

Parents' awareness and perception of the polio eradication programme in Gombe Local Government Area, Gombe State, Nigeria

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Abstract

The polio eradication programme currently present in Nigeria has not resulted in the complete eradication of the disease. This has prompted an investigation into the awareness and perception of recipients of the programme in Gombe Local Government Area (LGA), Gombe State.

The survey sample size was 422 parents. These were selected via a multistage sampling system. An additional 24 parents and 6 community leaders were purposely selected to participate in focus group discussions and interviews.

The results showed that while the majority of parents (353, 83.6%) believed that polio was a serious disease, only 216 (50.7%) parents believed their children were susceptible. Fifty-six per cent of respondents did not know the mode of transmission of the polio virus.

The major reasons cited for reluctance to release children for polio immunisation were: 165 (39.6%) parents were worried about polio vaccine overdose, 31 (7.3%) believed the vaccine was mixed with harmful pathogens, and 172 (40.8%) felt there were too many national immunisation days and too much attention was given to polio to the detriment of other diseases.

Based on these findings, there is the need for a campaign to educate parents on the nature of the polio disease, to highlight the importance of immunisation and to dispel negative rumours regarding the immunisation programme.

Introduction

Poliomyelitis remains a serious problem in a large part of the developing world, where the disease presents a constant threat to childhood populations. This has important consequences for social and economic development (Lucas & Gilles 1990). It is a particularly dangerous disease as less than one per cent of cases present with distinct symptoms of paralysis. This

means that if an outbreak occurs, by the time a case of paralysis has occurred to signal such an outbreak, up to 200 people would be infected (*Field Guide for National Immunisation Days* 2001).

The date set for polio eradication globally was the year 2000. This was not achieved, as 3500 cases of wild poliovirus (WPV) have been reported worldwide (Executive Board Room 2001), with Nigeria contributing 27 cases (World Health Organisation, Nigeria 2001).

Assessment of Nigeria's immunisation services revealed that immunisation coverage was low. Several factors were held responsible for this low coverage: a lack of planning at State and Local Government Area (LGA) levels, decreasing motivation of health workers, poor quality of immunisation services, and low demand for these services from the community Federal Ministry of Health/National Programme on Immunisation (FMOH/NPI 2001).

The continued presence of WPV in the country led to the planning and implementation of Sub National Immunisation Days (SNIDs), and two National Immunisation Days (NIDs) in the year 2002. Two hundred and two cases of WPV were reported in Nigeria at the end of the year 2002. Ninety-one per cent of these cases were from nine states (Bauchi, Borno, Gombe, Jigawa, Kaduna, Kano, Katsina, Nassarawa and Yobe). These areas were then targeted by a series of SNIDs (World Health Organisation, Nigeria 2003).

The success of these immunisation programmes, and thus the eradication of polio, is determined by parental attitudes and their willingness to take their children for immunisation. This study therefore set out to determine the level of awareness of parents about polio disease, parents' perception of their child's susceptibility to the disease, and the attitudes of parents toward the polio eradication initiative.

Methodology

The study area is Gombe LGA of Gombe State. Gombe State is located in northeastern Nigeria, bordered to the north by Yobe State, to the east by Borno State and to the west by Bauchi State. The

state was created in 1996 and is made up of 11 LGAs. These are Akko, Balanga, Biliri, Dukku, Funkaye, Gombe, Kaltungo, Kwami, Nafada, Shogom and Yamaltu-Deba.

Gombe LGA, which was created in 1996, is centrally located in the state, bordered to the north by Kwami, to the south and east by Akko and to the west by Yamaltu-Deba LGAs. It is the major link to the northeastern part of the country with a trunk-A road and railway line linking it with states in the northeast zone.

The state participated in all rounds of the NIDs conducted in the country from 1996 to date. In the two rounds of NIDs conducted in 1998 an average of 417,850 children were immunised. In 1999 454,349 children were immunised, in 2000 642,180 were immunised in the three NIDs carried out, and in the year 2001 634,507 children aged 0–59 months were given oral polio vaccine in the four rounds of NIDs carried out. Despite the high numbers of immunisations carried out as described, reports showed 10 cases of confirmed WPV in the state between January and December 2002. Gombe LGA contributed two cases (20%).

Gombe LGA has a projected total population of 309,210 and an oral polio vaccine target population of 72,134 (*Gombe National Immunisation Days Report 2001*).

Study Design

This study is a community based descriptive study. The aim of the study is to determine the level of parents' awareness and perception of the polio eradication programme in Gombe LGA of Gombe State, Nigeria. The measurement of perceived susceptibility of children to polio disease was determined by the parents' willingness to release their children for immunisation. The measurement of parents' awareness was determined by the level of information they had about poliomyelitis and the eradication programme.

Study Population

The study population are parents/guardians who have children aged 0–59 months residing in Gombe LGA.

Sampling Method

Gombe LGA was selected by random sampling of the four LGAs which had two cases of WPV. A multistage sampling system was used to select the parents from all the health districts. The LGA was divided into six health districts; seven settlements in each district were selected by ballot. In each settlement 10 houses were assessed after selection using the Expanded Programme on Immunisation

(EPI) cluster sampling system. Questionnaires were administered to parents in the selected houses by trained interviewers. Questionnaires were in English and Hausa languages.

The population used for the focus group discussions (FGD) and indepth interviews were selected using a non-probability sampling method. Sampling units of interest were selected on purpose, the categories of people selected being:

- 1 Traditional leaders: the district heads in each of the three political districts were identified.
- 2 Religious leaders: the Imam of the Izala sect of the Moslem faithful, the Imam of Gombe central mosque, and the chairman of the Christian Association of Nigeria (CAN), Gombe branch, were identified.
- 3 Community members: female clients attending clinics at the district level were identified; a group each in two clinics and a group of male members of the National Union of Road Transport Workers (NURTW) were identified.

In all cases consent was obtained to participate in the indepth interviews for categories 1 and 2 and the focus group discussions for category 3.

A total of six indepth interviews and three focus group discussions with eight participants in each were carried out.

Method of Data Collection

Quantitative and qualitative methods were used to collect data for a period of five weeks. A pre-tested focus group discussion guide was used for community members, indepth interview guides were used for traditional rulers and religious leaders, and an interviewer administered questionnaire was used for parents. Twelve research assistants were recruited and trained for data collection.

Ethical Consideration

The State Commissioner of Health gave his consent for the study. This was then used to obtain consent from the LGA PHC department and the LGA authority, which helped in obtaining the consent of the traditional and religious leaders. This then helped the researchers to enter into the communities and gain the verbal consent of all respondents before interviews were conducted.

Data Analysis

The completed questionnaires were checked at the end of each day for errors and consistency. The questionnaires were analysed using Epi-Info version 6. The responses during the FGD and indepth interview were recorded, content and context analysis was carried out, and frequency distribution was carried for all variables.

Limitation of the study

The perception of respondents about this study varied on the basis of belief and culture, and therefore they were not willing to give certain information. This limitation was controlled by training the research assistants to be aware of these feelings, so they could inform respondents that all findings would be used strictly for research purposes and that the identity of respondents would not be revealed. There were refusals by some mothers whose husbands were not around to give permission to participate in the study. This was controlled by thanking them and picking from the next household where the parent/guardian available consented to be part of the study.

Results

The results of the study are presented in two sections. Section 1 is the survey results comprising sociodemographic characteristics, awareness about polio disease, perception about polio disease, and attitudes towards NIDs. Section 2 is the indepth interview results for the traditional and religious leaders.

Section 1

Sociodemographic characteristics of respondents

A total of 422 respondents were interviewed. Results indicated that the age of respondents ranged from 15 to 84 years with a mean of 39.4 years (SD+/-12.7). The participants included 258 (61.1%) fathers, 131 (21%) mothers and 33 (7.8%) grandparents. Most of the respondents (381, 90.3%) were married, 16 (3.8%) were single parents, while 23 (5.4%) were in the divorced, widowed and separated status. Less than half of the respondents (136, 31%) had one child, 162 (38.4%) had two children while 144 (27%) had more than two children. Two hundred and eighty-one (66%) respondents were male compared to 141 (33.4%) females.

The majority of respondents (336, 79.6%) were Muslims compared to the small proportion (74, 17.5%) of Christians. Traditional worshippers represented 12 (2.8%) of the respondents.

Table 1 shows the educational level and occupation of participants.

Parents' awareness about polio disease

Many of the respondents (253, 60%) were aware of the local name for polio, while 344 (81.5%) had seen polio victims before. Most respondents (379, 89.8%) were aware that polio virus could cause paralysis of the leg and hand, and 385 (91.2%) were aware of the polio eradication initiative. Sources of awareness were through the NIDs campaign (88, 20.9%), routine immunisation visits (81, 19.2%) and health workers (70, 16.6%) and 117 (27.7%) heard from the

TABLE 1: Educational level and occupation of participants

	Number	Percentage
Educational level n=422		
No formal	80	19
Primary	39	9
Secondary	118	28
Tertiary	145	34
Arabic	4	1
Occupation n=422		
Farming	69	16
Trading	77	18
Civil Servant	199	47
Housewife, teacher, security	77	18

TABLE 2: Number of parents' awareness of various aspects about polio disease

AWARENESS	Number	Percentage
Awareness of the local name for polio		
<i>Shan inna</i>	181	43
<i>Chiwon shan inna</i>	44	10
<i>Inna</i>	28	7
Don't know	169	40
Seen a polio victim		
Yes	344	81.5
No	78	18.5
Awareness of mode of transmission		
Faecal-oral	177	41.9
Don't know	235	55.7
No response	10	2.4
Aware of polio eradication initiative		
Yes	385	91
No	37	9
Source of awareness about polio eradication		
Routine immunisation	81	19
National immunisation days	88	21
Health workers	70	17
All of the above	117	28
Neighbour, radio, tv, town crier	53	12

three sources. Many of the respondents (235, 55.7%) did not know the route for poliovirus transmission (Table 2).

The findings from the focus group discussions supported the results from the questionnaires, with the majority of participants being aware of the disease and able to give the local name. Awareness that polio can cause paralysis of the leg and hand was very high among participants. It was agreed by many that the NIDs campaign was the main channel through which their level of awareness concerning polio disease was enhanced. There was a low knowledge of the route of polio transmission.

TABLE 3: Parents' perceptions about susceptibility of children to polio infection

PERCEPTION	Number	Percentage
Polio is a serious disease		
Yes	353	84
No	69	16
Polio can cause infection in children		
Yes	208	49.3
No	214	50.7
OPV contains harmful pathogens		
Yes	31	7.3
No	391	92.7
Too much attention is given to polio rather than other killer diseases		
Yes	309	73.2
No	113	26.8

Parents' perception of the polio disease

Three hundred and fifty-three (83.6%) believed that polio is a serious disease, 206 (48.8%) believed that their children were susceptible to poliomyelitis and 214 (50.7%) believed that their children were not susceptible to the disease. Three hundred and nine parents were of the opinion that too much attention was given to polio immunisation to the detriment of other childhood killer diseases, while 31 (7.3%) believed that oral polio vaccine (OPV) contained harmful pathogens. (Table 3)

The focus group discussions revealed similar opinions. It was also revealed in the focus groups that they had heard rumours that the polio vaccine contained contraceptives, HIV and other harmful pathogens.

Parents' attitude towards house-to-house polio immunisation

One hundred and seventy-two parents (40.8%) believed that NIDs were too frequent and that discouraged 96 parents (22.7%) from their child taking polio immunisation. In contrast, 226 (53.6%) said they were not discouraged.

A reasonable number of respondents (165, 39.6%) believed that there could be polio vaccine overdose due to repeated immunisation. However, over half (50.8%) of respondents did not believe this to be the case.

The findings from the focus group discussion are in support of these results, as many of the participants believed that NID rounds were too frequent and other childhood killer diseases were neglected.

Section 2*Findings from the in-depth interview with traditional and religious leaders*

All the traditional and religious leaders interviewed, six in total, had a good knowledge of the disease

poliomyelitis. They described polio as a disease that affects legs and hands, affecting mainly children, making affected children disabled.

They had all seen victims of the disease before proving to them the importance of the programme. In their own words, participants said, "Before now people considered polio to be a spiritual problem. But with awareness we all know that it is a deadly disease caused by the polio virus that can kill or cause paralysis of the legs and hands". Their opinion on polio eradication was that it is a good programme, leading to the eradication of death and paralysis via the virus, and to the economic wellbeing of the people who would have been affected by the disease.

The interviewed leaders reported that they would always call the village ward/heads, telling them to let the communities know about the programme and to participate actively. They also encouraged their people to fully support the programme. They said "We enlighten people about the benefit of the programme in our communities and worship places, encouraging them to accept the programme. We were also involved in the mobilisation of the people in our capacities as traditional and religious leaders in support of the eradication programme".

One of the community leaders had served as the chairman of the social mobilisation committee in the LGA. On their opinion about the polio vaccine they said, "The polio vaccine as far as we know is safe, although a lot of rumours have been spread about the vaccine [in areas] such as family planning, HIV and harmful materials, but we are trying our best to dispel such rumours at present. Due to our persistent preaching and enlightenment in support of the programme in our worship places, rumours concerning the vaccine have been reduced".

On sanitation, three (50%) of the leaders were not satisfied with the sanitary condition of their communities. Many years ago environmental health officers were said to be going from house to house inspecting the general sanitary condition of the communities, but now these practices have stopped.

Suggestions from the community leaders were that they would continue to encourage their followers to accept the programme and tell them that rumours about the vaccine are false. They said that the government should enhance social mobilisation activities to enable the message of polio eradication to reach everyone in its original form. They also wanted the government to provide refuse collection and proper disposal services.

Suggestions for ways in which polio can be eradicated from the community were offered by the community leaders. These were to make sure both Christian and Muslim leaders continue to encourage their followers to release their children for immunisation every time the vaccinators visit. It was suggested that every effort should be made to dispel rumours about the vaccine and to let people know that

the vaccine is safe. They felt the government should also provide all that is required for immunisation against other childhood killer diseases to encourage parents to accept the polio eradication campaign. There should be continuous enlightenment campaigns in the communities via the traditional leaders.

Discussion

Results of the study indicated that the age of the respondents was in the range of 15 to 84 years, with the majority (281, 66%) being males. This highlights the male dominance in family affairs, with many of the mothers saying it was only their husbands who had the authority to give information concerning the family, unless permission was granted by their husband. This accounts for the refusal of immunisation by some mothers when vaccination teams visited the houses in the absence of the husbands. The wide age range, which included grandparents, brought to the fore the extended family structure that is in existence, where grandparents, older aunts and uncles take care of their grandchildren, nieces, nephews and wards. In such a family structure, these elderly persons are recognised caregivers who make decisions affecting the children.

The study showed high levels of awareness about the disease; this could be due mainly to the campaign efforts by the Federal State and Local governments in Nigeria and the international community. The study supported this, with 21, 17 and 28 per cent of respondents citing the NIDs campaign, routine immunisation visits and health workers, respectively, as their source of awareness.

A previous study by **Rasania** and Sachdev (2000) reported that the predominant source of information about polio was electronic media (56%), followed by health workers (21%).

Over half of respondents (235, 55.7%) did not know that the faecal oral route was the main route of transmission for the polio virus. This low knowledge of transmission of the virus could be responsible for parents thinking their child was not susceptible to the polio virus.

Seventy-three per cent of parents believed the attention given to polio immunisation was extreme, and that too little attention was given to other childhood pathogens, while seven per cent of respondents were under the impression the vaccine contained harmful pathogens. This perception can be explained by the lack of understanding by parents of the purpose of NIDs. A previous study (**Harmanci et al** 2003) reported that there was an increased risk of non-vaccination in people who do not know the purpose of NIDs. This lack of understanding of the importance and reason behind NIDs is highlighted in the results, with 96 (23%) parents being discouraged from accepting the vaccine because of the belief that the rounds of NIDs were too many, and not

understanding they are a result of global efforts to eradicate polio disease (**Glyod et al** 2003).

Many parents showed reluctance to participate in the immunisation due to a belief that there could be a harmful overdose of the polio vaccine. A previous study by **Saheh et al** (1999) found a lack of faith in the vaccine as a major reason for non-acceptance. A previous study by **Hennessey et al** (2000) also supported the findings of this study, where it was found the reason for under-vaccination included parents not being informed and considering vaccination unimportant.

Based on these findings, appropriate health promotion strategies, such as the organisation of health talks with mothers during natal and postnatal clinics and routine immunisation visits and community based advocacy and social mobilisation, should be designed to focus on the route of polio virus transmission, and the susceptibility of every child to the disease if not protected through full immunisation. Advocacy and social mobilisation could also be used to dispel negative rumours about the polio vaccine with the dissemination of information about the safety of the polio vaccine and highlighting the importance of the programme.

To address the problem that parents believe too much attention is given to polio vaccination at the expense of other diseases, more attention can be given to other vaccine preventable diseases, and a multiple antigen campaign could be conducted. This approach is supported by **Nuwaha et al** (2000) who said that Vitamin A supplementation could have increased NIDs national coverage in Uganda.

Conclusion

This study aimed at assessing parents' awareness and perception of the polio eradication programme in Gombe LGA, Gombe State. It was found that there was a high level of awareness about polio disease and a low level of knowledge of the route of polio virus transmission. Reluctance in the release of children for polio immunisation was found to be due to many rounds of national immunisation days, fear of polio vaccine overdose, and polio vaccine contamination with harmful pathogens. These results therefore suggest the need for social mobilisation that will take into consideration the parents' perceptions, and enlightenment campaigns that polio vaccine does not contain any harmful agent or contraceptive substances. The local government authority should also give greater attention to other routine immunisation services to counteract the feeling that too much attention is given to polio immunisation to the detriment of other childhood killer diseases.

It is also felt that community leaders should be involved from the planning stage of the programme, to create greater awareness about the safety of the vaccine

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and the goal of the polio eradication initiative, which is polio eradication.

References

- Executive Board Room (2001). *Sixth meeting of the Technical Consultative Group on the Global Eradication of Poliomyelitis*. Draft Meeting report 1-6. Geneva: WHO.
- Federal Ministry of Health/National Programme on Immunisation (2001). *National Immunisation Days Report 1998-2001*. Abuja, Nigeria.
- Field Guide for National Immunisation Days* (2001). Field Guide for supplementary activities aimed at polio eradication.
- Gloyd S, Suarez TJ and Mercer MA (2003). Immunisation campaigns and political agendas: retrospective from Ecuador and El Salvador. *International Journal of Health Services*, 3(1), 113-128.
- Gombe National Immunisation Days Report* (2001). Gombe local government area (LGA) report of the third round of the 2001 NIDs.
- Harmanci H, Gurbuz Y, Torun SD, Tumerden N, Erturk T (2003). Reasons for non-vaccination during national immunisation days: a case study in Istanbul, Turkey. *Public Health*, 117(1), 54-61.
- Hennessey KA, Marx A, Hafiz R, Ashgar H *et al* (2000). Widespread paralytic poliomyelitis in Pakistan: a case control study to determine risk factors and implications for poliomyelitis eradication. *Journal of Infectious Diseases*, 182(1), 6-11.
- Lucas AO and Gilles HM (1990). *A New Short Textbook of Preventive Medicine for the Tropics*. Third edition.
- Nuwaha F, Mulindwa G, Kabongyera E, Barenzi J (2000). Causes of low attendance in NIDs for polio eradication in Bushenyi District, Uganda. *Tropical Medicine and International Health*, 5(5), 364-369.
- Rasnia SK and Sachdev TR (2000). Pulse Polio Programme: an overview of parents' perception. *Journal of Communicable Diseases*, 32(4), 275-283.
- Saha I, Dasgupta S, Mandal AK (1999). Pulse Polio Immunisation 1995-1996: an evaluation in West Bengal. *Journal of Indian Medical Association*, 97(1), 8-10.
- World Health Organisation, Nigeria (2003). *Monthly Bulletin of Preventable Diseases*, 2(2).
- World Health Organisation, Nigeria (2001). *Acute Flaccid Paralysis Surveillance Indicators in Nigeria 1998-December 2001*.

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