

# THE OUTBREAK OF DIPHTHERIA IN NIGERIA: The Outcome of the Nation's Low Immunization Coverage

<sup>1</sup>OKOEBOR Rita

<sup>1</sup> Department of Sociology, Edo State College of Nursing Sciences, Benin City, Edo State, Nigeria.

✉: ritaokoebor@yahoo.com (+234)08033903424)

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## Abstract:

The outbreak of diphtheria disease in Nigeria has claimed the lives of many Nigerians, and the country has the highest number of children who are not immunized. This study intends to investigate the outbreak of diphtheria disease in Kano State and the immunization practices of its citizens. A qualitative research method with the use of Focus group discussion was adopted in this study. Fifty-six homogeneous focus group discussions were conducted among four target populations: health workers, pregnant women, nursing mothers, and women with young children. Results revealed the outbreak of diphtheria, inadequacy of the health care system, non-utilization of modern health care services, poor immunization coverage and fear of the safety of immunization and vaccination by the inhabitants of the study communities. It was recommended that an adequate, well-equipped, and functional healthcare system with a highly motivated health workforce across the 774 local government areas in Nigeria be provided. Full-scale immunization and vaccination programs should be provided across villages and communities in the entire country, and citizens of Nigeria should be adequately sensitized to the signs and symptoms of immunization and vaccine-related diseases.

**Keywords:** Immunization-coverage; immunization-practice; outbreak-of-diphtheria; safety; sensitization; utilization-of-healthcare.

## 1. Introduction

Diphtheria is a severe bacterial infection affecting a person's nose, throat, and skin. *Corynebacterium* species cause it (International Federation of Red Cross and Red Crescent Societies, 2023; Nigeria Center for Disease Control, NCDC, 2023). Persons who are at significant risk of contracting diphtheria are children and those who have not received any or only a single dose of the diphtheria vaccine. People who live in densely populated and unclean environments are also at risk of contracting the disease. Healthcare professionals, hospital frontline workers, and anyone who has come in contact with suspected or confirmed diphtheria cases are also at risk of contracting diphtheria (International Federation of Red Cross and Red Crescent Societies, 2023). There has been an alarming increase in diphtheria in Nigeria since the early parts of 2023. The condition worsened in March 2023, and Kano State had the highest number of cases. The suspected cases reported increased from 136 cases in the first week of 2023 to 253 cases by the fourth (International Federation of Red Cross and Red Crescent Societies, 2023; NCDC, 2023).

Nigeria Center for Disease Control (NCDC) recorded an increase in the disease in the first four weeks of its outbreak. NCDC has recorded a total of 733 suspected cases, including 89 deaths and children between the ages of 5 years and 18 years were the most afflicted groups in just two months of the

outbreak of the disease. The overall case fatality rate in 2023 stood at 12.3% (International Federation of Red Cross and Red Crescent Societies, 2023; NCDC, 2023). According to the World Health Organization (WHO), report from 20 states of Nigeria showed that suspected cases of diphtheria in the country had increased, with the majority of cases reported from Kano (74%), Yobe (12%), Katsina (6%), Sokoto (2%), Enugu (1%), Ogun (1%), Osun (1%), Kaduna (1%), Lagos (1%), and Zamfara (1%) states. Osun and Lagos States had high cases of zero-dose children who are at risk of diphtheria. This outbreak has been labelled as one of Nigeria's most severe outbreaks of diphtheria in recent years (WHO, 2023 and NCDC, 2023).

The recent diphtheria outbreak appears to be due to low vaccination. Based on the latest information from NCDC the diphtheria outbreak in Nigeria is a result of low vaccination. For NCDC, only 27 (12.5%) of the confirmed cases were fully vaccinated with a diphtheria toxin-containing vaccine. Lack of testing capacity, low testing, and accessibility challenges contributed to an increased rate of the disease (International Federation of Red Cross and Red Crescent Societies, 2023; NCDC, 2023). Due to insufficient testing equipment in the country, the cases of diphtheria were not diagnosed on time and reported comprehensively, thereby limiting the response team from getting regular updates on suspected and confirmed cases of diphtheria. Many sample results returned inconclusive, causing more delay in testing and publishing of epidemiological

results. According to the NCDC, many staff must receive adequate training to test for diphtheria (NCDC (2023)).

Nigeria contributes 30% of the global number of unimmunized children under five, and Kano State has the highest number of unimmunized children, 8% of the total 30%. Government efforts to strengthen routine immunization coverage and reduce under-five mortality have had limited success over the last decade (DREF Application, 2023; Ilezezi, 2023). In 2019, the country was at the top of the WHO list of countries with the highest under-five deaths (WHO, 2023; Ihejirika, 2023). The most recent National Demographic and Health Survey also reported a very high under-five mortality rate of 132 per 1,000 live births -- far higher than the target of 25 per 1,000 live births goal set out in the Sustainable Development Goal of the country (Ihejirika, 2023; Agrawal, et al., 2023).

Nigeria's national average of immunization coverage is 33% (DREF Application, 2023; Ilezezi, 2023). Immunization coverage varies dramatically across the country's different states, but improvements are needed in every state. All states fall below the global goal of 90% coverage for three doses of the pentavalent vaccine (WHO, 2017; Ophori et al., 2014; Save-the-children, 2022).

A study conducted by the National Bureau of Statistics (NBS) in collaboration with the State Bureau of Statistics in Kano and Lagos revealed that there are inequalities in immunization coverage with children of younger and less educated parents or caretakers, the children of the categories mentioned above are less likely to be immunized or vaccinated (Development Research Centre, 2022).

Kuravi, identified the following factors responsible for the low rate of immunization coverage in Nigeria: ineffective and deteriorated primary healthcare services are highly due to a lack of investment in personnel, facilities and drugs, as well as poor management of existing resources. The second is low government commitment towards ensuring the fulfilment of the Extended Program on Immunization (EPI) policy, as well as over-centralization in the administration of EPI at the federal level of governance and neglect at the state and local government levels. The third is the need for more confidence and trust in Nigerians in public health services, resulting from poor facilities and low delivery standards

(Kuravi, 2022). The problems mentioned above have been exacerbated by vertical interventions undertaken by international agencies, which undermined the capacity of the local service providers to implement sustainable programs (Harvey, 2019; United Nations International Children and Educational Fund, (UNICEF), 2018; Njoku, 2015).

The greatest challenge towards the acceptance of immunization and vaccination in Nigeria is religious beliefs, especially among northern Nigerian Muslims. Studies have shown that the Muslim north has the lowest rate of immunization coverage in the country, with 6% being the lowest (northwest) while the highest is 44.6% (southeast) (Ophori et al., 2017). Many people in the Muslim northern states believe that the activities of health workers on routine immunization are fueled by Western countries that are determined to impose population control on local Muslim communities (Ophori et al., 2017; Save-the-children, 2022)

At the family/community level, there is a low demand for immunization due to a lack of understanding of its value and incorrect knowledge of the preventive role of routine immunization, which is also widespread in Nigeria (Ophori et al., 2017; Save-the-children, 2022). Many decision-makers and caregivers reject routine immunization due to rumour, incorrect information, and fear (Ophori et al., 2017). It can be challenging to convince parents to allow their children to get vaccinated due to traditional beliefs and fears around safety (Ophori et al., 2017).

Another challenge to immunization coverage in Nigeria is a shortage of vaccines and immunization supplies (Ophori et al., 2017). The National Program on Immunization (NPI) has, as its first mandate to support the states and local governments in their immunization programs by supplying vaccines, needles and syringes, cold chain equipment and other things and logistics as may be required for those programs (Njoku, 2015; Adebowale, 2022). However, the supply of vaccines has always been problematic for Nigeria, primarily because funds are insufficient and not released on time. Studies revealed that in 2001, the whole amount for immunisation was approved. Still, only 61% was released; the late release of funds meant that the vaccine had to be bought on the spot market at inflated prices. 2002, no funds were released, and in 2003, the funding cycle only reached the stage of getting the budget approved. NPI did not supply any syringes for Rubella infection in 2005, and the safety boxes provided were limited in quantity (WHO, 2017; Ophori et al. 2017; UNICEF 2018; Olayinka, 2020).

It was against the backdrops mentioned above that this study intended to investigate the outbreak of diphtheria diseases in Kano State and the immunization practice of its citizens. Specifically, the study was designed to investigate the outbreak of diphtheria in Kano State, describe the practice of immunization in Kano State and explain the factors influencing immunization practice in Kano State.

## 2. METHODOLOGY

### 2.1 Research Design

A qualitative research method, Focus Group Discussion (FGD), was adopted for this study.

### 2.2 Population and Sampling

The population of this study comprised of health workers, specifically nurses, pregnant women, nursing mothers and women with children not above five years of age from fourteen local government areas out of the forty-four in Kano State, namely Nassarawa local government area with a population of 596, 411, Dala local government area with a population of 418,759, Kano Municipal local government area with a population of 371, 243, Ungogo with a population of 365,737, Gezawa with a population of 282,328, Kiru with a population of 267,168, Dawakin Tofa with a population of 246,177, Bebeji with a population of 191, 916, Gwarzo with a population of 183,624, Bunkure with a population of 174,467, Kabo with a population of 153, 158, Madobi with a population of 137, 685, Kunchi with a population of 110, 170 and Tofa with a population of 98,603.

The focus group discussions were conducted in 28 communities, two communities from each local government area. The communities were purposively selected due to their

connection with the Kano State Community Development Project for Women, making it very convenient for the author and her research assistants to select participants for the focus group discussion.

The author and her team had competency in practical probing questions, real-time note-taking strategies, real-time oral and written translation word-for-word translation, and recorded data transcription, enabling them to conduct the focus group discussion effectively.

### 2.3 Method of Data Collection

The participants were defined according to their role and decision-making capability regarding health-related issues for themselves, their family, and their communities.

Fifty-six homogeneous focus group discussions were conducted from the selected communities, and each group comprised six participants, a total of 336 participants.

Questions were put forward to the participants to discuss rotationally by the research team members who acted as moderators of each FGD. Targeted probing questions based on participants' comments allowed for a participant-directed discussion. Each participant was given ten minutes to give her viewpoint on the questions asked. The moderator ensured that no participant took control of the debate by ensuring that each participant did not exceed the limited time.

The participants' responses were tape-recorded with their permission, and notes were also taken.

The purpose of the discussion was explained to the participants before the commencement of FGDs. Distractions were minimized to ensure the free flow of the talks by reminding the participants of the need for them to be quiet and drift away from the debate.

Due to the stigma of illiteracy, oral consent was collected in the participants' native language of Hausa/ Fulani for those who did not understand English.

### 2.4 Method of Data Analysis

Content analysis formed the theoretical approach of this study. It was chosen deliberately for two reasons: (1) the dearth of existing literature and theories within the context of interest and (2) the ultimate goal of describing and characterizing the phenomenon, in this case, the factors that influence immunization practice in the study area. Content analysis was crucial to the inductive data analysis approach, through which codes, categories, and themes were directly drawn from the data gathered in the field.

Transcripts from the 14 homogenous FGDs formed the basis of the content analysis of this study: five FGDs with nursing mothers, four with pregnant women, three with women with young children and two with nurses.

### 2.5 Validity and Reliability

Although there was no ethical committee in the local government areas where the study was conducted, ten senior health officials of the Kano State Ministry of Health, which comprised two consultants, three nurses, three epidemiologists and two administrative staff, approved the study after careful consideration of the objectives of the study, the study methodology, particularly the research instrument before data collection and participant recruitment.

Before conducting FGDs with community members, four key informants' interviews (KIIs) were conducted with a nursing, pregnant woman, a nursing mother and a woman with young children in a community in Nassarawa local government area to provide the author and her team with information on health-related issues and immunization practices with the local government area. The key informants' interviews also gave researchers insight into immunization-related practices in the Nassarawa local government area.

### 2.6 Ethical Statement

This study had yet to be submitted to another journal for review and possible publishing. The researcher can guarantee the trustworthiness of this study. Data used for this study will be provided if anyone needs them. All procedures in the study involved human participants and were under the Ethical Standards of the Research Committee of the Nigerian Sociological Association. Although there were no ethical committee in the local government areas where the study was conducted, ten senior health officials of the Kano State Ministry of Health, which comprised two consultants, three nurses, three epidemiologist officers and two administrative staff, approved the study after careful consideration of the objectives of the study, the study methodology, particularly the research instrument. The traditional rulers of the respective local government areas where the study was conducted approved the study and acted as gate-keepers (they liaised between the researcher and her team members and the local indigenes) to the selected communities in their local government areas. The participants for this study were not induced financially, cajoled or coerced to participate in the study. The confidentiality of the participant's responses was maintained; the researcher ensured that the identity and information given by the participants were not disclosed to third parties. The purpose of the study was explained to the participants before the commencement of the interviews. There is no violation of any existing copyright.

## 3. RESULTS

### 3.1 An Overview of Findings of the Study

The discussions around the outbreak of diseases and immunisation practices arose organically from the following open-ended questions: "Have you or anyone you know experienced a combination of these symptoms recently: very high temperature, sore throat, swollen gland around the neck, difficulty in breathing and swallowing and thick grey-white coating around the throat, nose and tongue?" "Describe your practice of immunization. What factors influence your practice of immunization?" The questions aimed to probe the immunization practices and the factors influencing them. Several themes and subthemes emerged that characterized immunization practices in the study communities according to *whether* they engaged in immunization and *what* factors influenced them. The themes developed during analysis were presented accordingly: (1) Outbreak of diphtheria, (2) Non-utilization of hospitals, (3) Inadequate health care system, (4) Low immunization coverage, (5) Fear of the safety of immunization.

### 3.2 Outbreak of Diphtheria

The outbreak of disease conditions that could be described as

diphtheria was pervasive across participant groups and the studied communities. Symptoms such as high temperature, sore throat, swollen glands in the neck region, difficulty breathing and swallowing, and a thick grey-white coating covering the throat, nose, and tongue were experienced by most participants or someone they knew recently.

The focus group discussions across studied groups attested to the fact that in recent times, across the entire Kano State, they and the people they knew had been sick with feverish conditions that came with other health challenges, such as being unable to eat food because of sore throat or difficulty of food going through their throats and they experienced difficulty in breathing.

Two nursing mothers' focus group members attested to the fact that the recent outbreak of the disease in the state was highly contagious because it sped so fast among people. A woman in her mid-twenty specifically said, "My own experience of this disease outbreak in my household was first experienced in my husband, and just a few days after my husband presented the symptoms, three of my children also manifested similar symptoms."

The two health workers' FDGs attested that there was an outbreak of Diphtheria disease in the studied communities, the entire Kano State and some other states. They said the laboratory test conducted on patients who visited their healthcare units revealed that they were infected with the disease.

### *3.3 Non-utilization of Hospitals*

The non-utilization of hospitals was pervasive across participant groups. The use of an alternative healthcare system was the general practice in the studied communities. Alternative health care systems were measures which the people engaged in to get health and wellness for themselves and their children. They included the use of different kinds of herbs to cure various diseases and consulting religious priests for divination and ritual practices for the general good and well-being.

The focus group discussions across all the groups pointed to the general practice of using herbs when there were cases of sickness. The herbs mentioned by the participants include Dogoyaro (a popular herb known for its efficacy in treating malaria), Lemon grass, sunflower and a more comprehensive list of herbs used for treating dysentery, diarrhoea, nausea, cough, congested chest and difficulty in breathing, infertility, mental disorder and injuries were also mentioned. They said no health condition was experienced among the people in the studied areas who did not have herbal cures. Even those caused by preternatural forces were being cared for by spiritual healers through divination and symbolic rituals.

Focus Group Discussions also revealed that pregnancies and childbirths among the inhabitants of the studied areas involved the non-utilization of modern healthcare services. When asked the reasons for the practice, the participants explained that matters relating to pregnancy and childbirth had, from time immemorial, been handled by traditional skilled birth attendants who they believed knew about pregnancy and childbirth. These conventional birth attendants had knowledge of herbs for the different stages of pregnancy that they administered to pregnant women and during the period of childbirth, and they helped women deliver their babies.

Participants from women with young children FDGs explained that older women who had given birth to several numbers of children had gained experience from each pregnancy and childbirth they had handled. They use such knowledge and experience to help younger women in their community. They said every pregnancy and the attendant birth comes with its own unique experience, so women who had handled several pregnancies and births gain experience, which put them in a better position to assist less experienced women, most of whom deliver their babies in their homes. When the participants were asked if the non-utilization of modern health care services for antenatal and neonatal periods has negative health consequences, the FDGs explained that they do not think that the utilization of the traditional health care system comes with any health consequences. They, however, said there were cases where some women experienced complications in pregnancies and childbirths, which may result in the deaths either of babies or mothers or even both mothers and babies. Still, they do not attribute these complications to traditional healthcare services. Instead, these could be due to fate or activities of evil forces. They further said that should these pregnancies and births be attended to in the hospitals, the complications would still be experienced.

### *3.4 Inadequate healthcare system*

An inadequate healthcare system was pervasive in all the communities studied. When asked if they considered health care services in the studied communities adequate, the participants across all the FDGs were unanimous in their opinions. They explained that the health care system was inadequate or almost absent. Only some communities with modern health care units were adequately equipped as they lacked significant facilities and equipment to function as health care systems. There was also a shortage of workforce, particularly doctors and nurses. The few health workers in these healthcare units only come to work occasionally. Two pregnant women FDGs said we did not get to meet health care workers in these hospitals each time we visited; we were always told that doctors and nurses were not around to attend to us. We had no other option than to return to our homes and utilize herbal medicine. Two health workers FDGs explained that the health care system was highly inadequate in the studied local government areas and Kano State. The few available healthcare units needed better equipped; we found it challenging to carry out our work effectively because of a lack of hospital equipment. We were also overworked because we needed more health workers. Three nursing mothers FDGs and one pregnant FDG said the few hospitals available in the state were not close to them as they had to travel long distances before getting there. They said they passed through a great deal of stress before they could access health care. Lack of proximity to the health care system has often resulted in casualties as patients whose health conditions require emergency care died on the way to the hospital. This situation would have been avoided if the health system had been closer to the people.

### *3.5 Low Immunization Coverage*

The general notion of participants' FDGs was that when asked to describe the immunisation coverage in the studied communities, FDGs across all participant groups revealed low

immunization coverage in the studied communities. They attributed the situation to factors such as lack of government provision for health and the general welfare of its citizens, poor attitude to work by health workers, difficult terrain of most communities across the local government areas in the state and cultural restrictions of the people which made it difficult for them to get themselves and their family members vaccinated. Six FDG participants explained that the government's lack of interest and attention in the welfare of the citizens and those related to health matters had resulted in their lack of investment of the general resources of the people on things that would benefit them. Instead, the government used these resources to pursue their interest. When the government failed to invest in people's health, provisions would not be made for immunization and vaccination programs, which explains the reason behind the low coverage of immunization in most communities across all the local government areas in the state. One nursing mother said, 'The health of the citizens was never the concern of the government and, as such, did not deserve government attention.'

Two pregnant women FDGs and three nursing mothers FDGs said health workers' poor attitude to work was a factor that strongly hinders immunization coverage across communities in Kano State. Health workers were often absent from their workplace; some came late, and some were extremely rude to patients. One nursing mother said that even when there was a public call for us to immunize and vaccinate our children, when we went to the proposed location, we did not find the health workers there, they did not turn up, and this repeated act had discouraged many people for heeding to a public call for immunization and vaccination.'

Two pregnant women FDGs, two nursing mothers FDGs and two health workers FDGs attributed low immunization coverage in the studied communities to the difficult terrain of the communities, which were primarily hilly and challenging for the health workers and the inhabitants to navigate. One health worker said, 'The hilly nature of most of the communities, especially the rural communities, made it difficult for health workers to go there for immunisation and vaccination. We could hardly climb those hills to reach those people, so we abandoned them.'

Two health workers' FDGs attributed the low immunization coverage to the cultural/religious beliefs of the people in the studied communities, which made it difficult for them to utilize the modern healthcare system. They explained that the patriarchal nature of the people put women in a subordinated position in terms of decision-making matters within the family and the general society. Men made Important family decisions, even decisions relating to the health of the family members. Utilization of health care and immunization were among those decisions made by men. Permission to utilise health care and immunization must come from a woman's husband before she can engage in them, and most times, men did not grant their wives such permission, hence their non-utilization of health care. Two health workers unanimously said, 'no matter how we explain or describe the benefits of immunization and vaccination to women, they would not utilize the hospital nor would they come for immunization if their husbands did not permit them to.'

### 3.6 Fear of the safety of Immunization

The fear of immunization and vaccination safety was pervasive across the groups and studied communities. From the perspective of the inhabitants of the studied communities, except the health workers, the safety of immunization and vaccination was a primary concern and factor to be considered severe. Across all the FDGs of pregnant women and Nursing mothers, the fear of the safety of immunization and vaccination existed. Four nursing mothers' FDGs explained that the fear of the safety of immunization and vaccination was not unfounded. There were often cases whereby babies, young children and even adults alike experienced adverse reactions in their bodies after being immunized and vaccinated. In some cases, the reactions were so severe that they could lead to hospitalization and even death. Each time there was a public campaign for immunization and vaccination, health workers only talked about the supposed benefits. They would never say the possible side effects of such a vaccine. When the perceived or actual adverse effects outweigh the benefits of being immunised and vaccinated, people, particularly mothers, would instead not go or take their children out to get them immunized or vaccinated. The above reasons explain why many people did not get immunized and vaccinated. Two health workers' FDGs explained that the fear of the safety of immunization and vaccination had resulted in low immunization coverage in the studied communities. They said the fear of the safety of immunization that the inhabitants of the study communities had was unfounded, a mere perception based on rumour, and not actual or real complications that they experienced from being immunized or vaccinated. As health workers, we sensitized people to the importance of immunization and vaccination. Immunisation of children helped to prevent deadly diseases. Children who were given the complete immunization were healthy and had immunity against fatal diseases. We endeavoured to sensitize mothers on the need to get themselves vaccinated and immunize their children.

## 4. DISCUSSION

This study's findings revealed an outbreak of diphtheria and the inadequacy of healthcare services in the studied communities; few communities where healthcare systems were available were poorly equipped and poorly manned, and health workers had poor attitudes toward work. The study showed that there needed to be more utilisation of modern health care services, poor immunization coverage in the studied communities and fear of the safety of immunization and vaccination by the inhabitants of the study communities.

This study had the following limitations: of the forty-four local government areas in the Kano study, this study was conducted in fourteen local government areas and 28 communities. The sample size of 336 participants was considered minor, given that the population of Kano State was above 5 million. The lack of data on households by the National Population Commission, the institution saddled with the responsibility of data on the nation's population, made it impossible to select the population of this study randomly, hence the use of non-probability purposive sampling. Despite this study's limitations, the strength was that the issue under consideration was well explored and the findings were reliable.

The results of the study showed that in recent times in the

studied communities, there had been an outbreak of diphtheria; the participants or those they knew had in recent times experienced a combination of the symptoms that appeared to be those of diphtheria diseases, namely: fever, sore throat, difficulty in breathing and swallowing, swollen gland around the neck, thick white-gray coating around the nose, throat and tongue. The findings of this study were in collaboration with NCNC (2023) and Ihejerika (2023).

The results of this study revealed that non-utilization of modern health services and the reliance on traditional herbs for health care were the general practices of the inhabitants of the studied communities. The communities' inhabitants used several herbs to treat different diseases, injuries, and mental disorderliness. Traditional birth attendants and older, experienced women attended to pregnancies and childbirths. Complications and casualties that were experienced in the course of the use of an unorthodox system of health care were not viewed as a failure of unorthodox practice. Instead, they were considered as fate or activities of preternatural forces. The above findings collaborated with the works of Ophori et al., (2017); Save-the-children (2022) and UNICEF (2018).

The study revealed that modern healthcare systems needed to be improved in the study areas. Results showed that modern health care systems were not available in some communities and few communities where health care systems were available needed to be better equipped and better manned. The poor attitude of health workers toward work was also revealed in the study. The study showed that the inhabitants travel long distances to access the available health care services, a situation that resulted in casualties in cases of sick people who needed emergency medical services, as they often die on the way before reaching the hospital. These findings were in agreement with those of WHO (2018), Development Research Center (2022), Kurayi (2022) and Harvey, (2019).

The findings of this study revealed that immunization coverage was low. Results showed that the main factor responsible for the low immunization coverage in the study areas was the government's lack of interest in the welfare of the citizens in general and in health care in particular. This has resulted in a need for more funds for investment in the healthcare system. Another factor responsible for poor immunization coverage was the inaccessible terrain of the studied communities, resulting in health workers needing help to cover the areas during routine immunization. Poor attitude toward work by health workers was also a factor that contributed to poor immunization coverage. Some health workers were absent from their duties; some were rude to patients, eventually discouraging patients from utilizing the health care system. The culture of patriarchy, where men were in charge of important decisions within the family cycle and in the larger society, had placed women in subordinated positions. In the studied communities, men were the ones that make important decisions within the family cycle, including issues relating to the health of the family members. Presenting children for immunization by mothers was on the permission and approval of husbands. When men did not approve of immunising their children, the women would not take the children for immunization. These findings aligned with the works of Ophori et al. (2017), UNICEF (2018), Adebowale

(2022) and Olayinka (2020).

The findings of this study also revealed fear of the safety of immunization. Misconceptions surrounding the safety of immunization and vaccination had militated against the practice for a long time and accounted for the low coverage of immunization and vaccination in Nigeria. The results revealed that the health workers in the studied communities asserted that immunization and vaccination were safe with little or no side effects and should not be feared. However, majority of the participants thought that immunization had as many negative effects as the supposed benefits that had been for years propagated, as majority of the participants in this study had first-hand experience of the side effects of immunization and vaccination on their children and for them, their fears were not unfounded as claimed by health workers instead they were real. The above findings aligned with Ophori et al., (2017) and Njoku (2015) works.

The findings of this study revealed that complete immunization and vaccination were far from being achieved in Nigeria. For Nigerians to be able to be free from vaccine-preventable diseases and achieve the millennium development goal for health, the following recommendations should be given attention by policymakers in Nigeria:

1. An adequate, well-equipped, functional health care system with a highly motivated health workforce is needed across the 774 local government areas in Nigeria.
2. Full-scale immunization and vaccination programs should be provided across villages and communities throughout the country.
3. The citizens of Nigeria should be properly sensitized to the signs and symptoms of immunization and vaccine-related diseases.
4. There should be proper sensitization of the citizens of Nigeria on the importance of immunization and vaccination by health workers across all the tiers of the healthcare system in the country.
5. There should be provision of roads and bridges to aid easy mobility of the people to access health care.

## 5. CONCLUSION

The findings of this revealed that the outbreak of diphtheria in Kano State is an indication that Nigeria was yet to achieve the goal of eradicating immunization and vaccine-related diseases. Inadequate health care system, non-utilization of orthodox system of health care, low immunization coverage, non-proximity of the health care system, inaccessible terrain, poor attitude to work by health workers and misconceptions about the safety of immunization and vaccines were among the many challenges that Nigeria and Nigerians were grappling with as shown in the study. The cultural practice of patriarchy that puts men in charge of decision-making, which includes decisions regarding health-related matters within the family unit as revealed in the study, acted as an impediment to the utilization of the health care system and the non-immunizing and vaccinating of children, since women would not utilize health care for themselves and their children nor will they get their children immunized or vaccinated except their husbands permitted them.

## REFERENCES

- [1] Adebowale, N.T. (2023). 64% of children in Nigeria not immunized *Premium Times* Available:<https://www.premiumtimesng.com/news/top-news/551530-64-of-children-in-nigeria-not-immunised-report.html>S.
- [2] Agrawal, R., Murmu, S., Kanunoo, R. and Pati, S. (2023). Nigeria on alert: Diphtheria outbreaks require urgent action: - a critical look at the current situation and potential solutions *PCM Pubmed Central* 23(52), 101100 PMID: PMC9958346 doi: 10.1016/j.nmni.2023.101100 :<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9958346/>
- [3] Centers for Disease Control and Prevention. (2023). *An update of diphtheria outbreak in Nigeria*. Available from:<https://ncdc.gov.ng/diseases/sitreps/?cat=18&name=An%20Update%20of%20Diphtheria%20Outbreak%20in%20Nigeria>
- [4] Development Research Project Center (2022, January 20.) Policy brief on routine immunization in Kano State. *Development Research Project Center Magazine* <https://drpcngr.org/policy-brief-on-routine-immunization-in-kano-state>
- [5] DREF Application: (April, 2023). Nigeria-Diphtheria Outbreak – DREF Application (MDRNG037). Available from: <https://reliefweb.int/report/nigeria/nigeria-diphtheria-outbreak-dref-application-mdrng037>
- [6] Harvey, J. (2019). Exploring factors influencing immunization in Nigeria: A mixed methods study. *Public Health* 20(7), 1-19, <https://doi.org/10.3389/fpubh.2019.00392> <https://www.frontiersin.org/articles/10.3389/fpubh.2019.00392/full>
- [7] Harvey, J. (2019). Exploring factors influencing immunization in Nigeria: A mixed methods study. *Public Health* 20(7), 1-19, <https://doi.org/10.3389/fpubh.2019.00392> <https://www.frontiersin.org/articles/10.3389/fpubh.2019.00392/full>
- [8] Ihejirika P.I. (2023, February 15). Diphtheria kills 61 in Kano. *Leadership* <https://leadership.ng/just-in-diphtheria-kills-61-in-kano/>
- [9] Ileyemi, M. (2023, January 24). Nigeria records 123 infections and 38 deaths of Diphtheria. *Premium Times* <https://www.premiumtimesng.com/news/headlines/577477-diphtheria-nigeria-records-123-infections-38-deaths.html>
- [10] International Federation of Red Cross and Red Crescent Societies (2023, June 14). Diphtheria Outbreak in Nigeria. *Nigeria-Diphtheria-Outbreak-Dref-Application-MDRNG037* <https://reliefweb.int/report/Nigeria/nigeria-diphtheria-outbreak-dref-applicationmdrng037#:text=There%20has%20been%20an%20alarming%20further%20increase%20of%20the%20disease>.
- [11] Kurayi, M. (2022). Zero- or missed-dose children in Nigeria: Contributing factors and interventions to overcome immunization service delivery challenges, *Vaccine* 40(37), 5433-5444 <https://doi.org/10.1016/j.vaccine.2022.07.058> Get rights and content.
- [12] Njoku, C.A. (2015). Immunization and civil society in Nigeria: a challenge of scale. [https://www.gavi.org/vaccineswork/immunisation-and-civil-society-in-nigeria-a?gclid=CjwKCAjw04yjBhApEiwAJcvNoe0LPvpLreNwmPl6WZOveOVBuHILhvnLH4-dUXmi1g4rP0ufBZ8V1RoCkK8QAvD\\_BwE](https://www.gavi.org/vaccineswork/immunisation-and-civil-society-in-nigeria-a?gclid=CjwKCAjw04yjBhApEiwAJcvNoe0LPvpLreNwmPl6WZOveOVBuHILhvnLH4-dUXmi1g4rP0ufBZ8V1RoCkK8QAvD_BwE)
- [13] Olayinka, A.O. and Newell, M.L. (2020). The role of place of residency in childhood immunization coverage in Nigeria: analysis of data from three DHS rounds. *BMC Public Health* 20(123) <https://bmcpubhealth.biomedcentral.com/articles/10.1186/s12889-020-8170-6> [https://www.who.int/news-room/feature-stories/detail/how-do-vaccines-work?adgroupsurvey={adgroupsurvey}&gclid=CjwKCAjw04yjBhApEiwAJcvNoS1RVckl0CkUQ2DyTHr6RacyEHWHGkSyyCbCRUjt6BALX1kJZJAN7RoCRG4QAvD\\_BwE](https://www.who.int/news-room/feature-stories/detail/how-do-vaccines-work?adgroupsurvey={adgroupsurvey}&gclid=CjwKCAjw04yjBhApEiwAJcvNoS1RVckl0CkUQ2DyTHr6RacyEHWHGkSyyCbCRUjt6BALX1kJZJAN7RoCRG4QAvD_BwE)
- [14] Ophori, E.A., Musa, Y.T., Azih, A.V., Okojie, R. and Ikpo, P.E. (2014). Current Trends of immunization in Nigeria: perspective and challenges. *Trop Med Health* 42(2):, 67-75 PMID: PMC4139536 doi:10.214/tmh.2013-13
- [15] Save-the-children (2022, March 8). Scaling up routine immunization coverage in Nigeria. *Save-the-children Bulletin* <https://reliefweb.int/report/nigeria/scaling-routine-immunisation-coverage-nigeria>
- [16] World Health Organization (2017, April 7). Seventy-seven percent (77%) of children 12-23 months in Nigeria did not receive all routine immunization. *World Health Organization Bulletin* <https://www.afro.who.int/news/seventy-seven-percent-77-children-12-23-months-nigeria-did-not-receive-all-routine>.
- [17] World Health Organization. (January, 2023). Diphtheria outbreak in Lagos. *World Health Organization Bulletin* <https://www.afro.who.int/countries/nigeria/news/diphtheria-outbreak-response-lagos-state-sensitizes-communities-vaccine-efficacy>