

Health workers' perception about the supplemental immunization activities in Gombe Local Government Area, Gombe State.

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Summary

Polio immunisation has faced challenges of refusal from care givers in recent times despite the efforts put in to ensure its success. To identify the role of service providers in this attitudinal shift, a survey describing the perception of health workers about the supplemental immunization activities was carried out among 265 health workers who participated in the 3rd round of the 2003 sub-national immunization days in Gombe local government area (LGA) of Gombe state, Nigeria. Data was collected using pre-tested qualitative and quantitative instruments. Quantitative data was analysed using EPI Info statistical software and the qualitative using thematic areas. Results showed that 211(79.6%) knew fecal-oral route as the commonest mode for poliovirus transmission, 231(87.2%) knew the age for vaccination, 224(84.5%) knew the correct use of vaccine vial monitor while 143(53.9%) knew the correct-action to take when a case of polio was identified. On perception, 22(8.3%) perceived that OPV was harmful due to repeated administration, 26(9.8%) perceived that OPV had sterility property, contained harmful materials 14(5.3%) and HIV 11(4.2%). Main reasons for immunisation rejection were sterility 115(43.3%) and contamination with HIV 94(35.5%). The study found that irrespective of adequate knowledge on transmission, misconceptions still exist among health workers on the polio vaccine. Based on this, there is the need for continuous training to remove the misconceptions concerning their perceptions and rumors about the vaccine and the programme.

Keywords: Perception, health workers, polio eradication

Résumé

L'immunisation à la poliomyélite est menacée par le refus d'administration par le personnel de santé, bien que des efforts ont été déployé pour assurer leur

succès. Pour identifier le rôle des personnels de santé, cette surveillance décrivant leur perception, leurs activités supplémentaires d'immunisation était effectués sur 265 personnels qui participaient au 3^e étapes d'immunisation provinciale dans les district de Gombe au Nigeria, les données étaient collectées utilisant un questionnaire pré testé qualitatif et des instruments quantitatifs. Les données quantitatifs étaient analysées utilisant le programme statistiques Epi-Info et les données qualitatifs par les surfaces thématiques. Les résultats montraient que 211(29.6%) connaissaient la voie oro-fécale comme la plus commune de transmission du virus de la poliomyélite. 231(87.2%) connaissaient l'âge de la vaccination, 224(84.5%) connaissaient l'utilisation correcte du vaccin et 143(53.9%) connaissaient l'action propre d'administration du vaccin à prendre lorsque un cas de polio était identifié. 22(8%) percevaient que l'OPV était dangereux suite à une l'administration répétée, 26(9.8%) percevaient que l'OPV avait une propriété de stérilité et contenait des matériaux dangereux 14(5.3%) et le VIH 11(4.2%). Les raisons principales du rejet de l'immunisation étaient la stérilité 115(43.3%) et la contamination avec le VIH 94(35.5%). Cette étude montrait que la connaissance inadéquate du mode de transmission, des fausses conceptions existent encore au sein du personnel de santé sur la vaccination contre la poliomyélite. Sur cette base, il est nécessaire de continuer la formation et l'éducation du personnel à propos de ce vaccin afin d'éliminer les fausses conceptions et les rumeurs au sein du personnel.

Introduction

Poliomyelitis remains a serious challenge in large parts of the developing world where the disease presents a constant threat to childhood population with important consequences for social and economic development. The set date for polio eradication globally was the year 2000 which was not achieved as about 3500 cases of Wild Polio Virus (WPV) were reported worldwide [1] with Nigeria contributing 27 cases worldwide. By the end of year 2001, only sub-Saharan Africa and the Indian sub continent were still harbouring the virus [2] with Nigeria reporting 56 cases despite the four rounds conducted. Also, 355 cases of WPV were reported at the end of year

2003, 984 cases in year 2004 while 473 were reported as at October 2005 [3] showing an increase in prevalence. Epidemiology and virology data demonstrated focal endemic transmission in Afghanistan and Niger, with reported importations from Pakistan and Nigeria respectively and localized transmission in Egypt [4]. In Nigeria a lot of efforts have been expended since the Polio Eradication Initiative (PEI) was launched. This led to interruption of wild poliovirus (WPV) transmission in some parts of the country throughout year 2002. However, due to the continued transmission of WPV in the reservoir states like Kano, Kaduna, Jigawa and Bauchi in the North West and North East zones, there have been cases of re-infection of other areas of the country that had been effectively declared free of polio in the year 2002. Of the reported 202 cases in Nigeria by the end of year 2002, 91% were from 9 states (Bauchi, Borno, Gombe, Jigawa, Kano, Kaduna, Nassarawa and Yobe) [5].

The cause of the persistent survival of WPV in Nigeria particularly in the polio endemic states was observed to be attributable to the high number of unimmunized children due to non-compliance and outright rejection. These susceptible children have consistently acted as human reservoirs facilitating WPV transmission within and between communities. The discontinuation of mass vaccination campaign in the majority of polio-free countries left these areas vulnerable to importations of wild poliovirus (WPV) from the remaining countries in which polio is endemic.

For polio to be eradicated therefore, all children less than 5 years in Nigeria, the other five countries in which polio also is endemic and those countries with imported cases must be vaccinated during intensified supplemental immunization activities. The importance of the health workers to the success of the polio eradication programme cannot be over emphasized. It is in this regard that the knowledge and perception of the persons who carry out polio immunization campaigns become relevant for the success of polio eradication in Nigeria, hence the need for this study. The challenge therefore is to increase the quality of polio campaigns in the endemic areas of Nigeria, and reach all children during activities [6].

The study therefore set out to determine the knowledge of health workers about supplemental immunization activities and their perception. The results of the study will assist in decision making for enhancing the performance of those who participate

in NIDs. For the purpose of this study, the word *health workers* was used loosely to include all persons who participated in the 3rd round of the 2003 SNIDs.

Methodology

Study Design

This study was a descriptive survey aimed at determining the knowledge and perception of health workers on the supplemental immunization activities in Gombe Local Government Area (LGA) of Gombe state, Nigeria.

Description of Study area

Gombe state is located in the north eastern part of Nigeria, bordered to the north by Yobe state, to the east by Borno state and to the west by Bauchi state and to the south by Taraba and Adamawa states. The state is made up of 11 LGAs namely, Akko, Balanga, Biliri, Dukku, Funakaye, Gombe, Kaltungo, Kwami, Nafada, Shongom and Yamaltu-Deba. Gombe LGA, the study LGA has a projected total population of 309,210 with 3 political wards and 6 health districts [7].

Study Population

The study population was all the persons that participated in one of the rounds of S/NIDs in Gombe LGA.

Sampling Method

Gombe Local Government Area was selected by simple random sampling using the ballot method. The sample for the survey consisted of persons who participated in one of the rounds of S/NIDs in the LGA. The list of all persons who were involved in S/NIDs in the last 3 rounds of the exercise were obtained from records in the LGA primary health care (PHC) department from which the list of participants for the 3rd round of 2003 SNIDs was selected by balloting. The list contained the names of the 265 persons that participated in the 3rd round of 2003 SNIDs.

The population used for the focus group discussions (FGD) and key informant interview (KII) was selected using a non-probability sampling method (purposive sampling method). These key persons provided information on knowledge, perception, involvement and political commitment to polio disease and the eradication programme. The categories of people selected were the head of the LGA PHC

department who was purposely selected for the assessment of the political commitment of the LGA authority. For the FGD, health workers at the LGA PHC department from 3 different clinics (a group per clinic per political district) participated.

Methods of data collection

Quantitative (semi-structured self administered questionnaire) and qualitative methods (FGD and Key Informant Interview) were used to collect data for a period of 2 weeks. For the quantitative data, all the 265 persons who were all residents of the LGA and who participated in the 3rd round of 2003 SNIDs completed the questionnaire. Reliability and validity of instruments were ensured by the pre test that was conducted for the focus group discussion (FGD) and key informant interview (KII) guides and the questionnaire in a population of similar characteristics.

Data analysis

Content and context analyses of the thematic areas were done for the FGDs and the Key informant interviews. The completed questionnaires were checked at the end of each day for errors and consistency. The questionnaires were entered and analyzed using EPI-INFO version 6. Simple percentages were used to describe the results.

Results

Sociodemographic characteristics

Two hundred and sixty five health workers were interviewed comprising 147 (55.5%) males and 118 (44.5%) females. The age of the respondents ranged between 17 and 46 years with a mean age of 24 years (± 4.9). Specifically, 140 (52.8%) were between the ages of 21-30 years, 87 (32.8%) were less than 20 years and 32 (12.1%) were between 31-40 years. Forty eight (18.1%) of them were Christians, 7 (2.6%) were traditionalists, 8 (3.1%) had no specific religion while 202 (76.2%) were Moslems. One hundred and ninety six (74%) were single, 55 (20.8%) were married, 6 (2.2%) were separated and/or divorced while 2 (0.8%) were widowed. Educational attainment showed that 174 (65.7%) of the participants had secondary education, 75 (28.3%) had tertiary education, 10 (3.8%) and 6 (2.2%) had non-formal and primary education respectively. Of the 265 respondents, 224 (84.5%) lay members of the community recruited for the exercise, 21 (7.9%) were Community Health Extension Workers

[CHEW], 10 (3.8%) were Nurses, 9 (3.4%) were Community Health Officers [CHO] and 1 (0.4%) was Environmental Health Officer [EHO] (Table 1). Role played during immunisation showed that 237 (89.4%) participated as either vaccinators or local guides with 22 (8.3%) as supervisors and 6 (2.3%) as district coordinators.

Table 1: Socio-demographic characteristics of respondents

| | Number | Percentage |
|--|--------|------------|
| | 265 | |
| <i>Age of respondents in years</i> | | |
| ≤ 20 | 87 | 32.8 |
| 21-30 | 140 | 52.8 |
| 31-40 | 32 | 12.1 |
| ≥ 41 | 6 | 2.3 |
| <i>Marital status of respondents</i> | | |
| Married | 55 | 20.8 |
| Single | 196 | 74 |
| Divorced | 6 | 2.2 |
| Widowed | 2 | 0.8 |
| Separated | 6 | 2.2 |
| <i>Educational level of respondents</i> | | |
| Non formal | 10 | 3.8 |
| Primary | 6 | 2.2 |
| Secondary | 174 | 65.7 |
| Tertiary | 75 | 28.3 |
| <i>Professional Qualification of respondents</i> | | |
| Nurse | 10 | 3.8 |
| CHO | 9 | 3.4 |
| CHEW | 21 | 7.9 |
| EHO | 1 | 0.4 |
| Non professional | 224 | 84.5 |

Knowledge on supplemental immunization activities.

Results showed that respondents were knowledgeable on the reason for NIDs as 245 (92.4%) knew that NIDs are part of the strategies for polio eradication and 25 (5.7%) thought that NIDs replaced routine immunization. Knowledge on the reason for the use of the vaccine vial monitor [VVM] varied as 224 (84.5%) believed that it is used to monitor the potency of the vaccine, indicates the stage of vaccine as well as determining whether the vaccine can be used or not while 41 (15.5%) had no idea about the use of VVM. Two hundred and eleven (79.6%) knew the commonest mode of poliovirus transmission which is faeco-oral, while 46 (17.4%) and 8 (3%) believe that it is transmitted via the air

and animal sources respectively. Two hundred and thirty-two (87.5%) of the respondents knew the age range of children eligible for OPV administration while 33 (12.5%) did not. Two hundred and thirty one (87.2%) of the respondents could correctly identify an acute flaccid paralysis [AFP] case if encountered and 143 (53.9%) knew the correct action to take when an AFP case is detected (Table 2). These findings were corroborated with those of the FGD and KII where participants believed that improper refuse disposal especially human faeces promote the spread of the disease.

Table 2: Knowledge of health workers about supplemental immunization activities

| Knowledge of Health Workers n = 265 | Number | Percentage |
|--|--------|------------|
| <i>Knowledge of Reason for NIDs</i> | | |
| Polio eradication | 245 | 92.4 |
| Routine immunization | 15 | 5.7 |
| Don't Know | 5 | 1.9 |
| <i>Knowledge of use of VVM</i> | | |
| To monitor potency of vaccine | | |
| Indicates stage of vaccine whether is good for use or not. | 224 | 84.5 |
| Don't know | 41 | 15.5 |
| <i>Knowledge of Route of Polio Transmission</i> | | |
| Faecal oral | 211 | 79.6 |
| Airborne | 46 | 17.4 |
| Animal to man | 8 | 3.0 |
| <i>Age for OPV Administration n = 265</i> | | |
| 0-59 months | 232 | 87.5 |
| Others | 33 | 17.5 |
| <i>What to do on Identification of AFP cases n = 265</i> | | |
| Correct | 143 | 53.9 |
| Incorrect | 120 | 46.1 |

Perception on oral polio vaccine safety

Perception of the safety of the polio vaccine safety was assessed by asking respondents for their opinion on the adequacy of the vaccine, frequency of the exercise and its harmful effects. To these questions, 243 (91.4%) perceived that adequate doses of OPV were provided for the exercise while 22 (8.3%) perceived that OPV could be harmful to the children due to the frequency of the exercise. One hundred and thirty one (49.4%) respondents perceived that immunization exercises were too frequent and 89.8% believed that polio eradication is possible (Table 3).

These perceptions were corroborated with the findings of the FGDs where the health workers said that routine immunization, which is a very important strategy for polio eradication has not been given the deserved attention in terms of funding and vaccine supply to the districts. This they said have left the routine immunization services in a state of comma. The frequency of the NIDs according to the participants has also given room for little or no attention to other childhood killer diseases such as measles, cerebrospinal meningitis, tuberculosis and cholera which has led to the rampant cases of outbreaks of these diseases with high mortality in the communities.

Table 3: Perception of health workers about polio eradication initiative.

| Perception | Number | Percentage |
|---|--------|------------|
| <i>Adequate doses of vaccine provided during NIDs n = 265</i> | | |
| Yes | 243 | 91.7 |
| No | 15 | 5.7 |
| Don't know | 7 | 2.6 |
| <i>OPV can be given every Round of NIDs n = 265</i> | | |
| Yes | 241 | 90.9 |
| No | 15 | 5.7 |
| Don't know | 9 | 3.4 |
| <i>NIDs are too Frequent n = 265</i> | | |
| Yes | 131 | 49.4 |
| No | 134 | 50.6 |
| <i>Discouraged due to High Frequency of NIDs n = 265</i> | | |
| Yes | 51 | 19.3 |
| No | 214 | 80.7 |
| <i>OPV Administration each round is Harmful n = 265</i> | | |
| Yes | 22 | 8.3 |
| No | 243 | 91.7 |
| <i>Polio Eradication is Possible n = 265</i> | | |
| Yes | 238 | 89.8 |
| No | 27 | 10.2 |

Experiences on OPV rumours

The study looked at what rumours were pervading within the community about the polio virus. The most common entrenched rumour about the oral polio vaccine during immunisation exercise as heard by the respondents was that the vaccine possesses ability to cause sterility 158 (59.6%). Thirty seven (14.0%) heard that the vaccine contained HIV, 41 (15.5%)

were told that the vaccine was contaminated with harmful materials and only 29 (10.9%) of the health workers did not have information about the rumours concerning the vaccine.

On personal conviction of the rumours heard, 26(16.5%) of the 158 who heard the rumours on OPV containing sterility properties believed it, 14 (34.1%) of the 41 who heard that OPV contained harmful materials believed it while 11 (29.7%) of the 37 who heard that it contained HIV believed it.

Table 4: Field experiences of rejection

| Rejection | Number | Percentage |
|--|--------|------------|
| <i>Rejection Experiences n = 265</i> | | |
| Yes | 193 | 72.8 |
| No | 72 | 27.2 |
| <i>Reasons for Rejection n = 193</i> | | |
| A. Husband away | 18 | 9.3 |
| B. Religion | 15 | 7.8 |
| D. Contain HIV | 58 | 30.1 |
| E. Cause sterility | 79 | 40.9 |
| F. Too frequent NIDs | 23 | 11.9 |
| <i>Able to Resolve the Rejection n = 193</i> | | |
| Yes | 180 | 93.3 |
| No | 85 | 6.7 |

Table 5: Experiences of health workers about OPV rumours

| Experiences of health workers | Number | Percentage |
|---|------------|------------|
| <i>Rumour on Polio Vaccine heard n = 265</i> | | |
| A means of sterility | 158 | 59.6 |
| Contained HIV | 37 | 14.0 |
| Contaminated with harmful materials | 41 | 15.5 |
| Did not hear any rumour | 29 | 10.9 |
| <i>Rumour believed to be true by health worker who heard them</i> | | |
| A means of sterility | 26 (n=158) | 16.5 |
| Contain harmful material | 14 (n=41) | 34.1 |
| Contain HIV | 11 (n=37) | 29.7 |

Field experiences of mothers' rejection of OPV for their Children

The experiences of rejection of OPV by mothers were encountered by 193 (72.8%) of the health workers. The reasons given for the rejection were fear of sterility 79 (40.9%), fear of contracting HIV 58 (30.1%), too frequent rounds of NIDs 23 (11.9%), husband not at home 18 (9.3%) and rejection based

on religion 15 (7.8%). However, the respondents were able to resolve 180 (93.3%) of the 193 cases encountered. These reasons for rejection were also mentioned by the health workers who participated in the FGDs.

Discussion

The finding that more of the respondents had secondary education may be due to the fact that secondary school education was the basic qualification needed to participate in the immunisation exercise.

The results which showed 92.4% of the respondents were knowledgeable about the reason and strategies for polio eradication was supported by the responses from the focus group discussion where the discussants expressed good knowledge of the reasons and strategies for polio eradication. This level of knowledge exhibited could be attributable to the quality of the training given to respondents at the beginning of each exercise as well as the sensitization programmes by all levels of government. This finding was supported by WHO that reported high awareness of polio in Nigeria [8].

The findings that adequate doses of OPV were provided for the exercise was supported by Gloyd *et al* who said that NIDs are currently in vogue and are prominent in worldwide polio eradication efforts [9]. The perception that repeated OPV administration could be harmful to children was in agreement with Harmanci *et al* who reported that there was risk of non-vaccination in people who do not know the purpose of NIDs[10]. These findings have brought to the fore the need to raise health workers awareness of their impact on the caregivers and the crucial role in educating the caregivers which can only be achieved through appropriate and well directed perception and knowledge.

The rumours that oral polio vaccine had ability to cause sterility, contained HIV and was contaminated with harmful materials were also reported by Manjunath and Pareek who reported that misconceptions/beliefs of mothers of partially immunized children were the main reasons [11]. The finding that respondents believed these rumors is a cause for concern as they are parents who could further negatively influence the people in their community against the OPV vaccine.

The experiences of rejection of OPV were encountered by 72.8% of the health workers with key reasons being husband not at home and fear of

infection from diseases. These experiences stemmed from the rumors that were prevalent in the community. These findings are not surprising as the study area has a tradition of the husband being the sole decision maker for the home. This practice however has implications for health seeking behaviour when ill health occurs. Sahah *et al* also pointed out these reasons in their study in West Bengal where they found lack of faith in immunisation, fear of adverse effects as the major reasons for non-acceptance of polio vaccine [12].

The major finding that the health workers who participated in the immunization exercise believed the rumours about the vaccine containing infective and sterility agents was a source for concern. If health workers are deficient in these areas, playing their role in patient education, advocacy for acceptance of vaccine among others would be impossible. This therefore shows deficiency in the training being received before the commencement of each immunisation exercise.

Based on these findings, there is the need for training and retraining of health workers especially the community members who are recruited for the exercise on the different aspect of the immunization activities with greater enlightenment about the non-harmful nature of OPV to children. The expressed concern of the respondents on the need to ensure and sustain routine immunisation over and above the NIDs (polio eradication) programmes should be taken seriously and should serve as an advocacy tool to government.

Conclusion

The study aimed at assessing the knowledge and perception of persons who took part in the 2003 3rd round of SNID in Gombe local government area of Gombe State. It was found that the health workers had a good knowledge of the supplemental immunization activities, had wrong perception that OPV could be harmful to children and that NIDs were too frequent. These findings therefore advocate for a more comprehensive training and retraining of persons involved in NIDs and creation of public awareness about the safety of OPV and reason for repeated NIDs which is for polio eradication. It also bring to the fore the need to sustain the routine immunization which would be more effective.

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