Learning from experience: whys and wherefores of the polio non-compliance during *immunization-plus-days* in some high-risk wards in Bauchi Local Government Area, Nigeria

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Abstract

Poliomyelitis is a highly infectious viral disease that causes lower limb paralysis in young children. The incidence rate of the diseases has persisted in some part of northern Nigeria despite the national and global effort to eradicate it. The study aims to describe the factors associated with polio vaccination non-compliance by some parents/guardians of targeted children in five high-risk wards of the study area. The study adopts a cross sectional qualitative study, conducted from 2014-2015, to gain insights into the factors associated with non-compliance to polio vaccination in high-risk wards in Bauchi LGA, Nigeria. 450 non-compliant houses were randomly selected for the study. The in-depth interviews consisted of 36 fathers and 18 mothers, while the key note interviews involved 18 Muslim clerics and 18 prominent traditional rulers, using semi-structured questionnaire. The results of the study revealed frequency or too many rounds of vaccine administrations; misconception/myth about the vaccine, migration, and child absence during immunization as reasons for non-compliance. Other factors include negative perception regarding the health and immunity status of the children, religious beliefs, while some of the respondent refused for no clear reason. It is therefore, essential to adopt programs that would enhance vaccine compliance; by for example, developing effective polio vaccines that can be administered at fewer visits to communities. Also, efficient health education needs to be conducted to enlighten the at-risk population, including special strategies targeting internally displaced and migrant populations.

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Introduction

Poliomyelitis (Polio) is a highly infectious viral disease that is capable of causing total paralysis in a matter of hours. The virus entered the body through the mouth, and multiplies in the intestine and finally invades the nervous system.[1] Polio mainly affects young children and produces symptoms such as fever, fatigue, headache, vomiting, stiffness in the neck, pain in the limbs and paralysis.[2]

Epidemic of polio was first reported in many North America and European countries in the late 19th century, later polio became an epidemic across the globe.[3] According to the WHO reports, one in every 200 polio infections will lead to irreversible paralysis of the limbs, and 5 to 10% death as a result of immobilized breathing muscles.[4] As at year 2009, Nigeria had the highest burden of polio in the world. Wild poliovirus (WPV), which has been reported to be endemic in the Northern Nigeria has been shown to spread to other countries in the West Africa sub region.[5-7]

Although there is no cure for polio, it can be prevented through immunization with polio vaccine.[2] Despite efforts to immunize every child under 5 years of age in an effort to stamp-out poliomyelitis, many children are still not reached in some endemic countries. In Nigerian, strategies such as Immunization plus days (IPDs) which aims at interrupting the transmission of WPV while ensuring that every child between 0-59 months receives two drops

of a potent Oral Polio Vaccine (OPV) irrespective of their previous immunization status have, have been adopted since the inception of Supplemental Immunization Activities (SIAs), Although such interventions have recorded positive outcomes, they are not without challenges. Barriers commonly experienced in reaching children with oral polio vaccine (OPV) include; weak public infrastructure and health systems, insecurity, large scale population movements, corruption, political change, non-compliance and insufficient accountability.[8]

The Federal Government of Nigeria has demonstrated more commitment to its mandate of ending polio transmission by increasing the funding for the routine and new vaccines procurement and consolidating on the existing structure on polio eradication.[9,10] These efforts, coupled with individual and international support, have resulted in significant decrease in the prevalence of poliomyelitis in Nigeria.[11,12] Consequently, the official delisting of Nigeria from the list of polio endemic countries occurred in 2015.[13] However, despite the strong political support in the supply of immunization materials and personnel to house-to-house immunization exercise as to maintain the success achieved so far, the unvaccinated children have served as reservoir of the virus and possible source of re-infection in the environment.

Bauchi Local Government Area (LGA), located in Bauchi state (the 7th most populous state, in Nigeria with high-risk of polio), is known for its high level of unimmunized children.[9,14] This may be due to its poor accessibility and non-compliances of its locals.[15-17] Non-compliance, which refers to refusal of parents or guardians to consent to their eligible children (0 -5 years) to receive the polio vaccine (OPV), is a major factor hindering the success of the program in Bauchi LGA. This study is designed to investigate the factors associated with Polio IPDs non-compliance in five of the high-risk wards in Bauchi LGA of Bauchi State, namely: Makama B; Daniya; Tiryun; Makama A; and Hardo.

Materials and Methods

Study was conducted in Bauchi LGA of Bauchi State for a period of 2 years (2014-2015), a time that corresponds with monthly IPD rounds in 5 of the 20 wards of the LGA. The total population of people and number of houses in each ward were; Makama B (80,650 people; 12,305 houses), Daniya (112,855; 14,719), Tiryun (70,885; 9,628), Makama A (60,515; 11,024) and Hardo (83,400; 3,133), respectively. In each IPD rounds of polio campaign implementation, a community was visited per day in the 5 days monitoring exercise. Each day, 5 houses initially marked RX (which means non-compliance household) were sampled per community, a household head or guardian was interviewed while the next house was selected in cases where the respondents do not consent. A total of 5 communities consisting of 25 houses were visited per round while different set of houses were sampled in the subsequent rounds. In total, 18 rounds of immunization plus days (IPDs) were conducted in 2 years, hence, resulting in 450 reported non-compliant houses covered. The in-depth interviews (IDIs) and Key Informant Interviews (KIIs) were conducted to explore views, opinion and perception of households that did not consent their eligible children to be immunized using OPV vaccine. A total of (N=90) interviews were conducted. The in-depth interviews consist 36 fathers and 18 mothers, while the key note interviews involved 18 Muslim clerics and 18 prominent traditional rulers. Five interviews were conducted per each IPD round; involving 3 IDIs (2 with fathers and 1 mother) and the 2 KIIs thus 1 with community leaders, as the custodians of culture, traditions, norms and values, and 1 with religious leaders as the custodians of faith/belief) using interview guide. Each interview lasted between 20 – 30 minutes. The data obtained were coded and processed using Microsoft excel by creating themes and sub-themes and quotes generation.

Results

Respondents described various factors associated with immunization non-compliance. Their views and opinions were discussed under seven thematic areas as follows:

Misconception/Myth

The major cause of non-compliance according to some respondents was difficult to change attitude as a result of misconception or myth. The respondents opined that OPV is highly suspicious. Because it is free, they felt that white people cannot give anything free without an implication or hidden agenda. Hence, parent make decision best suitable to the welfare of their children and see no reason why they would be compelled in accepting polio vaccine against their own interest. Some respondents said;

"I neither take modern medicine nor go to hospitals, talk-less of vaccination, which is of no use." (6 respondents)

"I only accept immunization, when the ward head (Mai-anguwa) accompanied the health workers out of respect for me (respondent), otherwise I don't accept immunization"

(12 respondents)

Frequency/Too many rounds

The vast majority, almost 55% were not comfortable with too many rounds of campaigns. They are of the opinion that, too many doses of OPV from too many rounds /frequency might endanger the lives of their children.

"I don't like being force to do certain thing against my wish, after all, why are they insisting on polio vaccines every now and then? why not anti-malaria or other health problems but polio-polio all the time?"

Migration or internally displaced persons

This category constituted about 14% of the total respondents. Many of the respondents in this group do not get their wards vaccinated because of constant change in location, the children get missed out most times. Some felt that their children had been doing fine without immunization hence they do not see the need to vaccinate them. Some parents claimed that since their wards did not go to school nor mix with other children, there is no way they would be exposed to any infection.

"We've been here for a year, we never had vaccination, and nothing happened to him (child), so, why should I immunize him now?"

"I knew that he (child) wouldn't be exposed to anything"

"... my child wasn't going to school nor mix or play with other children because I am not sure, how many months we would be spending here so no need for OPV."

The ongoing insurgency in north eastern states of Nigeria contributed to forceful and un-willing movement of people. The victims settle temporarily with a divided mind of not knowing when to go back home or how long they would stay, where as some of the displaced persons put-in the host community with their relations and not willing to comply, therefore, making their non-com-

pliance attitude very obvious, hence a large number of internal displacement taking place between the LGAs and wards and then out of the LGA, back to their states such as Yobe, and Borno.

Lifestyle of the elite

In the view of many others, waiting to ensure their children are immunized is considered as waste of time and less important despite their understanding that polio vaccination is for the benefit of the children;

"I just can't spend my working hours waiting to immunize my children."

"Yes I understand you and all the good things about OPV, we prefer to do it in the hospital than at home, just take your".

Perceptions about the immunity of the child

Adequate breastfeeding, good nutrition and clean environment are considered essential for healthy growth of children and most specially to enable them build strong immunity against any disease, there is no need to immunize children that are brought up in this manner. Such was the conclusion of some of the parents;

"One should be sure that his children are healthy with strong immune (immunity) that is what, I am doing, with strong immune (immunity) one does not have to immunize his child."

"My children plays in a clean environment and eat well, I think I don't have to immunize my child".

"I breastfeed my child as a protection against diseases, do I have to immunize her again."

Perception about the health of the child

Some of the non-compliant parents interviewed believe that their children have a well-maintained health status that will combat any diseases, introducing vaccine into such system was considered as good as contaminating the system. More so, many claimed that there is no history of disease in their family, hence, is no need of getting their children vaccinated;

"I looked at the level at which he grows, I know that he is healthy and strong, and therefore I do not want to introduce something new to her body."

"I believe that a disease does not affect our family."

"My children's ability to overcome diseases is overwhelming; I will not vaccinate them".

Nothing, we just don't feel like vaccinating our children

In this study, some respondents have no reason for not getting their children vaccinated but chose just not to allow it.

"I have no reason for refusal, it is my right to allow or not."

"Must I give a reason to justify my decision?

Child absent

Excuse given by 2% of the parents for not vaccinating their children was that their children were not available when the team came in.

Against religious faith and moral beliefs

The three Muslim clerics (Imams) interviewed attribute the non-compliance to a popular anti-polio Professor's sermon, that polio vaccine was developed originally in Monkeys and horses, and demand the reason why, they should swallow monkey or horse blood. One parent had discovered from a newspaper article that the rubella vaccine had been developed originally from an aborted fetus and therefore the use of this vaccine conflicted with her moral principles.

"Almighty Allah protects and prevent sickness, not human effort, that's my belief."

A respondent discussed his own childhood experiences of not being immunized as a result of his family not complying with immunization, and did not have any negative consequences as a result, he therefore won't allow his children to be immunized.

Discussion

The non-compliant parents to polio vaccination in this investigation stated reasons to justify their decision, thus, establishing action as deliberate. Similar attitude had earlier been reported among some people around the world.[18-20] However, parents' refusal to vaccinate their children has been found very frustrating for physicians as gathered in earlier studies.[21-24]

The most common factor associated with such action was the misconception or myth of parents about polio, this lead to their 'difficult to change' attitude, especially those who are used to a particular way of life and not ready to embrace change, as gathered from some respondents that said: *"I neither take modern medicine nor go to hospitals, talk-less of vaccination, which is of no use".* Some respondents agreed to get their children vaccinated only if the district head accompanies the teams. However, they again rejected the next time an IPD team visited them. Others see no reason why they should be forced against their interest in getting their children immunized. As reported by Kimmel *et al*.,[25] this attitude showed poor knowledge of such parents about immunization. Parents' good understanding of vaccine-preventable diseases has been identified as leading to children being vaccinated in another study.[22,26]

Those that live a migratory life at the beginning and end of every harvest season (*yanci rani*) usually have two families, one in their original hometown (mostly Village) and the other in their urban settlement. This makes tracking very difficult and non-compliance made easy, because they exchange the wives seasonally, you may not see the children again until after a whole year. This observation was consistent with earlier reports on the adverse effect of culture of the people and parent or patient barriers on childhood immunization uptake.[25,27]

Non compliance among some elite was found to be associated with their lifestyle. Many were aware of the importance of immunization but were not ready to sacrifice their time to ensure their children were vaccinated. This challenge had earlier been reported in previous studies which showed poor compliance of parents as a result of time constrain due to work schedule.[28,29]

Another contributing factor gathered in this study was the perception of parents about child's health and body immunity. A parent stated; *"My children's ability to overpower diseases is overwhelming; I will therefore not vaccinate them".* Similar perception of parents had also been recorded.[17]

In this study, non compliance was also found to be associated with the influence of religious clerics. attributed to the propaganda raised by the known anti polio professor (Haruna Kaita), and lack of clear position of immunization in Islamic jurisdiction. Moreover, some religious adherents listen to only their scholar before they receive vaccine. Once the scholar approves anything, they willingly accept. These constitute another non-compliance group and their attitude was consistent with those of Muslim community who embraced rumors about polio campaign being Western conspiracy to control Muslim population as they strongly believe that polio drops contain sterility agents.[30-32]

Conclusions and Recommendations

The major factors associated with non compliance in this study were; frequent or too many rounds, misconception/ myth about vaccines, migratory lifestyle, and coincidental child absence IPDs. To effectively kick out polio, it is essential to adopt programs that would enhance the compliance of people. Efforts should be channeled towards polio vaccines (antigen) that would be administered once instead of many times. There is need to organize extensive health education programs to enlighten people including religious leaders and traditional rulers in immunization and primary health care. Also, to dismiss suspicion of some respondents of possible dangers associated with free vaccines, Polio vaccine should attract an relatively affordable charge. There should also be a special (holistic) approach that targets internally displaced persons.

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