketing Services (2010), Knowledge, Attitude and Practice study on social mobilization and communication factors affecting polio and Routine Immunisation uptake in Northern Nigeria revealed that 22% of cases of rejection of immunization were due to disapproval by husbands. In Bauchi state, the same report showed that 45% refusal was due to husband's non-consent, 28% in Kano and 51% in Borno.

In a separate study on Program Evaluation of Supplemental Immunization Activities (SIAs) for Polio in Northern Nigeria (2010) conducted by the *Centre for Disease Control, Atlanta, Georgia-USA*, found that 37% of refusal for immunisation in Northern Nigeria was due to father's dislike/disapproval of polio immunisation. (CDC Study on Barriers to Immunisation 2010)

The male head of households is important in a study of this nature. Available data showed that they largely influence the decision to vaccinate children or not. But the caregiver or mother is also critical because inasmuch as the male heads of households are critical factor in the acceptance or refusal of polio immunisation in Northern Nigeria, the female component cannot be neglected because they sustain the decisions made by the male heads of households.

However, due to inadequate financial and human resources required to study the whole population, a representative sample of the population was studied. The focus on the northern Nigeria is informed by the fact that since the commencement of polio eradication campaign in Nigeria, the North has constituted more than 75% of all cases of polio in Nigeria. (WHO: GPEI 2010).

3.7. Profile of the study Population

The study population consists basically residents from the northern part of Nigeria. The major preoccupation of the sample that made up the study population is farming, animal husbandry with a few traders and civil servants. Most of the respondents had Arabic education but quite a few attained secondary and higher education. It is worthy of note that Islam is the predominant religion of the people of Northern Nigeria. As a matter of fact about 98% of the sample population for this study was Muslims. Like in most other African societies, religious beliefs and practices permeates all aspects of lives, including marriage, education, inter-spousal relationship and even economic activities of the people of Northern Nigeria. Perhaps, this explains why some of the major reasons for refusal of polio vaccination were based on religion.

In a study by Centre for Disease Control, (CDC 2010) on Barriers to Immunisation in northern Nigeria, it found out that 4% of all cases of rejection on polio vaccination was due to religious beliefs while 37% was due to disapproval by the father/husband.

The man is traditionally the head of the household in typical Muslim homes in Northern Nigeria. He fends and provides for the wife or wives and children. He is the paramount decision maker in all matters relating to members of his family including health.

In a report by the Centre for Islamic Legal Studies, of the Ahmadu Bello University Zaria, (Centre for Islamic Legal Studies: 2005: 1-13) on "Promoting Women's Right Through Sharia in Northern Nigeria" it stated as follows:

> Muslim women are generally excluded from decision making at family and community levels. Husbands do not generally consult their wives on matters that may concern them or their children. Similar practice applies at the community level. Women are rarely involved on matters that neither concern the community nor are they nominated to represent the community. A woman is to be heard not seen. Seclusion is the practice whereby husbands restrict their wives' movements.

Although, the woman is the channel for procreation for the family, the man determines how many children his wives will give birth to. Even in a state of critical health condition, a woman requires the permission of her husband to be attended to medically. "However, a woman may not be operated upon without her husband's agreement. The lack of women's freedom to decide for themselves about their health is considered an important factor on women's health particularly in seeking medical care'. (Centre for Islamic Legal Studies: 2005: 1-13)

This also lends credence to the findings of the study by Research and Marketing Services (KAP 2010) Rapid Assessment of Social Mobilisation for Polio Eradication which found out that the main reason for refusal to immunize their children was mainly driven by religious conviction which increased from 10% in 2008 to 15% in 2010. The same study also found out that husband's disapproval accounted for 27% of cases of rejection in 2008 and 22% in 2010.

Given this background, it can be understood that religion and male heads of households play key roles in acceptance or rejection of immunization services. Perhaps this explains why male

participants in the study were more in number than females as well as why religious influencers were prominently featured in the documentary film used for the study.

3. 8. Sample Size

Walizer and Weinir, (1978) opine that one objective of scientific research is to describe the nature of a population, that is, a group or class of subjects, variables, concepts or phenomena. Sometimes, this is achieved by investigating the entire class or group. In the case of this study, a subset of the population was selected as a representation of the entire population due to time and financial constraint.

Inasmuch as it is impossible to study the entire population, determining an adequate sample size is one of the most controversial aspects of sampling. Wilmer and Dominick (1987) contended that how large a sample size could be to be representative of the population or to provide the desired level of confidence in the results has no simple answer.

But (Kreuger and Neuman 2006) suggest that the question of sample size can be addressed in two ways. One is to make assumptions about the population and use statistical equations about random sampling process. The second and more frequently applied, according to them, is the rule of the thumb – a conventional or commonly accepted amount. Researchers use it because they rarely have the information required by the statistical method.

Therefore, a Macorr Research formula for determining the sample size for a study of this nature was applied. Macorr (2012) maintains that sampling is the foundation of all research. The larger your sample size, the more sure you can be that responses from respondents truly reflect the opinion of the population. This indicates that for a given confidence level, the

larger your sample size, the smaller the confidence interval. However, the relationship is not linear.

Therefore, to obtain a sample for this study that is truly representative of the population, the Macorr formula was applied as follows:

Sample Size formula:-

$$SS = \frac{Z^2 * P * (1-P)}{C^2}$$

Where:-

Z= Z Value (e.g. 1.96 for 95% confidence level)

P= percentage picking a choice, expressed as decimal (0.0 used for sample size needed)

Confidence interval, expressed as decimal (e.g.0.04 = $\pm$4). Applying the above formula to the following total populations projected for 2012 by the National Population Census, appropriate sample sizes were obtained'

Table 8: Distribution of Sampled Population by LGA and Ward

State	**LGA**	**Ward**	**2012 Projected Population**	**Calculated Sample size**
Bauchi	Katagum	Ragwam	20,490	568
Kano	Dala	Gobirawa	73,512	590
Niger	Kotangora	Kawo	15,443	556
▪ **Total**				**1,714**

3. 9. Data Collection Instrument/Procedure

The data collection instrument for this study was a set of questionnaire (see annex 2) in a pre-test and post test design. The questions assessed participants' knowledge, attitude, acceptance and practice of polio vaccination. In order to ensure high response rate to the questionnaire, the researcher adopted Backstrom and Hursh-Cesar (1981) principles for writing successful introduction to questionnaire. They suggest that the introduction to a questionnaire should be short, realistically worded, nonthreatening, serious, neutral and pleasant but firm.

3. 10. Training of Coders

A total of sixteen research assistants comprising eight males and eight females were trained to screen participants, readout, interpret and capture participants' responses to the questionnaire. All research assistants were independent National Youths Service Corps members who could read and understand Hausa language. Four assistants (two males and two females) worked in each of the study sites. Thus a total of 12 research assistants were deployed during the field experimental survey and the Focus Group Discussion while four other assistants were engaged to collate and capture the data into the computer. The training of assistants lasted 4-hours a day for three days. The sessions on the first day focused on familiarizing the assistants with issues of polio vaccination followed by an introduction of their specific assignment.

On the second day, they were trained on specific terms of reference for the assignment. This covered household sampling procedures, participants' selection criteria and processes, data capturing and recording. The research assistants were trained how to administer the

questionnaire instrument for data collection. The questionnaire has 32 questions subdivided into eight parts. Part one dealt on socio-demographic variables of the respondents while parts two to eight focused on dependent variables like knowledge, perception, benefits of polio vaccination, awareness about polio, information seeking behaviour and interspousal communication.

The third was dedicated to field practical and walk through to pilot the processes and ensure that research assistants clearly understood what they were asked to do.

3. 11. Data Analysis

The quantitative data was analyzed using the odds ratio and simple percentages where odds ratio is not acquiescent with the data to underscore the responses from respondents.

To achieve a statistical standard result, an Odds Ratio (OR) formula was applied in analyzing the responses. Odds Ratio (OR) is one of several versatile and robust statistics that have become increasingly useful in clinical and behavioural research for decision making. McHugh (2009) stated that Odds ratio (OR) is particularly useful because as an effect-size statistic, it gives clear and direct information about which treatment approaches has the best odds of benefiting the patient (target).

Therefore, an Odds ratio (OR) is a measure of association between an exposure and an outcome. The Odds Ratio (OR) represents the odds that an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that same exposure.

Szumilas (2010) explained that Odds Ratio is most commonly used in case control studies, cross-sectional and cohort study designs. It evaluates whether the odds of a certain event or outcome is the same for two groups. In an article "When Can Odds Ratio Mislead?" Davies et al (2012:1-12) stated that:

> the odds of an event is the number of those who experience the event divided by the number of those who do not. It is expressed as a number from zero (event will never happen) to infinity (event will certainly happen). Odds are fairly easy to visualize when they are greater than one, but are less easily grasped when the value is less than one. Thus odds of six (that is six to one) means that six people will experience the event for every one that does not (a risk of six out of seven or 86%.

Goldin (2009) differentiates between odds ratio and relative risk. According to him, relative risk is the ratio of the probabilities of two events: if ***p*** is the probability of the first event occurring and ***q*** is the probability of the second, then the relative risk is ***p/q.*** The odds ratio is, however, the ratio of the odds, not the percentages. The word odd "is not used in colloquial sense, where it often refers to chance or probability or likelihood. Goldin (2009) maintains that in statistics, the *odds* of an event occurring is the probability of the event divided by the probability of an event not occurring.

Odds Ratio is usually expressed in statistical formula using a two-by-two frequency table as follows:

		Outcome Status	
		+	-
Exposure Status	+	A	B
	-	C	D

Where

- a = number of respondents in exposed groups 1 & 3 with correct answers
- b = number of respondents in exposed groups 1 & 3 with incorrect answers
- c = number of respondents in unexposed groups 2 & 4 with correct answers
- d = number of respondents in unexposed groups 2 & 4 with incorrect answers

Therefore, Odds Ratio (OR) on knowledge of respondents about polio is calculated:

$$OR = \frac{a/c}{b/d} = \frac{ad}{bc}$$

$$OR = \frac{\text{(n) exposed respondents with correct answers/unexposed with correct answers}}{\text{(n) exposed respondents with incorrect answers/unexposed with incorrect answers}}$$

$$= \frac{\text{(n) exposed with correct answers x (n) unexposed with correct answers}}{\text{(n) exposed with incorrect answers x unexposed with incorrect answers}}$$

While qualitative data generated from series of FGD discussions were analysed in clear descriptive terms to complement the quantitative analysis.

3.12. Internal Validity

Control over research conditions is necessary to enable the researcher rule out all possible rival explanations of results. The research is ensuring that behaviour change, if any, is a function of exposure to the documentary film on polio. Wimmer and Dominick (1978) pointed that control over research conditions is necessary to eliminate the possibility of finding ***y=f(b),*** where ***b*** is an extraneous variable. Any such variable is that creates a rival explanation of results according them is known as artefacts.

Campbell and Stanley (1963) outlined ten sources of artefacts; such as history, maturation, testing, instrumentation, experimenter bias, evaluation apprehension, demand characteristics, statistical regression, experimental morality, and selection. In order to avoid artefact situations, the researcher ensured that all participants sampled were those who had similar history of living in the ward for the past consecutive 12months, during which they have refused polio vaccination for at least once, they were all matured adult parents who had one of more children eligible for polio vaccination, and that participants were totally ignorant of the objective of the experiment.

In order to avoid instrument decay, the researcher also ensured that equipment and personnel used are of high quality, more participants were selected to avoid experimental morality arising out of dropouts and to avoid bias; personnel who applied the pre-test and collected preliminary data were blinded from the real purpose of the experiment.

3.13. External Validity

External validity refers to the generalization of the results of a study across populations, settings and time (Cook and Campbell 1979). Wimmer and Dominick (1978) pointed out that external validity of a study can be severely affected by the interaction in an analysis of variables such as subject selection, instrumentation, and experimental conditions.

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 several times; (3) selection of a sample that is representative of the group to which the results will be generalized.

In line with Cook and Campbell's orientation, the researcher adopted the recommended principles in this study to ensure external validity. One, the participants for the study were randomly selected; two, they were selected from both men and women to ensure heterogeneous nature. The study also adopted the Solomon-4 group approach which allowed for repetition of study and finally the study selected samples that are representative of the study population by following stringent sampling procedures.

3.14. Synopsis of the Documentary Film

The documentary starts on an emotion packed background music to capture and retain the attention of the viewers. A child paralysed by polio is seen struggling to walk at same pace with his peers. Another handsome looking child was being supported by his father to climb a pavement and get to where his peers are playing. A voice over comes to say:

> *Imagine the agony, the excruciating pains, and the stigma associated with polio paralysis. Imagine the burden of caring and supporting a crippled child through adulthood forever in life……*

The camera cuts in a woman from Kano whose son became paralysed due to polio infection. She narrates her ordeal, starting from when Mohammed who was already 3 years suddenly developed fever and could not walk again. She said that her son was a hyper active child, who likes running about and playing with his peers and neighbours. "Mohammed never rests for a while", she said. "But suddenly he developed fever and suddenly he couldn't move his left leg again. I hurriedly took him to a nearby health centre the next day where the nurse told me she suspects polio". She said that the nurse took her address and promised her that an officer was coming to her house later to check on her son. According to her she heaved a sigh of relief hoping to see her son walk again. But the officer came and only collected a sample of her son's stool and reported to her after few days that her son has been infected by polio

because she has been rejecting immunization against polio for her son. And that the paralysis has no cure. All efforts since then to get her son back on his feet proved abortive. Then she started crying and regretted why she ever refused polio vaccination for her only son.

The camera then features a man from Kano by name Yusuf Abdulahi carrying his paralysed son. He also narrated his experience and how his son became paralysed. He explained that since then he has been over burdened with having to carry him to school, to the market and even to play grounds to meet his peers. “Since then, he said, “I have taken my son to herbalist, occultist and diviners. No one could help him. I regretted refusing polio vaccination”.

He advises parents never to reject polio vaccination again and prayed that what has happened to his son should not happen to any other child.

Camera introduces the director of disease control at the national Primary health Care Development Agency, Dr. Abayomi E. Abanida explaining the transmission route of polio and how polio can be prevented. Secondly, Dr. Sani Gwarzo, a popular figure in Kano also comes on to explain what polio is, how it can be contacted, preventive measures and what parents should do to help their children grow up healthy.

At this point the film shows the Sarkin Muslimi, the Sultan of Sokoto immunizing children and saying that he has confidence in the efficacy of Oral Polio vaccine to protect children from polio paralysis.

The documentary also featured three notable religious scholars: Sheik Dahiru Bauchi of Bauchi, Sheik Ahmed Gumi of Kaduna and Sheik Isa Waziri of Kano supporting polio and indeed any immunization against diseases. Each of them made supportive statements quoting the Koran, Hadith and other Islamic books to support immunization.

The documentary film lasted 15 minutes and captured most of the critical elements of what makes a good documentary. According to Bill Nichols (1991) some components of a good documentary film are:

- The people who wield the power, influence and information are identified and become a part of the film.
- Each person or subject that is identified brings a unique focus to the film and requires a voice that is impartially heard.
- Live action shots are imperative to a good documentary. It shows scenes as they are actually happening in real time. These shots will serve as evidence of truth or deceit for the film's viewers.
- Still shots serve as filler between scenes. They are important to good documentaries because they do serve as credible transitions between live action and interviews. They are never to be considered "fluff" filler but should be relevant people, information or places.
- The soundtrack or music is very important. It sets the tone for a good documentary. The right music must be chosen and then edited by musical editor. This moves the documentary film one step closer to greatness.

From the foregoing, it can be deduced that the chapter on methodology has provided the road map and procedural approaches adopted in this study to generate and interpret data. It was stated that the study adopted a triangulation approach to study the subject. Combining the

merits of quantitative and qualitative methods of data collection, a Field Experimental Survey and Focus Group Discussion were adopted and applied to generate reliable data in a complementary format.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4. 1. Introduction

This study examined whether a polio documentary film could impact on the behaviours of caregivers and heads of households towards polio vaccination in the northern states of Nigeria. To achieve this objective, the research employed a field experimental survey as well as focus group discussion to elicit answers to the research questions posed earlier.

In order to ensure presentation of comprehensive research findings, this data is presented in three sections. Section one dwells on the socio-demographic variables of the respondents in this study. Section two delves into the findings of the research study while section three addresses the research questions posed at the beginning of the study.

A total of 1,714 participants were randomly selected but 1,688 (indicating a 98.5% response rate) took part in the study. Hence they were assigned to one of following four conditions:

- Group 1: Pre-test, Exposure to documentary film and post-test;
- Group 2: Pre-test, no documentary film and post-test;
- Group 3: No pre-test, exposure to film and post-test;
- Group 4: No pre-test, no film but administered post-test.

Although adequate sample size according to Macorr formula was selected for the study, some samples opted out prior to the actual survey. However, the dropout rate was insignificant to the extent that it had no impact on the sample size or the findings of the study. See Table 1 below for details**.**

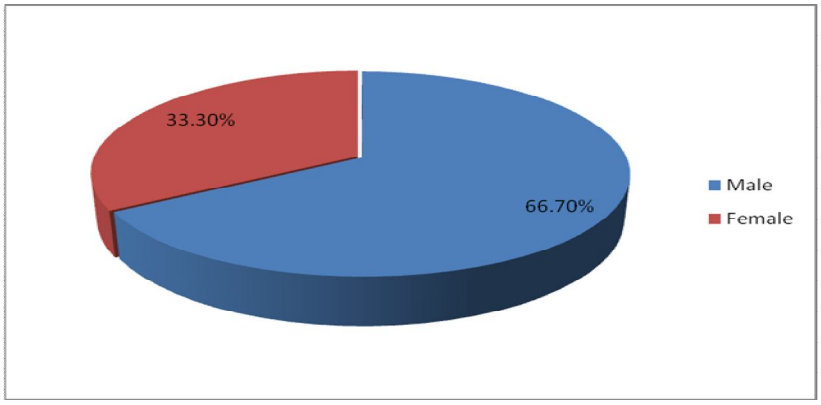
Table 9: Participation Rate of Sampled Population

State	Population Sampled	Sample participated in Study	Participation Rate	Dropout Rate
Bauchi	568	568	100%	0%
Kano	590	580	98.3%	1.7%
Niger	556	540	97.1%	2.9%
Total	1714	1688	98.5%	1.5%

4.2. Socio-Demographic Analysis

Sex: The sample population was made up of 1126 (66.70%) males and 562 (33.30%) females as shown in the pie chart below:

Chart 2: Male-Female Ratio of Sample Participants



However, individual state composition shows that Bauchi had 340 (60%) males and 228 (40)%) female representation while Kano had 362 (62%) male and 218 (38%) female participants. Niger state had a skewed representation of 77.7% males and 22.3% female respondents. Although, the intention of the researcher was to have 60% males and 40% female representation in the study population, there were cases of drop-outs prior to conclusion of the studies hence the variations in the ratios.

Age:

The sample consisted of participants aged between 16 - 50 years and above. The Table below shows the age distribution of participants and the groups they belonged during the study. Twenty-four percent of the sample aged between 16 – 20 years, 14% was made of participants aged 21 -25 years, while 26 – 30 years made up 20% of the total sample. See table 1 for further details:

Table 10: Age distribution of Sample Population

Groups	16-20	21-25	26-30	31-35	35-40	41-45	46-50	>50yrs	Grand Total
1	28%	13%	12%	18%	7%	11%	7%	3%	100%
2	21%	15%	23%	12%	3%	9%	11%	6%	100%
3	25%	14%	18%	15%	5%	10%	9%	4%	100%
4	21%	13%	27%	10%	3%	10%	9%	5%	100%
Grand Total	**23.75%**	**13.75%**	**20%**	**13.75%**	**5%**	**10%**	**9%**	**4.5%**	**100%**

Education

A total 62.7% of all respondents had at least Koranic education, 23.4% attended primary education, and 9.6% had secondary education while 4.3% attained higher education.

Table 11: Educational Distribution of Participants

Groups	Koranic	Primary school	Secondary school	Higher education	Grand Total
1	58%	25%	10%	7%	100%
2	64%	23%	10%	4%	100%
3	61%	24%	10%	5%	100%
4	68%	22%	9%	1%	100%
Total	**63%**	**23%**	**10%**	**4%**	**100%**

Religious Affiliation

Given that the population under study traditionally had strong religious beliefs, it was necessary to ascertain their affiliations. Hence, 90.2% of the respondents were Muslims, 1.3% Christians and 8.5% belong to other religions

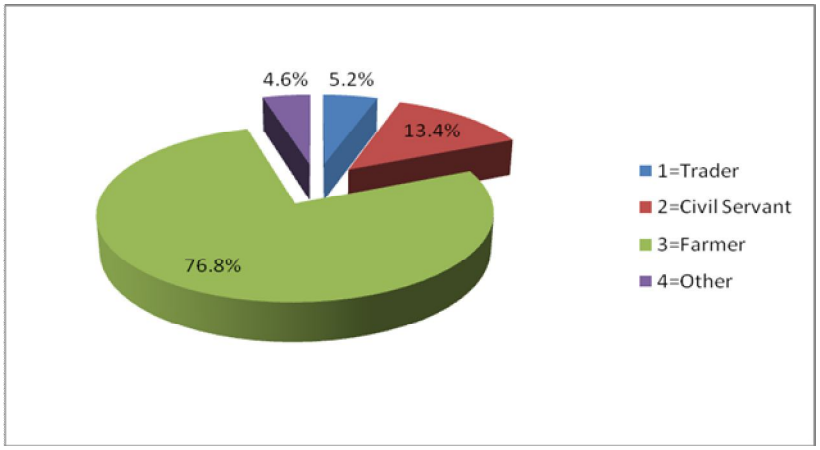
Table 12: Religious Affiliations of Participants

Groups	1=Islam	2=Christianity	(blank)	Grand Total
1	94.1%	0.5%	5.4%	100.0%
2	88.1%	3.3%	8.6%	100.0%
3	92.1%	0.0%	7.9%	100.0%
4	86.9%	1.3%	11.7%	100.0%
Grand Total	**90.2%**	**1.3%**	**8.5%**	**100.0%**

Occupation

The respondents had various occupations: a total of 76.8% are farmers, 5.2% are traders, and 13.4 are civil servants while 4.6% engage in other professions not listed on the questionnaire.

Chart 3: Occupational Distribution of Sample Population



4.3. Presentation of Findings

This section dwells on the various parts of the field experimental survey questionnaire and focus group discussion which covers knowledge of polio immunization, perception of severity of polio infection and benefits of vaccination, awareness of polio campaigns and acceptance of oral polio vaccine, inter-spousal communication on polio vaccination and information seeking behaviour on polio vaccination.

4.3.1. Knowledge of Polio:

The documentary film had featured an orientation of what polio is all about, how it is transmitted from one person to another and how vaccination can protect children from polio infection. After the exposure, the groups (treatment and control) were tested on what they understood about polio as a disease. To test this dependent variable, four questionnaire elements bordering on what polio is, mode of transmission, population at risk of polio infection and how polio can be prevented were designed to test respondent's knowledge about polio.

First, the research sought to know whether respondents knew the correct definition of polio and found as follows:

Table 13: Participants' Responses to the Question on Knowledge

Group	Correct	Incorrect	Total
Exposed	709 (a)	108 (b)	817
Unexposed	404 (c)	467 (d)	871
Total	**1113**	**575**	**1688**

Applying the Odds Ratio (OR), therefore,

$$\mathbf{OR} = \frac{\textbf{(n) exposed with correct answers X (n) unexposed with incorrect answers}}{\textbf{(n) unexposed with correct answers X exposed with incorrect answers}}$$

$$= \frac{709 \times 467}{404 \times 108} = \frac{331\,103}{43\,632} = 7.6$$

OR = 1: 7.6 **P<0.0001**

Therefore, the odds ratio is 1:7.6. This simply implies that participants who were exposed to the documentary film on polio have 7.6 times the odds of knowing the correct definition of polio than those who were not exposed to the documentary film. In other words, for every one participant in the control group who knew the correct definition of polio, there are seven others in the treatment group that knew the correct definition; the odds are one to seven.

Secondly, the research sought to know whether there was any difference in terms of knowledge about modes of polio transmission between those exposed to the documentary film and the unexposed. The results as tabulated below indicated that those exposed to the polio documentary film had 6.5 times the odds of knowing the correct route of transmission of polio than those who did not watch the film. Invariably, for every one participant that did not watch the documentary film who knew the correct route of polio transmission, there were six to seven other persons who knew it from among those that watched the polio documentary film.

Table 14: Participants' Responses to the Question on Modes of Polio Transmission

Group	Correct	Incorrect	Total
Exposed	686	131	817
Unexposed	389	482	871
Total	**1075**	**613**	**1688**

OR=6.5 (5.2 to 8.2) **P<0.0001**

Invariably, for every one respondent that did not watch the documentary film who knew the correct route of polio transmission, there were six to seven other persons who knew it from among those that watched the polio documentary film.

Furthermore, respondents who watched the documentary film had 3.5 times the odds of knowing the population at risk of polio infection than those who were not exposed to the documentary film. The odds ratio as shown below is 1:3.5.

Table 15: Participants' Responses to the Question on Population at Risk of Polio Infection

Group	Correct	Incorrect	Total
Exposed	531	286	817
Unexposed	301	570	871
Total	**832**	**856**	**1688**

OR=3.5 (2.9 to 4.3) **P<0.0001**

There was also a significant knowledge gap on how polio can be prevented between those exposed to the documentary film and those who were not exposed to it. The odds ratio between the two groups is 1: 8.6. This implies that those who watched the documentary film

had 8.6 times the odds of knowing how polio can be prevented than those who did not watch the documentary film. See tabular results below:

Table 16: Participants' Responses to the Question on Polio Prevention Methods

Group	Correct	Incorrect	Total
Exposed	618	199	817
Unexposed	230	636	866
Total	**848**	**835**	**1683**
OR=8.6 (6.9 to 10.7)			**P < 0.0001**

Note that on this variable, some participants in the unexposed group skipped this question. Perhaps, that explains why the total response on this was 1683 instead of 1688 as in the other variables.

The findings from the Focus Group Discussion lend credence to the findings from the field experimental survey. Respondents in the groups exposed to the documentary film as well those unexposed to it were asked to express their understanding of polio as a disease. Majority of those who watched the documentary film understood polio to mean a disease which mainly affects children and might cripple them for life. One respondent explained it as follows:

> Polio is deadly disease which affects children and can cause them paralysis for life if they have not received the treatment which is oral polio vaccination. Polio survives in dirty environments like ours and will continue to affect our children until we protect them by giving them the vaccine.

- *Male respondents 29years, Gobirawa ward, Dala LGA Kano*

Another respondent from the same group described polio as:

> Polio has been around for a long time. It is responsible for crippling people. I know many men and women who are crippled long time ago because then there were no treatment for polio. But today, we are lucky to have the medicine to protect our children even free of charge. Any child who did not receive the medicine is likely to get paralysed by polio.

- *Female participant, 47 years, Ragwam ward, Katagum LGA, Bauchi State*

On the other hand, respondents in the group unexposed to the documentary film opined that polio is a sickness caused by evil spirit that breaths on children's leg and because they are spirits there is no cure when a child is infected by polio.

> Polio is sickness caused by the evil spirit. It has no cure. The vaccine being administered to our children is western ploy to reduce the population of Muslims in Northern Nigeria. I will not accept it at all.

- *Female participants from unexposed group, 24 years, Kawo Ward, Kontagora, Niger state.*

Disaggregation of Dependent Data based on Socio-demographics

Disaggregation of dependent variables against dependent data was also done to distil the findings of this study further so as to ensure micro analysis and evidence based recommendations and decision making.

- **Knowledge of Polio Disease by Age**

Findings from this study revealed that respondents in the exposed group aged less than 50 years had 7.5 times the odds of knowing the correct routes of polio transmission than those in the same age category that were not exposed to the documentary film.

Table 17 shows Distribution of Responses on Knowledge by Age<50

Group	Correct	Incorrect	Total
Exposed	644	346	990
Unexposed	109	439	548
Total	**753**	**785**	**1538**

OR=7.5 (5.86 to 9.60)

However, the result is different for participants who were above 50 years of age. Participants who were more than 50 years of age and were exposed to the documentary film on polio had only 1.9 times the odds of knowing the correct routes of polio transmission.

Table 18 Distribution of Responses on Knowledge by Age>50

Group	**Correct**	**Incorrect**	**Total**
Exposed	42	43	85
Unexposed	22	43	65
Total	**64**	**86**	**150**

OR=1.9 (0.98 to 3.72)

This result, therefore, suggests that participants that were less than 50 years of age were much more likely to recall the correct routes polio transmits than those who were over and above 50 years. Hence, age is a significant factor in designing and targeting polio communincation interventions.

- **Knowledge of Polio Disease by Sex**

Results from this study showed a marginal knowledge gap between male and female participants even within the groups exposed to the polio documentary film. Male participants who were exposed to the polio documentary film had 0.5 times the odds of understanding polio better than the female participants. However, exposed male and female participants had significant edge over those who were not exposed. Respectively, the exposed male participants had 7.9 times the odds of understanding polio better than other males who were unexposed to the film.

Table 19 shows Distribution of Responses by Sex - Male

Group	Correct	Incorrect	Total
Exposed	82	57	139
Unexposed	15	83	98
Total	**97**	**140**	**237**

OR=7.9 (4.17 to 15.18)

The females had 7.4 times the odds against females who were not exposed to the documentary film. The odds ratio between same sex that got exposed to the documentary film and the unexposed were quite high for both males and females. But there was a marginal difference between the males and females which implies that sex may not be a very significant factor in understanding of polio issues. The odds ratio is in fact less than 1 against the females.

Table 20 shows Distribution of Responses by Sex - Female

Group	Correct	Incorrect	Total
Intervention	627	347	974
No Intervention	93	384	477
Total	720	731	1451

OR=7.4 (5.7 to 9.6)

- **Knowledge of Polio Disease by Educational Status**

Participants who had at least Koranic education and watched the polio documentary film had 9.3 times the odds of understanding polio better than their counterparts in the control group who belonged to the same educational category. For participants who attained formal education, the odds ratio was 1: 6.3 between the exposed and unexposed group. In other

words, educational status was a strong in the ability to understand the content of the polio documentary film. This type of comparison could not be done between Christians and Muslims because the number of Christians involved in the study was insignificant (1.3% and other religion 8.5%).

- **Knowledge of Polio Disease by Religion**

Knowledge of polio disease also differs significant according to participants' religious affiliation. There was wide knowledge gap between Muslims who were exposed to the documentary film and the control group unlike the Christian counters parts. Muslims who watched the film had 7.9 times the odds of having better knowledge of polio than other Muslims who did not watch the film. But the case is different with the Christians. Christians who were exposed to the documentary film had only 2.3 times the odds of higher knowledge than those who did not watch it. It can be said that Christians were generally freer to discuss polio and as such enrich their knowledge than Muslims.

Media Effects on Knowledge: Social Learning Effect: The findings from both the experimental field survey and the focus group discussion are not surprising. Several studies have pointed that human beings remember more of what they see than what they hear. Metcalf (1997) conducted a study at the University of Texas and found that human beings remember only 10% of what they read, 20% of what they hear, 30% of what they see, 50% of what they see and hear, and 90% of what they do and say. Since the documentary is an audio-visual tool, it is evident that those who watched it will remember the messages better than those who were verbally informed as the case has always been with the current polio communications approach in Nigeria.

Bandura (1977) pointed out that people are imitators by nature, as infants and even through adult lives, so the social learning theory has a heuristic value here. Hence, effects of the media in communicating and educating the population here is evident and it is not surprising. The polio documentary film featured images that respondents can easily relate with. It showed real life images of parents of northern origin who hitherto rejected polio vaccination until their children became paralyzed by polio and now their regrets. It also captured three medical experts explaining how it is transmitted and prevented, and environments where polio breeds and survives.

Bandura (1986) pointed out that "Most human behaviour is learned observationally through modelling: from observing others, one forms an idea of how new behaviours are performed, and on later occasions this coded information serves as a guide for action. Perhaps this explains why respondents who were exposed to the polio documentary film had a better knowledge of polio than those who were not exposed to it.

4.3.2. Perception

One of the underlining objectives of the polio documentary film was to purge the viewers of their hitherto negative perception about polio vaccination. This was done by a mix of agonizing imagery of polio victims, pathetic voice over, confessions of parents of polio victims and cues to action that could prevent and protect the children from polio infection.

An analysis of respondents' perception of polio infection was also done. Questions to assess the perceptions of respondents were crafted around the constructs of the Health Belief Model (HBM). The objective was to ascertain whether the polio documentary film had an impact on

the perceived susceptibility, severity, self efficacy as well as cues to action on those who watched the documentary film as against those who were not exposed to it.

The researcher, therefore, wanted to find out if there were differences in perceptions about the seriousness of getting infected by polio if ones' child were not vaccinated. The research also sought to ascertain the perceptions of participants about seriousness of the disease and its consequences and beliefs about the effectiveness of taking action (vaccinating ones' child) to reduce the risk of polio infection.

To test respondents' perception of risk if a child was not vaccinated against polio, participants were asked to state what would happen in the event that a child was missed during the rounds of polio vaccination campaign. The results as tabulated below showed that respondents who were exposed to the documentary film had 5.5 times the odds of knowing that such a child may be infected by polio than those who were not exposed to the film.

Table 21: Participants' Responses to the Question on Perceptions on Polio Infection

Group	**Correct**	**Incorrect**	**Total**
Exposed	568	249	817
Unexposed	256	615	871
Total	**824**	**864**	**1688**

OR=5.5 (4.5 to 6.7) **P < 0.0001**

A further assessment of the perception of susceptibility to polio infection in the community revealed that those who were not exposed to the documentary film had low sense of susceptibility to polio infection if a child in their community were infected by polio.

Respondents were asked to state whether a child infected by polio in their community posed any threat to their own children living in the same community. The result was quite revealing as shown in the table below:

Table 22: Participants' Responses to the Question on Susceptibility to Polio Infection

Group	**Correct**	**Incorrect**	**Total**
Exposed	688	129	817
Unexposed	280	591	871
Total	**968**	**720**	**1688**

OR=11.3 (8.9 to 14.2) **P < 0.0001**

The table above shows that participants who watched the documentary film had 11.3 times the odds of knowing that if a child is infected by polio in their community their own children stand the risk of being infected. In other words, exposure to the documentary film impacted significantly on the perception of susceptibility among participants who watched the film unlike those who did not watch the film.

Exploring another construct of the Health Belief Model, "cues to action" to ascertain what participants would do to protect their children from polio infection. Participants who were exposed to the film also had 11.3 times the odds of knowing that vaccinating their children would protect them from polio infection than those who were not exposed to the film. Table below captures this result succinctly:

Table 23: Participants' Responses to the Question on Cues to Action

Group	Correct	Incorrect	Total
Exposed	686	131	817
Unexposed	426	444	870
Total	**1112**	**575**	**1687**

OR=11.3 (8.9 to 14.2) **P < 0.0001**

But participants in the Focus Group Discussion that did not watch the documentary film have a low perception of risk regarding polio infection. They were asked if they thought that a child infected by polio in their community could pose a threat to their own children living in the same community. Most of the participants replied that such a child has nothing to do with their own children and would not in any way be a threat to their children. They were also asked to state what could happen to a child who has never been vaccinated against polio. Most of the participants categorically said that nothing would happen to such a child.

The finding of this study on this variable is consistent with that of Research and Marketing Services (RMS) 2010. The RMS KAP study focused on 18 states covering the North, South-South, South-East and South-West, with 12 of the 18 states from the northern states of Nigeria. It selected 2700 caregivers for the study and found out that 15% of respondents who said nothing could happen to an unimmunized child were mainly from Northern states of Yobe (62%), Sokoto (45%), Katsina (39%) and Kano (32%). These respondents were mainly from High risk states. In terms of education, 65% had attended Quranic schools; while 35% had formal education 20% had completed Secondary level while the 15% had not completed secondary school.

Unlike the group that watched the documentary film, they knew that if a child is infected by polio in a given community, every other child within the neighbourhood is at risk of contracting polio.

> After watching the film, I understood that if one child has polio in my community then every other child stands a risk of getting the infection from that child. That is why we are advised to make sure that all our neighbour's children are immunized against polio all the time.

- *Male Participant, 47 years, from Kawo ward, Kontagora, Niger state.*

However, there was a mixed reaction even within the group that watched the documentary film on what will happen to their children if they fail to get them vaccinated against polio. Some said that even if their child is not vaccinated against polio that Allah would not allow anything happen to the child. Some of the participants understood that when a child is not vaccinated against polio that the child risk a large risk of being infected by polio.

> Although I have seen in the majigi that if a child is not vaccinated against polio, the child could be infected. But I can tell you that even if my child is not vaccinated Allah will not let anything happen to my child, Insha Allah

- *Female participant, 27 years, Ragwam ward, Katagum LGA, Bauchi state*.

Despite the mixed reaction on the issue on risk perception among participants, it is obvious that the group that watched the documentary film had a higher perception of the risk associated with non-vaccination of a child against polio. Those who did not watch the film were very unequivocal in stating that there is no risk associated neither with non-vaccination of their own child nor with a child who is infected with polio in their community.

The finding discussed above is evident in many entertainment-education programmes. Elkamel (1996) stated that entertainment-education not only mirrors social reality, but also helps shape it by depicting what constitutes popular opinion, by influencing people's

perception of the roles and behaviours that are appropriate to members of s culture, and by modeling specific behaviour.

Cathartic Media Effects: Catharsis is one of the theories of media effects that dwells on the positive effects the media has on its viewers. Catharsis assumes that we all experience threatening impulses that we try to resist. All of these experiences that we try to repress gradually build up until our normal means of repressing them cannot be managed. This is when the media comes into play. The use of catharsis in form of emotions, pathetic voice over, helpless confessions of those whose children were paralysed by polio, the irredeemable conditions of the polio victims in the polio documentary film allows the release of this tension in the viewers.

The effect of the polio documentary film on the viewers was cathartic. Although cathartic media effects is often associated with violence, by watching the characters in the polio documentary film experience tragic and remorseful events, the resistant feelings of the viewers were presumably purged and cleansed. This emotional cleansing is believed to be a dominant benefit of the choice of this medium for communicating polio vaccination.

The features of the polio documentary film aided positive attitudes towards polio vaccination. It also created room for higher perception of the risks associated with non-vaccination of one's child against polio. This lends credence to the fact that the polio documentary film had a cathartic media effects on the viewers.

- **Perception of Risk of Polio by Sex**

Findings from this study showed that males who were exposed to the polio documentary film were much more likely to have a better perception of risk of polio infection than males who

did not watch the documentary film. The odds ratio between the two groups is 1: 10.7 indicating that male participants exposed to the film had 10.7 times the odds of having a higher sense of perception of polio infection than the unexposed.

The female participants also revealed similar results. Females who watched the film had 11.4 times the odds of having a higher perception of risk of polio infection than other females who were not exposed to it.

But the difference between males and females who were exposed to the polio film was narrow. The study found that females who watched the polio documentary film had 0.7 times the odds of a better perception of risk of polio infection than males who watched the film. Perhaps this may be not unconnected with the fact that women feel more for children than men. See table 23 and 24 for details.

Table 24: Distribution of Responses on Perception of Risk of Polio Infection by Males

Group	**Correct**	**Incorrect**	**Total**
Exposed	77	39	116
Unexposed	20	101	121
Total	**97**	**140**	**237**

OR=10.0 (5.39 to 18.44)

Table 25: Distribution of Responses on Perception of Risk of Polio Infection by Females

Group	Correct	Incorrect	Total
Exposed	611	241	852
Unexposed	109	490	599
Total	**720**	**731**	**1451**

OR=11.4 (8.83 to 14.72)

- **Perception of Risk of Polio Infection by Educational Status**

Educational status was another variable that had an impact on sense of perception of risk of polio as found in this study. Participants who had formal education and were exposed to the film had 15.3 times the odds to likely have a higher sense of risk of polio infection than those in the same educational category but didn't watch the polio documentary film.

However, there was a significant gap between those who had formal education and were exposed to the film and those who had only Koranic education but were also exposed to the documentary film. Participants who had formal education were 4.7 times more likely to have a higher perception of the risk of polio infection than participants who had only Koranic education though exposed to the documentary film on polio. In other words, the educational status impacts on the ability of participants to perceive polio infection as a risk for the child.

Table 26: Responses from Participants with Koranic Education

Group	Correct	Incorrect	Total
Intervention	388	172	560
No Intervention	95	404	499
Total	**483**	**576**	**1059**

OR=9.6 (7.20 to 12.78

Table 27: Responses from Participants with Formal Education

Group	Correct	Incorrect	Total
Intervention	300	108	408
No Intervention	34	187	221
Total	**334**	**295**	**629**

OR=15.3 (9.97 to 23.40

4.3.3. Awareness of Polio Immunisation Campaigns

All participants who watched the documentary film on polio and those who did not, have heard about polio. However, responses on the sources of information about polio revealed that only 4.4% ever heard about polio from health workers, 9.2% from traditional/religious leaders, 2.5% from television and 83.4% heard it through the radio while 0.5% did not respond to this question.

Concurrently, a high proportion of the participants would still want to learn about polio from the radio. A total of 74.7% of participants from all the groups together preferred radio to other sources of information. This suggests that radio will be highly effective for awareness creation about polio. See the table below for detailed analysis.

Table 28: Most Preferred Source of Information on polio:

Group	Radio	TV	TradLeaders	HW	(blank)	Grand Total
Group1	69.0%	0.0%	16.3%	13.4%	1.2%	100.0%
Group2	69.9%	5.0%	11.5%	13.6%	0.0%	100.0%
Group3	76.4%	0.0%	10.6%	11.8%	1.2%	100.0%
Group4	82.7%	0.0%	2.7%	14.4%	0.2%	100.0%
Grand Total	**74.7%**	**1.2%**	**10.1%**	**13.3%**	**0.7%**	**100.0%**

The result shown above is consistent with earlier comments and observations by communication scholars. Falobi et al (2002) observe that radio is the primary communication medium for reaching the largest segment of the population in Africa. They argue that radio is a constant presence on the streets, in houses, markets places and workplaces.

Benefo (2004) as quoted in Adegoju (2010) states that the arguments in support of radio points out that radio as a channel nullifies access barriers usually posed by illiteracy, production cost, affordability of the radio set and convenience of carrying it about (portability).

This view is supported by Oyelude and Oti (2007) that radio sets are easily operated and carried about in very remote villages (even where there is no electricity). Finding of a recent KAP study conducted by RMS (2010) on Rapid Assessment of Social Mobilisation issues affecting Polio Immunisation in Northern Nigeria also supports the fact radio is a preferred choice of information by majority of the rural and even urban population. The study found out that electronic media (45%) came first as the most effective channel. This channel was

mainly driven by radio and TV. Health workers (Nurses and Doctors) (26%) came in second position. This was followed by community/family which came in third (22%). This was mainly driven by town announcers while other sources made up 7%.

4.3.4. Acceptance of Oral Polio Vaccination

The dependent variable in this research was to assess the impact of a polio documentary film on the behaviour of parents who have been refusing immunization against polio for their eligible children. Bearing this in mind, the polio documentary film was founded on the principles of social learning theory as a bridge builder between the behaviourist and the cognitive learning processes. The documentary therefore, encompasses attention, memory and motivation.

Bandura (1986) identified two most important factors for affective modelling. One is identification and the other is reinforcement. The polio documentary film engaged characters who are familiar faces (children and parents from Kano, and Bauchi, Sultan of Sokoto, Sheiks Dahiru Bauchi, Waziri and Gumi) who could be easily identified. Consequently, participants became emotionally attached to the characters in the documentary film. Results from the experimental field survey suggest that these ties influenced their values and inspired behaviours much more powerfully than direct appeals for change.

Respondents were, therefore asked after watching the documentary film whether they will be willing to vaccinate their children or not. The Odds Ratio was 1: 6.6. Hence, those who watched the film had 6.6 times the odds of vaccinating their children against polio than those who did not watch the film. This is very incisive because the whole study is geared towards finding out whether watching the film would impact on the behaviours of respondents who

prior to watching the documentary film were noncompliant to polio vaccination. *See results on Table 12 below:*

Table 29: Willingness to Vaccinate Child in the Future

Group	Correct	Incorrect	Total
Exposed	599	218	817
Unexposed	255	616	871
Total	**854**	**834**	**1688**

OR=6.6 (5.4 to 8.4) **P<0.0001**

Given that all participants were those who have refused vaccination of their children at least once in the last twelve months, various reasons were adduced for such noncompliance. They range from vaccine being dangerous to child's health to rumours about the safety of the vaccine. However, the researcher also sought to find out who could influence participants' decision to avail their children of vaccination opportunities.

Results showed that, 68.9% would personally decide to vaccinate their children or otherwise; while 16.8% could be influenced by husbands and 9.8% by a health worker. This simply suggests that communication interventions should be strategized to convince caregivers on the importance of vaccination against polio as decisions to vaccinate their children rests largely in the individuals or their husbands but 4.5 % did not respond to this question. *See Table 25 below for details.*

Table 30: Who Influences Your Decision to Vaccinate?

Group	Health Worker	Trad leader	Religious Leader	Husband	Personal Decision	No Response	Grand Total
Group1	0.0%	0.0%	0.0%	25.6%	74.4%	0.0%	100.0%
Group2	14.1%	0.0%	5.0%	21.7%	58.9%	0.2%	100.0%
Group3	5.7%	0.0%	0.0%	15.5%	78.9%	0.0%	100.0%
Group4	18.4%	6.4%	3.5%	5.5%	63.1%	3.1%	100.0%
Grand Total	**9.8%**	**1.7%**	**2.2%**	**16.8%**	**68.6%**	**0.9%**	**100.%**

In order to also assess the depth of conviction of the participants, they were asked to state if they would try convincing other noncompliant persons they knew. It was found out that those who watched the documentary had a 2.3 times the odds of trying to convince other noncompliant persons than those who did not watch the film. See table 13 below:

Table 31: Participants' Responses to the Question on whether to convince other Noncompliant Households to Accept polio Vaccination?

Group	Convince others	Will not talk to others	Total
Unexposed	290	575	865
Exposed	716	101	817
Total	1006	676	1682

OR = 2.31 **P<0.0001**

FGD on Acceptance of polio vaccination

The focus of this study as stated earlier was to ascertain whether exposure to a polio documentary film would induce acceptance of oral polio vaccination by hitherto noncompliant parents. Responses from both groups varied as in the field experimental survey.

Participants from the groups exposed to the documentary film unanimously accepted to allow their children vaccinated against polio from then onwards.

> After watching this film and seeing what this disease can do to our children, it is only a foolish man that would resist polio vaccination again. I don't want my children to be infected like those I saw in the film.

- *Female participant, 39, Gobirawa Ward, Dala LGA, Kano State*

Another participant was even more passionate. He confessed that

> I did not know that polio was responsible for crippling many people that I see begging on our streets today. I sympathize with that woman whose child was already crippled. But I want to ask if the child can be given some medicine to help him walk again. As for me, I will always allow my children to be vaccinated against polio from today onwards.

Male participant, 44, Ragwam Ward, Katagum LGA, Bauchi State.

However, another male participant explained that he did not quite agree that polio could cause paralysis.

> I still do not understand how polio can cause paralysis, though I would allow my child to be vaccinated against polio any other time.

Male participant; 49, Gobirawa Ward, Dala LGA, Kano state.

The benefit of FGDs is that it provides room for cross fertilization of ideas. Hence, it is expected that some participants may have a divergent view on particular topics as this. However, the fact that majority of participants declared their willingness to allow their children vaccinated against polio in future complement the findings from the field experimental survey. Results from the field experimental survey showed that participants who watched the documentary film on polio had 6.6 times the odds of complying with polio vaccination for their children than those who were not exposed to the film.

On the other hand, responses from the groups that did not watch the film suggest strong resistance to polio vaccination. Thus validating results from the field experimental survey. A participant had this to say:

> I have heard so much about polio. I have also read so much about it. But I still suspect that if there is no hidden agenda in the programme, it will not be free of charge. When we go to the health centre, no one gives us anything free. Not even panadol, no free malaria treatment for our children and women. Yet you follow us down to our houses with this polio vaccine and you want me to believe it has no hidden agenda.

Male participant, 40, Gobriawa ward, Dala LGA, Kano state.

- **Acceptance/Willingness by Education**

Respondents who attained only Koranic education and watched the polio documentary film had 7.5 times the odds accepting or willing to have their children vaccinated in subsequent rounds of polio campaigns than those who were not exposed to the documentary film. But participants who had formal education from primary education to higher education were less likely to accept vaccination than those who had only Koranic education.

The odds ratio for those who had formal education was just 1: 5.4. This implies that those with formal education may require a much more intensive intervention in addition to the polio documentary film. This may not be unconnected with their level of reasoning and self confidence that they can conduct their own investigations and find out more about polio before making up their minds.

Table 32 Distribution of Responses on Willingness to Vaccinate by Educational Status

Group	Correct	Incorrect	Total
Exposed	359	160	519
Unexposed	124	416	540
Total	**483**	**576**	**1059**

OR=7.5 (5.72 to 9.90)

- **Acceptance/Willingness to vaccinate one's child by sex**

Dependent variable like willingness to vaccinate acceptance polio vaccination was weighted against independent variables like sex. It was found out that there was not much difference between males and females who watched the females. Male participants who watched the documentary no polio had 6.6 times the odds of accepting vaccination of their children after the session while it was 6.1 times for the females who also watched the documentary film. Therefore among participants who were exposed to the polio documentary, sex was not a significant determinant of behaviours among those who were exposed to the film.

Table 33 shows Distribution of Responses on Willingness to vaccinate Among Male participants who were exposed to the documentary film

Group	Correct	Incorrect	Total
Treatment	85	43	128
Control	12	97	109
Total	97	140	237

OR=6.6 (5.36 to 8.21)

Table 34 shows Distribution of Responses on Willingness to vaccinate Among Female participants who were exposed to the documentary film

Group	Correct	Incorrect	Total
Treatment	514	212	726
Control	206	519	725
Total	720	731	1451

OR=6.1 (4.87 to 7.67)

Social Action Effect:

The social action theory developed by Anderson and Meyer (1988) suggested that media has hidden messages that influence their audience. The principles of social action theory played key roles in the process of producing the polio documentary film. Hence, the documentary is carefully designed to portray the characters in a way that their actions on the screen evoke emotions and impact behaviours. This theory suggests that the actor is seen as an independent object by the viewer. The subject at hand is totally controlled by the actor, and their actions aren't controlled by any cultural or social order. This theory is similar to the hypodermic needle theory; in the way it suggests actions are noted as acceptable by the passive audience without the need to accept them.

4.3.5. Benefits of Polio Immunisation

Guided by the social action theory, the benefits of polio vaccination were succinctly captured in the polio documentary film. According to this theory, the communication process does not deliver meaning; rather it constructs it. Each communication act by the characters in the polio documentary film generates at least three potentially different sites of this construction from

where meaning arises. These sites are the intentions of the producer, the contents' conventions and the receivers' interpretation (Johnson, 2005).

The social action theory claims that media audiences are neither hapless nor passive. The theory views communication interactions in terms of actors' objective, receivers' interpretation and the message content (Anderson & Meyer, 1988).

Bearing this in mind, the polio documentary film had clear intentions to communicate the benefits of polio vaccination and impact on the behaviours of the viewers and not to merely inform them. Hence, issues are presented clearly enough while maximizing the mix of audio and visual to enable the viewers construct the desired meanings that could provoke desired behaviours necessary for acceptance of polio vaccination.

To assess the level of understanding and appreciation of the importance of vaccination against polio, participants were asked if they knew of any benefits their children stand to get from polio vaccination. Responses were at variance between those watched the documentary film and those who did not. See table 14 below:

Table 35: Participants' Responses to the Question on the benefit of polio immunization?

Groups	**Correct**	**Incorrect**	**Total**
Exposed	652	165	817
Unexposed	259	612	871
Total	**911**	**777**	**1688**

OR= 9.3 **P<0.0001**

From the table above, it is obvious that participants who watched the documentary film had 9.3 times the odds of knowing the benefits of polio immunization than those who did not

watch the film. It can be deduced, therefore, that the documentary film had impact on the respondents' ability to appreciate the importance of polio immunization.

Respondents who were exposed to the documentary film were more likely to know that failure to vaccinate eligible children against polio could result in paralysis or even death than those who were unexposed to the film. Results from the survey showed that participants who watched the film had 9 times the odds of knowing that children who were not protected from polio paralysis could be infected than those who were not exposed to the film as reported in the table below. Hence, it can be concluded that the documentary film had a great impact on the respondents.

Table 36: Participants' Responses to the Question on Consequences of Failure to Vaccinate

Groups	Correct	Incorrect	Total
Treatment	**648**	**169**	**817**
Control	260	609	869
Total	**908**	**778**	**1686**

OR=9.0 **P<0.0001**

Respondents who were exposed to the documentary film were 8.5 times more likely to know that children not immunized against polio may not grow up healthy than those who did not watch the film**.** In other words, for every one respondent in the unexposed groups that knew this, about eight respondents who were exposed to the documentary film would know the correct answer. Undoubtedly, therefore, exposure to the documentary film impacted on the target audience's knowledge of the benefits of polio immunization. See table below for references:

Table 37: Participants' Responses to the Question on Effect of Polio on Unvaccinated Children

Groups	Correct	Incorrect	Total
Exposed	618	199	817
Unexposed	234	637	871
Total	**852**	**836**	**1688**

OR= 8.5 **P<0.0001**

❖ **FGD on Benefits of Polio Vaccination**

Discussions on the benefits of polio vaccination revealed divergent views between those who were exposed to the documentary film and those who were not. Participants who watched the film stated that the benefits of polio vaccination as follow:

- A child vaccinated against polio will grow up healthy;
- A child vaccinated against polio will not get crippled;
- A child vaccinated against polio will not pose any health burden to the family;
- A child vaccinated against polio will be a pride of the family"

But participants who were not exposed to the documentary film thought that the polio vaccination does not have any benefits for the child. A participant from the group believes that the benefit of polio vaccination was to reduce the population of Muslims in Nigeria in order to give Christians an upper hand.

> The only benefit of polio vaccination is to reduce the population of Muslims so that the Christians will have upper hand in resource allocation in Nigeria in order to serve American interests.

- *Male participant, 33years, Gobirawa ward, Kano state*

Other participants who spoke in the unexposed group confessed that they don't know of any benefits of polio vaccination and would not trust the intention of the implementers.

> I don't know of any benefit this vaccine gives to my child and I cannot trust the explanations of the implementers because they always come to Africa whenever they want to try new drugs. The case of Pfizer is still fresh in our minds.

Male Participant, 38 years, Gobirawa ward, Kano state

4.3.6. Inter-Spousal Communication on Polio Vaccination

Most respondents in both the exposed and unexposed groups have ever discussed polio with their spouses. But there was a divergence in responses on who will discuss the benefits of polio immunization with spouses after the sessions. Those who watched the documentary film were 4.2 times more likely to discuss the benefits of polio immunization with spouses after the sessions.

Table 38: Participants' Responses to the Question on Inter-spousal Communication

Groups	**Yes**	**No**	**Total**
Exposed	650	167	817
Unexposed	419	452	871
Total	**1069**	**619**	**1688**
OR= 4.2		**P<0.0001**	

But further discussions to find out why participants especially those exposed to the documentary film would not discuss the issues with spouses revealed the reason behind the decision. A participant responded:

> I have already watched the film. I now understand better what polio can do to unvaccinated children. I am the head of the household. I have already taken the decision to have all my children vaccinated from now onwards. All that I need to do now is to leave an instruction to my wife to allow the children to be vaccinated. Shekina**!**

4.3.7. Polio Information Seeking Behaviours

Reasoning today is influenced by the media rather than platonic ideas (Bourdon, 2000). Usually, the media is the most trusted institution with strong followership and whatever it reports, supports or rejects is often taken as the stand of the society. McCombs & Shaw, (1972) pointed out that the media has a way of influencing public opinion, necessarily not by supporting one view over another, but by laying emphasis on certain issues in the public sphere. The polio documentary film set an agenda for the exposed group.

Besides, one of the attributes of drama, film or theatre is the creation of curiosity and interest among those exposed to it. Exposure to the documentary film on polio expectedly generated more interest and curiosity about the disease among those watched the documentary film than in those who did not watch the film. This is evident in the discrepancy between those who watched the film and those who did not. Participants exposed to the documentary film had 13 times the odds of seeking further information and probably learning more about polio than those who were not exposed to the film. Hence, the impact of the documentary film is evidently clear and obvious as shown below:

Table 39: Participants' Responses to the Question on Seeking More Information

Groups	Yes	No	Total
Treatment	734	83	817
Control	352	519	871
Total	**1086**	**602**	**1688**

OR= 13.0 **P<0.0001**

Thus, on seeking more information on polio afterwards, participants also shared their views. Those who watched the documentary film were more willing to seek further information on polio to enrich their knowledge. This was equally the case in the field experimental survey.

> I know the limam from Kano central mosque who spoke in support of polio vaccination in the film. I am going to meet him to ask further questions about what he said in the film. He is my friend.

Male participant, 46, Gobriawa ward, Dala LGA, Kano state.

Participants who were exposed to the documentary film had 13 times the odd of seeking further information than those who were not exposed to it. This is further justified by the reactions of those who participated in the FGD as captured above. But participants who did not watch the film were adamant on seeking further information on polio. A participant from Kawo ward, Kotangora LGA, Niger state said:

> What other information do I need? I know that polio vaccine is a western ploy to reduce our population. And who doesn't know this, anyway?

From the foregoing, it can be deduced that the documentary film impacted on the audience. Although, there are variables where the distinctions were not very evident, in most of the aspects, participants who watched the film demonstrated better understanding, perception and willingness to allow vaccination of eligible children.

Conclusion

From the findings of both the field experimental survey and the focus group discussion, it can be construed that a documentary film can impact on knowledge, perception, acceptance, inter-spousal communication and information seeking behaviour on polio. Although, field experimental survey as a research study is largely distinct from a focus group discussion in

context and approach, results from both sources on this study rather complement each other. The complementary results from both methods have rather strengthened our confidence in the internal and external validity of the results of this study.

4.4. Contributions to Knowledge

This study has contributed to ever growing knowledge of entertainment-education as a communication strategy for impacting behaviours and indeed polio vaccination behaviours. With empirical evidence, the study has proved that exposure to a polio documentary film is an effective strategy for communicating polio vaccination. The findings of the study revealed that:

- Exposure to a polio documentary film impacts on knowledge of polio, its mode of transmission, prevention and benefits of polio vaccination. It was found out that there was significant knowledge gap between participants who were exposed to the polio documentary film and those who were not exposed to it.
- The finding was equally supported by the results from the FGDs. Participants in the exposed group had better knowledge of, how it can be transmitted and how it can be prevented than those in the unexposed group.
- Therefore, exposure to a polio documentary film impacts significantly on knowledge of polio and the benefits of polio vaccination among noncompliant parents than those who were not exposed to the film. *(See Tables 12- 19).*
- Secondly, the study has also informed that exposure to a polio documentary film affects perception of polio as a disease that infects. It was also found out those participants in the groups that watched the documentary film had higher perception of

risk of polio than those in the groups that did not watch the documentary film on polio.

- A further assessment of the perception of susceptibility to polio infection in the community revealed that those who were not exposed to the documentary film had low sense of susceptibility to polio infection if a child in their neighbourhood were infected by polio. Participants were asked to state whether a child infected by polio in their community posed any threat to their own children living in the same community. Therefore, noncompliant parents who were exposed to a polio documentary film have a higher perception of risk of polio infection than those who did not watch the polio documentary film. *(See Tables 20 – 26).*

- Thirdly, the study has also revealed that exposure to a polio documentary film enhances acceptance of polio vaccination by hitherto noncompliant parents. Participants were asked after watching the documentary film to state whether they will be willing to vaccinate their children or not. The Odds Ratio was 1: 6.6. Hence, those who watched the film had 6.6 times the odds of vaccinating their children against polio than those who did not watch the film. This is very incisive because the whole study is geared towards finding out whether watching the film would impact on the behaviours of participants who prior to watching the documentary film were noncompliant to polio vaccination. (*See results on Tables 28 - 33).*

- In order to also gauge depth of conviction among participants, they were asked to state if they would try convincing other noncompliant persons they know. It was found out that those who watched the documentary had a 2.3 times the odds of trying to convince other noncompliant persons than those who did not watch the film.

Results from the FGD also support this finding. Hence, it can rightly concluded that participants exposed to the polio documentary film are more willing to accept to vaccinate their children aged 0-59months against polio infection as than those who did not watch the film.

- Fourthly, this study has also confirmed that entertainment-education motivates people to discuss the educational issues interwoven into an entertainment format. Participants who were exposed to the polio documentary film were wont to seek further information on the issue than those not exposed. The results from the field experimental survey revealed that respondents exposed to the documentary had 13 times the odds of seeking further information and probably learning more about polio than those who were not exposed to the film. Invariably, exposure to the polio documentary film motivates interest to seek further information on polio vaccination among participants who watched the film than among those who did not. Hence, the impact of the documentary film is evidently clear and obvious as shown in Table 38:
- This was equally the case in the responses by participants in the FGD as shown below:

> I know the limam from Kano central mosque who spoke in support of polio vaccination in the film. I am going to meet him and ask further questions about what he said in the film. He is my friend.

- So, exposure to a polio documentary film will motivate interest to seek further information regarding polio vaccination among those that watched it than it would among those who did not watch the documentary film**.**

It can be concluded with empirical evidence; therefore, that entertainment-education as a communication strategy for polio vaccination can impact on knowledge, perception, and acceptance and motivate inter-spousal communication among hitherto noncompliant parents for polio vaccination. Both the quantitative and qualitative results of the study lent credence to this fact.

However, it is worthy to note that the adoption of a polio documentary film appealed only to the cognitive variables of the target audience. Other factors such as environment, culture, income, peer influence could also have impact on the perception of polio programmes by a given audience. However, the strong literary foundation, rigid methodological approach and standard statistical analytic approach of this study guaranteed its reliability and validity.

CHAPTER FIVE

SUMMARY, CONTRIBUTIONS AND RECOMMENDATIONS

5.1. Summary

This research has studied study the impact of a polio documentary film as an entertainment-education tool on vaccination behaviour of polio noncompliant parents in the northern states of Nigeria. A total of 1,688 randomly selected individuals participated in the study in the three highest wards for polio infection between years 2000 – 2010 in Northern states of Nigeria. These wards are Ragwam in Katagum LGA, Bauchi, Gobriawa in Dala LGA Kano state and Kawo in Kotangora LGA of Niger state.

The study adopted a field experimental survey and focus group discussion to achieve its objective and answer series of research questions it set out at the beginning of the study. Quantitative data generated from the studies were analyzed using the Odds Ratio formula while the qualitative data were presented in a descriptive format.

Generally speaking, the study found a strong relationship between exposure and knowledge, perception, attitude and acceptance of polio vaccination among noncompliant parents. However, Rasaq Olajide (2008) while reviewing the Soul City approach to entertainment-education in South Africa postulates that effective promotional, advertising, partnership and networking steps needed to be in place to give entertainment vehicle the catalyst necessary for affecting desired behaviours. He maintains that integration of two or more of such mutually reinforcing communication strategies will better guarantee behavioural shift and sustainability.

Summary of findings:

Knowledge:

The study found out that exposure to a polio documentary film had impact on participants' knowledge of polio issues as compared to those who were not exposed to the film. In order words, there is a gap in the knowledge level on concept of polio, prevention methods and the population at risk between the groups who watched the film and the groups that did not.

Hence, the findings of this study are consistent with similar study conducted by Brown et al (2004) on "Promoting HIV/AIDS Prevention Through Dramatic Film: Lessons from Tanzania and Kenya". The methodologies for the Brown study were a similar field experimental design with a Solomon-4 block groups. The results like this showed that the films effectively increased knowledge of HIV/AIDS and concern about the spread. The findings also indicated that knowledge was associated with increasing self-efficacy.

The findings of the study are also in congruence with Rogers and Singhal (1989) Kenyan study. *Tushauriane, (Let's Talk about it)* a television series and *Ushikwapo Shikamana (If Assisted, Assist yourself)* both entertainment education soap operas in 1987 in Kenya were studied by Everett M Rogers and Arvind Singhal. They found an increase in knowledge among 70% of viewers who indicated they had learned from Hum Log that women should have equal opportunities, 68 percent had learned that women should have the freedom to make their personal decisions in life, and 71 percent had learned that family size should be limited. Findings from these studies as well as the current one on polio have all lent credence to the fact that entertainment-education impact on knowledge.

Perception:

This study also found out that participants who were exposed to the film had a high perception of risks associated with polio infection. They are, therefore, much more likely to allow their children to be vaccinated against polio given the high perception of risk of polio infection as depicted in the documentary film on polio.

Consistent with SIDA dans la cite' study on using an entertainment-education soap opera to educate the public on HIV/AIDS. SIDA dams la cite' study found out that women who had seen the episodes were 1.4 times more likely than non-viewers to have used condom in their last sexual activity. While men exposed to the episodes were 2.7 times more likely to have used condom in their last sex due largely to their high perception of risks associated with non-*condomized* sex.

Acceptance of Polio Vaccination:

Participants exposed to the film were also much more likely to change their hitherto noncompliant behaviour and allow their children to be vaccinated against polio unlike participants who did not watch the film. This is the variable at the centre of the study as the study is all about behaviour change.

This finding is consistent with the findings in several other entertainment-education studies like Rogers et al (1999), Ryerson (2006), and Papa et al (2000).

Rogers et al conducted a study in Tanzania to determine the effect of an entertainment-education soap opera, Twende Na Wakati on the adoption of Family Planning methods. The study adopted a field experimental design similar to the method of this study. It found that

couples who were exposed to the soap opera were much more likely to adopt a family planning method (49%) than were non-listeners (19%).

Similarly, *Tushauriane, (Let's Talk about it)* and *Ushikwapo Shikamana (If Assisted, Assist yourself)*, linked family size to land inheritance and the resulting ability or inability of children to support their parents in their old age. By the end of the series, contraceptive use in Kenya increased to about 58 % and desired family had fallen from 6.3 to 4.4 children per women.

Information Seeking Behaviour:

The study also found out that exposure to the documentary film on polio could motivate interest to seek further information and clarifications. This was evident from the field experiment survey as well as the FGDs. Participants who watched the film were much more like to seek further information from other sources to learn and know more about polio.

Concurring with this finding, Rogers (1999) postulates that there is strong evidence that entertainment-education programmes get people talking – not only about exciting storylines and interesting characters, but also about the issues that are inter-woven into the programmes.

Inter-Spousal Communication:

This study also set to find out if exposure to a polio documentary film could induce inter-spousal communication on polio among those who watched the film as against those who did not.

This could not be established from the two methods adopted for the study. While the field experimental survey substantiates that those who watched the film had higher odds of engaging in inter-spousal communication afterwards, findings from the Focus Group Discussion were not as unequivocal. Male participants who were exposed to the documentary film in the field experimental survey and who also participated in the FGDs indicated that they would rather instruct their spouses to allow their children vaccinated against polio. While the female participants were observably silent except for one that simply wished her husband was a participant in the exposed group.

The act of giving instructions is a communicative process and as such the findings from the FGDs still supports those of the field experimental survey. It is safe to conclude that exposure to the documentary film will generate communication and negotiations among family members. The FGDs found that those who watched the film as well as those who did not were unlikely to engage in inter-spousal communication as a result of exposure to the film.

In a similar study, in Tanzania, Rogers and Singhal (1999) Twende na Wakati. Rogers and Singhal (1999) found that couples who listened to Twende Na Wakati were much more likely (66%) to talk with their spouses about family planning than non listeners (32%).

5.2. Recommendations

Given the findings from this study, it is recommended that polio communication should adopt entertainment-education tool as a cardinal strategy for communicating polio issues to target audience in Nigeria.

An in-depth audience research should be conducted to determine the most appropriate means of communicating polio issues to specific target audience other than one size fits all approach being practiced at the moment by the programme implementers.iii. A participatory communication channel should be established to involve programme beneficiaries from the planning stage through to implementation and evaluation of polio programmes to avoid alienation and suspicion among programme beneficiaries.

A bottom-up planning and communication strategy should be adopted to ensure active involvement of all stakeholders.

Recommendations for Further studies

A follow-up study is recommended to determine the trend of noncompliance in the same wards where this study took place after some vaccination campaigns in order to ascertain whether the documentary film had a sustained impact or not.

It is also recommended that a further study be conducted to determine other social and environmental determinants of polio uptake among noncompliant parents.

5.3. Limitations of the Study

Although, the researcher is aware that behavioural outcomes are products of cognitive, environmental and sociological variables, this study focussed mainly on cognitive variables to impact on polio vaccination behaviours among noncompliant parents. Hence, the study did not account for the interactions of other intervening variables like income, culture, the people's perception of government programmes, peer influence, bandwagon effects and needs prioritisations which also have profound impact on behaviours. However, the process

of scientific method of data generation, sampling procedure, empirical results of the study and standard statistical analysis guaranteed its validity, reliability and generalizability.

Secondly, another limitation inherent in field experimental study and Focus Group Discussion is the logistics and financial resources to execute the study. One often encounters external hindrances that could not have been anticipated. One of such challenges was that some participants opted out (1.5%) as soon as the topic on polio was introduced. However, this rate of dropout was insignificant to the extent that it had no impact on the sample size or on the outcomes of the study.

Furthermore, majority of the participants were semi-literate or at best literate in Arabic language. Hence, they required an interpreter to read out, interpret and record their responses. This process took an unduly long time given the number of participants who could not attempt the questionnaires by themselves. This challenge was anticipated from onset and planned for. A total of 16 NYSC members, who have good knowledge of Hausa language and have worked in the polio programme as monitors, were trained and employed as decoders and recorders.

Thirdly, some respondents, especially, those who filled out the questionnaires by themselves skipped some questions and this accounted for the variation in the total number of respondents for some questions. Again this was negligible, in some cases 0.9%, which did not impact on the findings of the study.

In addition, the logistics of acquiring the viewing equipment for the exposed group was enormous. This was, however, overcome by hiring local viewing machines where available in the locality or from the nearest cinema viewing centre.

Finally, it was a bit of challenge to assemble enough female participants for the study. But this was addressed by the engagement and involvement of the Mai Ungwar in each of the wards who sent out their wives to gather other women for the study.

5.4. Delimitations of the Study

This study was restricted to only three most high-risk wards in three most high risk LGAs in three most high risk states in the northern region of Nigeria. Given the constraint on funds and time, the researcher restricted the study site to only three states out of nineteen states in Northern Nigeria. The sample size also was restricted to only 1688 participants for the whole study. However, strict adherence to stringent and independent sampling procedures from the state to the selection of participants guarantees the external validity of the study.

The results of this study can be extrapolated to a large audience given the representative nature of the samples and evidence based measures applied to ensure internal validity of the processes of sampling, instrumentation and standard data analysis.

5.5. Conclusion

At this point of the polio eradication programme in Nigeria, it is rather imperative that programme implementers should search for alternative communication strategies to reach, convince and sustain compliance by noncompliant parents. And from the foregoing, it is evident that entertainment-education provides the elixir required to impact significantly on

the behaviours of noncompliant parents in order to have their children vaccinated against polio.

This study has revealed that a polio documentary film as an entertainment-education communication strategy for polio eradication is effective. Results of the study showed that participants were exposed to the documentary film demonstrated improved knowledge of polio disease, benefits of vaccination, perception of the risk of polio infection, and even acceptance to allow vaccination of children against polio.

The study further revealed that exposure to the documentary film motivates interspousal communication on the issues of polio vaccination. But there was a divergence in responses on who will discuss the benefits of polio immunization with spouses from the two methodologies. Participants in the exposed groups during the field experimental survey indicated interest to discuss benefits of polio vaccination with spouses. Those who watched the documentary film were 4.2 times more likely to discuss the benefits of polio immunization with spouse after the sessions. But during FGDs, most participants in the exposed group as well as unexposed did not see strong reasons for further discussions on polio with spouses after the sessions. Those exposed to the film admitted that they would instruct/advice their spouses to avail their children of vaccination opportunities. But participants who did not watch the film felt there was no need to discuss the issue as such discussion would not change their positions.

However, divergence of opinions is not alien in triangulation and even in FGDs as a singular method of study. It is important to note that findings from the field experimental survey support the assertion that a polio documentary film could provoke inter-spousal

communication. Results from the FGDs rather confirm the sense of supremacy of the man as the head of the household, as painted in the profile of the study population, rather than a departure from the sense of importance of inter-spousal communication on polio. Participants in the FGDs who were exposed to the film felt that since they have been thought the benefits of polio vaccination, the best they could do was to instruct their spouses to allow their children to be vaccinated. As a matter of fact, the act of giving instructions is a communication activity. Thus, findings from the FGDs equally support findings from the field experimental survey.

Although, the results of this study has generally shown that entertainment-education using a polio documentary film is effective and can impact on behaviours of noncompliant parents for polio vaccination, it is important to note that this study is not oblivious of other extraneous factors that could affect attitude and acceptance of polio vaccination. The researcher is aware that as socio-economic, religious, environmental, perception of the target audience of government's intention, prioritisation of needs, peer influence and culture among others could affect cognitive variables covered in this study despite its laudable results.

Appendix 1

Step-By-Step Guide on How to Make a Documentary Film

What is a Documentary Film?

A documentary film is a movie of carefully chosen and arranged scenes that attempts o document reality. It is usually not scripted and the people in the movie are not typically actors and it may rely on voice-over narration to describe what happening in the footage. A documentary often includes interviews with people in the film for additional context or information.

Tim Driks (2012) described documentary film as non-fictional slice of life factual works of art and sometimes known as cinema verite. Driks further categorized documentary films as follows:

- A well known event e.g. African Cup of Nations League 2013, The UN House Bomb Blast 2011;
- Biographical films about living or dead person e.g Madonna, John Lennon, Muhammad Ali- When We Were Kings- 1996) ;
- A concert or rock festival e.g. Stop Making Sense 1984, Madonna: Truth or Dare 1991;
- A comedy show e.g. Eddie Murphy shows;
- A live performance e.g. PMAN Award Nite 2008;
- A sociological or ethnographic examination – following the live of an individual over a period of time e.g. Ahmadu Bello, Nnamdi Azikiwe, Obafemi Awolowo;
- An expose including interviews;

- A sports documentary – the World Cup Competition 2004;
- A compilation film of collected footage from several sources on a specific issue or subject etc.

A documentary film, therefore, constitute a broad category of nonfictional motion pictures intended to document some aspects of reality, primarily for the purpose of instruction, entertainment, education or historical records.

Key Steps to Making the Polio Documentary Film

Step 1: Choose a Subject that Fascinates You

The choice of a subject area to make a documentary is fundamental to making a good documentary but more importantly is choosing a subject area that fascinates and is accessible to you. If one is lukewarm about the subject matter, chances are the documentary film will be too. Having worked on the polio eradication programme in Nigeria and Pakistan for over a decade, the researcher is not only at home with polio issues but found it fascinating. Seeing dozens of innocent children becoming crippled for life as a result of refusal by parents to have their children vaccinated against polio made the subject area even more passionate for the researcher. Besides, Nigeria's performance in the global polio eradication initiative has been a subject of international concern and therefore would attract attention of the audience any time.

Step 2: Formative Research

The second step undertaken by the researcher was to thoroughly research on and gather information on the subject of study. This was done through the internet, books, journals, events, interviews and real life involvements in the activities of the subject matter. In the course of the researcher's work in the field in seventeen states of Northern Nigeria, the researcher had garnered enormous data on polio communication. Hence, the story lines were

obvious and the leads on interesting characters were straight forward. From reviews of various reasons for noncompliance to polio vaccination adduced by parents, it was obvious that some of the reasons were due mainly to ignorance of the importance of vaccination. Some parents also identified religious factor as their reasons for noncompliance. Thus, the subjects to tackle in the documentary film were obvious: effects of non-vaccination against polio on the child, inadequate knowledge of the benefits of polio vaccination, religious aspects and actions to protect vulnerable children against polio infection.

Step 3: Create a Structure/Outline

The structure/outline of a documentary film is the blueprint of the work. Think about how the storylines will flow. This step requires a clear visualization of the how to tell the story. Is there existing footage or photos that can help tell the stories or will everything be shot anew? Who are the primary characters? What are the core story points? What are the elements of the story that are compelling and could make one to tingle with intrigue? How can you create intrigue for the audience? Are there some existing situations that that can be filmed? How can the film be built up? What is the climax and anticlimax of the film?

In the case of the polio documentary film used for this study, the researcher thought of how to buzz the subject matter on the audience and retain their attention bearing in mind that these were persons who were hitherto noncompliant to polio vaccination. Hence, the documentary started with an emotional screams of a child in pains followed by footages of polio infected child who struggles to work like his peers but couldn't. Then his mother confesses that she had been refusing vaccination of the child against polio until he became infected and now she regrets all her actions. The story runs featured a father who had similar experience of refusing vaccination until his son became paralysed. The storyline of the documentary was

done in a way that it captures the attention of the audience with that emotion packed introduction, confessions of the noncompliant parents, an education on how polio infects and transmits from one child to another by Muslim doctors well known in the northern part of Nigeria, a word of commitment by the Sultan of Sokoto, who is the Sarakin Muslim. To address the religious concerns of some parents, Muslim religious scholars like Sheik Dahiru Bauchi, Sheik Ahmed Gumi and Sheik Isa Waziri, all who are familiar and influential faces, featured in the documentary to explain the position of Islam regarding immunisation. The documentary ended with footages of adult men and women who were already paralysed as they struggle to lead normal life but with unimaginable difficulties.

Step 4: Create a Shot List

This is the list of footages and interviews that are needed for the production of a documentary film. In the shooting list for making the polio documentary film and given available footages, the researcher listed the following:

i. Three children aged between 3-5years paralysed by polio;
ii. Parents of those children who will be willing to be part of the documentary to confess their regrets and advise to noncompliant parents to allow their children to be vaccinated against polio
iii. A house-to-house vaccination team during a polio campaign as they enter houses and vaccinate children;
iv. Children running away on sighting the vaccination teams in order to avert polio vaccination;
v. Two medical experts to explain how polio enters the human body and how it infects and is transmitted from one person to another;
vi. Children playing around a filthy refuse dump and scavenging on it;

vii. A filthy environment, preferably an refuse dump site, to demonstrate where polio breeds;

viii. An environmental specialist who spoke about how polio thrives and survives in the environment;

ix. The Sultan of Sokoto vaccinating a child with oral polio vaccine as an indication of his confidence in the oral polio vaccine and a call on all Muslims to accept the vaccine;

x. Three Muslim religious scholars – Sheiks Isa Waziiri, the Imam of Kano Central mosque, Ahmed Gumi, secretary of Jamatur Nasir Islam in Kaduna, Dahiru Bauchi, a notable religious leader with followership of over 10,000 people across Nigeria and beyond;

xi. President of the Kaduna Polio Victims association and Adviser to the Governor on Disabled Persons;

xii. A footage of polio victims on rally in Kano

xiii. The Executive Director of the agency in charge of polio eradication programme in Nigeria - Dr. Muhammad Ali Pate.

Although, not listed in any order, the above thirteen items made the major shooting list for the production of the polio documentary film for this study.

Step 5: Shooting

The next step the researcher took was to contact the persons to be interviewed or the owners of the locations for the shooting for footages that were not readily available from pervious recorded events like flag off ceremonies or other public functions. The shooting was done by a professional video operator using a standard Sony Camcoder camera with HD9000 which guarantees high resolution. The shooting was directed by a popular film

producer and actor Ibrahim Mandawari who has been into production and acting of Hausa films for the past 24 years mostly in Northern Nigeria.

Step 6: Write the Script

Once all of the footage was shot and the various production elements gathered, the researcher then scripted the documentary bearing in mind the duration which was 15 minutes. Following the storylines elucidated earlier, the researcher organized the film by scripting and allocating ample time to each segment of the film depending on what effects to achieve and what messages to communicate until a holistic picture was achieved. The voice over script was also done at this stage.

Step 7: Post Production

At this point, we simply fast forwarded through all the footages and shots , taking printable screenshots of key scenes. This way, we created a visual map of the footages and thus the editing process was simplified. Once this was done, we watched the whole footage and created an action log listing timestamps until a real life chronological story of 15 minutes duration was produced to entertain as well as educate the audience on polio.

Step 8: Peer Review

The 15 minutes documentary film was therefore submitted for peer review to two separate film makers and one polio programme officer for their comments and opinions on the content and structure. After their review, the researcher went back to the studio to effect all necessary corrections.

Step 9: Field Pilot Testing

In order ensure that the documentary film was culturally acceptable and communicates the intended messages to the audience, it was pilot tested in Kaura Goje ward, Nasarawa LGA, Kano state among men who had attended a community dialogue meeting and

women who attended compound meeting preceding a round of polio campaign. Their comments and observations were considered.

Appendix 2

Sample Questionnaire

Questionnaire on Impact of Polio Documentary Film in Northern Nigeria

Part A. Socio-Biographic

1. Sex: *Male ◯ *Female ◯

2. Age: *16 – 20 ◯ *21 – 25 ◯ *26 – 30 ◯ * 31 – 35 ◯

*36 – 40 ◯ *41 – 45 ◯ * 46 – 50 ◯ * 50 and above ◯

3. Educational status: *No formal education ◯ * Arabic educati◯ *

Primary school ◯

* Secondary school◯ * Higher education and above◯

4. Occupation: *Farmer ◯ * ◯ * ◯servant

*Other ◯

5. Religion: *Islam ◯ *Ch◯nity *◯nism

*Other ◯

Part B: Knowledge of Polio Immunisation

6. What is polio? *

a) A disease that is caused by the evil spirit (shan inna) ◯

b) A disease that can cause paralysis or even death among children ◯

c) A disease introduced by American to reduce population of Muslims

d) An illness like malaria or stomach ache

7. How can someone be infected by polio?

a) By offending the evil spirit

b) By oral fecal route

c) By shaking hands with someone who is infected

d) By destiny

8. Who is at the risk of polio infection?

A) Everyone irrespective of age

b) Only children

c) Only Adults who offend the spirit

d) No body

9. Is polio infection preventable? **a)** Yes b) No **c) Doesn't know**

10. How can polio be prevented?

a) By immunizing all children between 0 -59months at the same ti

b) By giving arms to the poor

c) By doing what is right in the sight of God and being a good Muslim

e) Doesn't know

Part C: Perceptions of Severity of Polio Infection

11. If your child is not vaccinated with oral polio vaccine during house to house or routine immunization sessions, what do you think will happen to him or her?

a) He may become blind

b) He will become dumb

c) He may become paralysed

d) He may become deaf

e) Nothing will happen to him ◯

f) Doesn't know ◯

12. If a child in your community is paralysed by polio, does that pose a risk to your own children?

A) Yes ◯ B) No ◯ c) Doesn't know ◯

13. What would you do to protect your children from polio infection?

a) Vaccinate them with oral polio vaccine all the time ◯

b) Pray to God to protect them from polio infection ◯

c) Give them good food and fura da nunu ◯

d) Take good care of them ◯

Part D: Awareness of Polio Immunisation Campaigns

14. Have you ever heard about polio?A)Yes ◯ B) No ◯ c) Doesn't know ◯

15. If you heard about any polio campaign, what was the source of your information on that polio campaign?

a) Newspaper ◯ b) Radio ◯ c) Television ◯

d) traditional/religious leader ◯ e) Health work ◯

16. What is your most preferred source of information about polio immunsation?

a) Newspaper ◯ b) Radio ◯ c) Televisi ◯

d) traditional/religious leader ◯ e) Health worker ◯

Part E: Acceptance of Oral Polio Vaccine

17. If your answer to question 18 is yes, what was your reason for refusing vaccination for your child?

a) Vaccine dangerous to child's health ◯ b) Vaccines contain sterilizing substances ◯

c) Immunization times not convenient ◯ d) No faith in immunization ◯

e) Adverse effect after last vaccination ◯

f) Not aware of the time and date of the vaccinatio◯ g) Islam forb◯olio immunisation ◯

i) Husband does not allow it ◯ k) Rumor about vaccines◯

18. Have any of your children been missed during polio immunization campaign even though you would have accepted?

a) Yes ◯ b) No ◯

19. Who can influence your decision to vaccinate your children against polio?

a) Health worker ◯ b) Traditional leader ◯ c) Religious leader ◯

d) Husband ◯ e) Personal decision ◯ f) Neighbor ◯

20. Are you willing to vaccinate your children against polio from now onwards? A) Yes ◯ B. No) ◯ c) Not sure◯

21. Would you advise other noncompliant parents to allow their children vaccinated against polio from now onwards? A) Yes ◯ B. No) ◯ c) Not sure ◯

22. What would you do next time if the polio team missed out your house during house to house campaign?

a) Report to the nearest health facility

b) Nothing

c) Doesn't know what to do

Part F: Benefits of Polio Immunisation

23. Do you know of any benefits you stand to get by vaccinating your children against polio?

a) Healthy children ◯ b) No gain at all ◯ c) Don't know ◯

24. Failure to immunize children at eligible age can result in life time paralysis and possibly death?

a) True ◯ b) False ◯ c) Don't know ◯

25. Children not immunized against polio may not grow up healthy.

a) True ◯ b) False ◯ c) Don't know

Part H: Inter-spousal Communication on Polio Vaccination

27. Have you ever discussed issues of polio with your wife or husband?

a) Yes ◯ b) No ◯ c) Can't remember ◯

28. Will you discuss the benefits of polio vaccination with your husband or wife after now?

a) Yes ◯ b) No ◯ c) Not sure ◯

Part I: Seeking More Information on Polio Vaccination

29. Have you ever asked any health worker to explain the benefits of polio vaccination to you?

a) Yes ◯ b) No ◯ c) Can't remember ◯

30. Have you ever sought for more information on polio from other sources like internet, religious or traditional leaders?

a) Yes ◯ b) No ◯ c) Can't remember

31. Will you seek for more information on polio after now?

a) Yes ◯ b) No c) Not sure ◯

34. If you were to seek more information on polio from after now, what would be your most preferred source?

a) Health worker ◯ b) Religious leader ◯ c) Traditio ◯ Leader

d) Husband ◯ e) Wife ◯ f) Other ◯

Focus Group Discussion

Issues for FGD:

1. Basics of polio immunization
2. How polio transmits and how it can be prevented
3. The severity of polio paralysis on the child, the family and the society.
4. The benefits of fully immunized child
5. The place of immunization in Islam
6. Acceptance of polio vaccination
7. Interspousal communication on polio

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