

KNOWLEDGE AND ATTITUDE OF COMMUNITIES TOWARDS VACCINATION SERVICES IN SOKOTO STATE, NIGERIA

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ABSTRACT

This paper examines the knowledge and attitudes of people at the grassroots towards vaccination services in Sokoto state. Vaccine preventable diseases such as measles, poliomyelitis, whooping cough, diphtheria, tetanus, chicken pox etc, are prevented through immunization. These are infectious childhood diseases affecting growth, development and lives of infants worldwide with high prevalence in developing countries, Nigeria inclusive. The paper unravelled the level of knowledge people in the hard-to-reach areas of Sokoto state have on Vaccines Preventable Diseases, the importance of immunization exercise and their attitudes towards immunization. The research was purely qualitative with Focus Group Discussion (FGD) and In-Depth Interview (IDI) as methods of solicit data from respondents. A total of 228 respondents drawn from six communities

Introduction:

Vaccine preventable diseases (VPDs) already defeated in other parts of the world still run a continued transmission in developing countries. African countries for example still experience high infant mortality rates due to many infectious diseases that are avoidable through immunization. Beside malaria, the major cause of morbidity and mortality among Nigerian children are VPDs like chicken pox, poliomyelitis, tuberculosis, measles, whooping cough, diphtheria and tetanus. These account for about 22% of infant deaths (World Health Organization, 2009).

within the selected Local Government Areas were selected for the study, where 18 FGD sessions and 12 IDIs were conducted with mothers of children less than five years, husbands, elderly women, traditional leaders, religious leaders and health personnel. Based on the findings, the study discovered that people at the grassroots have knowledge of vaccines preventable diseases and usually take their children for vaccination at the available healthcare centres or when visited at their houses. Despite some of the misconceptions about the vaccines and vaccination in the study area, people have positive attitudes towards immunization and issues surrounding the practice of the immunization exercise in the study setting. Factors found to pose challenges are availability of health care personnel in the available health care facilities and distance. Thus, the study recommends an increase provision of healthcare facilities and supply of drugs, healthcare personnel in these communities for holistic immunization coverage.

Keywords: Attitude, Community, Disease, Knowledge, Vaccine and Service

Immunization as a preventive measure of childhood diseases should generate acceptance and effective utilization, but the routine immunization coverage in Nigeria is still very low by international standards (Generation Next, 2009). Accordingly, immunization coverage rates in Nigeria are among the lowest in the world. There are also extreme inequities in immunization coverage between the six geo-political zones in the country and immunization coverage is definitely the worst in the North - West and North Eastern geopolitical zones.

Since the establishment of National Programme on Immunization (NPI), the government of Nigeria has accelerated efforts to revive immunization services. Officials of the Expanded Programme on Immunization (EPI) developed a blue print with a multi-year plan including activities for improving routine immunization coverage. Additionally, in April 2006, the National programme on immunization developed an approach of integrating other antigens and child survival interventions with the polio eradication campaigns (WHO, 2006). Numerous partner agencies are implementing projects in tandem with the Government of Nigeria aiming to strengthen

routine immunization in the country, particularly across the northern states. These include Community Participation for Action in the Social Sector Project (COMPASS), World Health Organization (WHO), United Nation's International Children's Emergency Fund promoting the revitalization of routine immunization in northern Nigeria (WHO, 2006, UNICEF, 2009).

Although immunization remains the most cost-effective tool for reducing childhood morbidity and mortality occurring from vaccine preventable diseases, the utilization of vaccination services is still low in Nigeria by International Standards (Generation next, 2009). In most countries of the world, the effective measure of preventing childhood deaths as well as reducing the toll of disability, illness and missed schooling among the children who survive has been through vaccination. Even WHO (2009) estimated that if all vaccines now available against childhood diseases were widely adopted, and if countries could raise vaccine coverage to a global average of 90% by 2015 an additional two million deaths a year could be prevented among children under five making a major contribution to some objectives of the Sustainable Development Goals (SDGs), the seventeen international development goals that all 193 United Nations Member states and global civil society have agreed to achieve by the year 2030.

Knowledge of local impediments to effective immunization programs is very important in the development and implementation of appropriate solutions. Against this background, this study sought to determine the knowledge and attitude of communities regarding childhood vaccine preventable diseases, including poliomyelitis.

Concept of Vaccination

Immunization, also called vaccination or inoculation is a method of stimulating resistance in the human body to specific diseases using microorganisms—bacteria or viruses—that have been modified or killed. These treated microorganisms do not cause the disease, but rather trigger the body's immune system to build a defense mechanism that continuously guards against the disease. Thus, if a person immunized against a particular disease later comes into contact with the disease-causing agent, the immune system is immediately able to respond defensively (Blackman, 2009).

Vaccination is intentional immunization against a particular disease by the use of vaccines, substances that are structurally similar to the actual disease-producing agents but that do not produce disease themselves (Cancro, 2010). Immunization has dramatically reduced the incidence of a number of deadly diseases. For example, a worldwide vaccination program resulted in the global eradication of smallpox in 1980, and in most developed countries immunization has essentially eliminated diphtheria, poliomyelitis, and neonatal tetanus.

Scientists have developed two approaches to immunization: active immunization, which provides long-lasting immunity, and passive immunization, which gives temporary immunity. In active immunization, all or part of a disease-causing microorganism or a modified product of that microorganism is injected into the body to make the immune system respond defensively. Passive immunity is accomplished by injecting blood from an actively immunized human being or animal (Blackman, 2009). The use of immunization to prevent disease predated the knowledge of both infection and immunology. In China in approximately 600 BC, smallpox material was inoculated through the nostrils. Inoculation of healthy people with a tiny amount of material from smallpox sores was first attempted in England in 1718 and later in America.

A significant breakthrough came in 1796 when British physician Edward Jenner (1749-1823) discovered that he could immunize patients against smallpox by inoculating them with material from cowpox sores. In 1885 Louis Pasteur (1822-1895) created the first successful vaccine against rabies for a young boy who had been bitten 14 times by a rabid dog. Over the course of ten days, Pasteur injected progressively more virulent rabies organisms into the boy, causing the boy to develop immunity in time to avert death from this disease (Blackman, 2009 and Hardwick, 2010).

Immunization programme was introduced in Nigeria in 1979 known as the Expanded Programme on Immunization (EPI) and the government established the National Programme on Immunization (NPI) under Decree 12 in 1997 to effectively control the occurrence of all vaccine preventable diseases through immunization focusing on prevention, control and eradication of diseases such as tuberculosis, measles, diphtheria, neonatal

tetanus etc. Susceptible target children under eleven months, all pregnant women and reproductive age group (Bonnie, Okonek and Peter, 2001).

The first disease people tried to prevent through vaccination was probably smallpox. The earliest recorded use of smallpox occurred in China in the 16th century. Damaso (2018) argued that it was also the first disease for which a vaccine was produced. Although at least six people had used the same principles years earlier, the smallpox vaccine was invented in 1796 by English physician Edward Jenner. He was the first to publish evidence that it was effective and to provide advice on its production (Barie, et'al, 2018). Elkhider (2018) noted that Smallpox was a contagious and deadly disease, causing the deaths of 20–60% of infected adults and over 80% of infected children. Vaccination work has suffered some reluctance in science, ethics, politics, medical safety and religion. Although no major religion opposes vaccination, some people think it is an obligation because it has the potential to save lives. In the United States, people can receive alleged damage compensation under the National Vaccine Injury Compensation Program. Early success has brought widespread recognition, and mass vaccination campaigns have greatly reduced the incidence of many diseases in many geographic regions.

Knowledge of Community Regarding Childhood Vaccine Preventable Disease

Parents' knowledge, attitude, and practices regarding immunization are the most important factors that could contribute to their immunization decisions. Thus, parents' decisions about immunization are very crucial for enhancing the immunization rate and compliance. Their compliance, in turn, leads to full immunizations of children, which prevents VPDs in children and for inhibiting any possible immunization errors. Moreover, some studies have been published globally regarding parents' knowledge, attitude, and practices about infant immunizations. There is no single study published nationally and no studies have been reported in the study area for frequent outbreaks of vaccine preventable diseases, especially polio. Decision-making on immunization of an infant lies predominantly on the father; and, if

vaccinations become rejected due to rumours and the concern accorded to figure's preference to greater excessive illnesses.

Mothers' information, mind set and exercise play a vital position in accomplishing entire immunization before first birthday of the infant, the preceding figure elements also are contributing to achievement or failure of immunization software, information and exercise research offer statistics approximately the people awareness of positive topics, their emotions and their practices. Immunization has stored the lives of greater youngsters than another clinical intervention with inside the final 50years. Vaccines are safe, easy and one of the maximum cost-powerful methods to store and enhance the lives of children international. Each 12 months, to 3 million lives are stored through immunization. However, more than 22 million youngsters nonetheless cross without primary immunization that is leaving them at risk of life-threatening illness and everlasting disability. Immunizing youngsters towards vaccine-preventable illnesses is an important factor in saving lives, growing productivity, and reducing poverty. The effects of the preceding observation can be due to the low degree of awareness in rural communities and their wonderful mind set toward vaccination.

People's Attitude towards Vaccination Services

Vaccines are broadly known with the aid of using fitness, government and the clinical network as a primary device for reaching public fitness successes inclusive of the eradication of smallpox (Andre et al., 2008; ECDC, 2012). Yet, for lots individuals, this isn't always enough foundation with which to embody vaccination whole-heartedly. People doubt the advantages of vaccines, fear over their protection and query the want for them. A mindset of hesitancy differs from a movement of vaccine refusal. Even folks that are vaccinated can harbour hesitancy closer to positive elements of vaccination. The coverage subject is that hesitancy quickly will become refusal, as recommended with the aid of using concept and experience (Salathé and Bonhoeffer, 2008), and unvaccinated clusters emerge wherein sickness outbreaks can occur (Gangarosa et al., 1998; Jansen et al., 2003). For example, a UK observation of 14,578 kids discovered that three-quarters of mother and father whose kids

had been no longer vaccinated with MMR made aware selection to now no longer vaccinate (Pearce et al., 2008).

The refusal rate shows that the conventional assumption that people go through records deficit, lack get right of entry to the records or are misinformed, at best, an incomplete knowledge of vaccination attitudes (Hobson-West, 2003). We anticipate that, at one point, there's a crucial difference to be drawn among hesitancy and outright rejection. If we take the difference among hesitancy and rejection seriously, it will become clear that while insurance prices are beneficial for figuring out folks that reject, the metric does little to assist us apprehend hesitant attitudes, their origins and the scope to alternate them. The purpose of retaining excessive insurance prices enables to make sure vaccination advantages are brought broadly, however the very act of handing over huge scale vaccination could make vaccines 'sufferers in their personal success'. As the ravages of sickness emerge as much less acquainted to people, it can emerge as greater hard to articulate the desirability of vaccination. Nichter (1995) talked about that "call for vaccination is regularly low, even amongst populations having remarkable immunisation prices". When hesitancy is prevalent, making sure compliance and excessive insurance prices might not be sufficient to make sure that vaccination is sustainable in the future (Roalkvam et al., 2013).

Study Design

The study was purely qualitative as the purpose was to explore information pertaining knowledge and practices of the target communities towards vaccination and health related exercise. This is because qualitative researches are guided by a theoretical and methodological focus on complex relations between (1) personal and social meanings; (2) the individual and cultural practice; and (3) the material environment, or context. There is no universal blueprint for doing qualitative research. However, for the purpose of this study, two approaches were adopted; Focus Group Discussions (FGD) and In-depth Interviews (IDI).

Study population

The study population comprises mothers of under-five year's children, adult males, elderly women, traditional and religious leaders, other community influencers and health personnel in the 6 hard-to-reach settlements in the 3 local government areas under study.

Sample and Sampling Technique

Sample size for the study was 228 respondents located in the hard-to-reach settlements, of 35 wards of 3 LGAs in Sokoto state. These outreach services were aimed for the polio high risk, deprived and underserved areas. Respondents were sampled purposively to reflect the differences in the population that are relevant to the research topic discussed at the FGD sessions. Same technique was used selecting key informants within the study population for In-Depth Interviews (IDIs). Meanwhile, to arrive at the target respondents, a multi-stage cluster and random sampling was employed, where a list of all LGAs in the State's Senatorial Districts was obtained, one of the LGAs in each Senatorial District was randomly selected, a total of two wards and two communities were randomly selected, mothers with children under- five years, husbands and elderly women were purposively selected from these communities. Same methods was also employed in selecting key informants for In-Depth Interviews, which includes; Religious/traditional leaders, Community influencers and Health personnel

Table 1: Target Groups for Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs)

Local Governments	No. of Wards/intervention settlements	Proposed number of FGDs with			Key informant interviews with religious/traditional leaders, community influencers and health personnel
		Mothers with children under 5 years	Husbands	Elderly women	
Yabo	12	2	2	2	4
Kware	12	2	2	2	4
Gada	11	2	2	2	4
Total	35	6	6	6	12

Altogether, a total number of 18 FGDs and 12 IDIs were conducted in different

parts of the target local government areas with 216 respondents for FGDs and 12 key informants.

Instruments and Methods Data Collection

Unstructured in-depth interview and focus group discussions guides were used as tools for gathering desired qualitative data. These instruments were used to solicit data from such individuals as traditional and religious leaders, policy makers, programme implementers, opinion leaders (men and women), mothers, husbands and elderly women which allow researchers to introduce other issues they may come across during the research so as to cover as wide range of issues as possible.

Care was taken in ensuring uniformity of composition of each group as well as a relaxed atmosphere that establishes the sort of harmony needed for an honest and open discussion. Before the actual FGD however, initial contact was made with each would-be-participants at his/her own convenience. This gesture was aimed at creating a rapport and showing each participant how important their presence and contribution would be and to allow for the collection of their socio-demographic data. This served as a tool for grouping would be-participants. FGD sessions took place simultaneously for both male and female participants. The male sessions hold at all available convenient space, in public building, under the tree or in the door entrance of village head or community leader's house. The male members of the team attended to the male sessions. All female sessions hold inside the house and, consistent with the cultural requirements of purdah, were conducted by female members of the research team. The team divided their role into (1) Moderator (2) Note-taker and/or observer or manager.

Method of Data Analysis

Qualitative methods generate textual data and qualitative methods of data analysis were used in analysing the data. The process began with careful recording, editing and transcribing raw data for completeness, consistency and accuracy. The transcripts generated for each FGD sessions and individual in-depth interview were read for content clarity. Similarly, similar ideas, issues and expressions were identified and brought together under one theme from the same or different sessions/interview. Thus, the data were analysed

thematically. However, the sampled respondents' socio-economic and demographic data were presented and analysed quantitatively with the help of Statistical Package for Social Sciences (SPSS) using frequencies and percentages.

Results and Discussion

Below is the presentation of data on the socio-demographic and economic characteristics of study respondents; thematic analysis of the qualitative data. Data is presented and analysed according to the themes and objectives of the study where responses were quoted verbatim and findings of the study discussed.

Table 2: Socio-demographic and Economic Characteristics of Respondents

Variable	Sex	Frequency	Percentage
Sex Distribution of Respondents	Male	77	33.8
	Female	151	66.2
	Total	228	100.0
Age Distribution of Respondents	Age	Frequency	Percentage
	18-23 Years	32	14.0
	24-29 Years	61	26.8
	30-35 Years	68	29.8
	24-29 Years	61	
	36-41 Years	53	23.2
	42- Above	14	6.2
Total	228	100.0	
Respondent's Education Qualification	Qualification	Frequency	Percentage
	Qur'anic	79	34.6
	Primary	62	27.2
	Secondary	48	21.0
	Tertiary	23	10.1
	Others(Specify)...	16	7.1
Total	228	100.0	
Marital Status of the Respondents	Status	Frequency	Percentage
	Married	198	86.9
	Divorced	14	6.1

	Separated	2	0.9
	Widow(er)	14	6.1
	Total	228	100.0
Respondents' Ethnic Group	Ethnic Group	Frequency	Percentage
	Hausa	202	88.6
	Fulani	21	9.2
	Others	5	2.2
	Total	228	100.0
Respondents' Occupation	Occupation	Frequency	Percentage
	Student	6	2.6
	Civil Servant	37	16.2
	Business/Trading	65	28.5
	Farmers	108	47.4
	Artisan	12	5.3
	Total	228	100.0
Monthly Income Level of Respondents		Frequency	Percentage
	1,000-5,999	96	42.2
	6,000-10,999	73	32.0
	11,000-15,999	31	13.6
	20,000-25,999	19	8.3
	30,000-Above	9	3.9
	Total	228	100.0

Table 2 above presents data on the socio-economic and demographic characteristics of respondents for the study where majority were females as represented with 66.2 percent while males were represented with 33.8 percent of the total respondents. Respondents aged 30-35 years accounted for 29.8 percent, those between the age of 36-41 accounted for 23.2 percent, respondents between the age of 24-29 years accounted for 26.8 percent while those between the age of 18-23 years accounted for 14.0 percent and those aged 42-above were 6.2 percent of the total respondents. On educational qualifications, the data show that 34.6 percent of the respondents acquired Qur'anic education only, respondents with primary level of education were 27.2 percent, those with secondary certificate were 21.0 percent while respondents with tertiary level of education were 10.1 and those with other educational qualifications were 7.1 percent of the total respondents. Majority

of the respondents were married as represented with 86.9 percent of the total respondents, divorced and widows were represented with 6.1 percent of the total respondents while respondents separated with their spouses were represented by 0.9 percent of the total respondents. Majority of respondents were Hausa ethnic group accounting for 88.6 percent, while Fulani ethnic group accounted for 9.2 percent of respondents and other ethnic group residing in the study area were 2.2 percent of the total respondents. Farming has been identified as the dominant occupation of the respondents as confirmed by 47.4 percent, respondents engaged in business or trading were 28.5 percent, civil servants were represented by 16.2 percent while artisans and students were 5.2 and 2.6 percent respectively. Data on the above table also show that 42.2 percent earn less than N6,000 per month, respondents earning less than N11,000 were 32.0 percent, those earning less than N16,000 accounted for 13.6 percent of respondents while respondents earning less than N26,000 and those earning N30,000 and above were represented by 8.3 and 3.9 percent respectively.

Theme 1: Knowledge of Communities Regarding Childhood Vaccines-Preventable Diseases

It is one of the major objectives of this study to understand the level of knowledge of communities regarding childhood vaccine-preventable diseases, including poliomyelitis. This section deals with such and other related issues. The section specifically analyses data on the participants' knowledge about the meaning of vaccination, types of vaccines, duration of vaccination, vaccination centres, vaccination methods and age of children to be vaccinated.

Meaning of vaccination

An important question the respondents in both the FGD and KII were asked was the meaning of vaccination. Participants in the FGD demonstrated some understanding of what vaccination means, with many of them stating that it is a way of preventing diseases such as measles, polio and tuberculosis. Some of the FGD participants further stressed that vaccination is very important because it prevents children from diseases. According to a 52-year-old, male,

FGD participant in Kware LGA:

To the truth, this thing is very important because before we grew up there are several diseases, like, polio and so on which are very much before and are everywhere which affect the legs, hands and so on but due to vaccination, and by the Grace of God we are better. We that are 50 years and above know that there were many blind people in the past but due to vaccination we have seen a sign of those things on them and God had intervened. Now, when you look at this town by the Grace of God, we cannot find 10 blind people. There is improvement now than before, but that polio by God's grace you can get up to 5 people with polio. When we are growing up you see one house to 2 houses without a person with *ado*, polio or so on, but vaccination help the way you can't expect because we have seen its benefits (Elderly Man, Wammako LGA).

Another participant added that:

What we think about vaccination is that like if there is a problem approaching then we prevent it from coming and even if it attacks the attack will be easy to manage, that is why we think it's important. If we prevent disease, even when it comes it will be easy to treat (An elderly female, Bodinga LGA)

A KII participant also stated that:

What I know about vaccination, it is an injection which will be given to children or adults for the prevention of some diseases which will affect children and adults (Traditional leader, Kware LGA).

Another KII participant explained that:

Praise be to God, to the truth I know the importance of vaccine that is taken by the children because many times they were vaccinated not once or twice and we see the benefits and importance to the children that were vaccinated, to the truth, especially during the time of measles you see a child who is affected with measles but measles you will see him standing not lying because for me I know there was an area

whenever he went for vaccine the children will be vaccinated by the grace of God there was a time that measles affected the area and their small children all did it but standing none of them was lying God so kind the infection went away nobody is dead talk less of someone who likes and by so in this area we thank God and know the importance of vaccination to the honest (Traditional leader, Bodinga LGA).

Health workers in the study area also shed more light on the meaning of vaccination to be a form antigen that gives the immune system of the body the capability to fight diseases. A health worker in Wammako LGA noted that:

Like antigen, the meaning of vaccination is that it is done to give a child immune in his body, it prevents disease to affect the child. That the meaning that if the disease affects the child, it will not harm him and it will not suffer him, for some, it will not affect him and even if it affects him, he will still be standing on his feet (Health Personnel, Wamakko LGA).

This finding from a study conducted by Adefolalu (2019) where 250 mothers who were selected by multistage sampling and used frequencies and percentages for statistical analysis of the data collected revealed that 72.0 percent of the mothers who participated had an overall good knowledge regarding child vaccination, also 100 percent of the mothers who participated had a positive attitude regarding child vaccination and 98.8 percent of the mothers who participated, stated that childhood vaccination is essential (Adefolalu, 2019). Similarly, Sankar et al. (2018), who sampled 143 mothers in their study, found that 50.4% of mothers had excellent knowledge, whereas 34.2% had average knowledge regarding childhood vaccinations. Additionally, 64.3% of the mothers had a positive attitude, and 90.2% of the mothers had good practice towards childhood vaccinations (Sankar et al., 2018).

Types of vaccines

Various types of vaccines were identified by the participants as the available vaccines in their various communities. The vaccines identified include polio, eclampsia, measles, malaria, BCG, polio, *Ado*, Painter, hepatitis, meningitis and whooping cough.

In the words of a participant in Kware LGA:

There is eclampsia, there is for meningitis, there is for "Lala", this is "ado" there is chickenpox all of them, they do it but if there were vaccine it will kill it (Elderly woman, Kware LGA).

In supporting the previous speaker, another participant in Bodinga LGA stated that:

We know that of measles, we know that which is two, we know that of meningitis that is what I know to my knowledge, we know that of polio (Elderly woman, Bodinga LGA).

A traditional leader in Kware LGA further asserted that:

The injections I know there is an injection for vaccination of polio, there is an injection for vaccination for the diseases of small children and there is for pregnant women, there is for pregnant women, there is for those who gave birth and there is for small children from one month up to five years, I know they do the vaccination (Traditional leader, Kware LGA).

Health personnel in Wammako LGA further corroborates the types of vaccines earlier mentioned to include:

There is BCG, which will be done to a child immediately after he was born, from birth up to a week, it will be done to him and if it was not done, it can be done 2 weeks, before the naming ceremony BCG will be done to him. There is OPD zero, HP, and Hepatitis B for liver disease, which are the ones to be done to him when he was born. BCG, Hepatitis B and OPD zero dose the first dose before he passed 2 weeks (Health Personnel, Wamakko LGA).

Duration of vaccination

The duration of vaccination services in Sokoto depends on the individual expected to be vaccinated and the type of vaccine to be given at a particular moment in time. The study discovered that infants are usually vaccinated immediately after they were born and a continuous vaccination follows suit on a weekly, monthly and even yearly basis. In addition to the above, the HB injection is usually administered at birth, PCB is administered when a child is not more than 2 weeks of birth and subsequently administered at 6 and then 10 weeks of birth and usually extends to 10 months, yellow fever and measles

are administered when a child is 9 months and the second dose of measles follows suit when a child is one year and another in his 22nd month. As for IPB, it is usually administered at 14 weeks but the first dose is given when a child is 6 weeks and the second dose is administered at 12 or 14 weeks.

A male parent in Kware LGA asserted that:

If a child is born within 2 hours, then after one or two weeks, then After 40 days, After 3 months. Like now when they give birth to a child, you know, when they give birth to a child before a week there are injections, they did to him which are vaccines, even a child was born at home they take him to hospital for vaccinations. Like polio is all the time. (Male parent, Kware LGA).

A mother of under-five in Bodinga LGA asserted that:

From birth. Before 2 weeks after birth Some 10 days. Then 9 months. It finishes after 9 months (Mother of under-five child, Bodinga LGA)

This supports a study by Verulava et al. (2019), which included 60 mothers and used frequencies and percentages for statistical analysis of the data collected, revealed that most of the mothers (65 percent) did not know the reason for the vaccinations, but they knew the right age for the vaccinations and when they must start. Also, 59 percent believed that vaccination is not harmful. Thus, the attitudes of the mothers regarding vaccination were good, because most of the mothers believed in the importance of vaccination and they followed the vaccination schedule (Sankar, et al 2018).

Vaccination Centres

Most of the participants averred that the vaccination is conducted in various centres and locations which include the Hospitals, dispensaries and primary healthcare centres, schools, and even at the traditional palaces of district heads in the LGAs or village heads as well as religious centres. Participants further asserted that vaccination teams usually engage in house-to-house vaccination exercises on a timely basis or when it is deemed necessary, this is usually conducted on a monthly or quarterly basis. A participant in Kware LGA asserted that:

They go house by house and they do it in the centre. They do it in the school. They do it in front of "Dan Galadima" side (A father of an under-five child, Kware LGA)

Another participant revealed that:

Most of the time, we go to the hospital, because people now know it's important and you can't wait until they come (Elderly woman, Kware LGA).

Similar to the above, another participant alleged that:

We visit hospitals, and pregnant women who delivered are advised to vaccinate their child, they will come and give them vaccine on the day they delivered or after birth before two weeks, or after three months or four and they finished in six months and the rest (Father of under-five child, Bodinga LGA).

In another development, traditional rulers positively influence the vaccination exercise in Sokoto as they serve as frontrunners in calling the attention of the people towards vaccination services, a participant asserted that:

Where ever we are going is not better than this place that we are, the king will call the rulers and the ruled this is what the government wants, he the (king) wants our cooperation to help him bring people and the rulers to go an announce it to their location/site this is what the government said we should do and he wants your cooperation and to continue doing it the way they want it. (A Father of under-five child, Bodinga LGA).

Vaccination methods

On the methods employed in administering vaccination services in Sokoto, participants alleged that injection was classified to be the major vaccination method in the State as most women and children are usually injected with the vaccine in the hand. In addition to the injection administered, findings from the study further revealed that drops in the mouth are usually used in vaccinating infants and children and sometimes tablets are issued to older adults. On the practical aspect of the vaccination exercise, BCG is usually administered in the left leg, while painter and PCB are in the right, the painter is also administered in the left hand and IBP in the right. Yellow fever is done in the right hand while measles is done in the left hand and they are given at the same time when a child is 9 months. A participant from Kware LGA revealed that:

For children, they use to give to drop. While for adults they give them injection in the hand (A father of under-five children, Kware LGA)

In a divergent view, a father from Wammako LGA asserted that:

The majority of vaccines, have dropped one and are the minority since there is one for eclampsia, and polio I know it drops one but the majority is that they give the injection (A father of under-five child, Wamakko).

Age of children to be vaccinated

The age of children usually vaccinated is between infancy to five years of age. As the child grows up to 5 years of age, the child is usually vaccinated against different diseases on a timely basis. Findings from the study further revealed that there exists a traditional ideology of asking a child to touch his ear, if he executes such, he will not be vaccinated. In the view of a father of an under-five, he revealed that:

From birth 0 to 5, they will even say to a child to touch his ear like if he touches, they will not do it but if he did not touch then they will do it to him they do that (father of an under-five child, Kware LGA).

For some parents, they conceive vaccination to be given from birth to nine months and end immediately the child clock clocks 9 months of age neglecting other necessary vaccination expected to be given for the first 5 years of age. An elderly woman in Kware LGA revealed that:

From birth to nine months, they are given an injection. It finishes when the child reaches 9 months (Elderly woman Kware LGA)

The above finding corroborated the view of another mother of under-five in Bodinga LGA where she revealed that:

Even when a child is 2 days old you can take him for vaccination. Up to 9 months (A mother of under-five child, Bodinga LGA)

Theme 2: Peoples' Attitude towards Vaccination Services

This section specifically analyses data on the attitude of people towards vaccination services, the practice of people regarding vaccination, allowing children to be vaccinated, whether children were taken to the vaccination centre or not, all the children or the specific number, gender of children, age of children, is the vaccination compulsory or voluntary, incentives to children or parents.

Practice of People Regarding Vaccination

Based on the findings of the study, vaccination services are in high demand in Sokoto, as a result of the commendable efforts of the district heads and traditional rulers of the state who typically advise their subjects to avail their children of vaccination when needed. Ordinarily, village/district heads announce routine immunization services, and most subjects comply with such announcements. A father of an under-five child in Kware LGA revealed that:

Our practice when they come, these will be an announcement through village head or district head, they will use to bring our children on so date and time and this is the centre and if they will start with people of a young age like those that have malaria, if it is polio, they will follow the children house by house to do it (A father of under-five child, Kware LGA)

However, it was revealed in the study that vaccinations are of huge importance in Sokoto, thus most of the stakeholders do not wait for enforcement by the traditional/district head before availing their children of vaccination. Some parents of under-five children and beyond emphasized that vaccinations are of utmost importance to their children. An elderly woman in Kware LGA noted that:

Everyone who takes his child to be vaccinated has seen the importance of it. When you take your child once or twice and you see its benefit you will not stop, and even if there are children inside the house you will stop them from doing it

because you know its importance (An elderly woman, Kware LGA).

Various misconceptions were identified on vaccination in Sokoto State as even today some parents feel that vaccination poses a problem in their later lives. The common fallacy is that vaccination restricts the number of children one can have in his or her later life. Thus, some parents felt vaccination is a hidden ideology that developed in Europe. Various misconceptions were identified on vaccination in Sokoto State as even today some parents feel that vaccination poses a problem in their later lives. The common fallacy is that vaccination restricts the number of children one can have in his or her later life. Thus, some parents felt vaccination is a hidden ideology that developed in Europe. According to an elderly woman in Bodinga LGA:

Some want while some don't want. One may even reject it when they come to his house while another may accept, he lives everything to God while someone may even query it, we all give, even days back when they come, we give, may God give you faith up till today I didn't see what they are looking (An elderly woman, Bodinga LGA).

On the idea of limiting the number of children to be delivered by vaccinated children in their later years of life, another elderly woman in Bodinga LGA also revealed that:

What results for some to reject it is that if you give your child is that you have stopped him from giving birth if they can come and sit the way you do even that person will agree to take it but they come and you give your own and they said he will stop from giving birth can you take your child tomorrow (An elderly woman, Bodinga LGA).

In addition to the above, not all couples usually have a total disagreement to share the same fallacy on vaccination limiting childbirth, sometimes, only the couple usually disagree on vaccinating their children, another elderly woman in Bodinga LGA revealed that:

Some will not give, when our father is alive, when they come, he will say they should go ahead, sometimes my mother will

stop them but my father will tell them to go (Elderly woman, Bodinga LGA).

In light of this, the study concluded that there exists a positive attitude toward people's practice towards vaccination services in Sokoto, due to the unwavering behaviour displayed in availing their children of vaccination services, even though there are a few stakeholders who share a fallacy that vaccination limited birth rate in the later years of children vaccinated as infants.

However, this contradicts an assertion made by (Salathé and Bonhoeffer, 2008), and (Gangarosa et al., 1998; Jansen et al., 2003) that people doubt the advantages of vaccines, fear over their protection and query the want for them. A mind set of hesitancy differs from a movement of vaccine refusal. Even folks that are vaccinated can harbour hesitancy closer to positive elements of vaccination. The coverage subject is that hesitancy quickly will become refusal, as recommended with the aid of using concept and experience (Salathé and Bonhoeffer, 2008), and unvaccinated clusters emerge wherein sickness outbreaks can occur (Gangarosa et al., 1998; Jansen et al., 2003).

Allowing Children to Be Vaccinated

Since health workers and traditional/district heads made it a priority to introduce vaccinations to the public more frequently, most parents became aware of the need to allow their children to receive vaccinations, and they do so voluntarily whenever the need and time arise. An elderly woman in Kware LGA revealed that:

Before we don't know it was important, they follow and warn us about its importance but now. Whenever they say we will go. We don't play with it. We do it for both children and adults. (Elderly Woman, Kware LGA).

Furthermore, leaders in various LGAs in the state revealed that the upsurge behind the voluntary vaccination is a result of the awareness campaigns openly promoted on the various probable causes of diseases and vaccination used in curbing such, a traditional leader in Kware LGA revealed that:

In this place, to the truth, it is hard to find a person who doesn't allow his child to be vaccinated because of the awareness of the people because they inform them what they want to do and the time they want to do and also its importance if you know the importance of something then you allow it that the reason sometimes we don't that is when they are doing it in the hospital, we will go to hospital and if the centre we take out children to those centres (Elder, Wammako LGA).

Whether all Children are taken to the Vaccination Centres

The vaccination centres in Sokoto usually include the hospital, schools, Islamic schools or even the *almajiri tsangaya* schools: as well as the king or district heads palace and sometimes such vaccination exercises are conducted on a house-to-house basis. A chief in Kware revealed that:

We take them several places, they can say we should meet at schools, or for example, we that teaches at Islamic Schools, they can meet us there and they will inject them and also, we take them to hospital and also, they can say it would be in the king palace (Religious Leader, Kware LGA).

In the view of another parent, he noted that:

It can be house by house or hospital they are all included. It depends, there are times when the government needs it to be done in the centre and there are times when the government will say it is house by house (A father of under-five child, Kware LGA)

To buttress further, the vaccination exercise in the state is mostly organized by the government to cover a house-to-house basis, a participant was quoted as saying:

When they include it, the government will say this one is for the house-to-house, meaning this group will do it house by house, while if it is for the hospital, people will go to the hospital to do it. There is one that they do in the king's palace and they will do it there or schools and they will do it there,

they will do it successfully (A father of under-five child, Bodinga LGA).

Gender and Age of Children taken for Vaccination

Most stakeholders in Sokoto state are not selective in terms of sex or age of children to be vaccinated, parents usually avail all children of vaccination services especially children of five years and below. An elderly woman in Kware LGA revealed that:

Everyone, both male and female, all of them since we know it is important, including us. Just recent they say it is important for people who gave birth, especially for those who were affected with eclampsia during giving birth, I think Five years and below (Elderly woman, Kware LGA).

Whether Vaccination is voluntary or compulsory

Vaccination exercise in Sokoto state is usually not compulsory but based on a voluntary exercise, when a parent chooses not to avail his child for vaccination, the vaccination usually enlightens such parent on the importance of the vaccine to the child and if there is resistance, the vaccination team will move to the next house. A male couple in Kware LGA noted that:

It is not compulsory, if you don't want to know how to dodge it and you leave it if you are not interested, it is not compulsory. All diseases are from God but you can get well (Husband, Kware LGA).

Furthermore, parents who usually resist health workers vaccinating their children are sometimes convinced by fellow community members or the district head of the environment. A district head of Kwacciya revealed that:

Some accept it voluntary and there are some that we have to advise up to the time they will accept it. It is not compulsory, some will even ask why you did not allow your children to be vaccinated, do you know its benefit, tell him its benefit and importance and then he will accept by the time he accepted it at the end when one was vaccinated maybe today, tomorrow or even the day after tomorrow when someone comes and he will

say what is the solution he wants that thing to him (Hakimi Kwacciya)

An elderly woman in Kware LGA further revealed that:

No, it is not, it is in our consent. When they said, they are doing it we go (An elderly woman, Kware LGA).

Some parents even alleged to be acquitted with the benefits of the vaccination hesitated on the need to make the vaccination services compulsory. A father of under-five child in Kware LGA was of the view that:

We already know its benefits so there is no need to make it compulsory (A father of under-five child, Kware LGA)

Giving incentives to children or parents during Vaccination

Findings from the survey discovered that incentives are sometimes given to children to attract their attention towards receiving the vaccines, this incentive is usually in form of biscuits, candy sweets and chocolates alike which draws the attention of children, it should be noted that vaccination is usually given only with parental consent as children are not vaccinated randomly on the street. In addition to the above, some parents usually complain of the side effect of the vaccination manifesting as a headache which health workers usually give paracetamol to be given to the child after administering the vaccine. According to an Elderly woman in Kware LGA:

They don't give anything, we used to say that when done to a child, he will have a fever and they are complaining that why we don't give him paracetamol, but now that thing has passed, every time they do it, we will buy paracetamol for the child of he was attacked by fever because of the pain of the injection (Elderly woman, Kware LGA).

Stakeholders further lamented that gifts do not attract them to take their children for vaccination services but rather usually avail their children of such services as a result of the knowledge they have and the importance of the vaccination services to the health of the children in the later years. According to a father of an under-five child:

To our tradition, if there are no gifts, or there are gifts we used to take our children for vaccination because of its importance, we know that is why to take our children whether there are sweet that they used to give or chewing gum and so on, it is not because of them (A father of under-five child, Bodinga).

To this end, findings from the study discovered that in some communities, incentives had to be given to convince some parents to allow their children to be vaccinated and to also attract the attention of children to willingly take the vaccine, furthermore, some children even sneak without prior knowledge of their parents to the district head palace to take vaccines to also get the incentives that are being shared.

Summary of Major Findings

Respondents demonstrate knowledge of the meaning of vaccination. Various types of vaccines identified by respondents include polio, eclampsia, measles, malaria, BCG, polio, *Ado*, *Painter*, hepatitis, meningitis, chickenpox and whooping cough. Health personnel added other vaccines like OPD zero, HP, and Hepatitis B for liver disease. The duration of vaccination services in Sokoto depends on the individual expected to be vaccinated and the type of vaccine to be given at a particular moment in time. Vaccination is conducted in various centres and locations which include the Hospitals, dispensaries and primary healthcare centres, schools, traditional palaces of district heads in the LGAs or village heads as well as religious centres. In addition to house-to-house vaccination exercises on a timely basis or when it is deemed necessary, usually conducted on a monthly or quarterly basis. Traditional rulers positively influence the vaccination exercise in Sokoto as they serve as frontrunners in calling the attention of the people towards vaccination services. Injection is the major vaccination method in the State as most women and children are usually injected with the vaccine in the hand. In addition to drops in the mouth used in vaccinating infants and children and tablets often issued to older adults. All vaccines are administered on the various parts of the body depending on the type of vaccine. The age of children usually vaccinated is between infancy to five years of age. As the child grows

up to 5 years of age, the child is usually vaccinated against different diseases on a timely basis. That there exists a traditional ideology of asking a child to touch his ear, if he executes such, he will not be vaccinated.

People have good attitude towards vaccination services in the study area as vaccinations are considered having huge importance to children in Sokoto, thus most of the stakeholders do not wait for enforcement by the traditional/district head before availing their children of vaccination. Although, various misconceptions were identified on vaccination in Sokoto State as some parents feel that vaccination poses a problem in the children's later lives.

Conclusion

This study unravelled the peoples' level of knowledge of vaccination services and vaccine preventable diseases at grassroots areas of Sokoto state, nature of response and acceptance of vaccination among the people and how they present their children for vaccination. Adequate knowledge of vaccination services, the vaccines and childhood preventable diseases have been demonstrated by the people in the study area. Despite some challenges in access to health care facilities in some hard to reach areas, inadequacy of health care personnel and some perceived misconceptions about the vaccines and orthodox medicine, parents cooperate with the medical personnel in administering the vaccines and often take them to the nearest health care centre for vaccination. In light of this, the study concluded that there exists a positive attitude in people's practice towards vaccination services in Sokoto, due to the unwavering behaviour displayed in availing their children of vaccination services, even though there are a few stakeholders who share a fallacy that vaccination limited birth rate in the later years of children vaccinated as infants but unravelled and acknowledged improvement in the health of children, unlike years back when vaccination services were wholeheartedly rejected.

Recommendations

Based on the findings of the research, the study recommends further efforts by all stake holders (State and non-state actors) in ensuring our society is free

from all childhood preventable diseases. These recommendations should be integrated to serve as intervention towards most of the problems and challenges pervading individuals, especially children in the study area.

1. There is need for a heart-to-heart talk with pregnant women by convincing them of the need and importance of utilizing ante-natal, neo-natal and postnatal health care services for the safety of the woman and her child. In addition to the aforementioned, engagement with health professionals will help identify the possible threat to delivery and put in place to mitigate strategies to avoid the challenges.
2. To achieve the overall objective of integrating the opinions and perspectives of stakeholders to metamorphose into an objective reality, state and non-state actors like the traditional rulers, civil society organizations and the media need to have conjoined effort in educating and enlightening the people on the need to have safe and resounding health in the population.
3. Even though stakeholders utilize traditional or orthodox and religious health services, a visit to conventional and modern health care services is imperative.
4. There should be an expansion of health care centres and facilities to be sufficient, effective and affordable for the whole population.
5. There should be an increase in the supply of drugs, recruitment of more health personnel as well as wide coverage to inaccessible areas, and continuous sensitization and enlightenment campaigns.
6. Drugs for other diseases should also be subsidised, more especially in low socioeconomic communities.
7. A strong alliance with traditional leaders and the religious clerics is needed for more sensitisation of the populace on accepting vaccination services wholeheartedly

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