KNOWLEDGE, ATTITUDE AND PERCEPTION OF MOTHERS OF UNDER-FIVE REGARDING VACCINATION DURING HOUSE-TO-HOUSE IMMUNISATION CAMPAIGNS IN IBADAN NORTH-WEST LOCAL GOVERNMENT AREA, OYO STATE

BY

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CERTIFICATION

I hereby certify that this study was carried out by SOLAGBADE, Abimbola Jamiu under my supervision in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan, Nigeria

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DEDICATION

This work is dedicated to the Almighty God; the giver of life.

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ABSTRACT

House-to-House Immunisation Campaigns are activities that provide children with an additional dose of vaccine and deliver other interventions where health workers build up extra efforts to focus on the community to offer immunisations to all individuals in a targeted population, regardless of the past immunisation status. However, there is a dearth of information on knowledge, attitude, and perception of vaccination during the house-to-house immunisation campaign. This study was designed to investigate this dearth among mothers of under-five towards vaccination during house-to-house immunisation campaigns in Ibadan North-West Local Government area (IBNWLGA), Ibadan, Oyo State.

A descriptive cross-sectional study that employed a multistage sampling technique was done. Four wards were randomly selected from each zone, out of the eleven wards in IBNWLGA. Based on their distinctive features, settlements were selected from these wards using simple random sampling, simple random sampling was used to select the number of respondents. A pre-tested semi-structured interviewer-administered questionnaire was administered on three hundred and five respondents to document their socio-demographic characteristics, knowledge, attitude, and perception of house-to-house immunisation. Knowledge, attitude, and perception were measured on 9-point, 16-point, and 10-point scales respectively. Knowledge scores of ≤3, 4-6, 7-9 were rated poor, fair and good respectively. Attitude scores of ≤8 and >8 were rated negative and positive attitude respectively while perception scores ≤5 and >5 were rated negative and positive perception respectively. Data were analysed using descriptive statistics and Chi-square test at a 5% level of significance.

The mean age of respondents was 30.6±6.1 years, 54.4% were Christians, the highest level of education for most of the respondents was secondary education (68.5%) and almost half were traders (45.2%) with 1.9±0.9 as mean years of marriage. Their mean parity and the number of under-five were 2.5±1.4, 1.2±0.4 respectively. Knowledge was generally poor as many (66.6%) had poor knowledge with mean score of 3.2±1.8, even though all of them had heard about the campaign, majority (83.9%) of them knew that the vaccine protect their children from diseases, only one- third of them were able to mention some of the vaccines correctly while majority (92.5%) claimed that proper information was not given by the vaccinators about the vaccines and which

occupation, marital status and number of under-five showed significant statistical difference with the knowledge of respondents. The majority had a positive attitude (88.2%) and positive perception (84.6%) which ethnicity and level of education showed significant statistical difference respectively. One-fourth believe that frequent vaccination will make the vaccine ineffective (24.6%), overload immune system (25.9%) and one-fifth see no need for vaccination if the child is healthy.

Respondents had poor knowledge of house-to-house immunisation but most had positive attitude and perception. There is a need for promotion of house-to-house immunisation campaign especially by educating mothers of under-five on its benefit to achieve optimal nationwide immunisation coverage.

Keywords: Knowledge, Attitude, Perception, House-to-house immunisation campaign, Mothers of Under-Five.
Word count: 462

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GLOSSARY OF ABBREVIATIONS

ACPE -	Advisory Committee on Poliomyelitis Eradication
BCG -	Bacille Calmette-Guerin
EPI -	Expanded Program on Immunisation
HBM –	Health Belief Model
IBNWLGA-	Ibadan North West Local Government Area
IPD -	Immunisation Plus Days
IPV -	Inactivated poliovirus vaccine
LIDs -	Local Immunisation Days
NDHS-	Nigeria Demographic and Heath Survey
NIDs -	National Immunisation Days
NIPDs -	National Immunisation Plus Days
NPHCDA -	National Primary Health Care Development Agency
OPV -	Oral polio vaccine
RI -	Routine Immunisation
SIAs -	Supplementary Immunisation Activities
SNID-	Sub-national vaccination days
UNICEF -	United Nations Children's Fund
WHA -	World Health Assembly
WHO-	World Health Organization

DEFINITION OF TERMS

Immunisation: is an act of actuating invulnerability to a child by applying a vaccine that almost guarantees protection from many major diseases.

House-to-house Immunisation Campaigns: are activities whereby vaccine is taken simultaneously to many residents where health workers build up extra efforts to focus on the community to offer immunisations to all individuals in an objective populace, regardless of the past immunisation status.

Knowledge: is the intellectual understanding of a particular concept or skill. In this study, it refers to an individual's understanding of the House-to-House Immunisation Campaign.

Attitude: a feeling or opinion about something or someone, or a way of behaviour.

Perception: the way in which something is interpreted, regarded or understood.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Immunisation is one of the most effective public health interventions available which involves the process of conferring increased resistance to an infectious disease by a means other than experiencing the natural infection. In recent decades, vaccines have substantially contributed to the reduction in childhood disease burden worldwide, saving millions of lives. Immunisation is the fundamental strategy for the eradication of smallpox–one of the greatest achievements in the history of public health. Polio is now on the brink of eradication thanks again to the power of vaccines. More children than ever before now live healthy lives free of vaccine-preventable diseases because of immunisation. Moreover, the impact of vaccines extends beyond public health to children's educational performance, increases household incomes and, ultimately, greater national economic growth (WHO, 2016).

Childhood immunisation is an act of actuating invulnerability to a child by applying a vaccine that almost guarantees protection from many major diseases. Childhood vaccination is widely considered to be 'overwhelmingly good' by the scientific community (Givs, 2005). World Health Organization (WHO) initiated the Expanded Program on Immunisation (EPI) in May 1974 to vaccinate children throughout the world (WHO, 1993). The fundamental techniques for the prevention of infection are to eliminate or diminish the number of infecting microorganisms from circulation, to enhance the host immune response and to treat the infected host. These strategies are achieved by two of immunisation types (active and passive) (WHO, 1997).

House-to-house immunisation campaigns (Supplementary Immunisation, Mass Immunisation) were an integral part of early control efforts. Thereafter, polio vaccines were used largely in routine childhood programs. The resolution in 1988 to eradicate polio globally led to the development of appropriate strategies to achieve this goal, including house-to-house immunisation campaigns (i.e., national immunisation days, sub-national immunisation days and mop-up activities), to achieve the highest possible coverage in the shortest possible time. The low vaccination uptake has been credited to variables, for example, poor knowledge, no felt need, too many rounds, religious belief, political differences, maternal education, age, occupation, marital status, home, access to media, fear of side effects, family unit riches, and place of delivery (Tagbo *et al*., 2014).

1.2 Statement of the problem

Africa has the highest U5MR of the entire world's continents with 40% of all global deaths in under-five occurring in Sub-Saharan countries, U5MR reduced by 26% from 181 deaths per 1000 live births to 145 deaths per 1000 live births in the same year3 and but we are yet to meet the MDG (WHO, 2013). Vaccine-preventable diseases (VPDs) cause an estimated 2 million deaths or more every year, of which approximately 1.5 million deaths occur among children below five-year age. Refusal of house-to-house immunisation campaign is a significant challenge (Henderson, 1999). Some parents believed that there is no other vaccine required outside the routine immunisation and have little knowledge of supplementary vaccination like immunisation plus days. Parents were ignorant of the number of doses of vaccines required. A substantial proportion of respondents in all states wrongfully believed that administering more than four doses of vaccine is harmful to a child while some believed that the vaccine should be given once (Babalola, 2017).

Barriers to childhood immunisation include parental (maternal) lack of knowledge about the importance of immunisation, poor perception of the potential threats of VPDs on the child's health, culturally based beliefs and the relative lack of medical knowledge leading to the assumption that the disease is harmless, minimally contagious or a 'normal' part of childhood (WHO, 2013). A very high proportion of women or mothers had partial or no knowledge about immunisation. In line with this, study conducted by Angadi et al also found partial or non-immunisation among children under five and the possible reason they found to be lack of information, lack of motivation (Reja, Gupta and Bhatnager, 2018). The impact of Immunisation on childhood morbidity and mortality has been great, full potential, has not yet been reached.

1.3 Justification of the study

There is a dearth of information on knowledge, attitude, and perception of vaccination during the house-to-house immunisation campaign, immunisation which has greatly reduced the burden of infectious diseases prevents illness, disability, and death from vaccine-preventable diseases including, Measles, Pertussis, Diphtheria, Polio, Rubella, and Tetanus (Yousif *et al*., 2013). Prevention is ultimately the most effective defense system in controlling infectious diseases. So the knowledge regarding immunisation in prevention of infectious disease among mothers of under-five children is important (Sanaa *et al*., 2013). Immunizing a child significantly reduces the costs of treating diseases, thus providing a healthy childhood and reducing poverty and suffering. The knowledge of the benefit of immunisation may be important especially when parents are

required to immunize their children repeatedly as in the case of house-to-house immunisation campaigns. Parents might prioritize preventing other diseases such as measles compared to polio considered by them to be a rare disease (Siddiqi *et al*., 2010).

The attitude of most mothers towards immunisation services relies on the efficacy of the vaccine to protect against disease; there was a poor attitude towards polio immunisation among mothers who believe that it contains anti-fertility agents. Decision-making on immunizing a child lies predominantly on the parents; vaccine rejection because of rumors and the priority accorded to parent's preference to more severe diseases (Falade and Bankole, 2014). Mothers' knowledge, attitude, and perception play an important role in achieving complete immunisation before the fifth birthday of the child, also contributing to success or failure of immunisation program (Qutaiba *et al*., 2014).

The study to determine their knowledge, attitude, and perception towards this campaign will help determine if there is any misconception, willingness to vaccinate their children which will affect the immunisation status of children of under-five.

1.4 Research questions

1. What is the level of knowledge of mothers of under-five towards vaccination during house-to-house immunisation campaigns?
2. What is the attitude of mothers of under-five towards vaccination during house-to-house immunisation campaigns?
3. What is the perception of mothers of under-five towards vaccination during house-to-house immunisation campaigns?

1.5 Objectives of the study

1.5.1 Broad Objective

To investigate the knowledge, attitude and perception of mothers of under-five regarding vaccination during house-to-house immunisation campaigns in Ibadan North-West Local Government area (IBNWLGA), Ibadan, Oyo State, Nigeria.

1.5.2 Specific Objectives

1. To assess the knowledge of mothers of under-five regarding vaccination during house-to-house immunisation campaigns in IBNWLGA, Ibadan, Oyo State, Nigeria.
2. To determine the attitude of mothers of under-five regarding vaccination during house-to-house immunisation campaigns in IBNWLGA, Ibadan, Oyo State, Nigeria.
3. To determine the perception of mothers of under-five regarding vaccination during house-to-house immunisation campaigns in IBNWLGA, Ibadan, Oyo State, Nigeria.

1.6 Hypotheses

The following null hypotheses were posed for the study:

$H_0$1: There is no significant association between the knowledge of house-to-house immunisation campaigns among mothers of under-five and the acceptance of the vaccine for uptake by their children in Ibadan North-West Local Government Area, Ibadan, Oyo State, Nigeria.

$H_0$2: There is no significant association between the attitude regarding vaccination during house-to-house immunisation campaigns among mothers of under-five and the acceptance of the vaccine for uptake by their children in Ibadan North-West Local Government Area, Ibadan, Oyo State, Nigeria.

$H_0$3: There is no significant association between the attitude regarding vaccination during house-to-house immunisation campaigns among mothers of under-five and the acceptance of the vaccine for uptake by their children in Ibadan North-West Local Government Area, Ibadan, Oyo State, Nigeria.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview to house-to-house Immunisation campaign

In about 600 BC, the Chinese were acquainted with utilizing smallpox material vaccinated through the nostril to prevent disease in a procedure, known as "variolation" which took an assortment of structures. Immunisation of healthy individuals with a tiny measure of material from smallpox bruises was done in numerous Asian nations around then and the learning about infection was vague. However, Hippocrates, the father of Medicine had the ability to depicted mumps, diphtheria, pandemic jaundice, and different conditions, in 400 BC. The utilization of immunisation to anticipate ailment originated before the knowledge of both disease and immunology (Allison, 2014). In 1798, Edward Jenner published his work on the advancement of an inoculation that would protect against smallpox. Two years earlier, in 1796, he had first speculated that protection from smallpox illness could be acquired through immunisation with a related virus, vaccinia or cowpox. He tried his hypothesis by vaccinating eight-year-old James Phipps with cowpox pustule fluid recuperated from the hand of a milkmaid, Sarah Nelmes in a procedure known as “vaccinia”, the boy got cowpox. Be that as it may, when the kid was exposed to smallpox two months after by Jenner, the child did not get the disease (Thomas and Jenner, 2015).

In a related improvement, in 1927 Bacille Calmette-Guerin (BCG) vaccine was first used in infants, having been created by Albert Calmette and Camille Guéérin in 1921. BCG (live-attenuated Mycobacterium Bovis) represented the only vaccine against tuberculosis (Kennedy *et al*., 2008). Goodpasture's exhibited in 1931 how infection can develop in cell culture which was further developed and appeared to have the capacity to develop a virus in the medium, in this manner making ready for the subsequent generation of viral vaccines. Oral polio vaccine types 1 and 2, created by Albert Sabin and developed in monkey kidney cell culture were authorized for use in the U.S in 1961. In 1960, Sabin presented the monovalent live oral poliovirus antibody followed by its trivalent kind in 1963 (Hull *et al*., 1998). Live attenuated measles virus vaccine was authorized in the U.S in 1965, the suggested age for routine administration was changed from 9- 12 months of age (Allison, 2014). Following the tremendous achievement related with vaccine advancement and particularly the fruitful eradication of smallpox; in 1974 the Expanded Program

on Immunisation (EPI) was made by WHO, in an offer to give vaccination to the majority of the total populace before the first birthday (Olive and Aylward, 1999). The six illnesses that have been handled under this activity were tuberculosis, diphtheria, tetanus, pertussis, polio, and measles. It was not until 1988 that the WHO suggested that the yellow fever vaccine be added to the National Immunisation Programme of those nations where it is endemic. Later in 1992, the World Health Assembly suggested hepatitis B inoculation for all infants (WHO and UNICEF., 1996).

2.2 Knowledge on House-to-House Immunisation campaign

The mother plays a crucial role in encouraging the wellness of children. Various ignorance, misconception and insufficiency of knowledge in relation to vaccination are dominant among mothers (Reja et al., 2018). Many mothers don't come regularly for vaccination of their children. As a result, they miss the due date of vaccination. Low literacy level of mothers is a matter of worry. Some of them don't know about the diseases for which their child is being immunized. Although many mothers don't know the timings of vaccination but some of them follow the Immunisation card and come accordingly (Kapoor and Vyas, 2010). A positive correlation between parental knowledge, practice and vaccination rates of children was reported by many studies (Qidwai et al., 2007; Nath et al., 2008; Borràs eta l., 2009). Similarly, many studies reported positive correlation between mother's knowledge, attitudes and practice and children's immunisation (Nisar, Mirza and Qadri, 2010).

A study by Sankar et al. (2018) also found doctors and nurse to be most important source of information on immunisation. A study conducted in Lucknow in 2005 reported that the paramedical workers were the main source of knowledge regarding immunisation for fully and partially immunized respondents while unimmunized respondents were mainly influenced by community leaders (Al-lela et al., 2014). In another study, the preferred mode of reminder for vaccination is through health worker though some mothers opted SMS or telephonic reminder. Knowledge, level of education, and religion of mothers have been reported as major contributory factors to low immunisation coverage Nigeria, Africa and Asia (PAN, 2012; Onsomu *et al*., 2015; Maina *et al*., 2013; Subani *et al.,* 2015; Uzochukwu *et al*., 2004; Beaven *et al*., 2016) As shown in previous studies in resource limited settings, good immunisation coverage has been achieved by the efforts of a robust primary health care approach (Bradley, IGALS, 2005) mothers' knowledge (Streatfield *et al*., 1990; Bhuiya *et al*., 1995; Bradley, IGALS, 2005) and the provision of

immunisation information (Bhuiya *et al*., 1995; Jamil *et al*., 1999; Cui and Gofin, 2007). Other reasons for incomplete immunisation were unawareness of mother regarding age related vaccines, the child was ill-was brought and was not immunized, unawareness of need for immunisation (Mugada *et al.,* 2017*).* Education and literacy of parents especially mothers determine vaccination practices (*Navaneetha et al.,* 2020*).*

2.3 Attitude on house-to-house immunisation campaign

Parental attitudes about vaccines is an important factor in predicting child's immunisation status (Gust, 2004). It is of importance that a child should receive all immunisation at the appropriate ages and intervals in order to ensure maximal protection from vaccine preventable diseases. (Adedire *et al*., 2016; Sadoh and Eregie, 2009). The attitude of parents regarding immunisation play a major role in increasing vaccine coverage (Navaneetha et al., 2020). Some administered respondents declined from bringing their children for immunisation for the fear of side effects and few respondents were unaware of the importance of immunisation (Reja *et al*., 2018). Parental practices like unawareness of adverse effects and contraindications of vaccination, negative perceptions about vaccination in mild illness, negative attitude, for example, mother's fear of vaccination was considered as one of the major barrier to childhood vaccination (Gherardi, 2013). In a study, majority of the mothers had favourable attitude whereas only few demonstrated unfavourable attitude towards immunisation. There was also significant association found between knowledge and attitude of the study subjects (Kalyani and Sharma, 2018).

2.4 Perception regarding house-to-house immunisation campaign

The perception that vaccines cause autism was the most prevalent parental concern in a survey conducted in the USA (Smith *et al*., 2009). In a study, many were of the opinion that mothers should not forget their children immunisation appointments, majority still believed that it is important for parents to be reminded of their children immunisation before the appointment day. Almost all the mothers perceived that immunisation reminders will be helpful to mothers in complying with their children immunisation schedules (Brown et al., 2015). In a study, a large proportion of mothers believed that infants took too many vaccines and many of mothers believed that vaccines are given for infants to prevent non serious (simple) diseases (Shiferaw *et al*., 2015). This type of perception is similarly described by other scholars from Texas health science center at Fort Worth (America) with three consistent perception of mothers such as vaccines could harm

child, children receive too many vaccinations and vaccinations are given to prevent diseases that are not serious (Anna, 2009). Basically, this similarity should not be seen from the same angle of reference. For example, mothers found in developed countries may develop this type of belief due to they pay attention more about vaccines safety while mothers found in developing countries like Ethiopia may be due to lack of knowledge or social influences. Surprisingly, 49.4% of respondents worried that vaccination may make infants sick and 7.5% perceived that vaccination can cause death in infants. Similarly, 15.0% and 16.1% of respondents believed that vaccination had no any use (not work) and decreases infants' natural immunity respectively. This finding is in line with other cross-sectional study done in Connecticut (north eastern United States) (Jisy *et al*., 2013).

2.5 House-to-house immunisation Activities/ Supplementary Immunisation Activities (SIAs)

The World Health Assembly launched the Global Polio Eradication Initiative in 1988 and announced the year 2000 as the target year by which to accomplish poliomyelitis eradication. Mass campaigns have been an essential strategy for polio control since effective vaccines were first licensed, starting with inactivated poliovirus vaccine (IPV) in 1955, and oral poliovirus vaccine (OPV) in 1961 (Sutter *et al*., 2003). While both vaccines provide individual protection against paralytic disease, OPV has attributes which made it the vaccine of choice for the global eradication initiative, and which make it very suitable for campaign use:

(1) it can be administered by volunteers after basic training (health professionals are not essential for all immunisation activities);

(2) it induces mucosal immunity which decreases the community transmission of polioviruses;

(3) it is associated with secondary spread from vaccines to close contacts, thereby immunizing some of these contacts (Majiyagbe, 2004).

In 1988, the World Health Assembly (WHA) resolved to eradicate polio by 2000 (WHO, 1988). The polio eradication initiative designed and implemented eradication strategies for all polio-endemic countries, including the use of mass campaigns with OPV to rapidly raise population immunity and interrupt the circulation of wild poliovirus. To make the most of the attributes of OPV, and achieve the maximum benefit of OPV in campaigns, it is essential to reach a very high proportion of the target population with potent vaccines and to do that consistently with each immunisation round. Operational planning and effective management are essential to ensuring the quality of campaigns, and to achieving consistent high coverage. Effective implementation of mass campaigns with OPV has been instrumental in interrupting wild poliovirus circulation in many

countries, and campaigns will continue to be a critical strategy for the final achievement of polio eradication globally (Hull *et al*., 1994).

Nigeria following this worldwide concern instituted a strategy regarding the eradication of polio, meningitis, and others through Supplementary Immunisation Activities (SIAs)/Catch-up battles (Immunisation Plus Days (IPDs), Local Immunisation Days (LIDs), Child Health Week and so on) which is normally arranged and consistently done dependent on necessities and result of coverage surveys, to enhance routine immunisation coverage and control out-break circumstances e.g. meningitis, measles, and yellow fever. So also, Supplemental Tetanus Toxoid exercises for women of childbearing age, polio eradication and measles elimination activities are arranged and completed every year until the objectives/goals are met. SIAs are mass vaccination campaigns amid which health workers and volunteers build up extra effort benefit focuses (for measles vaccination) or on the other hand go door to door (for polio immunisation) to offer immunisations to all individuals from an objective populace, regardless of the past immunisation status. SIAs might be conducted across the country (through national immunisation days (NIDs) or child health days) or may target explicit regions/locales (through sub-national vaccination days (SNID) thus called mop-ups). They supplement routine immunisation (RI) administrations (i.e., administrations conveyed at fixed health facilities) in two different ways. SIAs may fundamentally contribute to herd immunity against infection in local communities by conveying a substantial number of OPV dosages in a short period. The idea is to catch children who are either not immunized or only partially immunized. Also, to boost immunity in those who have been immunized. This way, every child in the most susceptible age group is protected against infection at the same time instantly depriving the favorable condition that causative organism survival depends (Sinha *et al*., 2007).

2.6 National Immunisation Days (NIDs)

National Immunisation Days are conducted in rounds because the oral vaccine does not require a needle and a syringe, volunteers with minimal training can serve as vaccinators well beyond the existing trained health staff. Three to five National Immunisation Days are usually required to eradicate some diseases, but some countries require more time especially those whose routine immunisation coverage is low. NIDs are normally conducted during the cool, dry season because logistics are simplified, immunological response to oral polio vaccine is improved and the potential damage to heat-sensitive is reduced. In 2004, UNICEF drew on several of their "Goodwill

Ambassadors" to inform and mobilize the African public as part of its Global Polio Eradication Initiative. These personnel recorded radio and television spots and spoke out about polio with the media to help raise public awareness of the importance of every child being vaccinated during the synchronized Polio National Immunisation Days (NIDs) in West and Central Africa (UNICEF., 2004).

2.7 National Immunisation Plus Days (NIPDs)

The Immunisation Plus Days (IPD) is a supplemental immunisation strategy used for mass immunisation through house-to-house vaccination aimed at eligible children irrespective of their previous vaccination status. During National Immunisation Plus Days (NIPDs), states provide funds to guarantee the conveyance and administration of vaccines to children in their homes or schools. This activity helps to provide herd immunity and protect the child from vaccine-preventable diseases. It has been demonstrated to save the lives of many children in Nigeria. The National Immunisation Plus Days (NIPDs) campaign involves House-to-House, Transit and Fixed Post teams while children at homes, markets, churches, mosques, major car parks, and social event venues would be targeted (NPHCDA., 2009).

The Immunisation Plus Days (IPDs) initiative was launched in May 2006 by the National Programme on Immunisation (NPI), a government initiative with support from UNICEF and the World Health Organization to tackle polio in the 18 northern regions still affected by the virus. Immunisation Plus Days approach is a strategic plan to administer Oral Polio Vaccine together with other routine immunisation antigens aimed at strengthening the fight against vaccine-preventable diseases in Nigeria, increase acceptability of oral polio vaccine, helps reduce the burden of vaccine-preventable diseases and encourage search for acute flaccid paralysis in children between zero to fifteen years who suddenly develop weakness of the limbs. Emphasized that the vaccination team would be moving from house to house, churches, schools, mosques, markets, motor-parks and village squares to administer oral polio vaccine. Nigeria additionally one of the most astounding infants and under-five death rates globally. The government tried to heighten endeavors to annihilate polio in the nation perhaps in 2015. It would be reviewed that Nigeria, Afghanistan, and Pakistan are said to be polio-endemic nations globally. Global Polio Eradication Initiative has prescribed different immunisation campaigns to raise population immunity and avert the spread of the infection in Nigeria and neighboring nations in Lake Chad Basin.

In previous studies in Nigeria, the level of education was found to be important in accepting OPV during IPD in Zaria, Northern Nigeria. Lacking the knowledge of the benefit of immunisation was a factor for OPV refusal during IPD. The knowledge of the benefit of immunisation may be important especially when parents are required to immunize their children repeatedly as is the case with IPD. There was generally low knowledge of the existence of vaccines in a fixed post during IPD. The fixed post has the added advantage of strengthening routine immunisation. Ironically, the success of the Immunisation Plus Days in preventing paralysis among children < 5 years of age has decreased the visibility of vaccine-preventable diseases (Obadare, 2005).

Also, other common reasons given by noncompliant for refusing vaccines during IPDs were "no felt need" and "too many rounds". The "too many round" reason may indicate genuine fatigue to the frequent rounds of IPD in Nigeria and may cause all impediments to achieving high-quality IPDs (Pérez-Cuevas *et al*, 1982; Balraj and John, 1986). It was observed that no routine immunisation (RI) messages were being given during the IPD door to door visits and no parents were encouraged to take their children to the fixed post for immunisation. The knowledge of the availability of other vaccines in the fixed post during IPD may help reduce the perception that polio is been singled out for mass campaigns to the detriment of other childhood diseases (Abdulaziz *et al*., 2016).

2.8 Effect of House-to-house Immunisation Activities on Routing Immunisation (RI)

The Global Polio Eradication Initiative outlines a similar strategy of fortifying immunisation systems while using mass polio vaccination campaigns where RI coverage is low. However, concern has long existed about the potentially negative impact that measles SIAs, polio campaigns, and similar vertical disease control, elimination, and eradication activities could have on the routine health system, including RI services (Taylor *et al*., 1998). The concern about the negative effects of SIAs on RI relates in part to the similarities and differences between the two approaches. RI services seek to regularly provide all recommended vaccines in a country's immunisation schedule to a preset target age group (usual infants), through either health facilities or outreach sites, whereas SIAs usually provide 1 or 2 vaccines during a short time frame to a wider age range. However, SIAs and RI services have substantial overlap in resource requirements; specifically, SIA vaccinators are often the same healthcare providers who provide RI and other primary health services. Indeed, studies indicate SIAs can negatively affect routine health service delivery

temporarily owing to this human resource overlap (Griffiths *et al*., 2010; Verguet *et al*., 2013; Mounier-Jack, 2016).

These negative impacts need to be weighed against the potential benefits that SIAs can have on RI service delivery, including

(1) more efficient use of overlapping resources,

(2) the ability of well-conducted SIAs to reach underserved children previously unreached by RI services, and

(3) consolidation of SIA and RI micro-planning activities, which includes identification of hard-to-reach populations for determining where to place vaccination sites via catchment area maps or village line listings in the micro-plan.

Program components related to vaccine administration, including definitions of adverse events, vaccine contraindications, and other vaccine safety-related topics, are generally similar across SIAs and RI services (Hersh *et al*., 2003).

The Advisory Committee on Poliomyelitis Eradication (ACPE) recommended the implementation of independent monitoring of SIAs in all infected countries in November 2009 to rectify the problem of delayed and poor quality of SIA data provided by many countries as well as improve the credibility of the program (Cochi *et al*., 2014). Independent monitoring of SIAs provides an objective measure of SIA quality that can be used to guide improvements to reach more children by enabling corrective action both during SIAs and in planning for the next vaccination campaign. Immunisation decision making is not a straightforward process for parents. Information influences parental decision making on whether they immunize their child or not (Hill and Cox, 2013). The most common primary reason for non-vaccination is lack of awareness and misconception. In this regard, communication helps to provide health information to raise awareness, create and sustain demand, and encourage acceptance of vaccination services. Immunisation messages can be communicated through media, health workers, town criers, drama, and songs by local musicians (Jegede *et al*., 2007).

2.9 Conceptual Framework

The Health Belief Model (HBM) is the most common model used to study health-related behaviors. The HBM assumes that people are likely to exhibit disease prevention behaviors if they perceive that (a) they are highly susceptible to the disease; (b) the disease is serious; (c) the behaviors are beneficial; (d) the behaviors have few barriers; and (e) they are cued to perform the behaviors (Glanz, Rimer, and Lewis, 2002).

Health Belief Model (HBM) derived from the theories of K. L. around 1952, originated by Hochaum, Stephen and Rosenstock (McCormick-Brown, 1999). The HBM was developed initially in the 1950s by social psychologists in the U.S. Public Health Service to explain the widespread failure of people to participate in programs to prevent and detect disease (Hochbaum,1958; Rosenstock,1960,1974). Later the model was extended to study people's responses to symptoms (Kirscht, 1974) and their behaviours in response to a diagnosed illness, particularly adherence to medical regimens (Becker *et al.*, 1979). This theory marked the beginning of systematic theory-based research in health behaviour. It focused on the relationship between health behaviours, practices, and utilization of health services. In this section, the constructs of Health Belief Model are explained and then the application in the area of house-to-house immunisation campaign and its uptake.

Perceived susceptibility

The perceived susceptibility refers to beliefs about the likelihood of getting a disease or condition. Perceived risk of contracting a disease refers to individuals' subjective perception of their susceptibility to the disease. For example, mothers of under-five must believe there is a possibility of their children getting diseases such as measles, tuberculosis, poliomyelitis and so on, or children will get sick more easily than other children. The health belief model predicts that mothers of under-five will be more likely to uptake vaccination for their children if they feel that they are susceptible to vaccine preventable diseases (Glanz *et al*., 2008).

Perceived severity

The perceived severity of a disease refers to the severity of a health problem as assessed by the individual. This variable refers to feeling about the seriousness of contracting an illness or of leaving it untreated include evaluations of medical/ clinical consequences like death, disability and pain or social consequences such as effects of the conditions on work, family life and social

relations. Health belief model that predicts perceived seriousness of a disease necessitate people to engage in preventive actions like complication of the disease can be dangerous or cause serios health problems

Perceived benefits

Even if a person perceives personal susceptibility to a serious health condition (perceived treat), whether this perception leads to behavior change will be influenced by the person 's belief regarding the perceived benefits of the various available actions for reducing the disease treat (Glanz *et al*., 2008). For example, mothers of under-five must believe that a course of preventive behaviors available would be beneficial in reducing the risk of their children to contract vaccine preventable diseases. Therefore, individuals exhibiting optimal beliefs in susceptibility and severity are not expected to accept any recommended health action unless they also perceive the action as potentially beneficial by reducing the treat. Health belief model predicts that those with perceived benefits are more likely to take preventive actions, than those with no perceived benefits or low perceived benefits which include relieve of influenza symptoms and complications, boost of their children immune system

Perceived barriers

Perceived barriers to action refer to the negative aspects of health-oriented actions or which serve as obstacles to action and/or that arouse conflicting incentives to avoid action. Perceived barrier refers to the potential negative aspects of particular health action may act as impediments to undertaking recommended behaviors. A kind of nonconscious, cost effective analysis occurs wherein individuals weight the action expected benefits with perceived barriers such as it could help me, but it may be expensive, have negative side effects, and be unpleasant, inconvenient or time consuming. For example, if mothers of under-five believe that anticipated benefit of doing behaviors to prevent vaccine preventable diseases outweigh the barriers to or cost of the preventive behaviors, they are more probably to obtain vaccine during house-to-house immunisation for their children.

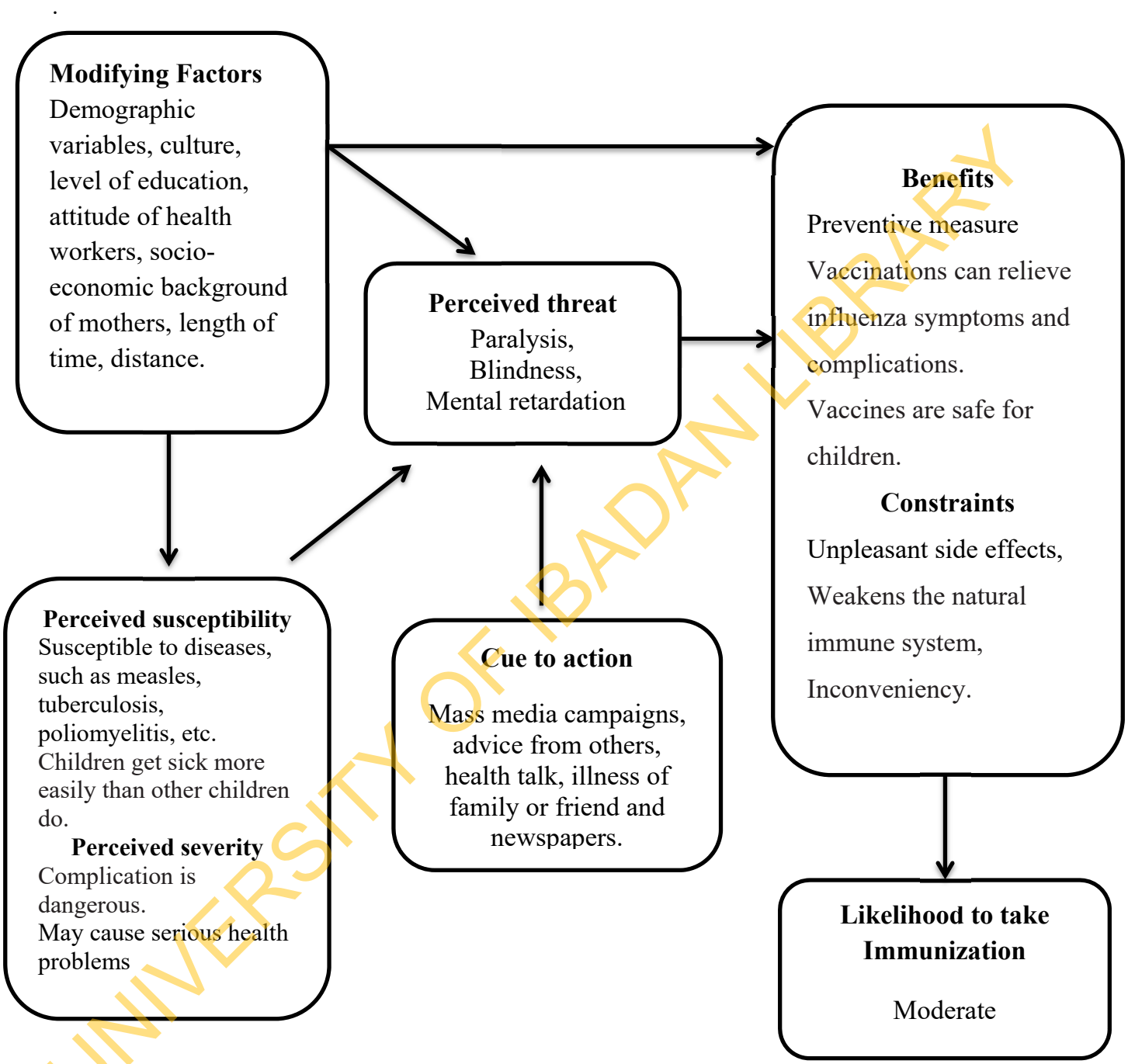
Cues to action

Various early information of the Health Belief Model included the concept of cues that can trigger actions. Readiness to action (Perceived susceptibility and perceived benefits) could only be potentiated by other factors particularly by cues to instigate action such as bodily events or by

environmental events such as media publicity (Glanz *et al*., 2008). For example, mothers of under-five would be more likely to accept vaccination during house-to-house immunisation if they are reminded through mass media campaigns, advice from others, health workers, family and friends.

Perceived self-efficacy

Perceived self-efficacy is defined as the conviction that one can successfully execute the behavior required to produce the outcomes. For behavior change to succeed, people must feel threatened by their current behavioral pattern (perceived susceptibility and severity) and believe that change of a specific kind will result in a valued outcome at an acceptable cost (perceived benefit). Then, they also must feel themselves competent (self – efficacious) to overcome perceived barriers to take actions. For example, mothers of under-five should be confident that they could accept vaccination for their children during house-to-house immunisation campaign.



CHAPTER THREE

METHODOLOGY

3.1 Study Design

A descriptive cross-sectional design

3.2 Study Area

This study was carried out at Ibadan North-West Local Government which is one of the eleven LGAs that constitute Ibadan metropolitan area. Ibadan is the capital of Oyo state, one of the 36 states of the Federal Republic of Nigeria. The state is centrally situated in the southwestern part of the country and it is 128 km north-east of Lagos and 345 km south-west of Abuja, the federal capital territory. Ibadan Northwest Local Government Area was created out from Ibadan North West 1991 as one of the functioning LGAs in Oyo state, Nigeria by the Military head of State, Gen. Ibrahim Babangida. The administrative headquarters of this LGA is located in Onireke. It has an area of 26 km² and a population of 152,834 at the 2006 census. Ibadan North West Local Government is bounded in the North by Ido Local Government, in the West by Ibadan South West Local Government, in the East by Ibadan North East and in the South by Ibadan South East Local Government. Ibadan North West Local Government is a predominantly urban area with eleven wards which has within his jurisdiction Onireke, Ayeye, Dugbe, Inalnde, Ologuneru to mention just a few. The Local Government can boast of markets like Ayeye, Dugbe, Agbeni and Eleyele. It is inhabitants include Yoruba, Hausa, Ibo and Other tribes who engage in trading, farming, artisanship and civil service (Ajayi and Moody, 2018).

3.3 Study Population

The study population for this research was mothers of under-five children living within the Ibadan North West Local Government Area, Ibadan, Oyo State, Nigeria.

3.4 Inclusion Criterion

Mothers of under-five children willing to participate in the study.

3.5 Exclusion Criteria

Mothers of under-five children who had not been living in the study area or just visiting.

Mothers of under-five children who were too sick to participate.

Mothers of under-five children who were not available at the time.

3.6 Sample Size

The number of mothers of under-five interviewed in the study area was determined using Leslie Kish formula, it was established that the desired level of reliability should not exceed 0.05 with 95% confidence interval.

Using percentage of Under-five that did not receive all basic vaccination in Oyo state of 76.7% according to Nigeria Demographic and Heath Survey (NDHS) 2018.

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

Where, n = Sample size

Z = Standard normal deviation; 1.96

p = Prevalence of mother of under-five

q = 1 – Prevalence

d = Precision; 0.05

z = 1.96; p. 76.7% i.e. 76.7 /100 = 0.767 NDHS 2018)

q = 1 – 0.268 = 0.732

$d^2 = 0.05 \times 0.05 = 0.0025$

$$= \frac{1.96 \times 1.96 \times 0.767 \times 0.233}{0.0025} = \frac{0.6865}{0.0025} = 274.6$$

10% Non-response rate = 274.6/ (1-0.10) = 305 (approximately)

Three hundred and five respondents were therefore targeted to participate in the study. However, the figure was raised to three hundred and five to adjust for 10% attrition rate or non-response rate from two hundred and seventy-five.

3.7 Sampling Technique

A multi-stage sampling technique was employed for this study

Stage 1: Four (4) wards was selected from the eleven (11) wards using simple random sampling.

Stage 2: Communities were selected from each of the four (4) wards using simple random sampling.

Stage 3: Houses in the community was enumerated and simple random sampling was used to select the houses

Stage 4: Respondents were selected from each household and in cases where there are more than one eligible respondents in the household, balloting is done to select one of them.

3.8 Instrument for Data Collection

The study was carried out with the aid of semi –structured interviewer administered questionnaire at different wards in Ibadan North West Local Government Area, Ibadan, Oyo State, Nigeria.

It was divided into of four sections:

Section A: Socio - demographic characteristics of the study participants.

Section B: Knowledge of mothers of under-five regarding vaccination during house-to-house immunisation campaigns.

Section C: Attitude of mothers of under–five regarding vaccination during house-to-house immunisation campaigns.

Section D: Perception of mothers of under–five regarding vaccination during house-to-house immunisation campaigns.

3.9 Validity

Validity refers to the accuracy of an instrument that is, how well it measures what it is supposed to measure. In order to establish validity of the instruments, it was validated by comprehensive review of relevant literature and formulation of research objectives. I also subjected the instrument to scrutiny by experts to validate the instrument and the supervisor was consulted to give a valid template of how the instrument should be. These individuals edited and made useful corrections and suggestions before the actual administration of the questionnaire to the study participant.

3.10 Reliability

Reliability of an instrument is a measure of the consistency in which the instrument will measure what it is supposed to measure (Mugenda and Mugenda, 2003). An instrument is reliable if it gives similar results after several administrations under similar conditions. In establishing the reliability of the instrument, the researcher applied the Pre-test technique. The Pre-test technique is a process whereby the researcher administered the constructed questionnaire to 10% of the total study population in another representative population with similar characteristics with the study population but the filled questionnaire for the pre-test shall not be used in the final analysis of the work. The pre-test of this study was carried out in Ibadan North East Local Government; a similar population group, questions found to be unclear or unnecessary was modified or deleted accordingly. Appropriate corrections were captured subsequently to establish reliability. A

reliability measure was carried out on the pre-test questionnaire to know the reliable of the instrument and a co-efficient of 0.739 (Cronbach Alpha) was gotten which is considered reliable.

3.11 Data Collection Technique

For the study, serially numbered interviewer-administered questionnaire was used. The data were collected by the researcher with the use of three (3) research assistants who was trained prior to the time of data collection. The research assistants moved from house to house in the community to select the eligible participants. Then, after the questionnaire had been filled, the researcher checked for completeness and errors before leaving the field.

3.11.1 Recruitment and training of research assistants

Three experienced research assistants were recruited and trained on the ways and method of data collection. They were trained for two days using the developed training manual before data collection. During the training, participatory approach was adopted and everyone were involved, demonstration and return demonstration (role play) approached was used.

3.12 Data Management and Analysis

All completed questionnaires were checked for completeness and consistencies of variables. Cleaning, sorting, recording and coding of data for analysis was also done. A coding guide was developed to facilitate data entry and entered into the computer using Statistical Package for Social Sciences (SPSS version 25) and analyzed. The result obtained from the analysis summarized and presented in prose, tables and charts. Knowledge, attitude, and perception were measured on 9-point, 16-point, and 10-point scales respectively. Knowledge scores of ≤3, 4-6, 7-9 were rated poor, fair and good respectively. Attitude scores of ≤8 and >8 were rated negative and positive attitude respectively while perception scores ≤5 and >5 were rated negative and positive perception respectively. Data were analyzed using descriptive statistics and Chi-square test at a 5% level of significance.

3.13 Ethical Consideration

Ethical approval was sought and obtained from the Oyo state Ministry of Health research ethics committee before going to the field for data collection with Reference number AD 13/479/1289. Also, informed consent was obtained from the respondents. To ensure confidentiality of research participants, identifiers such as names and other information that can reveal the identity of research

participants was not included in the research instruments. The nature of the study, benefits and objectives was explained to the respondents and they were assured that the information given would be treated with utmost confidentiality. Respondents was also intimated about the opportunity to withdraw their consent freely at any point during the study. Confidentiality of each participant was maximally maintained during and after the collection of their information. Information gathered from the respondents was stored in the computer for analysis by the researcher while copies of the filled instruments was kept for maximum safety.

- **Confidentiality of data:** In order to assure respondents of confidentiality of the information that was supplied, names of respondents was not required, only identification numbers was assigned to the questionnaires for proper recording.
- **Translation:** The questionnaire was translated to Yoruba language for easy understanding of the questions by respondents.
- **Beneficence to Participate:** The outcome of the research will be of benefit not only to the participants but all mothers of under-five to provide educational intervention that will improve house-to-house immunisation campaigns
- **Non-maleficence to participants:** The research did not require the collection of invasive materials. Therefore, safety of the participants was guaranteed.
- **Voluntariness:** The participants was given full details concerning the research before taking part in it so as to ensure that they fully understand what the research is all about and were willing to take part in it. The participants were free to withdraw at any point of the research.

3.14 Limitation of the study

The study did not explore other factors such as level of knowledge and perception of health care personnel on house-to-house immunisation campaign, because they play important roles in immunisation activities. It was also limited to mothers of under-five living at Ibadan North West Local Government Area, Ibadan, Oyo state. This research study would have covered a larger area but due to time and financial constraint, it was limited to few wards, however a representative sample size was used.

CHAPTER FOUR

RESULTS

4.1 Socio Demographic Characteristics

There were three hundred and five respondents that participated for this study and they were women with under-five children. The age range for 54.1% of the mothers was from 25 to 34 years with a mean age of 30.3±6.1 years, of which 87.9% were of Yoruba ethnicity. More than half of the respondents (54.4%) were Christians, 45.2% were of the Islam faith (Table 4.1a). More than two-thirds (68.5%) of the respondents had secondary school education, only fifteen (4.9%) had no formal education and the major occupation was trading constituting 45.2% of the respondents (Table 4.1b).

The majority (95.7%) were married and only 3.3% were single. Out of the married women, the majority (91.5%) were in a monogamous marriage and only 8.5% were in a polygamous marriage. The means years of marriage was 7.8±5.0 years, about one-third (29.5%) of the respondents had at most two children with mean number of children being 2.5±1.4, of which 78.0% had one under-five child (Table 4.1c).

Table 4.1a Socio-Demographic Characteristics of Respondents (n= 305)

Socio-Demographic Characteristics	Frequency	Percent (%)
Age		
15-24 years	49	16.1
25-34 years	165	54.1
35-44 years	89	29.2
45-55 years	2	0.7
Ethnicity		
Yoruba	268	87.9
Igbo	23	7.5
Hausa	7	2.3
Others	7	2.3
Religion		
Christianity	166	54.4
Islam	138	45.2
Traditional	1	0.3

4.1b. Level of Education and Occupation of Respondents (n= 305)

	Frequency	Percent (%)
Level of Education		
No Formal Education	15	4.9
Primary Education	35	11.5
Secondary School	209	68.5
Tertiary Institution	46	15.1
Occupation		
Trader	138	45.2
Self-employed	137	44.9
Unemployed	14	4.6
Civil Servant	6	2.0
Artisan	6	2.0
Student	1	0.3
Others	3	1.0

Table 4.1c Respondents' Marital status and Parity (n =305)

	Frequency	Percent (%)
Marital Status		
Single	10	3.3
Married	293	96.0
Separated	2	0.7
Type of marriage (n=293)		
Monogamy	270	92.2
Polygamy	23	7.8
Years of Marriage (n=295)		
1-5 years	111	37.6
6-10 years	114	38.6
11-15 years	50	17.0
16-20 years	14	4.8
21-25 years	5	1.7
26-30 years	1	0.3
Number of Children		
1	90	29.5
2	90	29.5
3	59	19.3
4	42	13.8
5	14	4.6
6	9	3.0
7	1	0.3

4.2 Knowledge on house-to-house immunisation campaign

All the respondents have heard of house-to-house immunisation campaign with health workers being the most reliable source of information (38.0%), followed by family members (31.0%). However, only 35.7% knew the number of times it takes place in a year with 64.3% having no idea (Table 4.2a).

Figure 4.1 shows the knowledge of respondents on house-to-house immunisation. One-third (33.4%) knew the vaccine given during house-to-house immunisation and only 8.9% knew that vaccination during this period is used to make-up for missed vaccines. Figure 4.2 shows that 12.8% of the respondents said vaccines given during this period have side effects, 23.1% said it affected their decision to allow their child(ren) to take the vaccine and many (76.9%) said it won't affect their decision. Most (83.9%) mentioned that it protects their child(ren) from diseases. One-third (31.8%) said it promotes the child's growth. One-fourth (25.6%) stated that it strengthens the child's health and about one-tenth (11.1%) see immunisation as a way of avoiding future health implications. Almost one-fifth (18.4%) of the respondents see the acceptance of vaccine during this campaign as a way of increasing the child's survival, 39.7% mentioned it reduces cases of disability, few (4.3%) agreed that it helps healthful adulthood (Table 4.2c).

Table 4.2a Awareness on house-to-house immunisation campaign (n= 305)

Source of information on house-to-house immunisation campaign	Frequency	Percent (%)
Health workers	116	38.0
Neighbors	96	31.5
Mass media (radio and television)	45	14.8
Community group	33	10.8
Family members	4	1.3
Religious leaders	3	1.0
Pamphlets and posters	2	0.7
Others	6	2.0

Respondents had a mean knowledge score of 3.2±1.8. The proportion of respondents' level of knowledge were as follows; 66.6% had poor knowledge (0-3), 28.5% had fair knowledge (4-6) while 4.9% had a good knowledge (7-9) on house-to-house immunisation campaign.

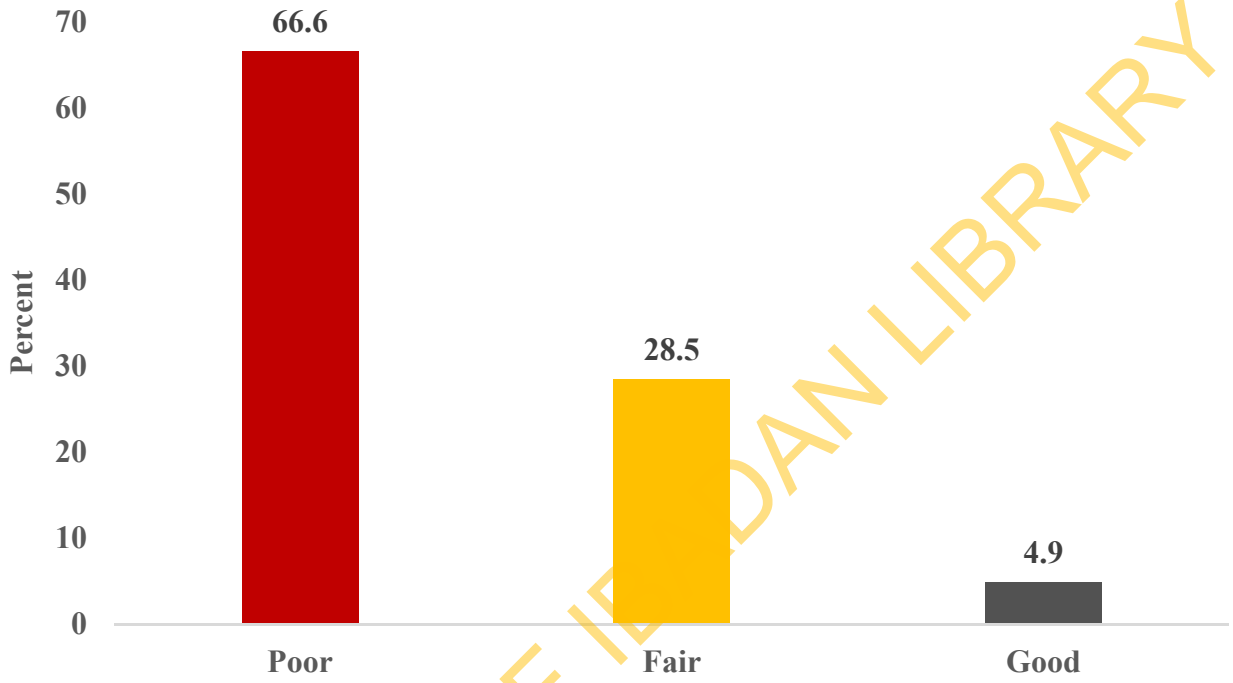


Figure 4.1: Level of knowledge on house-to-house-immunisation campaign (n=305)

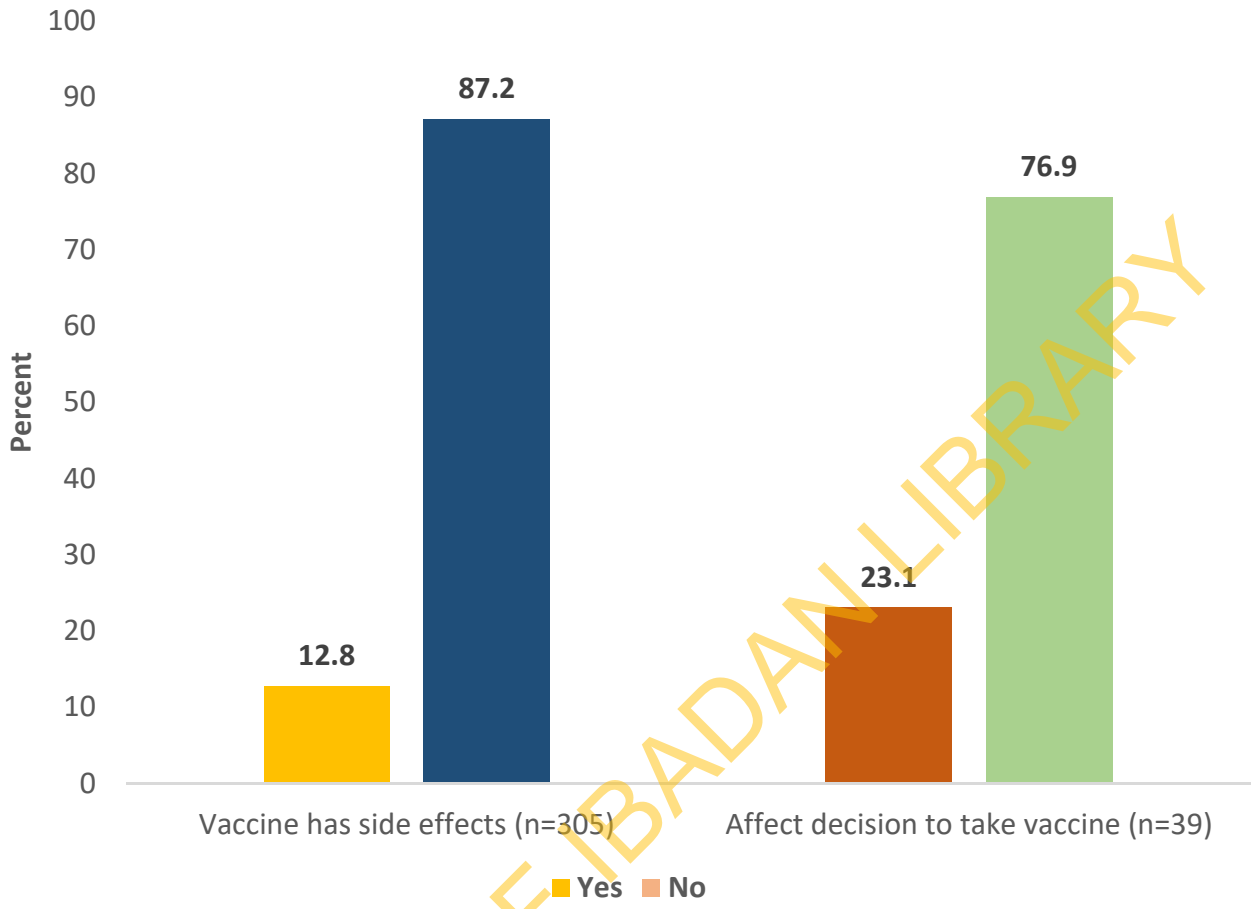


Figure 4.2 Respondents knowledge on the side effects of vaccines and how it affects their decision

Table 4.2b Knowledge on house-to-house immunisation campaign (n= 305)

	Frequency	Percent (%)
Know the vaccine given at every house-to-house immunisation campaign		
Yes	102	33.4
No	203	66.6
Vaccination during these campaigns is given to cover up the missed vaccines		
Yes	27	8.9
No	278	91.1

Table 4.2c Knowledge on house-to-house immunisation campaign (n= 305)

Function of Immunisation *	Mention Spontaneously (%)	Mentioned after probe (%)
Protect children from disease	256 (83.9)	49 (16.1)
Reduce cases of disability	121 (39.7)	184 (60.3)
Promote child's growth	97 (31.8)	208 (68.2)
Strengthen/improve child's health	78 (25.6)	227 (74.4)
Increases child survival	56 (18.4)	249 (81.6)
To avoid future health implication	34 (11.1)	271 (88.9)
Helps healthful adulthood	13 (4.3)	292 (95.7)

**** Multiple response included***

4.3 Attitude on house-to-house immunisation campaign

More than one-tenth see no need for immunisation if the child is healthy (12.8%) and agreed that it is better for their child to fall sick and develop immunity against the disease than to take immunisation during this period (11.8%). Few of the respondents (2.0%) agreed that authorities promote vaccination for financial gain and not for people's health. However, the majority of the respondents (92.5%) disagreed that proper information is being given about the vaccine by the vaccinator, few (7.5%) sees no need for house-to-house immunisation after the routine immunisation, the majority (94.4%) agreed that most houses were always visited. Few respondents (7.9%) agreed that awareness about the campaign is not properly done most times. Also, majority (83.9%) respondents disagreed that vaccinators do an experiment on under-five children during this campaign and the majority (93.1%) agreed to the time vaccinators visit their various houses to be convenient (Table 4.3a).

Table 4.3b shows other attitude to house-to-house immunisation campaign, majority of the respondents (88.0%) consider all the vaccine collected necessary for the child, majority (90.8%) trust the vaccinators during the house-to-house campaigns in vaccinating their children and more than one-tenth (12.8%) would not want to get their next child to be immunized during this period, more than half of the respondents (54.4%) will allow their child to take the vaccine in their absence. However, one-fifth (19.0%) of the respondents said political difference can affect their decision in allowing their child to be vaccinated and many (75.7%) can change their decision in allowing their child to be vaccinated by the influence of the religious leaders (Table 4.3c).

Table 4.3a Attitude on house-to-house immunisation campaign (n= 305)

Statements	Agree n (%)	Undecided n (%)	Disagree n (%)
There is no need for immunisation if the child is healthy, no faith in immunisation	39 (12.8)	2 (0.7)	264 (86.6)
It is better for my child to develop immunity by getting sick than to get vaccine	36 (11.8)	7 (2.3)	262 (85.9)
Authorities promote vaccination for financial gain, not for people's health	6 (2.0)	4 (1.3)	295 (96.7)
There are too many rounds of the house-to-house immunisation campaign	71(23.3)	10 (3.3)	224 (73.4)
There is no need for house-to-house vaccination after routine immunisation	23 (7.5)	5 (1.6)	277 (90.8)
I am afraid of the side effects or adverse reaction of vaccination during this campaign	10 (3.3)	10 (3.3)	285 (93.4)
Proper information is given about the vaccine by the vaccinator which convince me to allow my children take the vaccine.	20 (6.6)	3 (1.0)	282 (92.5)
Most houses are not always visited during most house-to-house campaign.	12 (3.9)	5 (1.6)	288 (94.4)
Awareness about the campaign is not properly done most times.	24 (7.9)	2 (0.7)	279 (91.5)
Vaccinators do experiment on under five children during house-to-house immunisation campaign	30 (9.8)	19 (6.2)	256 (83.9)
The time the vaccinators come are not always convenient	16 (5.2)	5 (1.6)	284 (93.1)

Table 4.3b Other attitude regarding house-to-house immunisation campaign (n= 305)

	Frequency	Percent (%)
Consider all the vaccine collected necessary for the child		
Yes	268	88.0
No	37	12.0
Trust the vaccinators during the house-to-house campaigns in vaccinating your children		
Yes	277	90.8
No	28	9.2
Would want to get immunized during this house –to-house immunisation campaign for the next child		
Yes	266	87.2
No	39	12.8
Allow child to take the vaccine during this period in my absence		
Yes	166	54.4
No	139	45.6
Reason for not allowing child to take vaccine in my absence during this campaign		
Monitor the process	72	51.4
Safety	30	21.4
To ask questions	17	12.1
Always go out with the child	12	8.6
Other reasons	7	5.0
No reason	1	1.4

Table 4.3c Influence on acceptance of vaccine on house-to-house immunisation campaign (n= 305)

	Frequency	Percent (%)
Political difference affect decision in allowing child to be vaccinated		
Yes	58	19.0
No	247	81.0
Religious leader influence decision in allowing your child to be vaccinated		
Yes	231	75.7
No	74	24.3

Respondents mean attitude score was 13.7±2.9. The proportion of respondents' level of perception were as follows; 11.8% had a negative attitude (0-8), 88.2% had positive attitude (9-16) on house-to-house immunisation campaign.

Table 4.3c Attitude on house-to-house immunisation campaign (n= 305).

Attitude on house-to-house immunisation campaign	**Frequency**	**Percent (%)**
Negative (0-8)	36	11.8
Positive (9-16)	269	88.2
Total	**305**	**100**

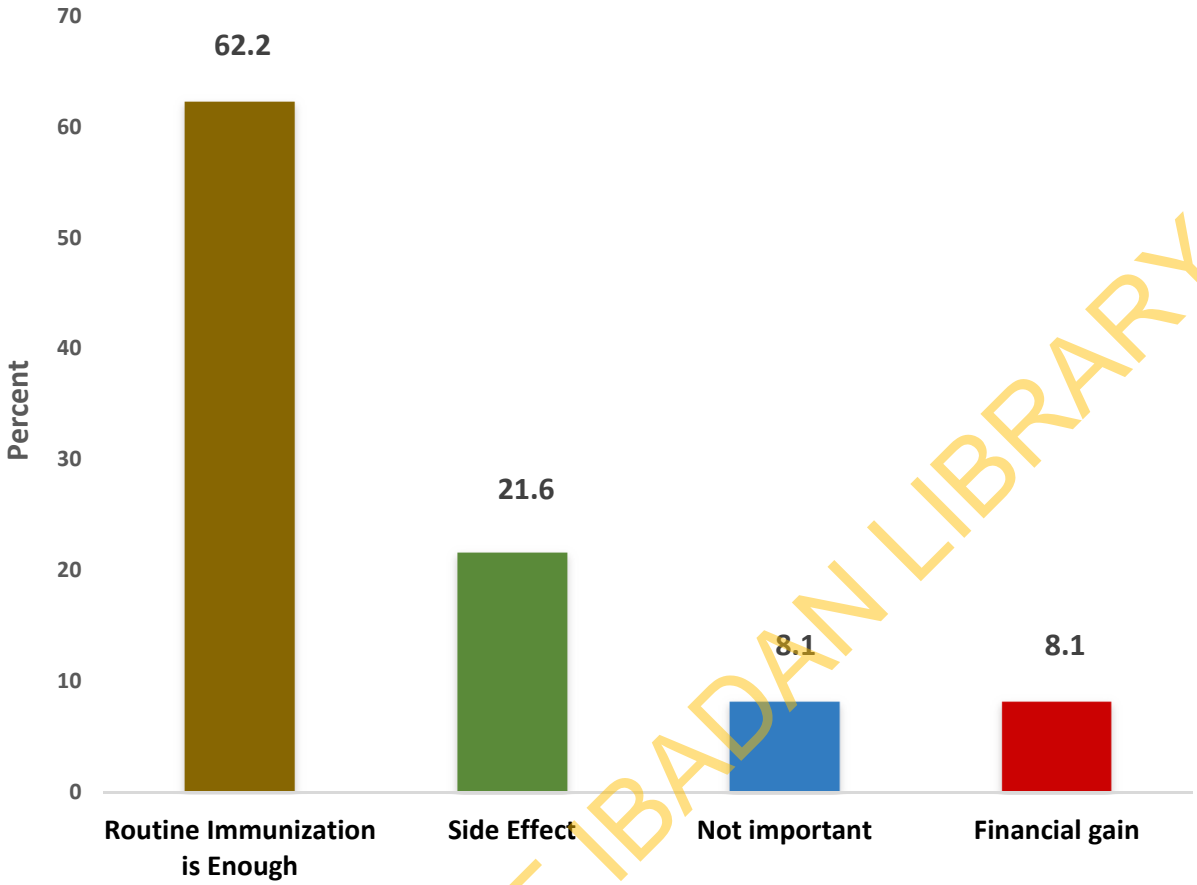


Figure 4.3 Reasons respondents do not consider all the vaccine collected necessary for the child (n=37)

4.4 Perception on house-to-house immunisation campaign

Table 4.4a represents respondents' perceptions of the house-to-house immunisation campaign. Respondents' mean perception was 8.5±1.9. One-tenth (10.8%) of the respondents agreed that alternative practices can eliminate for the need of vaccination and majority (91.5%) disagreed that children usually take too many vaccines during these campaigns and it is dangerous. Also, about one-fourth (24.6%) agreed that vaccination will not work if given severally, almost all the respondents (98.7%) disagreed that vaccines are not effective in stopping children from catching diseases. Only 3.6% perceived that it is not important for their child to receive all the necessary vaccinations, more than one-tenth (13.4%) agreed that natural immunity lasts longer than vaccination. One-fourth of the respondents are of the perception that frequent vaccination leads to accumulation of chemicals in children which overloads the immune system and too much vaccination affects the cognitive functions of the child, majority (96.4%) agreed that vaccination during this period is important only for serious disease and few (4.9%) are of the perception that vaccines given to children during house-to-house immunisation campaign are effective to protect them against general diseases.

Table 4.4a Perception on house-to-house immunisation campaign (n= 305)

Statements	Agree n (%)	Undecided n (%)	Disagree n (%)
Alternative practices can eliminate the need for vaccination	33 (10.8)	20 (6.6)	252 (82.6)
Children take usually too many vaccines during these campaigns and it is dangerous	14 (4.6)	12 (3.9)	279 (91.5)
Vaccination will not work if given severally	75 (24.6)	16 (5.2)	214 (70.2)
Vaccines are not effective in stopping children from catching diseases.	3 (1.0)	1 (0.3)	301 (98.7)
It is not important for my child to receive all the necessary vaccinations.	11 (3.6)	2 (0.7)	292 (95.7)
Natural immunity lasts longer than a vaccination	41 (13.4)	17 (5.6)	247 (81)
Frequent vaccination during different campaigns lead to accumulation of chemicals in children which overloads the immune system.	79 (25.9)	18 (5.9)	208 (68.2)
Too much vaccination affects the cognitive functions of the child	77 (25.2)	26 (8.5)	202 (66.2)
Vaccination is important only for serious disease	8 (2.6)	3 (1.0)	294 (96.4)
Vaccines given to children during house-to-house immunisation campaign are effective to protect them against general diseases	15 (4.9)	1 (0.3)	289 (94.8)

Respondents mean perception score was 8.4±2.0. The proportion of respondents' level of perception were as follows; 15.4% had a negative attitude (0-5), 84.6% had positive attitude (6-10) on house-to-house immunisation campaign.

Table 4.4b Perception on house-to-house immunisation campaign

Perception on house-to-house immunisation campaign	Frequency	Percentage
Negative	47	15.4
Positive	258	84.6
Total	**305**	**100.0**

4.5 Test of Hypotheses

Hypothesis 1: There is no significant association between socio-demographic characteristics of mothers of under-five and the knowledge on house-to-house immunisation campaigns in Ibadan North-West Local Government area, Ibadan, Oyo State, Nigeria

Table 4.6.1 presents the result of the cross tabulations between respondents' socio-demographics characteristics and the knowledge on house-to-house immunisation campaigns.

Fisher's Exact analysis revealed that there was a significant association between the occupation, marital status, number of under-five and the knowledge on house-to-house immunisation with a p-value < 0.05. Thus, this suggest that the null hypothesis was rejected.

Hypothesis 2: There is no significant association between socio-demographic characteristics of mothers of under-five and the attitude on house-to-house immunisation campaigns in Ibadan North-West Local Government area, Ibadan, Oyo State, Nigeria

Table 4.6.2 presents the result of the cross tabulations between respondents' socio-demographics characteristics and the attitude on house-to-house immunisation campaigns.

Fisher's Exact analysis revealed that there was a significant association between the ethnicity and the attitude on house-to-house immunisation with a p-value < 0.05, this suggest that the null hypothesis was rejected.

Hypothesis 3: There is no significant association between socio-demographic characteristics of mothers of under-five and the knowledge on house-to-house immunisation campaigns in Ibadan North-West Local Government area, Ibadan, Oyo State, Nigeria

Table 4.6.3 presents the result of the cross tabulations between respondents' socio-demographics characteristics and the perception on house-to-house immunisation campaigns.

Fisher's Exact analysis revealed that there was a significant association between the level of education and the perception on house-to-house immunisation with a p-value < 0.05. Thus, the null hypothesis was rejected.

Table 4.5.1a: Respondents' Socio-demographic characteristics and knowledge on house-to-house immunisation campaigns (n= 305)

Variables	Knowledge Score Category			Df	F[i]	p-value
	Poor (%)	Fair (%)	Good (%)			
Age (Years)						
15-24	38(12.5)	10(3.3)	1(0.3)			
25-34	103(33.8)	53(17.4)	9(3.0)	6	5.714	0.465
35-44	61(20.0)	23(7.5)	5(1.6)			
45-54	1(0.3)	1(0.3)	0(0.0)			
Ethnicity						
Yoruba	172(56.4)	81(26.6)	15(4.9)			
Igbo	20(6.6)	3(1.0)	0(0.0)	6	5.181	0.438
Hausa	5(1.6)	2(0.7)	0(0.0)			
Others	6(2.0)	1(0.3)	0(0.0)			
Religion						
Christianity	107(35.1)	51(16.7)	8(2.6)			
Islam	95(31.1)	36(11.8)	7(2.3)	4	2.648	0.796
Traditional	1(0.3)	0(0.0)	0(0.0)			
Level of Education						
No Formal Education	14(4.6)	1(0.3)	0(0.0)			
Primary Education	29(9.5)	6(2.0)	0(0.0)	6	10.615	0.075
Secondary School	129(42.3)	67(22.0)	13(4.3)			
Tertiary Institution	31(10.2)	13(4.3)	2(0.7)			
Occupation						
Trader	104(34.1)	31(10.2)	3(1.0)			
Civil Servant	5(1.6)	0(0.0)	1(0.3)			
Student	1(0.3)	0(0.0)	0(0.0)			
Artisan	5(1.6)	1(0.3)	0(0.0)	12	20.016	0.041**
Self-employed	77(25.2)	49(16.1)	11(3.6)			
Unemployed	9(3.0)	5(1.6)	1(0.3)			
Others	2(0.7)	1(0.3)	0(0.0)			

***** Statistically significant (P<0.05)***

Table 4.5.1b: Respondents' Socio-demographic characteristics and knowledge on house-to-house immunisation campaigns (n= 305)

Variables	Knowledge Score Category			Df	F[i]	p-value
	Poor (%)	Fair (%)	Good (%)			
Marital Status						
Single	10(3.3)	0(0.0)	0(0.0)			
Married	192(0.7)	86(28.2)	15(4.9)	4	6.277	0.044**
Separated	1(0.3)	1(0.3)	0(0.0)			
Type of marriage						
Monogamy	178(60.3)	79(26.8)	13(4.4)	2	1.081	0.583
Polygamy	15(4.9)	8(26.8)	2(0.7)			
Years of Marriage						
1-5 years	73(24.7)	32(0.7)	6(2.0)			
6-10 years	65(22.0)	41(0.3)	8(2.7)			
11-15 years	42(0.7)	8(2.7)	0(0.0)	10	16.957	0.054
16-20 years	10(3.4)	3(1.0)	1(0.3)			
21-25 years	2(0.7)	3(1.0)	0(0.0)			
26-30 years	1(0.3)	0(0.0)	0(0.0)			
Number of Children						
1	59(19.3)	29(9.5)	2(0.7)			
2	49(16.1)	33(10.8)	8(2.6)			
3	48(15.7)	9(3.0)	2(0.7)			
4	30(9.8)	9(3.0)	3(1.0)	12	19.062	0.087
5	11(3.6)	3(1.0)	0(0.0)			
6	5(1.6)	4(1.3)	0(0.0)			
7	1(0.3)	0(0.0)	0(0.0)			
Number of Under-5						
1	162(53.1)	69(22.6)	7(2.3)			
2	41(13.4)	17(5.6)	8(2.6)	4	11.427	0.014**
3	0(0.0)	1(0.3)	0(0.0)			

***** Statistically significant (P<0.05)***

Table 4.5.2a: Respondents' Socio-demographic characteristics and attitude on house-to-house immunisation campaigns (n= 305)

Variables	Attitude Score Category		Df	F[i]	p-value
	Negative (%)	Positive (%)			
Age (Years)					
15-24	7 (2.3)	42 (13.8)			
25-34	19 (6.2)	146 (47.9)	3	0.693	0.870
35-44	10 (3.3)	79 (25.9)			
45-54	0 (0.0)	2 (0.7)			
Ethnicity					
Yoruba	25 (8.2)	243 (79.7)			
Igbo	8 (2.6)	15 (4.9)	3	13.079	0.002**
Hausa	1 (0.3)	6 (2.0)			
Others	2 (0.7)	5 (1.6)			
Religion					
Christianity	23 (7.5)	143 (46.9)			
Islam	13 (4.3)	125 (41.0)	2	2.072	0.370
Traditional	0 (0.0)	1 (0.3)			
Level of Education					
No Formal Education	1 (0.3)	14 (4.6)			
Primary Education	4 (1.3)	31 (10.2)	3	0.825	0.851
Secondary School	24 (7.9)	185 (60.5)			
Tertiary Institution	7 (2.3)	39 (12.8)			
Occupation					
Trader	16 (5.2)	122 (40.0)			
Civil Servant	0 (0.0)	6 (2.0)			
Student	0 (0.0)	1 (0.3)			
Artisan	3 (1.0)	3 (1.0)	6	9.023	0.130
Self-employed	15 (4.9)	122 (40.0)			
Unemployed	1 (0.3)	13 (4.3)			
Others	1 (0.3)	2 (0.7)			

***** Statistically Significant (P<0.05)***

Table 4.5.2b: Respondents' Socio-demographic characteristics and attitude on house-to-house immunisation campaigns (n= 305)

Variables	Attitude Score Category		Df	F[i]	p-value
	Negative (%)	Positive (%)			
Marital Status					
Single	2 (0.7)	8 (2.6)			
Married	34 (11.1)	258 (84.9)	2	1.296	0.485
Separated	0 (0.0)	2 (0.7)			
Type of marriage					
Monogamy	33 (11.2)	237 (80.3)	1	1.517	0.331
Polygamy	1 (0.3)	24 (8.1)			
Years of Marriage					
1-5 years	15 (5.1)	96 (32.5)			
6-10 years	13 (4.4)	101 (34.2)			
11-15 years	5 (1.7)	45 (15.3)	5	1.370	0.957
16-20 years	1 (0.3)	13 (4.4)			
21-25 years	0 (0.0)	5 (1.7)			
26-30 years	0 (0.0)	1 (0.3)			
Number of Children					
1	14 (4.6)	76 (24.9)			
2	14 (4.6)	76 (24.9)			
3	4 (1.3)	55 (18.0)			
4	3 (1.0)	39 (12.8)	6	5.745	0.443
5	1 (0.3)	13 (4.3)			
6	0 (0.0)	9 (3.0)			
7	0 (0.0)	1 (0.3)			
Number of Under-5					
1	29 (9.5)	209 (68.5)			
2	7 (2.3)	59 (19.3)	2	0.762	0.852
3	0 (0.0)	1 (0.3)			

***** Statistically significant (P<0.05)***

Table 4.5.3a: Respondents' Socio-demographic characteristics and perception on house-to-house immunisation campaigns (n= 305)

Variables	Perception Score Category		Df	F[i]	p-value
	Negative (%)	Positive (%)			
Age (Years)					
15-24	9 (3.0)	40 (13.1)			
25-34	24 (7.9)	141 (46.2)	3	0.736	0.831
35-44	14 (4.6)	75 (24.6)			
45-54	0 (0.0)	2 (0.7)			
Ethnicity					
Yoruba	37 (12.1)	231 (75.7)			
Igbo	8 (2.6)	15 (4.9)	3	6.477	0.061
Hausa	1 (0.3)	6 (2.0)			
Others	1 (0.3)	6 (2.0)			
Religion					
Christianity	24 (7.9)	142 (46.6)			
Islam	23 (7.5)	115 (37.7)	2	0.837	0.691
Traditional	0 (0.0)	1 (0.3)			
Level of Education					
No Formal Education	2 (0.7)	13 (4.3)			
Primary Education	3 (1.0)	32 (10.5)	3	8.618	0.029**
Secondary School	28 (9.2)	181 (59.3)			
Tertiary Institution	14 (4.6)	32 (10.5)			
Occupation					
Trader	24 (7.9)	114 (37.4)			
Civil Servant	0 (0.0)	6 (2.0)			
Student	0 (0.0)	1 (0.3)			
Artisan	1 (0.3)	5 (1.6)	6	7.910	0.191
Self-employed	17 (5.6)	120 (39.3)			
Unemployed	3 (1.0)	11 (3.6)			
Others	2 (0.7)	1 (0.3)			

***** Statistically significant (P<0.05)***

Table 4.5.3b: Respondents' Socio-demographic characteristics and perception on house-to-house immunisation campaigns (n= 305)

Variables	Perception Score Category		Df	F[i]	p-value
	Negative (%)	Positive (%)			
Marital Status					
Single	2 (0.7)	8 (2.6)			
Married	45 (14.8)	248 (81.3)	2	0.616	0.755
Separated	0 (0.0)	2 (0.7)			
Type of marriage					
Monogamy	43 (14.6)	227 (76.9)	1	1.112	0.392
Polygamy	2 (0.7)	23 (7.8)			
Years of Marriage					
1-5 years	20 (6.8)	91 (30.8)			
6-10 years	20 (6.8)	94 (31.9)			
11-15 years	5 (1.7)	45 (15.3)	5	5.189	0.380
16-20 years	0 (0.0)	14 (4.7)			
21-25 years	0 (0.0)	5 (1.7)			
26-30 years	0 (0.0)	1 (0.3)			
Number of Children					
1	20 (6.6)	70 (23.0)			
2	16 (5.2)	74 (24.3)			
3	8 (2.6)	51 (16.7)			
4	3 (1.0)	39 (12.8)	6	9.584	0.122
5	0 (0.0)	14 (14.6)			
6	0 (0.0)	9 (3.0)			
7	0 (0.0)	1 (0.3)			
Number of Under-5					
1	39 (12.8)	199 (65.2)			
2	8 (2.6)	58 (19.0)	2	1.159	0.533
3	0 (0.0)	1 (0.3)			

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

House-to-house immunisation has doubtlessly created a big impact on global public health. However, to achieve maximum benefit, immunisation coverage should uniformly reach certain critical levels for different diseases. Achieving this requires not only effort on the provision of house-to-house immunisation services, but also optimum utilization of these services by the target population. Mothers of under-five children who are the main target of the campaign need to be significantly aware of the services and benefits of immunisation.

Immunisation of children has remained an outstanding preventive measure against vaccine-preventable diseases (VPDs) in modern medicine. However, information on house-to-house immunisation received by mothers and caregivers may make or mar its successes. Proper communication and dissemination of information on immunisation to the mother/caregiver cannot be overemphasized. Access to quality information on house-to-house immunisation by mothers has a direct effect on vaccination rates (WHO/IVB., 2009).

Socio-demographic characteristic characteristics

The majority of the respondents' age ranged from are 25 to 34 years old with a mean age of 30.3±6.1 years similar to other studies by Asrat (2017) and Adefolalu *et al*., 2019. Majority were of Yoruba ethnicity as expected due to the study area selected. More than half of the respondents were Christians followed by Muslims which was a result of the fact that these are the two major religions dominant in the area. Many of the respondents had the highest level of education to be secondary school which indicates that the study population is literate. Trading was the major occupation of the respondents which is a result of the nature of the community. However, previous studies by Marks *et al*. (1979) revealed that the educational status of mothers has a strong association with high vaccine uptake. Also, a study by Abdulraheem *et al*. (2011) confirms this assertion from Marks *et al*., 1979 that educational level is associated with mothers and missed opportunities for vaccination. This implies that education cannot be overlooked when assessing factors influencing childhood immunisation incompletion.

The majority were married which was also expected as the study population is the mother of under-five and out of the married women, the majority were in monogamous marriage quite lower than half documented by Obasohan *et al*. (2017). The means years of marriage was 7.8±5.0 which indicates that majority were just in their first decade of marriage, the mean parity was 2.5±1.4 and many had a child below the age of five as at the time of the study which is expected considering that majority were in their first decade of marriage.

Knowledge on house-to-house immunisation campaign

All the respondents had heard of house-to-house immunisation campaign similar to study by Adefolalu *et al* (2019) and health worker being the most reliable source of information on house to house immunisation which is similar to a study by Njidda (2017), this is, however, lower than studies carried out in Karachi Pakistan, North India, Saudi Arabia, and Bangladesh because health workers only emphasizes on routine immunisation. Also, only one-third assumed to know the number of times it takes place a year with many having no idea the number of times and this could be that the house-to-house immunisation campaign does not have fix time.

Few had a good knowledge of house-to-house immunisation campaign lower than a study by Hassan *et al*.,2019. However, about one-third knew the vaccine given at house-to-house immunisation and only a few knew that vaccination during this period is used to cover-up for missed vaccines which is as a result of the poor knowledge on house-to-house immunisation campaign. One-tenth of the respondents said vaccines given during this period have side effects similar to a study by Angadi *et al*., (2013) but few say it affects their decision to allow their child to take vaccine which is in agreement but higher than other findings by Babalola in 2011 and Fatiregun in 2013.

The majority mentioned that it protects their children from diseases which is the reason majority had positive perception and attitude regarding the immunisation campaign. One-third said that it promotes a child's growth supported by Anekwe and Kumar (2015). One-fourth stated that it strengthens the child's health and about one-tenth see immunisation as a way of avoiding future health implications. Almost one-fifth of the respondents see the acceptance of vaccine during this campaign as a way of increasing child's survival, some mentioned it reduces cases of disability, few agreed that it helps healthful adulthood which in contrast to a finding by Njidda *et al* in 2017 where most of the respondent agreed to it.

Attitude on house-to-house immunisation campaign

This study revealed that majority had positive attitude similar to a study by Rishikesh (2018) but lower compared to findings where all the respondents showed a positive attitude which could be attributed to the generally poor knowledge. this is a sharp contrast to the findings of the study in Addis Ababa where only about half of the respondents had a positive attitude toward immunisation (Birhanu *et al*., 2015). One-tenth see no need for immunisation if the child is healthy higher than reports by Adefolalu *et al*., 2019 and Odia *et al*., 2019. About one-tenth of the respondents agreed that it is better for their child to fall sick and develop immunity against the disease than to take immunisation during this period which is due to their poor level of knowledge.

However, majority of the respondents disagreed that proper information was given about the vaccine by the vaccinator and this contributed majorly to the poor knowledge of the majority, few see no need for house to house immunisation after the routine immunisation similar to a study by Asif *et al* in 2012. Majority agreed that most houses are always visited but just a few respondents agreed that awareness about the campaign was not properly done most times which was as a result of the fact that the vaccinators meet them unaware. Also, majority disagreed that vaccinators do experiment on under-five children during this campaign because majority have positive perception and attitude regarding house-to-house vaccination and majority agreed to the time vaccinators visit their various houses to be convenient in contrast to a study by Fatiregun (2013) but close to a study by Chris-Otubor (2015).

Majority of the respondents considered all the vaccines collected were necessary for the child and almost one-tenth would not want to get their next child to be immunized during this period which is higher what was documented by Vonasek *et al*. (2016). Almost half of the respondents will not allow their child to take the vaccine in their absence which is understandable because they wants to monitor the process and ask questions when necessary about the safety of the vaccine . However, few of the respondents said political difference can affect their decision in allowing their child to be vaccinated in contrast to a study by Abdulaziz in 2014 where he recorded fewer and this can be attributed to the fact that politicians now organize house-house immunisation campaign as a form of political campaign and many can change their decision in allowing their child to be vaccinated by the influence of the religious leaders which they are major stakeholder of the community able to influence through faith.

Perception of the house-to-house immunisation campaign

This study revealed that majority had positive perceptions similar to a study by Hassan *et al*., 2019 on house-to-house immunisation campaigns. One-tenth of the respondents agreed that alternative practices can eliminate for the need of vaccination similar to a study by Taiwo (2011) which documented that mothers give their children traditional concoction in place of vaccine and majority disagreed that children usually take too many vaccines during these campaigns and it is dangerous, also supported by Offit *et al*.,(2002) and Hilton *et al*., (2006) where they mentioned that the fear of multiple vaccines overload the immune system needs to be taken seriously to prevent obstacle to vaccine acceptance. Also, one-fourth agreed that vaccination will not work if given severally close to a study where mothers of under-five wrongfully believed that administering more than four doses of vaccine is harmful to a child (Mizan, 2006) also because the knowledge about number of times a child should receive vaccines is generally poor (Babalola, 2017).

Almost all the respondents disagreed that vaccines are not effective in stopping children from catching diseases similar to other studies where most believed that immunizing children was necessary for disease prevention (Angadi *et al*., 2013; Birhanu *et al*., 2015; Adefolalu *et al*., 2019). Only a few perceived that it is not important for their child to receive all the necessary vaccinations, about one-tenth agreed that natural immunity lasts longer than vaccination which is similar to study by Kennedy *et al* in 2005 which also reported one-tenth responded that the body can protect itself from vaccine-preventable diseases and this also constitutes their poor knowledge about the house-to-house campaign. One-fourth of the respondents are of the perception that frequent vaccination leads to the accumulation of chemicals in children which overloads the immune system supported by a study by Taiwo (2011) where respondents agreed that too much vaccination overload a child's system.

5.2 Implication of the findings for Health Promotion and Education

The findings of the study have several implications for planning, development, and implementation for health promotion and education on house-to-house immunisation campaigns. It has been deduced from the study that, although mothers of under-five had positive attitude and perception regarding house-to-house immunisation campaigns, their knowledge was generally low. Therefore, there is a need to put efforts regarding improving the knowledge of mothers of under-five on house-to-house immunisation campaign, however, this must be directed towards improving the knowledge on the campaign through the following areas.

Public Enlightenment

There will be a need to create more jingles on the air in the local dialects the community can relate with on the house-to-house immunisation and on the various vaccines that should be taken. Also, fliers and billboards with relevant information on house-to-house immunisation should be produced and widely distributed which has the potential of reaching out to a large audience. Campaign enlightenment should be done on television and through social media where professionals get to discuss the importance of vaccination during this campaign.

Advocacy

Advocacy is one major public health strategy for achieving public health policy and overcoming various health problems or defining intervention strategies. Immunisation is one of the core immunity foundation for a child's health which will be beneficial to the child throughout his/her lifetime. However, proper advocation needs to be done to increase the general knowledge of the vaccine during the house-to-house immunisation campaign. The political and religious leaders should advocate for proper health education on the vaccine given during this campaign and the need for acceptance.

5.3 Conclusion

SIAs have been very successful in bringing about an increase in vaccination coverage. House-to-house campaigns have been a recurring activity in the country for the last 15 years. Maintaining consistent vaccine acceptance during targeted campaigns is crucial since sustainable progress against vaccine-preventable diseases depends on the deployment of a wide range of vaccination, most of which take place through house-to-house immunisation campaign. There were costly

setbacks for the program that impacted heavily on the acceptance of the vaccine especially because of general poor knowledge (Ghinia *et al.*, 2013).

However, the results of this study showed that all of the respondents had heard about the immunisation of under-five children but majority of the respondents showed poor knowledge about house-to-house immunisation. The majority had a positive attitude and perception regarding the immunisation of under-five children where ethnicity and level of education showed a statistically significant association respectively. I conclude by calling for the promotion of house-to-house immunisation campaign especially by educating mothers of under-five on its benefit to achieve optimal nationwide immunisation coverage.

5.4 Recommendations

Based on the findings from this study, the following recommendations are made:

1. Health promotion in the form of health education is still lacking in some areas making adherence to the house-to-house immunisation campaign a challenge. There is a need to properly counsel them on the importance of disease prevention and health protection through house-to-house immunisation campaign by the Ministry of Health.
2. Strong and persistent engagement of communities' particularly traditional and religious leaders to engender continued public acceptance of the vaccine will be beneficial to the success of the program.
3. Some mothers were observed to still have negative perception and attitude regarding immunisation which calls for periodic education to increase their knowledge about house-to-house immunisation changing negative perception and attitude about immunisation and debunking myths and rumors about the campaign. It is thus recommended that health education and talks at routine immunisation centers on the benefit of vaccines given during the campaign should be intensified.
4. To promote quality service provided during this campaign, vaccinators need to be properly trained to strengthen provider's capacity for quality service.
5. Traditional birth attendants in various localities should be reached and educated on house-to-house immunisation as disease prevention and health protection tool which will help them educate any mother of under-five in their care.

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APPENDIX 1

INFORMED CONSENT FORM

Introduction

You are invited to take part in a research study. Before you decide whether to participate, you need to understand why the research is being done and what it would involve. Please take the time to read or to listen as I read the following information. You may talk to others about the study if you wish. Please ask me if there is anything that is not clear, or if you would like more information. When all of your questions have been answered and you feel that you understand this study, you will be asked if you wish to participate in the study and if yes, to sign this 'Informed Consent Form'. You will be given a signed copy to keep.

Purpose of the Study and Study Requirements

Dear Respondent,

My name is …… I am a postgraduate student at the Department of Health Promotion and Education, Faculty of Public Health, University of Ibadan. The purpose of this study is to gather information about the Knowledge, Attitude and Perception of Mothers of Under-Five Towards Vaccination During House-to-House Immunisation campaigns in Ibadan North-West Local Government Area, Ibadan, Oyo State, Nigeria. If you agree to take part in the study, you will be asked to sign an informed consent form. You will also be asked to respond to questions. You will complete the questionnaire within 15 minutes approximately. There are no risks associated with this study and your participation will not cost you anything other than your time of answering the questions in the questionnaire. **You should not write your name on the questionnaire.** All information collected will be treated as anonymous and will not be linked to you in any way.

Participation in this research study is entirely voluntary and you can withdraw at any time. If you choose to withdraw at any time, this will not affect you in any way but please note that some of the information that has been obtained about you before your withdrawal may be modified or used in reports and publications. These cannot be removed anymore, however, the researcher promises to try in good faith to comply with your wishes as much as is practicable. The researcher will inform you of the outcome of the research through journal articles. Your willingness to complete the questionnaire implies you have given consent to participate in the study. Kindly append your

signature in the section below as a form of written consent to participate in the study. Thank you for your cooperation.

Statement of the person obtaining informed consent:

I have fully explained this research to the respondent and have given sufficient information, including risks and benefits, to make an informed decision.

Date: …….

Signature: ……..

Name: ……..

Statement of the person giving consent:

I have read the description of the research and have had it translated into a language I understand. I have also talked it over with the researcher to my satisfaction. I understand that my participation is voluntary. I know enough about the purpose, methods, risks and benefits of the research study to judge that I want to take part in it. I understand that I may freely stop being part of this study at any time. I have received a copy of this consent form and additional information sheet to keep for myself.

Date: ……

Signature: ……..

Detail contact information including a contact address, telephone, fax, e-mail and any other contact information of researcher, institutional HREC and head of the institution:

If you have any question about participation in this research, you can contact the Researcher: Mr Solagbade Abimbola Jamiu, Department of Health Promotion, Faculty of Public Health, College of Medicine, University of Ibadan, Phone №: 07069264123, e-mail: solagbadeaj@gmail.com

APPENDIX 2

QUESTIONNAIRE

Topic: Knowledge, Attitude and Perception of Mothers of Under-Five Towards Vaccination During House-to-House Immunisation campaigns in Ibadan North-West Local Government Area, Ibadan, Oyo State, Nigeria

My name is Solagbade Abimbola Jamiu. I am a postgraduate student of the University of Ibadan presently conducting a research study: Knowledge, Attitude and Perception of Mothers of Under-Five Towards Vaccination During House-to-House Immunisation campaigns in Ibadan North-West Local Government Area, Ibadan, Oyo State, Nigeria. In filling this questionnaire, your honest answers will be appreciated.

Serial Number _____

Please answer all the questions as honestly and accurately as you can — this is very important.

SECTION A: SOCIO - DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS.

Instruction: Kindly respond to the following as appropriate as possible

1. Age as at last Birthday: _____
2. What tribe do you belong to: 1. Yoruba ( ) 2. Igbo ( ) 3.Hausa ( ) 4.Others (Specify) _____
3. What is your religion: 1. Christianity ( ) 2. Islam ( ) 3.Traditional ( ) 4.Others (Specify) _____
4. Marital Status: 1. Single ( ) 2.Married ( ) 3.Divorced ( ) 4. Widowed ( )
5. What is your highest level of education: 1. None ( ) 2. Primary ( ) 3.Secondary ( ) 4.Tertiary Education ( ) 5.Others (Specify) _____
6. What is your occupation? 1. Trader ( ) 2. Civil Servant ( ) 3. Student ( ) 4.Artisan ( ) 5. Self-employed ( ) 6. Unemployed ( ) 7. Others (Specify) _____
7. What is your type of marriage 1. Monogamy ( ) 2. Polygamy ( )
8. Years of marriage _____
9. How many children do you have: _____
10. How many under five children do you have: _____

SECTION B: KNOWLEDGE OF MOTHERS OF UNDER-FIVE TOWARDS VACCINATION DURING HOUSE-TO-HOUSE IMMUNIZATION CAMPAIGNS

Instruction: Kindly respond to the following as appropriate as possible

11. Have you heard of house-to-house immunisation campaign? 1. Yes ( ) 2. No ( )

(If No, go to question 19)

12. What is your source of information on house-to-house immunisation campaign?

1. Mass media (radio and television) ( ) 2. Pamphlets and posters ( ) 3. Family members 4. Friends ( ) 5. Neighbors ( ) 6. Health workers ( ) 7. Religious leaders ( ) 8. Community group ( ) 9. Others (Specify) _____

13. Does your source of information about the campaign affect the acceptance of the vaccine?

1. Yes ( ) 2. No ( )

14. If Yes, which of the above mentioned source would make you accept the vaccine (Specify)

_____

15. Does the vaccinator during this campaign provide you with sufficient information to address your concerns about vaccination? 1. Yes ( ) 2. No ( )

16. How often does the campaign take place in a year _____

17. Do you know the vaccine given at every house-to-house immunisation campaign?

1. Yes ( ) 2. No ( )

18. If Yes (Specify all you know) _____

19. What do you think immunisation is for? **(Do not Probe)**

S/N	Statements	Mention spontaneously	Mentioned after probe
i	Protect children from disease		
ii	Promote child's growth		
iii	Strengthen/improve child's health		
iv	Treat/cure disease		
v	To avoid future health implication		
vi	Increases child survival		
vii	Reduce cases of disability		
viii	Improves child's intelligence		
ix	Makes child grow normal		

x	Helps healthful adulthood		

SECTION C: ATTITUDE OF MOTHERS OF UNDER-FIVE TOWARDS VACCINATION DURING HOUSE-TO-HOUSE IMMUNIZATION CAMPAIGNS

Instruction: Kindly respond either agree, undecided and disagree to the following

S/N	Statement	Agree	Undecided	Disagree
	There is no need for immunisation if the child is healthy, no faith in immunisation			
	It is better for my child to develop immunity by getting sick than to get vaccine.			
	Authorities promote vaccination for financial gain, not for people's health.			
	I am afraid of the side effects or adverse reaction of vaccination during this campaign			
	There are too many rounds of the house to house immunisation campaign			
	There is no need for house-to-house vaccination after routine immunisation			
	There are unknown effects of vaccines during house-to-house immunisation campaign.			
	Vaccines given to children during house-to-house immunisation campaign are effective to protect them against diseases			
	Proper information is given about the vaccine by the vaccinator which convince me to allow my children take the vaccine			
	Most houses are not always visited during most house-to-house campaign			
	Awareness about the campaign is not properly done most times			

	Vaccinators do experiment on under five children during House-to-house immunisation campaign			

32. Do you consider all the vaccine collected necessary for the child? 1. Yes ( ) 2. No ( )
    If No, Why? _____
33. Do you trust the vaccinators during the house-to-house campaigns in vaccinating your children? 1. Yes ( ) 2. No ( ).
34. Are you able to openly discuss your concerns about vaccines given during this period with my child's vaccinator? 1. Yes ( ) 2. No ( ).
    If you had another child, would you want him/her to get immunized during this house –to-house immunisation campaign? 1. Yes ( ) 2. No ( ).
35. Will you advice your relatives and family to immunize their children during these campaigns? 1. Yes ( ) 2. No ( ).
36. Why Not _____

SECTION D: PERCEPTION OF MOTHERS OF UNDER-FIVE TOWARDS VACCINATION DURING HOUSE-TO-HOUSE IMMUNIZATION CAMPAIGNS

Instruction: Kindly respond either agree, undecided and disagree to the following

S/N	STATEMENT	Agree	Undecided	Disagree
3	Alternative practices can eliminate the need for vaccination			
3	Children take usually too many vaccines during these campaigns and it is dangerous			
3	Vaccination will not work if given severally			
4	Vaccines are effective in stopping children from catching diseases			
4	It is important for my child to receive all the necessary vaccinations.			
4	Vaccination during these campaigns is given to cover up the missed vaccines			

4	There are unknown effects of vaccines administered in the future.			
4	Natural immunity lasts longer than a vaccination			
4	Frequent vaccination during different campaigns lead to accumulation of chemicals in children which overloads the immune system.			
4	Too much vaccination affects the cognitive functions of the child			
4	Frequent vaccination during makes children vulnerable to death			
4	The time the vaccinators come are not always convenient			
4	Vaccination important only for serious disease			

50. Do you think political difference can affect your decision in allowing your child to be vaccinated during these immunisation campaigns? 1. Yes ( ) 2. No ( ).
51. Can your religious leader influence your decision in allowing your child to be vaccinated during these immunisation campaigns? 1. Yes ( ) 2. No ( ).

THANK YOU FOR YOUR RESPONSE

ILANA IWE-IBEERE

DI FUN AWỌN ỌJỌ

IMỌ, IWOYE ATI IṢEṢI AWỌN IYA ỌMỌ TI ỌJỌ ORI WỌN KO TO ỌDUN MAARU SI GBIGBA AJESARA OJULE SI OJULE NI AGBEGBE IJỌBA IBILẸ ARIWA OORUN IBADAN, IBADAN, IPINLẸ ỌYO.

Ẹyin Olukopa wa Owọn,

Oruko mi ni Solagbade Abimbola Jamiu, mo jẹ akẹ́ẹ́kọ́ làtí ile ìwé giga Yunifàsitì tí Ile Ibádán ni ẹka tí àtí n risi eto nípa idanilẹkọọ ati igbega eto ilera, ti o wa ni Kolẹẹji tí ati n se itọju pélu oogun, Ni abala Tí ohun risi eto ilera àwọn ara ilu, Mo nse iwadi imọ, iwoye ati iṣeṣi awọn iya ọmọ ti ọjọ ori wọn ko to ọdun maaru si gbigba ajesara ojule si ojule ni agbegbe ijọba ibilẹ ariwa oorun ibadan, ibadan, ipinlẹ ọyo. Kikopa nínúu iwadi yìí jẹ tí eyi ti oti okan yin wa, ati fi ohunka idanimọ si ara awọn iwe ibeere kookan lati dabobo idanimọ yin. Gbogbo àlàyé tí ẹba si se fún mi ninu iwadi yi ni yìí o wa ni ipamọ larin emi àtí ẹyìín, mi ko sini se afihan rẹ fún ẹnikẹni.

Kikopa yin ninu iwadi yii ṣe pataki pupọ nitoriwipe yi o ṣe iranlọwọ fun oluwadi lati mọ imọ, iwoye ati iṣeṣi awọn iya ọmọ ti ọjọ ori wọn ko to ọdun maaru si gbigba ajesara ojule si ojule. Ẹ jọwọ ẹni lati ṣe akiyesi wipe ko si idahun ti o tọ tabi eyi ti kotọ ninu gbogbo idahun eyikeyi ti ẹba fi esi si awọn ibeere ti a ba bi yin. Didahun si awọn ibeere yi ko ni gbayin ni akoko pupọ, nitoriwipe ko ni gbayin ju ogun tabi ogbọn iseju lọ. Ki a to maa tẹ siwaju, o tunmọ siwipe ẹ ti fi aramọ lati kopa ninu iwadi yi pẹlu gbigba lati kopa ninu ifọrọwanilẹnuwo.

A dupẹ lọwọ yin fun ifọwọsowọpọ yin.

Ohunka Idanimọ_____

Ejowo dahun gbogbo awọn ibeere bi otitọ ati bi o ti ye bi eti le dahun - eyi jẹ pataki.

IPIN ALAKỌKỌ: ALAYE LORI ETO IGBESIAYE OLUKOPA

Ilana: E jowọ ẹdahun si awọn ibeERE wọn yii bi oti to ati bi oti yẹ.

1. Ọmọ ọdun melo ni ẹ jẹ ni igba ti ẹ se ọjọ ibi yin kẹhin (ni ọdun)? _____

2. Kini Eya ti ẹ tiwa? 1. Yoruba ( ) 2. Igbo ( ) 3. Hausa ( ) 4. Ẹya miran: (ẹ darukọ ẹ ni pato) _____

3. Kini ẹsin yin : 1. Kristiẹniti ( ) 2. Imole ( ) 3.Ibile ( ) 4. Esin miran (ẹ darukọ ẹ ni pato) _____

4. Ipo igbeyawo yin: 1. Mi o ti ni oko ( ) 2.Mo ti ni oko ( ) 3.Motikosile ( ) 4. Opo ( )

5. Kini ipele ẹkọ ti e de: 1= Mi o ka iwe Kankan rara ( ) 2 = ile iwe alakobere ( ) 3 = Ile iwe girama ( ) 4. Ẹkọ Ile-ẹkọ giga ( ) 5.Omiran (Ẹ darukọ ẹ ni pato) _____

6. Kini iṣẹ ti en se? 1. Onisowo ( ) 2. Oṣiṣẹ ilu ( ) 3. Akeko ( ) 4.Onise owo () 5. Iṣẹ ti ara ẹni ( ) 6. Alainiṣẹ ( ) 7. Ise miran (Ẹ darukọ ẹ ni pato) _____

7. Kini iru igbeyawo yin 1. Igbayawo olobirin kan ( ) 2. Igbayawo olobirin pupo ( )

8. Ọdun melo ni bayi ti e se igbeyawo _____

9. Ọmọ melo lebi: _____

10. Melo ni awọn ọmọ ti ko tiipe odun marun ti e ni: _____

IPIN KEJI: IMO AWỌN IYA ỌMỌ TI ỌJỌ ORI WỌN KO TO ỌDUN MAARU SI GBIGBA AJESARA OJULE SI OJULE

Ilana: E jowọ ẹdahun si awọn ibeere wọn yii bi oti to ati bi oti yẹ.

11. Njẹ e ti gbọ nipa eto gbigba ajesara ojule si ojule? 1. Bẹẹni ( ) 2. Bẹẹkọ ( )

(Ti o ba je Bẹẹkọ, lọ si ibeere kokandinlogun)

12. Kini orisun yin lori ipolongo ajesara ojule si ojule?

1. Awon ohun igberoyin jade (redio ati tẹlifisiọnu) ( ) 2. Awọn iwe apamọ ati awọn akọsilẹ ( ) 3. Ebi ( ) 4. Awọn ọrẹ ( ) 5. Awọn aladugbo () 6. Awọn oniwosan ( ) 7. Olori esin ( ) (8) Awujo ẹgbẹ ( ) 9 Awọn miran (ẹ darukọ ẹ ni pato) _____

13. Ṣe orisun ti e ti gbo nipa ipolongo naa ni ipa lori gbigba ajesara naa fun omo yin?

1. Bẹẹni ( ) 2. Bẹẹkọ ( )

14. Ti oba je bẹẹni, ewo ninu orisun ti a sọ loke yoo mu ki o gba ajesara fun omo yin (ẹ darukọ ẹ ni pato) _____

15. Ṣe oni eto ilera ti oun fun awon omo yin ni ajesara fun yin ni alaye to peye lori awon ajesara wonyi? 1. Bẹẹni ( ) 2. Bẹẹkọ ( )

16. Igba melo ni ipolongo naa waye ni ọdun kan _____

17. Ṣe e mọ ajesara ti awon ni eto ilera man fun awon omo yin ni asiko ojule si ojule yi?

1. Bẹẹni ( ) 2. Bẹẹkọ ( )

18. To ba je bẹẹni (E so gbogbo ti e mọ) _____

19. Kini e ro pe ajesara wa fun? (Maṣe bere)

S/N	Gbolohun	Awon tiwon daruko ni sisentele	Awon ti won daruko leyin iwadi
i	Oun daabobo awọn ọmọ kuro lowo isan		
ii	Oun se iranlowo fun idagbasoke ọmọde		
iii	Oun se ifunlagbara/ atunse ilera ọmọde		
iv	Oun se itoju fun aarun awon omode		
v	Lati yago fun awọn ipa arun ojo iwaju		
vi	Alekun igbesi aye ọmọ		
vii	Din awọn iṣẹlẹ romolapa romolese ku		
viii	Fun aleku opolo pipe omode		
ix	Ki omo le dagba daada		
x	Ṣe iranlọwọ fun ilera toba dagba		

IPIN KETA: IWUHASI AWỌN IYA ỌMỌ TI ỌJỌ ORI WỌN KO TO ỌDUN MAARU SI GBIGBA AJESARA OJULE SI OJULE

Ilana: E jowọ ẹdahun si awọn ibeere wọn yii bi oti to ati bi oti yẹ.

S/N	Gbolohun	Mofaramo	Mioleso	Miofaramo
20	Ko si nilo fun ajesara ti ilera omo na ba peye, ko si igbagbọ ninu ajesara			
21	O dara fun ọmọ mi lati se agbekalẹ ajesara nipasẹ nini aisan ju lati gba oogun ajesara.			
22	Awọn alaṣẹ gbe igbega fun ajesara fun anfani owo ti won makoje nibe, kii ṣe fun ilera ara ilu.			

23	Mo bẹru awọn ikolu ti ajesara fun omode ni akoko ipolongo yii			
24	Eto ajesara ojule si ojule tin man po ju			
25	Ko si nilo fun ajesara ojule si ojule lẹhin ti omo bati gba ajesara ile iwosan			
26	Awon aisan tabi ipa aimo wa pelu ajesara ni asiko ajesara ojule si ojule			
27	Awọn oogun ti won n fun awọn ọmọde nigba ipolongo ajesara ojule si ojule ni o munadoko lati dabobo wọn lodi si awọn aarun			
28	Alaye to peye ni awon eleto ilera maun fun awon obi ni won fin gba ki awon omo won gba ajesara			
29	Ọpọlọpọ awọn ile ni won kii de ni ọpọlọpọ igba ti ipolongo ojule si ojule baun lo lowo			
30	Won kin se ipolongo eto ejesara ojule si ojule daada			
31	Awon eleto ilera maun fi awon omo sadanwo ni ojule-si-ojule			

32. Ṣe e lero pe gbogbo oogun ajesara ṣe pataki fun ọmọde naa? 1. Bẹẹni ( ) 2. Bẹẹkọ ( )
Ti oba je bẹẹkọ, Ki nidi? _____

33. Nje e gbẹkẹle awon eleto ilera nigba awọn ipolongo ajesara awọn ọmọ rẹ ? 1. Bẹẹni ( ) 2. Bẹẹkọ ( ).

34. Nje e le sọ awọn iṣoro nipa awọn ajesara ti won fun awon omo yin ni akoko yii pẹlu awon eleto ilera 1. Bẹẹni ( ) 2. Bẹẹkọ ( ).

35. Ti e ba ni ọmọ miiran, se ema je ki ogba ajesara yii asiko ipolongo ojule si ojule yii?
1. Bẹẹni ( ) 2. Bẹẹkọ ( ).

36. Ṣe iwọ yoo ṣe imoran fun ẹbi rẹ ati ẹbi rẹ lati ṣe ajesara awọn ọmọ wọn lọwọ ni awọn ipolongo wọnyi?
1. Bẹẹni () 2. Bẹẹkọ ().

37. Idi ti kii ṣe _____

IPIN KERIN: ISESI AWỌN IYA ỌMỌ TI ỌJỌ ORI WỌN KO TO ỌDUN MAARU SI GBIGBA AJESARA OJULE SI OJULE

Ilana: E jowọ ẹdahun si awọn ibeere wọn yii bi oti to ati bi oti yẹ.

S/N	Alaye lori Eyin wiwu	Mo faramọ	Mioleso	Mi o faramọ
38	Awọn iṣẹsi miiran le mu ki eniyan ma nilo abẹrẹ ajesara			
39	Awọn ọmọde maa n gba abẹrẹ ajesara pupọ ju ni awọn akoko ipolongo wọnyi atiwipe o lewu			
40	Ajesara ko ni ṣiṣẹ ti a ba fun wọn pọ ju			
41	Awọn abẹrẹ ajesara munadoko lati dena awọn arun aisan fun awọn ọmọde			
42	O ṣe pataki fun ọmọ mi lati gba gbogbo abẹrẹ ajesara ti o yẹ.			
43	Abẹrẹ ajesara tiwọn fun wọn nigba awọn ipolongo wọnyi ni a fin dipo awọn ti wọn ko gba seyin			
44	A ko mọ awọn ipa ti awọn abẹrẹ ajesara ti wọn n fun awọn ni ara wọn ti wọn ba dagba.			
45	Idaabobo ti ara fun ra rẹ n pese ma n pe ju ti abẹrẹ ajesara lọ			
46	Abẹrẹ ajesara ti wọn fun awọn ọmọ nigbagbogbo ni awọn akoko ipolongo lee sokunfa ki kemika korajọ lagọ ara awọn ọmọde ti o si le koba ẹya ara ti o n mojuto idabobo.			
47	Gbigba ọpọlọpọ abẹrẹ ajesara lee koba bi ọpọlọ awọn ọmọ ṣe n ṣiṣẹ			
48	Gbigba abẹrẹ ajesara ni gbogbo igba lee sokunfa ki awọn ọmọde maa ku bi kose yẹ			
49	Akoko ti wọn ṣe eto abẹrẹ ajesara ko ki n rorun fun wa nigbagbogbo			
50	Gbigba abẹrẹ ajesara ṣe pataki fun awọn aisan to le nikan.			

51. Nję ẹ le ro pe ọrọ oselu le ni ipa lori ipinnu rẹ ni gbigba abẹrẹ ajesara fun ọmọ rẹ ni awọn akoko ipolongo abẹrẹ ajesara ti o lọwọ wọnyi? 1. Bẹẹni ( ) 2. Bẹẹkọ ( ).

52. Nję ẹ le ro pe olori ile ijọsin rẹ ni ipa lori ipinnu rẹ lati gba abẹrẹ ajesara fun ọmọ rẹ ni awọn akoko ipolongo abẹrẹ ajesara ti o lọwọ wọnyi 1. Bẹẹni ( ) 2. Bẹẹkọ ( ).

ẸSE ADUPẸ FUN DIDAHUN SII AWỌN IBEERE WA WỌN YII