

Community Awareness and Sensitization on Acute Flaccid Paralysis Case Reporting in a Northern State of Nigeria

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Abstract: The World Health Organization (WHO) launched the Expanded Programme of Immunization (EPI) in 1974 with the objectives of reducing childhood morbidity and mortality due to vaccine preventable diseases. This innovative action together with the success recorded in smallpox eradication encouraged the WHO to launch the global polio eradication campaign in 1988. The main strategies in addition to existing routine immunizations are supplementary immunization activities and epidemiological surveillance for Acute Flaccid Paralysis (AFP). The dwindling resources available for the programme have made it necessary to revisit all levels of supports by the government and partner agencies. One of the major outcome of this is health sector reforms of the Nigerian government which advocates for strengthening community participation and ownership of health programme/activities to ensure sustainability. This is particularly, important in the ongoing polio eradication campaign which is beyond health facility/workers alone, but rather required household and community involvement. The study was conducted to determine the level of awareness and community sensitization on AFP surveillance and how these have influenced their attitude and practice of AFP case detection and reporting. This descriptive cross sectional study was carried out among 573 consenting adults selected using multistage sampling technique. Pre-tested semi-structure questionnaire were administered to the respondents in their homes by trained research assistants. About one-fifth of the total respondents 114 (19.9%) were aware of AFP surveillance system/activities and only a few 38 (6.6%) could give a reasonable definition or explanation of what AFP surveillance mean. Total 78 (13.6%) of the total respondents had seen AFP case in the previous 3 years prior to interview, while 108 (18.8%) have had a child or ward or household member with AFP. Health workers were the most popular source of information 27 (23.7%) and sensitization 18 (23.1%) on AFP surveillance. Respondents' awareness and sensitization on AFP surveillance showed no significant difference between the males and females ($p > 0.05$). However, more females than males have been questioned on AFP case by health workers especially during House-to-house supplemental immunization campaigns and this is statistically significant ($p = 0.0153$). Level of education and types of occupation of the respondents had no association with the respondents' awareness of or having had sensitization on AFP surveillance. The awareness and knowledge of AFP surveillance is low among the studied population despite the polio eradication campaign that has been on for more than a decade. Intensive health education and community sensitization is required in addition to the current effort to achieve high polio immunization coverage.

Key words: Poliomyelitis, surveillance, flaccid paralysis, supplemental immunization, WHO, AFP

INTRODUCTION

Poliomyelitis is caused by poliovirus, a single strand RNA virus which belongs to the enterovirus group. The virus has three sub-types (Type 1, II and III) all of which are capable of causing paralysis. The poliovirus infects only human beings and there is no animal reservoir.

Before the introduction of polio vaccines, the disease occurred in all countries of the world. In many countries, it is a seasonal disease, occurring most frequently in the hot and humid season. Infection with a specific type of poliovirus confers a lifelong immunity to that subtype. There is no cross immunity against the sub-types of poliovirus.

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The clinical responses to poliovirus infection are extremely variable. In more than 90% of infected individuals, the infection is in-apparent and 4-8% of infections will result in a minor illness also known as abortive poliomyelitis, while about 1% of cases will present as aseptic meningitis. Between 0.1 and 1.0% of susceptible persons infected with a poliovirus will develop paralytic disease (Marx *et al.*, 2002). People with in-apparent infection do not often seek medical care but are capable of spreading the virus to others. This group therefore, constitutes a major threat and challenges in the prevention of transmission of the polio virus.

Although, children under 5 years of age are most frequently affected, out-breaks of poliomyelitis with high attack rates among adults have been reported by Prevots *et al.* (1998) and Hennessey *et al.* (2002). The greater severity among older patients were observed in out-breaks among susceptible adults (Wyath, 1995; Oostvogel *et al.*, 1994). Besides age, unvaccinated or inadequately vaccinated children and poor socioeconomic status are important risk factors for polio infection. The risk of acquiring paralytic-manifestations is very high if infection is associated with intramuscular injections, strenuous exercise, surgery and trauma.

In 1988, the World Health Organization (WHO) committed itself to the eradication of poliomyelitis from the world. Although, the goal seemed impossibly difficult, however, much progress has been made and the end of polio is in sight. As at year 2000, about 95% of infants in the world were fully immunized against poliomyelitis hence, the number of poliomyelitis cases occurring worldwide has fallen sharply. Reports from Centre for Disease Control (CDC, 2005a, b) in Atlanta Georgia confirmed eradication of poliomyelitis from the countries of North and South America has been achieved. No cases of laboratory-confirmed poliomyelitis due to wild poliovirus were reported in North, South and Central America and the Caribbean Islands in since 1993. Most countries of Europe are reporting no cases. Globally, there has been a dramatic decline in the number of polio cases, particularly in Asia and African continents, however, 4 countries remain endemic for Wild Polio Virus (WPV) transmission. These countries are Nigeria, Pakistan, India and Afghanistan (CDC, 2005).

Acute Flaccid Paralysis (AFP) surveillance is a key strategy for monitoring the progress of polio eradication and is a sensitive instrument for detecting potential poliomyelitis cases and poliovirus infection. Good and quality AFP surveillance system have made it possible to document a substantial reduction in morbidity due to poliomyelitis. To ensure the success of the Polio

Eradication Initiative (PEI), it has become critical that surveillance be intensified so that the absence of wild poliovirus circulation can be verified with confidence in countries not reporting confirmed cases of poliomyelitis.

Following the adoption of resolution calling for global eradication of poliomyelitis by Nigerian Government intense activities have been directed towards interrupting virus transmission in the country.

Active surveillance for AFP commenced in the country in year 2000 with the recruitment of Surveillance officers by the World Health Organization (WHO) to support the state Epidemiological team in AFP surveillance and other priority diseases under the Integrated Diseases Surveillance and Response (IDSR) and to provide technical support to other officers involved in AFP surveillance at all levels in the country. The technical support provided by these officers was similar to what obtained in South Africa where National focal surveillance officers were used to support the health ministry as reported by Ngcobo (2002). Since, inception of AFP surveillance system in Nigeria and indeed Kwara state, there have being continuous improvement every year in active case search, early case detection and investigation. The AFP surveillance performance indicators for the state have always been within the global and national set targets. The achievement can be attributed to 2 major factors; the commitment of focal persons and Disease Surveillance and Notification Officers (DSNOs) who formed the bedrock of surveillance network at the health facility and community levels in the state and secondly, the financial support given to field officers to facilitate AFP surveillance. The support is mainly to offset transport cost incurred during AFP case search, reporting, investigation and stool samples collection and submission at the national laboratory.

The recent health reforms of Federal government of Nigeria focus on promoting community partnership and ownership of health activities/programme to enhance sustainability. This is particularly important in PEI considering the dwindling funds (at national and international levels) available to support polio eradication in Nigeria. Therefore, there is need to increase and/or strengthen community awareness and sensitization on AFP surveillance with a view to encouraging case detection and reporting by individuals, family and community without expectation of financial motivation of any kind. This study was conducted to determine the level of awareness and community sensitization on AFP surveillance and how these have influenced their attitude and practice of AFP case detection and reporting. The outcome of this study will provide useful information that

can be used to develop necessary action or intervention programmes that will improve community based surveillance for AFP and other priority diseases.

MATERIALS AND METHODS

This descriptive study was carried out in Kwara state, Nigeria between June and December 2007. The state has 16 Local Government Areas (LGAs) with 193 wards and estimated total population of about 2,435,000. Simple random sampling technique was used to select 120 wards. The total number of households in each ward was obtained from the Health department of their respective LGAs while the Primary Health Care (PHC) house numbering register was used to select studied households within the wards through systematic random sampling technique. In all 650 respondents were contacted but only 573 agreed to participate in the study.

Semi-structured pre-tested questionnaire containing questions that elicited required information based on the study's objectives were administered to adults (age 20 years and above) that were first seen or met in their respective households regardless of their sex, as long as the respondents are members of the households. Research Assistants (mainly health workers and teachers) were recruited and trained before visiting households for administration of the questionnaires. Verbal informed consent was sought from each participant before the commencement of the interview and only those who consented were used for the study. Data collection and analysis were done using EPI-2000 software package and frequency distribution tables were generated for each variables. Chi-square test was used to determine the statistical significance of cross tabulated variables with level of significant predetermined at ($p < 0.05$).

RESULTS

The age of the respondents ranged from 18-62 years with a mean of 35.4 ± 4.8 years. About half 293 (51.8%) of the respondents were gainfully employed while the others were students, housewife or apprentice. There were more females 303 (52.3%) than males 270 (47.7%) Table 1.

Less than one-fifth of the respondents 114 (19.9%) were aware of AFP surveillance system/activities and only a few 38 (6.6%) could give a reasonable definition or explanation of what AFP surveillance mean. Seventy-eight (13.6%) of the total respondents had seen AFP case in the previous 3 years prior to interview, while 108 (18.8%) have had a child or ward or household member with AFP (Table 2). Health workers were the most popular source of information 27 (23.7%) and sensitization 18 (23.1%) on AFP surveillance to the respondents. Although, 30 (38.5%) out of the 78 respondents who had seen AFP case in the preceding 3 years took no action on the cases, actions/steps taken by others included: Advised parent of victim to go to health facility 23 (29.5%), reported the case to a health worker 11 (14.0%), advised victim to seek care from the herbalist 8 (10.3%) or spiritualist 6 (7.7%) Table 3.

Although, majority of the total respondents 292 (51%) would advice a fresh case of AFP to report at nearest health facility, about a quarter still prefer to refer the case to traditional/spiritual healers. Respondents' awareness and sensitization on AFP surveillance showed no significant difference between the males and females ($p > 0.05$). However, more females than males have been questioned on AFP case by health workers especially

Table 1: Socio demographic characteristics of respondents

Age group (years)	Frequency (%)
≤20	46 (8.0)
21-30	133 (23.2)
31-40	223 (38.9)
41-50	121 (21.1)
51-60	37 (6.5)
>60	13 (2.3)
Total	573 (100.0)
Occupation	
Civil servant	161 (28.1)
Students	193 (33.7)
Self employed	136 (23.7)
Housewife	40 (7.0)
Apprentice	43 (7.5)
Total	573 (100.0)
Educational status	
None	82 (14.3)
Primary	109 (19.0)
Secondary	205 (35.8)
Tertiary	181 (30.9)
Total	573 (100.0)

Table 2: Respondents' responses on certain issues on AFP surveillance

Issues on AFP surveillance	Yes	No	Total
Awareness of AFP surveillance	114 (19.9%)	459 (80.1%)	573 (100%)
Acceptable meaning of AFP surveillance	38 (6.6%)	535 (93.4%)	573 (100%)
Ever seen AFP case in the last 3 years	78 (13.6%)	495 (86.4%)	573 (100%)
Child or ward/household member ever had AFP	108 (18.8%)	465 (81.2%)	573 (100%)
Ever been asked of AFP case during NID	132 (23.0%)	441 (77.0%)	573 (100%)
Ever had sensitization/discussion on AFP reporting	78 (13.6%)	495 (86.4%)	573 (100%)
Awareness of stool collection in AFP case	67 (11.7%)	506 (88.3%)	573 (100%)

Table 3: Respondents' source of AFP awareness and sensitization

Respondents' source	Frequency (%)
Source of AFP awareness (multiple responses N = 114)	
Electronic media	14 (12.3)
Print media	7 (6.1)
Health workers	27 (23.7)
Town criers	2 (1.8)
Opinion/community member	5 (4.4)
Friends/colleagues/neighbours	9 (7.9)
Source of AFP sensitization (multiple responses N = 78)	
Health workers	18 (23.1)
NID staff	11 (14.0)
NPI staff	8 (10.0)
Other health agencies	5 (6.0)
Community immobilizers	3 (4.0)
Pressmen	2 (3.0)
Subjects' action when a new AFP case is seen	
Advise case to go to hospital	292 (51.0)
Refer to traditional healers	71 (12.4)
Refer to religious leader	41 (7.2)
Pray for the child	27 (4.7)
Report to LGA/health workers	104 (18.2)
Don't know/Not sure of what to do	38 (6.6)
Total	573 (100.0)

Table 4: Effect of respondents' gender on awareness and sensitization on AFP

Sex	Awareness of AFP		Total
	Yes	No	
Sex in relation to awareness of AFP surveillance			
Female	69	234	303
Male	45	225	270
Total	114	459	573
$\chi^2 = 3.34, p = 0.0679$			
Sex in relation to sensitization towards AFP surveillance			
Female	36	267	303
Male	42	228	270
Total	78	495	573
$\chi^2 = 1.64, p = 0.2004$			
Sex in relation to questioning on AFP case by vaccinators			
Female	82	221	303
Male	50	220	270
Total	132	441	573
$\chi^2 = 5.88, p = 0.0153$			

Table 5: Respondents occupation and educational status in relation to awareness and sensitization towards AFP surveillance

Parameters	Yes	No	Total
Occupation			
Sensitization on AFP			
Civil servant	21	140	161
Student	26	167	193
Self employed	19	117	136
House wife	7	33	40
Apprentice	5	38	43
Total	78	495	573
$\chi^2 = 0.72, p = 0.948$			
Education			
Awareness of AFP surveillance			
None	15	67	82
Primary	22	87	109
Secondary	43	162	205
Tertiary	34	143	177
Total	114	459	573
$\chi^2 = 3.34, p = 0.9402$			
Action on AFP			
Sensitization on AFP			
Hospital/HW	23	11	34
Traditional healers	4	10	14
Nothing	5	25	30
Total	32	46	78
$\chi^2 = 2.93, p = 0.0009$			

during house-to-house supplemental immunization campaigns and this is statistically significant (p-value = 0.0153) Table 4. Level of education and types of occupation of the respondents had no association with the respondents' awareness of or having had sensitization on AFP surveillance. Majority of subjects who had sensitization on AFP surveillance acted positively when they saw a case of AFP than those who never had sensitization and this was also statistical significant (p = 0.0009) Table 5.

DISCUSSION

This survey was conducted in one of the polio endemic states in Nigeria where polio eradication campaign has been on over 10 years. During and after immunization campaigns community members are often sensitized by vaccination teams during house-to-house campaigns. Despite this the level of awareness of AFP as shown in this study is very low. While passive and active surveillance of AFP by health workers is important for detection of Polio cases, reporting of cases occurring among community members will provide greater yield in number of reported cases.

Early detection and reporting of AFP cases is important in detection of Poliomyelitis. Late reporting of AFP cases results in low yield of polio cases in stool samples taking later than 14 days after onset of symptoms. High level of awareness by community members is important for early detection and reporting of AFP cases. A study in Niger by Ndiaye *et al.* (2003) indicated that high quality of surveillance can improve in developing countries can improve if a community based approach is adopted. A high level of awareness and sensitization on AFP cases among community members is likely to result in low resistance to polio vaccination campaigns which have been reported in northern part of Nigeria and confirmed by Akande and Akande (2006). Awareness of AFP has been shown in this study to result in positive action on disease reporting, this will certainly be enhanced if a high level of community members are aware or sensitized on Acute Flaccid Paralysis. AFP Surveillance provides a means of detecting circulating wild polio virus in a population and is therefore crucial to the global polio eradication effort. Surveillance will be necessary as long as global polio eradication is ongoing until final global certification of polio free world is achieved (Lernout and Casteren, 2005).

The low level of awareness of AFP in this study population is further worsened by very low (6.6%) correct knowledge of AFP. This is probably a reflection of the quality of health education and sensitization given by the health workers and even volunteers that are recruited during house-to-house polio eradication campaigns. In

this study, significantly more females than males have been questioned on AFP during house-to-house campaigns but there was no significant gender difference in awareness of AFP among the respondents. This further buttresses the likely problem of quality of the sensitization by these health workers during the campaigns. There is therefore, a need to address the communication method and various strategies used for health education and sensitization by the health workers. Adequate knowledge and understanding of certain diseases among people is often hampered by the absence of local name that corresponds adequately with the disease.

There was no significant difference in level of awareness of AFP across the various education levels unlike the case in several other health conditions. This is an indication of the general low level of health education in this community on AFP which was earlier reported by Olawoye *et al.* (2000). With the importance of AFP surveillance as a strategy in polio eradication a lot more will need to be done to get people to be well aware of AFP. The meeting of expert review committee on Polio Eradication Initiative in Nigeria also highlighted the importance of raising community awareness on AFP to improve on the quality of AFP surveillance. Even when countries are certified free from Poliomyelitis, AFP surveillance will need to be in place for some time.

About one-fifth of respondents who are will take action if they see a case of AFP will seek intervention of traditional and spiritual healers. In African countries a lot of people still believe in supernatural causation of diseases attributing them to evil forces. Deformities are often associated with evil forces and this believes prevent people from taking appropriate responses for disease investigation and treatment. In a study in Niger by Ndaiye *et al.* (2003), 75% of nurses reported that cultural believes are a major constraint to AFP surveillance and is known to prevent or delay detection, reporting and investigation of AFP cases. Health education directed at this believes is important in developing countries.

CONCLUSION

This study have shown low level of awareness of AFP surveillance and poor knowledge of AFP case at the community level despite all strategies and ongoing activities directed towards polio eradication campaign in the last 10 years in Nigeria. Community based health education and sensitization need to be strengthened in addition to the current effort of house-to-house strategy to achieve high polio immunization coverage and community driven surveillance in the country.

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