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Knowledge, Attitude, Perception and Beliefs of Parents/Care givers About Polio Immunization

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Abstract

Cross sectional descriptive study was conducted in Gaya Local Government Area (LGA) of Kano state, in order to assess the knowledge, attitude, perception and belief towards polio immunization among parents/caregivers, and use this information to influence planning for rapid interruption of transmission of WPV in the LGA. While all adults from 6 selected settlements of the 10 wards of the LGA were considered for qualitative assessment, using Focus Group Discussion (FGDs) and Key Informant Interviews (KIIs) only mothers and fathers or care givers, in households with children less than five years of age were considered for quantitative assessment using World Health Organization (WHO)-Expanded Program on Immunization (EPI) Lot Quality Assurance Sampling (LQAS) techniques used to determine polio immunisation coverage, after Immunisation Plus Days (IPDs) round in Nigeria, but with increase in the number of households sampled. The results of the study show very high level (95%) of awareness of the existence of polio vaccines and immunization exercise, despite the fact that there is gap in the belief about the protectiveness of the vaccine against poliomyelitis, as only 66% of the respondents believe that the vaccine protect against poliomyelitis. The knowledge about the protective doses of OPV is only 37% and about 51% believe that administering more than 4 doses leads to adverse effect. However, the noncompliance level stands at 20%, in which 'no care givers consent' accounts for 31%. However, it is recommended that social mobilization activities should be intensified in the communities should be accorded a priority.

Keywords

Polio, Immunization, Caregivers, Knowledge, Perception, Gaya

1. Introduction

In 1974 the World Health Organization (WHO) launched its Expanded Program on Immunization (EPI) and in 1988, the World Health Assembly and its members committed to the goal of eradication of poliomyelitis by the year 2000 (Banerjee *et al*, 2000). Since then, Successful polio eradication efforts continue to move the world closer to eradicate on and certification as free of wild poliovirus. The successes may not be as expected in some countries, as with the growing face of financial and political investments, polio remains endemic in Nigeria, Pakistan, and Afghanistan and has been repeatedly exported to other previously polio-free countries—leading the 65th World Health Assembly to declare polio eradication a "programmatic emergency for global public health" in 2012 (World Health Assembly, 2012). Pakistan and Nigeria represent the gravest risk to global eradication. The challenge of global eradication is most greatly focused in specific parts of these two countries (IMB 2012). From its previously strong performance that attracted considerable praise, Nigeria has slipped back in a quite alarming way (IMB, 2012). Global certification will occur once all 6 World Health Organization (WHO) regions report finding no wild poliovirus under high-quality surveillance for at least 3 years and the Global Certification Commission becomes satisfied that sufficient laboratory containment exists (WHO, 1995; WHO, 2002).

Nigeria, being one of the signatory of the resolution is the first African country to conduct house to house immunization

campaign as a strategy for reaching all the eligible children with the oral polio vaccine. Since then, a lot have been achieved in the fight, and now Nigeria is said to be on track to eradicate polio (Independent Monitoring Board, 2013). Though substantial, the resources of the Global Polio Eradication Initiative (GPEI), including vaccines, specially trained personnel, and social mobilization campaigns, are limited and must be targeted to high-risk areas within endemic countries such as Nigeria in order to maximize impact (NPHCDA, 2012).

Gaya local government is one of the rural LGAs in Kano state that reported the first case of Wild Polio Virus type 1 (WPV1), in the country in the year of 2014, at a period when the country is facing a major increase in the engagement, ownership and oversight of polio eradication activities at all levels by all stakeholders. This indicates that, the improvement may not have been uniform across all the LGAs in the state, and that there are cohorts of children missed during the IPD rounds, especially with the existing evidence of cases of noncompliance in the LGA.

The question was why these children were consistently missed. While most parents were aware of the need for polio drops to protect their children, many did not understand the rationale for repeated rounds (India CLEN study, 2001). Misconceptions about OPV and suspicions about motivations behind the campaign emerged, especially in the light of other visible problems (i.e. understaffed clinics, poor roads, other diseases). Misconceptions included: OPV caused illness in children, was ineffective, caused infertility and was part of a plan to curb growth of Muslims and scheduled Hindu castes (UNICEF, 2004).

There is no vaccine against resistance or refusals that are rooted in social-cultural, religious and political contexts. No supply chain can overcome issues of gender-based decisionmaking in households. Medical approaches alone cannot address certain community concerns and that is why OPV is brought to their door when many other services are not available (Obregón et al, 2009).

In an anthropological study carried out in Nigeria (Jegede, 2005), an adult male participant stated that "people do carry rumour that immunisation is a secret way of controlling population." A young female participant said "some people say that immunisation is part of the methods used to check the number of children a woman can bear."

In 2003, there was a boycott of polio vaccination in Kano and one of the important factors that played a role in the polio vaccine boycott was the general distrust of aggressive, mass immunization programs in a country where access to basic health care is not easily available (Murphy, 2004). In his report for the Baltimore Sun, John Murphy (2004) wrote: "The aggressive door-to-door mass immunizations that have slashed polio infections around the world also raise suspicions. From a Nigerian's perspective, to be offered free medicine is about as unusual as a stranger's going door to door in America and handing over \$100 bills. It does not make any sense in a country where people struggle to obtain the most basic medicines and treatment at local clinics" (Murphy, 2004). Other factors that led to the boycott included lack of trust in modern medicine, political and religious motives, history of perceived betrayal by the federal government, the medical establishment, and big business, and a conceivably genuine—albeit misplaced and ineffective—attempt by the local leadership to protect its people (Jegede, 2007).

Public trust is essential in promoting public health (Faith et al, 2005). Such trust plays an important role in the public's compliance with public health interventions, especially compliance with vaccination programs, which target mainly healthy people. Where public trust is eroded, rumours can spread and this can lead to rejection of health interventions (Jegede, 2007).

An editorial in The Lancet argued that "few data exist on the best way to stop the spread of false information" (Kimman and Boot, 2006). One lesson from the Kano boycott is that research is needed to investigate why people have concerns and fears about vaccination, and what steps should be taken to avoid boycotts in the future (Jegede, 2007).

This study was aimed at assessing knowledge, attitude, perception and belief towards polio immunization among parents/caregivers in Gaya LGA, in order to use this information to influence planning for rapid interruption of transmission of WPV in Gaya LGA, Kano state, Nigeria.

2. Methodology

Cross-sectional descriptive study was employed. However, quantitative and qualitative methods were used for data collection specifically from February-April, 2014. While all adults were considered for qualitative assessment, only mothers and fathers or care givers, in households with children under five years of age were considered as respondents for quantitative assessment. For quantitative assessment, WHO/EPI Lot quality assurance sampling techniques was used to select settlements and number of households for the study, by application pre-tested questionnaire. Holding Key Informants Interviews (KIIs) with Opinion leaders and focus group discussions (FGDs) with mothers/fathers/others caregivers was used to source for the qualitative information.

2.1. Description of the Study Area

Gaya Local Government Area (LGA) is one of the rural LGAs in Kano state, located on 11°52′5″N 9°0′40″E, in the eastern part, and about 64 Km from the state capital. According to the 2006 census, it a total population of 207,419 and population density of 338.4 inh./Km². It has an area of 613km² and bordered to the east with Dutse in Jigawa state, with Ajingi/Gabasawa, Wudil and Albasu/Takai LGAs of Kano state to the north, west and south respectively (www.citypopulation.de). It has 10 political wards out of which 2 are situated in the Gaya main city. The target population of children below the age of 5 years which is the target for the immunization campaign is 53,847 as projected from 2006 census. The estimated number of children below

the age of 1 year, 15 years (target for polio surveillance), pregnant women, and women of child bearing age are 10769, 128156, 13462, and 59232 respectively (Nigeria projected population, 2015). The vegetation is Sudan savannah and main ethnic group is Hausa/Fulani and mainly engage in agriculture, producing crops such as cassava, groundnut, millet, Guinea corn, Rice, Beans. Other occupations include cattle rearing, trading, hunting and blacksmithing (http://wwwgayalocalgovernment-oye.blogspot.com).



Figure 1. Map of Kano state showing Gaya LGA.

2.2. Quantitative Sampling Techniques (Lot Quality Assurance Sampling Techniques)

Only six wards in the LGA were involved and a multi stage sampling technique was employed in each ward. In the first stage, all the six wards were randomly selected, irrespective of the risk nature of the wards. During the second stage, one settlement each from the six selected wards was selected randomly for household sampling. In the third stage, 30 households were selected each from the settlements, where one respondent, who must be a parent or caregiver of children under the age of 5 years, is selected for responses. This method was adapted from WHO Lot Quality Assurance Sampling (LQAs) method used to determine polio immunisation coverage, after IPDs round in Nigeria, but with increase in the number of household sampled.

6 wards x1 settlement x 30 household x 1 parent/caregiver=180 respondents.

Table 1. Selected wards and settlements.

S/No	Ward	Settlement
1	Gaya North	Burji Cikin Gari
2	Gamoji	Hadin Kansila
3	Kademi	Unguwar Gyada Kudu
4	Kazurawa	Yankau Cikin Gari
5	Maimakawa	Kurta Gabas
6	Shagogo	Jahunawa

2.3. Qualitative Design

Focus groups discussions (FGDs) and Key informant

interviews (KII) were carried out with mostly male parents. One FGD was conducted for groups of 10 adult males, cutting across different age groups in each of the selected settlements. Participants were selected deliberately from areas with either record of or perceived noncompliance. One Key Informants Interview was conducted with a selected community leader or respected opinion or religious leader in each of the settlements.



Figure 2. Percentage of respondents by category.

2.4. Questionnaires for Quantitative and Qualitative Study

A pre-tested structured questionnaire, comprising of 5 sections was used to collect data from parents/caregivers. Socio demographic information of the respondents is captured in the first section, second section sought for the respondents awareness about oral polio vaccine protection against poliomyelitis, the third section found out if respondents believe immunizing children has unwanted effect, section four sought whether or not mothers accept immunization while section five determined reasons of the respondents for rejection of poliomyelitis vaccine. These questionnaires were adapted from the Nigerian National Program on Immunization (2006) study on Knowledge, perception and beliefs about childhood immunization in northern Nigeria.

2.5. Data Analysis

Microsoft excel was used for data analysis. However, descriptive statistics using simple percentage, range, mean and median were used for used for appropriate depiction.

3. Results

3.1. Socio Demographic Information

Out of the 180 respondents, 113 were mothers,

representing 62% of the total respondents, whereas 48 and 19 representing 26% and 12% were fathers and other caregivers respectively.

Mothers' ages ranges from 15 to 54 years, whereas fathers ages ranged from 21 to 76 years. Similarly, the ages of other caregivers ranged from 15 to 93 years. The mean ages were 33.6 ± 9 , 39.2 ± 2.8 and 34.7 ± 5.4 years respectively for mothers, fathers and other caregivers.

Majority 162 (90%) were farmers, whereas only 18(10%) were Fulani. All the respondents (100%) were Muslims. The level of education of the respondents can said to be poor as majority 154 (85%) have no formal education, but rather Quranic education. However, few 11(6%) had post-secondary education whereas the remaining 15(9%) had only primary and secondary school education.

Majority of the respondents 168 (93%) are farmers whereas the few 12 (7%) out of the Fulani are cattle rearers.

3.2. Perceived Causes of Poliomyelitis

This study reveals gross lack of knowledge and negative perception about the actual causes of poliomyelitis. Majority of the respondents have no idea about the exact cause of the disease and rather attribute it to evil spirit popularly known in Hausa communities as "Inna". For instance, a mother of 2 remarked that, "Poliomyelitis is caused by an evil spirit called "Inna" that normally comes at night and paralysed children. However, many mothers (54%) of the mothers share similar beliefs. During the FGD, majority of the attendees are of the opinion that it is caused by God. A community leader during KII opined that polio is caused by witchcraft and that it can only cured by prayers. A political leader stated that polio is caused due to poor environmental sanitation and dirty drinking water.



Figure 3. Percentage of Respondents Aware of Polio Vaccine and Immunisation.

3.3. Knowledge of Oral Polio Vaccines and Its Perceived Protectiveness Against Poliovirus

There is high level (95%) of awareness among members of

the community about the existence of polio vaccine and immunisation against poliomyelitis. Figure 3 above summarises the proportion of respondents that were aware of oral polio vaccine and immunisation against poliomyelitis.

However, in all the settlements there is decline in the proportion of the respondents who believe that the polio vaccine could protect against the poliomyelitis. This was found to be only 66% as 118 respondents hold the belief that the oral polio vaccines confer protection against the disease (Figure 4).

However, the knowledge of the number of doses required to confer immunity was found to be abysmally low (37%) as only 66 of the respondents accurately mentioned the exact number of doses (Figure 5). Moreover, 92 respondents (51%) are of the belief that administering more than 4 doses of the vaccine brings about harmful effect to the children (Figure 6). These negative findings were more in the rural settlements and among the less educated respondents compared to others, despite the fact that it cut across all the wards of the LGA.

3.4. Acceptance or Rejection of Oral Polio Vaccines

Majority (144, 80 %) of the respondents accept oral polio vaccination (Figure 8).

However, the acceptance varies with the level of awareness and education of the members of the community. The level of rejection was found to be 20% as only 36 of the respondents indicated their rejection of the oral polio vaccine (Figure 7). Analysis of reason for rejecting OPV reveals that reason due to no care giver consent predominates, by accounting for 31% of the reasons (Figure 9).



Figure 4. Percentage of Respondents Who Believe OPV Confers Protection.

4. Discussion

From the result of this study, one can deduce that members of community of Gaya LGA have very high level (95%) of awareness of the existence of polio vaccines and immunization exercise (figure 3). However this finding corroborated the findings of the study conducted by NPI in 2006 about the Knowledge of childhood immunization in Nigeria. Despite this level of awareness about the oral polio vaccine and immunization exercise, there is gap in the belief about the protectiveness of the vaccine against poliomyelitis, as not more than 66% of the respondents believed that the vaccine protect against poliomyelitis (Figure 4). This percentage must be raised to interrupt transmission of wild polio virus in the LGA, as those who don't believe are most likely to reject the vaccine. The knowledge about the number of doses required to give protection against poliomyelitis is very low as it stands at only 37% (Figure 5). However, those of the opinion that administering more than 4 doses result in adverse effect in children is up to 51% (Figure 6). This may be the reason why people are not complying after 1 or 2 doses. In any case awareness must be raised to educate mothers and care givers on the number of doses required to give maximum protection and that number of doses does not correlate with their belief that it result in adverse effect.



Figure 5. Percentage of respondents with Correct Knowledge of Doses Required.



Figure 6. Percentage with Belief that More than 4 Doses Causes Harmful effect.

Figure 7 and 8 summarize the data for the proportion of respondents that reject and accept oral polio vaccine respectively. Interestingly, the proportion of those accepting the oral polio vaccine stood at 80% where as those rejecting account for 20%. However, figure 9 depicts the result of the

reason for not accepting the vaccine in order to suggest way of overcoming the rejection. From this result, majority of those not accepting are due to no care givers' consent, which account for 31%, and then followed by too many rounds accounting for 25%. This latter reason corroborates the findings of India CLEN study (2001), where it was reported that many did not understand the rationale for repeated rounds. In this case, intervention towards addressing these two issues must be targeted towards reaching the fathers, who are mostly the ones to consent for immunization in the community. This may take the form of dialogues, sensitization meetings, Majigi film shows to illustrate the devastating effect of poliomyelitis. Issues related to no felt need should be addressed by the government, through provision of basic services and infrastructures in communities.

However, from the FGD and KII, majority attributed the reason for non-acceptance of polio vaccines to the nonchalant attitude of government in providing its citizens with required infrastructures and other services. A religious leader said 'Our governments neglect us in all sector of development, but will be disturbing us with polio vaccination every month'. In this regards, meeting with community leaders will go a long way in turning the issue around, as they are regarded with high esteem in their communities.



Figure 7. Percentage of respondents who reject oral polio vaccine.



Figure 8. Percentage of Respondents who Accept Oral Polio Vaccine.



Figure 9. Reason for Rejecting Oral Polio Vaccines.

5. Conclusion

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From the result of this study, it may be concluded that parents/caregivers have high knowledge (95%) about polio vaccine and immunization exercise. However, they have poor belief that the OPV confers protection against poliomyelitis and hence about 20% reject the vaccines which shows negative attitude towards uptake of oral polio vaccine in the communities. The reason for rejecting the vaccine was largely due to no care giver consent and that there is need to target the fathers who normally hold the key to consenting for vaccination. There is also evidence of misperception among members of the community that giving more than 4 doses OPV brings about adverse effect to the children.

Recommendations

In order to interrupt transmission of wild polio virus in the Gaya local government, the level of acceptance of polio vaccination must be raised from 80% to 95% or above. This can be achieved based on the findings of this research by:

- 1. Intensifying social mobilization activities especially targeting fathers who usually decide whether to vaccinate or not.
- 2. Unmet needs in Gaya LGA should be accorded priority by the LGA authority in order to combat rejection due to no felt needs.
- 3. Compound meetings with mothers should be regularly held to clear misconception about the oral polio vaccine.
- 4. Sensitization of religious leaders should be considered by the LGA team prior to every immunization campaign.
- 5. Rural settlements should be the targets for every immunization activities as they often have low access to health care services.
- 6. The LGA has quite number of Fulani settlements and hence the need to involve them in planning and

implementation of immunization programs

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