

Original Article

Year: 2016 | Volume:4 | Issue-1

Obituary to polio through tool of social mobilization- A cross-sectional study in Western Uttar Pradesh

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Abstract

Background: Poliomyelitis (polio) is a highly infectious viral disease and mainly affects children under five years of age. **Objective:** The present cross-sectional study was conducted to assess the impact of social mobilization on families resistant to giving polio drops to their children.

Materials and Methods: One round of polio drop administration during September, 2014 was selected randomly. Medical interns were trained as social mobilizers by the UNICEF. The social mobilizers visited the households that

refused to give polio drops to their children because of certain rumors and misguided beliefs. They tried to convince the family members that polio drops were safe and it did not hurt any religious and cultural sentiments.

Results: The total number of resistant families, identified during first day of house to house activity was 270. Out of these, 180 families were visited by Team 'A'. Rest of the houses were covered by other agencies. A large number of houses 106 (58.8%) were converted to 'P' houses and 74 houses

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(41.1%) remained resistant after the activity of Team 'A'. These resistant houses were again visited by Team 'B' members. Out of these 74 houses, polio drops were administered in 57 (77.0%) houses. However, after maximum efforts of both the teams, only 17 (9.4%) houses remained extremely resistant.

Conclusions: Large numbers of resistant families were converted to 'P' houses.

Introduction

Poliomyelitis is a viral disease mostly affecting children that can paralyse them. It mainly affects children under five years of age. One in 200 infections leads to irreversible paralysis. Among those paralyzed, 5% to 10% die when their breathing muscles become immobilized.¹ Globally, there were 359 cases of wild polio virus, reported in 2014 which included 340 and 19 polio cases in endemic and non-endemic countries respectively. Out of these cases, Pakistan reported maximum number of cases (306) followed by Afghanistan (28), Nigeria (06), and Somalia (05).² Setbacks to polio eradication program started in 2002 when new cases steeply rose from 268 in 2001 to 1600 in 2002.³ In India, declining trend of polio cases has been noticed since 1998 setback occurred in 2002 and from 2006 to 2009

However, some of the families remained resistant even after maximum efforts of the teams. These extremely resistant families might be the potent sources of polio infection in the community and they should be followed up strictly.

Keywords: Polio round, Social mobilization, Post polio eradication, Resistant houses

large number of cases have been reported.³ The last case (Rukhsar) of P₁ polio virus in India was reported on 13th January 2011 in Howrah district of state of West Bengal.⁴ India's name has been struck off from the list of endemic countries⁵ and finally "Polio Free India" certification was done on 27th March 2014.⁵

It has been recommended that dose of IPV should be included by the end of 2015 as part of commitment of the countries declared polio free to the global polio endgame plan which aims to ensure a polio-free world by 2018.⁶

Initially, Pulse Polio Immunization Programme (PPI) enjoyed enormous success and popularity. There was an immense spirit of volunteerism throughout India, which resulted in successfully increasing the Oral Polio Vaccine (OPV)

coverage from 85% in 1995 to 96.1% in 2000–2001.⁷ In 1999–2000, the Government of India stepped up the frequency of mass immunization from two national campaigns per year, which normally took place 4 to 6 weeks apart between December and January, to six. It also introduced a series of five Sub-National Immunization Days (SNID) with intensive vaccination of children in eight states where cases of paralytic polio were reported: Assam, Bihar, Gujarat, Madhya Pradesh (M.P.), Orissa, Rajasthan, Uttar Pradesh (U.P.) and West Bengal (W.B.) and the activity was renamed as Intensified Pulse Polio Immunization (IPPI).⁸ This was an effort to reach the remaining 3.9% children. These 3.9% or 5.3 million children were those eligible children, between 0-5 years of age, who either did not turn up at the booth or dropped out of the vaccination exercise.⁸ Without reaching these children it was not possible to eradicate the poliovirus from the country.

However, the most backward and underserved communities with little or no access to mass media were probably not reached by these activities. It was also noted that communication between health specialist, national planners and community was poor. The rationale behind administering OPV drops to 0-5 year children through repeated doses over the

years was poorly appreciated by the people.⁹ At the same time, in an effort to reach targets, use of force by the health workers in underserved areas added to the resentment against a ‘government sponsored programme’. Doubts were raised about government motives in repeated rounds. Doubts left unanswered led to rumors such as polio drops cause infertility, are useless and paralysis may occur in spite of its administration or it causes polio.⁸ People started shutting doors and hiding their children. They told lies and refused to have their children vaccinated, especially males.¹⁰ At this stage, resistance and rumors against OPV were widespread in the community. It became clear that the program could not succeed without participation of the community. Efforts were undertaken to break the barrier of resistance by social mobilization. An analysis of children affected in 2002, Aligarh revealed that these children were below 2 years of age, predominantly Muslim boys.¹¹

The majority of cases (80%) were reported from Western Uttar Pradesh (UP), accounting for 60% of global cases.¹² These cases were mostly confined to densely populated urban areas with poor civic amenities. Western Uttar Pradesh was the ‘world Epi-centre’ for polio in 2003.¹¹ World Health Organization (WHO) and

Government of India's surveillance data showed that children in 'high risk' urban slums of Western UP were being consistently missed during NID or SNID and Routine Immunization sessions and they were primarily Muslims and It was estimated that 3.9% or 5.3 million eligible children were missed during the rounds.^{12,13}

The Aligarh Muslim University was approached by the UNICEF to work towards addressing the resistance in the underserved areas in partnership with UNICEF, Rotary International and District Administration.¹² Role of Social Mobilization Network (SMNet) of UNICEF was to improve access and reduce family and community resistance to vaccination.¹⁴

Information, Education and Communication (IEC) activities were stepped up by multiple channels of communication, focused on reminding

parents of the importance of vaccinating all children below 5 years of age, right from infancy, with TV spots, appeals by politicians and film stars.^{7,15}

To reach these resistant pockets in community and to reduce the resistance, especially in more resistant Western UP including Aligarh, the underserved strategy was introduced and involved religious leaders, health personnel, opinion makers and other influential persons. They are instrumental in removing the misconception regarding polio drops, thereby reducing the resistance in the community especially Muslims. During the Friday prayer sermon, given by the high priest in the mosques, these rumors were clarified and rectified.¹³ Keeping in mind above facts, this study was undertaken to assess the impact of this social mobilization effort on resistance to the program.

Materials and methods

This cross-sectional study was conducted in nine high risk urban areas of Aligarh, namely Indira Nagar, Banna Devi, K.K.Jain Clinic, Mehfooz Nagar, Upper Fort, Naurangabad, Jeevangarh, Begum Bagh and Ghantar Chowk where maximum number of resistant families were identified during polio rounds. Aligarh is a small

district in the state of Uttar Pradesh, situated about 133 Km in south east of Delhi with an area of 5019 Sq Km and having a population of 3,673,849. The population of Aligarh city is 872,575 having an estimated 95,983 children in the age group of 0 to 5 years. Of these, 43% (37,5207 children) are living in nine high risk areas.¹⁶

To find out conversion rate by social mobilizers, out of 05 polio rounds conducted in Aligarh, one round of polio immunization campaign (September, 2014) was selected randomly for this study. Medical interns of the Aligarh University were trained as social mobilizers by the UNICEF, Rotary International trainers for carrying out Team 'A' and Team 'B' Activities. In every team, there was at least one female medical intern to play a vital role. Her presence made the accessibility to the houses easier because most of the male family members were laborers or working in small -scale industries and stayed away from home at the time of visit. Only female members of family were available. The Interns were trained keeping in mind the demographic, socio-economic, cultural and religious factors of the communities.

People were living in hard to reach areas, urban slums which were underserved. Training was also given to interns in such a way that they were capable of dealing with the local issues which are not directly related but they had indirect effect on social mobilization program. Sometimes the communities were resistant to polio drops not because of fear of sterility or other side-effects, but for other proxy grievances like electricity, water supply, roads and waste disposal etc.

Vaccinators were not the part of the team but they moved with the teams and vaccinated the children in resistant families. Sunday was the booth day on every polio round where families were supposed to bring their children to booth for vaccination. Most of the time attendance at booth was low due to the anticipation that the vaccinators would come on Monday at their door step to vaccinate their children.

On Monday vaccinators identified the resistant families refusing vaccination with polio drops. In the daily evening meeting at the district hospital, list of the resistant families were made and handed over to community mobilization coordinator (CMC) of the concerned area for next day activity. Team 'A' activity started on Tuesday and continued for four days. Team 'A' was accompanied by the CMC who took the team of interns to resistant houses. Trained members of the Team 'A' first greeted the families, took note of their grievances and asked about any apprehension regarding polio drops. They tried to counsel the families and answered their doubts. They imparted correct health education in a friendly atmosphere to these resistant families and tried to convince them that polio drops did not have any side effect and it did not cause sterility.

After convincing them, polio drops were given to their children. Sometimes the family pretended that child was sick. The interns, then examined the children and if found sick, gave them medicine which they carried with them. The seriously ill children were referred to nearby health centers, district hospital and medical college. These sick children were vaccinated on subsequent days.

During house to house Team 'A' activity, most of the resistant or 'XR' houses were converted to 'P' houses where polio drops were administered to children. However, during this activity, few resistant families were identified who refused to give polio drops to their children even after exhaustive and skilful social mobilization activity carried out by Team 'A' members. For these more resistant families Team 'B'

activity was carried out 2 to 3 days after the completion of Team 'A' activity. Numbers of Team 'B' were reduced due to less number of resistant houses. Composition of Team 'B' was based on feedback received from the CMC and medical officer regarding performance of the Team 'A'.

All efforts were made to convince these families by the team members but in some of the families, medical interns and other social mobilizers could not succeed. These were extremely resistant families which constituted the vulnerable group posing threat to the children in the community. Appropriate ethical clearance for the study was obtained from the Institutional Ethical Committee of J.N. Medical College, Aligarh Muslim University, Aligarh (India). Data were collected, collated and analyzed using SPSS 20.

Results

Total number of resistant houses, identified on first day of house to house activity was 270 which included sick children (XS) and purely resistant houses (XR). Practically these houses were considered as resistant as most of the families pretend that child was sick. It included 199 houses of sick children, and 71 resistant houses without any apparent reason of denying the polio

drops. Out of these, 180 families (66.7%) were visited by Team 'A'. Rest of the houses were covered by other agencies. A large number of houses 106 (58.8%) were converted to 'P' houses (houses where children had polio vaccination). After 3 days of Team 'A' activity, 74 houses (41.1%) remained resistant and these were most resistant houses. (Table-1)

Table 1: Conversion during Team ‘A’ Activity

XR: Resistant family other than sick child

XS: Sick child

Categories	Visited	Converted	Not Converted
	No.(%)	No.(%)	No.(%)
XR	22 (29.7)	15 (68.2)	07 (31.8)
XS	52 (70.3)	42 (80.8)	10 (19.2)
Total	74 (100.0)	57 (77.0)	17 (23.0)

All the 74 most resistant houses were visited by Team ‘B’ volunteers. After prolonged counseling and motivation, family members of 57 houses (77.0%) allowed administering polio drops to their children. However, Team ‘B’ failed to give polio drops in 17 (23.0%) houses and these

were seen as extremely resistant houses. It included 10 sick children and 07 resistant families where apparent reason of resistance was not known. Conversion rate was higher in sick children (80.8%) than other type of resistance (68.2%). (Table-2)

Table 2: Conversion during Team ‘B’ Activity

Categories	Resistant Families	Visited	Converted	Not Converted
	No.(%)	No.(%)	No.(%)	No.(%)
XR	71(26.3)	41(57.4)	19(46.3)	22(57.3)
XS	199(73.7)	139(69.8)	87(62.6)	52(37.4)
Total	270(100.0)	180(66.7)	106(58.8)	74(41.1)

Table-3 summarizes the result of Team ‘A’ and Team ‘B’ activities in nine high-risk areas. Out of 270 resistant houses, identified during house-to-house activity,

180 houses were visited by both the teams. Out of these 180 resistant houses, 163 (90.6%) houses were converted to ‘P’ houses by the workers of Team ‘A’ and

Team ‘B’. Only 17 (9.4%) houses were remained resistant after putting across all efforts. These houses were notified and list

was given to higher authorities for further action at their end.

Table: 3 Conversion during Team ‘A’ & ‘B’ Activity

Categories	Resistant Families	Visited	Converted	Not Converted
	No.(%)	No.(%)	No.(%)	No.(%)
XR	71 (26.3)	41 (22.8)	24 (58.5)	07 (17.1)
XS	199 (73.7)	139 (77.2)	129 (85.6)	10 (5.0)
Total	270 (100.0)	180 (100.0)	163 (90.6)	17 (9.4)



Picture 1: Interaction with a resistant family during social mobilization

Discussion

The main achievements of the present study is that in all high risk areas maximum numbers of resistant families were

converted to ‘P’ houses where large numbers of children were given OPV. These families were persuaded and convinced by the teams of interns, social

workers and influential persons that polio drops did not have any side-effects. Local influential persons first gave OPV to their children in front of large number of people, thereby removing the fear regarding the OPV in the community.

The people in these areas asked for other basic amenities like sanitation, drinking water, health services and electricity. Team members discussed their problems with the district authorities and requested to instruct the person concerned to take appropriate action at the earliest. This helped a lot in reducing the resistance in the families. But this program cannot be linked with their other problems. Resistance was high in K. K. Jain area which was attributed to the fact that a child died after administration of polio drops (due to some other illness) and this news was published in local dailies. Later on, it was found that child died due to other reason not related to polio drops. These extremely resistant families might be the potent source of infection and they should be followed up strictly. All effort should be made to give polio drops in these families.

When the people were told that team members were doctors from medical college, their response was good as compared to response given to other staff members of the district hospital. They were

more receptive to the advices given by medical interns.

In a study conducted in Aligarh, India, unclear information and lack of communication was identified as the main reason for resistance to polio drops.¹⁰ The other finding observed was that families in cities like Aligarh were not provided adequate information regarding polio eradication program and vaccinating every child every month. It was apparent that this might have contributed to fatigue, if not suspicion of the program.¹⁰ Since this study was conducted in 2009 and in different setting, reasons for resistance might be different as observed in our study. Communities where social mobilization activities are conducted are consistently less likely to refuse OPV, more likely to attend booths and more likely to report positive attitudes towards OPV and higher perception of polio risk.^{13,16} In four high-risk districts of Uttar Pradesh where social mobilization activities were conducted, the number of wild poliovirus cases dropped from 116 to 49 and there was a significant increase in booth coverage between 50% and 57%, compared with 19-35% at district level.⁸ A one-year longitudinal study in 13 districts of Uttar Pradesh demonstrated that booth coverage was 8 to 12% higher in areas with a community mobilization coordinator than in areas without one.¹³

Similar observations were found in a study conducted in Surat, India.¹⁷

Other studies found a statistically significant difference ($P < 0.05$) in families' positive attitudes and behaviors towards OPV.^{18,19}

Limitations

This cross-sectional study involved only polio drops resistant families of Aligarh and had a small sample size; therefore, caution needs to be taken to generalize the findings. This study was also conducted only in areas with available social mobilization network

Conclusion

Large numbers of resistant families were converted to 'P' houses where children were administered oral polio drops. High rate of conversion was achieved by the effective social mobilization activities. However some of the families remained resistant even after maximum efforts of the teams. These extremely resistant families might be the potent source of infection and may transmit the infection in the community. Hence, they should be followed up strictly. All efforts should be made to impart correct health education regarding importance of polio drops and routine immunization. There is a need to

An evaluation of the role of community mobilization coordinators in Uttar Pradesh pointed to a 20% increase among families who reported that interaction with community mobilization coordinators influenced their intention to vaccinate their children.²⁰

of the UNICEF. It would have given more valid results if comparison was done in two different settings: one with available social mobilization network and one without it. Moreover, as this is a cross-sectional study, associations have been established among variables but not the casual inferences.

carry out polio campaign more vigorously through information, education and communication (IEC) activities in post eradication phase for sustainability. District authorities should focus on issues related to basic amenities of the community. Communication strategies such as mobilizing social networks and community leaders, creating political will, increasing knowledge and changing attitudes, overcoming gender barriers and, above all, reaching out to the poorest and the most marginalized population of the community. It is important to cover unserved and underserved population as they had played a central role in the final push to eradicate polio and would continue in sustenance of

polio campaign till it is eradicated from our neighbours and whole world.²¹

Fatal attacks on frontline workers in Pakistan and Nigeria and a programmatic emergency, mainly caused by funding deficit, the global polio eradication efforts are passing through a

Acknowledgement

The research team acknowledges the help provided by Community Mobilization Coordinators (CMC) of UNICEF in the

critical phase where the impact of its outcome is going to be felt all across public health programs. Keeping in mind the world scenario, we should be more vigilant despite certification of polio free India by World Health Organization and other international agencies.²²

field. We are also thankful to our medical interns for carrying out social mobilization and subsequently reducing the number of resistant houses.

Competing Interest

The authors have declared that no competing interests exist.

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