



POLIO VACCINATION; KNOWLEDGE, ATTITUDE, AND PRACTICE IN DISTRICT ABBOTTABAD, KHYBER PAKHTUNKHWA, PAKISTAN.

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INTRODUCTION

Pakistan is 5th most populous country in the world with a population of 180.71 million, out of which 62.62% live in rural and 37.38% live in urban areas. Overall literacy rate is 52%. Pakistan spends only 0.7% of its GDP on health, and due to this low budget, the infectious diseases and childhood immunizable diseases are still accounting for the major portion of sickness and death¹. The initiative for the Global Eradication of Polio was coordinated by the Expanded Programme on Immunization (EPI), established by World Health Assembly (WHA) in 1974². Polio was the first disease whose eradication was the

ABSTRACT... Objective: To assess knowledge, attitude and practice (KAP) about poliomyelitis (polio) vaccination in District Abbottabad, province Khyber Pakhtunkhwa (KPK), Pakistan, to identify reasons of failure of polio vaccination/ eradication campaign and to make recommendations in the light of the study. **Setting:** District Abbottabad, province KPK, Pakistan including both urban and rural areas. **Period:** Three months from 1st June to 31st August 2012. **Methods:** This cross-sectional descriptive explorative study was conducted in District Abbottabad, of province KPK, Pakistan. A structured questionnaire was submitted to people in the urban and rural population using convenient sampling. Out of 200, only 142 questionnaires were filled by interviewing parents and guardians of the children followed by focused group discussions with the community heads and the parents of the children. **Results:** Majority (61.78%) of respondents were of low income category with the mean age of 31 years. Amongst those (75%) were earning Rs.7,000-12,000 per month. Literacy rate was low with 45.77%. Out of which 40.67% fathers and 59.33% mothers were illiterate. Therefore a few respondents were aware about the mode of transmission of polio. Majority (80%) said that polio could be prevented by polio drops and about 86% said that this vaccine had no side effects. About 45% respondents refused to cooperate with polio teams, and 28% respondents believed, that Abbottabad Operation had bad effect on anti-polio campaign. Regarding the use of boiled drinking water, 95.8% respondents knew that it was good for health. While only 4.20% were using boiled water for drinking. Advice of the health professionals (69.71%) and other family members (7.74%) was respected in making health care decisions, therefore it was an opportunity for the government to involve these persons as well as media men in conveying message to the community to achieve ultimate goal of polio free Pakistan. **Conclusions:** Unawareness among the population of District Abbottabad, especially the knowledge about the disease, mode of transmission and its prevention are the most deficient areas. Secondly misconceptions about the nature of polio drops, and religious misinterpretations in masses, created by general public and religious leaders, are the major obstacles in the real success of vaccination campaign.

Key words: Polio, Poliovirus, Polio vaccine, Polio eradication, KAP, GPEI.

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goal of EPI³. Pakistan was the co-sponsor of the resolution adopted by WHA in the subject matter⁴. The Global Polio Eradication Initiative (GPEI) was launched in 1988⁵. Polio is the most serious viral disease⁷, that presents as an acute febrile illness with sudden onset of weakness of extremities⁸, and spreads most commonly by faecal-oral route, particularly in areas of poor sanitation, affecting mainly young children. The wild poliovirus (WPV) is transmitted through contaminated food and water, and multiplies in the lymphoid tissue of intestine, from where it can invade the nervous system. Many infected people have no symptoms but do excrete the virus in their faeces, hence

transmitting infection to others. The virus survives in endemic form by infecting a continuous supply of susceptible infants born into the community⁹. The disease is preventable through high immunization coverage with polio vaccines¹⁰. Two hundred and two suspected cases of polio were studied, at Virology Department of National Institute of Health (NIH) Islamabad, which revealed, that nearly 94% of children were unvaccinated, amongst them about 93% had culture proven polio¹¹. The global importance of polio is obvious by the fact that a day (October 24) is declared by the WHO, as World Polio Day. The discovery and production of polio vaccines, inactivated polio vaccine (IPV) and oral polio vaccine (OPV) in the 1950s and subsequent massive global anti-polio immunization campaigns through the GPEI, changed the picture and infection rates declined rapidly¹². Pakistan seemed to be very near of the success, because polio cases remarkably decreased from 198 in 2011 to only 58 in 2012. Anyhow, hurdles like the war against terrorism, frustration among vaccinators, lack of awareness, and inaccessibility are there to retard the vaccination campaign¹³. The polio eradication campaigns in Pakistan have been suffering from continuous setbacks as 27 polio workers have been assassinated since December 2012 during anti-polio immunization campaigns^{14,15}. Polio is close to being completely eradicated, with less than 300 new cases being reported globally in 2012¹⁶. Fortunately the three countries (Afghanistan, Nigeria, and Pakistan), those have yet to end endemic polio transmission have restricted the virus to fewer areas than ever before¹⁷. On May 26, 2012, the WHA declared ending polio a “programmatically emergency for global public health”, and called on the WHO Director-General to develop and finalize a comprehensive polio endgame strategy considering, India’s success, the threat to the global community of ongoing poliovirus transmission in three endemic countries including Pakistan, and the growing knowledge about circulating vaccine-derived polioviruses (cVDPVs), which can cause outbreaks of paralytic disease¹⁸. In 2013 WHO reported 74 polio cases in Pakistan, out of which, 51 (69%) of the polio confirmed cases were from Federally

Administered Tribal Areas (FATA), that was identified as the single major poliovirus reservoir in Pakistan¹⁹. The Government of Pakistan had highlighted multiple reasons of polio in Pakistan primarily militancy and ‘refusal families’. Militancy, had compounded the polio campaign in FATA and North Waziristan of Pakistan, by putting many children at risk. As a result of the GPEI, polio today harms a relatively small number of children worldwide, but this situation will change dramatically, in case eradication is not completed, because polio is having an in-built epidemic tendency. It is anticipated, that in the present scenario of ongoing endemic transmission in three endemic countries will continuously threaten polio-free areas everywhere in the world, until and unless it is eradicated completely¹⁸.

METHODOLOGY

This study was conducted in rural and urban population of district Abbottabad. The study included 200 households through convenient sampling. Only permanent residents of district Abbottabad with at least one child under the age of 5 years were selected. Data was collected through a structured questionnaire. After collection of data, focused group discussions were made with parents and community members on various issues about polio and its vaccination. Focused discussions were carried out to identify various barriers to vaccination in the District Abbottabad, and issues of coverage and refusal, regarding polio vaccination. The parents were given a brief introduction about the issues regarding the vaccination and were posed with different questions about use, advantages/ disadvantages, and side effects of polio vaccine.

Variables of interests

Socio demographic variables

- a) Age of parents
- b) Level of education

Study variables

Knowledge, attitude and practice of parents about polio vaccination.

Statistical analysis

Statistical analysis was performed using the SPSS

17 version for quantitative analysis. Descriptive statistics were used to describe the data.

RESULTS

In the selected areas, out of 200 households, 142 questionnaires were filled and returned, during the study period.

Age of respondents

The mean age of respondents was 31 years and number of children varied from 1-7. The children under 5 years were 139.

Population Response

The population response was not satisfactory as out of 200 sample size, 142 (71%) responded to the survey and showed interest in which male to female ratio was 65% and 35% respectively, while 58 (29%) refused to participate with gender distribution of 68% male and 32% female.

Educational status of the respondents

The literacy rate of district Abbottabad was comparatively better in urban population than in rural population.

Knowledge of Parents Regarding Polio Vaccination

When respondents were asked about polio vaccination, 84.50% were not vaccinated, and remaining were not interested to reply. Information about ways to prevent the disease by polio drops was 80% while 20% knew little. When inquired about the side effects of the polio vaccine, 86.61% said that it was harmless and 9% said that it had side effects like impotence, 2.3% did not respond and remaining 2% said that it could cause death.

Visits of Polio Teams

When asked about visits of polio teams to their door steps, 56.33% respondents said that polio teams visited their home for polio drops in most recent campaign, 34.07% said that polio teams did not visit and 9.6% were unaware whether any team visited or not.

Refusal Cases of Polio Drops

About 45% of the respondents agree that they refused vaccination of their children while 11.5%

did not reply to this question, and 43.8% had got their children vaccinated.

Attitude about Polio Vaccination

About 71% respondents showed positive attitude towards polio vaccination but 29% said that they would stay away from the teams or not at all respond, showing their confusion on the issue.

Satisfaction on Current Polio Campaign

When asked about the current situation of anti polio drive, most of the respondents (76.76) were satisfied with the current polio campaign but 13.38% were still not satisfied and rest (9.86%) did not respond the question.

Knowledge about the Transmission of Virus

It was revealed that over 57% respondents were unaware of the routes of disease transmission, 21.12% knew that the polio is transmitted by faecal-oral route.

Decision Making

When inquired about the decision maker in the family about the intake of polio drops, it was found that father (43.93%) followed by grandparents including grandfather (26.16%) and grandmother (15.51%) and others 10% (like uncle and cousins) were the decision makers. The role of mother was only (4.4%) in decision making. When they were asked, "why are children vaccinated, and what to do if they are missed"? Over 70% respondents replied, that they knew, that these polio drops meant for the prevention of polio and disability. Majority (77%) of the respondents, regarding missed vaccination said they would like to take those vaccination missed children to the nearest hospital or health care facility, while 11.56% said they would not do so.

Use of Boiled Drinking Water

Most of the respondents had no concept of use of boiled drinking water in their daily life. Only 4.2% said, that they were using boiled water for drinking, and 95.8% had never used it.

Focused Group Discussion

Based on group discussion following was observed:

1. Majority of local participants knew that polio is a serious health issue in Pakistan.
2. Lack of communication and proper briefing about benefits of polio vaccine by the vaccination teams to the community is a major reason of lack of interest and refusal of parents for their children vaccination
3. Poverty, daily wages of males and Parda observation of females are the other major reasons for missed polio vaccination children during National Immunization Days (NIDs) for polio. The father cannot afford to spare a day and lose his daily wages earning for vaccination and ladies are not allowed to go out (Parda Observation).
4. Misconcepts and baseless rumors about the dangerous effects of vaccine causing infertility in male children is also a serious issue among the illiterate masses who are reluctant to get their children vaccinated especially the male ones. These people consider it as a sort of family planning program under the disguise of polio vaccine. It needs to be addressed and nullified.

During group discussions, the participants were given detailed information about the polio drops to clear their reservations. This had a very positive effect and majority of them agreed to get vaccinated their children who were missed during polio vaccination campaign.

People should be motivated through media to get their children vaccinated from near health care facility. Vaccination teams should spend some time with parents of the children and community members to educate them about the benefits of the polio vaccine drops. They said that next time it is quite possible that, "the community members may even wait for these drops during NIDs. To overcome the refusals, it is important that teams or participants should give these polio vaccine drops to their own children in front of those who are refusing, so that they get convinced that nothing would happen to their children. School teachers should also educate children about the benefits of polio vaccine. Political will and religious leadership's negotiation should address

and motivate their local community to actively participate in this national campaign. The Polio Eradication and Endgame Strategic Plan 2013-2018, addresses the eradication of the disease, whether it is caused by WPV or cVDPV¹⁸.

DISCUSSION

The present study showed that though most of the parents and care givers of the children knew, about polio vaccine drops and their advantages but information about the mode of transmission is lacking in the community. No doubt militancy, especially in FATA and North Waziristan area of Pakistan had its impact upon polio campaign, in addition of 'refusal families' but perception of militancy alone as an obstacle for polio eradication efforts is not absolute²⁰. The other major reasons for new poliovirus cases in the secured areas of Pakistan, are lack of accurate polio vaccination coverage estimates and unaccountability of responsible officials. This is evident in the measles epidemic in the violence free zone of southern Sindh which highlights the failure of public health preventive system as the primary malefactor rather than the poor security perspective^{21,22}. Three hundred and six deaths and 14000 reported cases of measles in 2012 draws the attention towards the poor immunization infrastructure, swarming with incorrect reporting²³. Measles was one of the six childhood immunization diseases, for which EPI set its initial goal to provide immunization services to all the children of the world by 1990, during the first year of life³. These failures in Pakistan's polio eradication campaigns are now complicating the global scenario for a polio free world²⁴. In 2011 seven poliovirus cases were detected in China, in which type 1 poliovirus strain endemic in Pakistan was identified genetically²⁵. Vaccinators and polio teams should also educate the community about the transmission of polio and its possible dangers to the children. Polio is one of the most feared diseases of the 20th. Century, being incurable till to date, yet preventable. Prevention is through safe and effective polio vaccines both IPV and OPV, which are available as hope for the best. The strategy to eradicate polio is therefore based on preventing infection by vaccinating every child until transmission stops and the world is

polio-free. According to global polio eradication initiative report Pakistan is one of three endemic countries, that still is facing different problems in the eradication of polio from its homeland. Despite security and violence issues, which are major hurdles for polio eradication in Pakistan, still there is dire need to strengthen vaccination programme through introduction of tools of information technology (IT). The monitoring of vaccination campaigns through IT like SMS text and global information system (GIS) needs to be adopted and implemented for accurate coverage during supplementary immunization drive^{26,27}. The urgently needed security compromised areas must be addressed on priority basis, but close monitoring of polio vaccination campaigns is of the utmost importance to ensure accountability and to affect factors behind poor coverage. As polio can only be prevented by polio vaccination (both OPV and IPV) so effective polio vaccines and effective vaccination programmes are two important factors, which have affected the national polio campaign. The problem of vaccine storage in areas where refrigeration facilities are not available or power supply is discontinued very frequently also affects the efficacy of polio vaccine²⁸. The polio refusals increased in the districts of Sindh which had been declared 'sensitive' for worsening security situation. Religious extremism in Shikarpur and some other districts of upper Sindh was on an alarming increase, which might have caused increase in the refusals²⁹. Failure to Vaccinate was due to rumors spread by some religious groups that the polio vaccination was a conspiracy of the West for birth control by reducing women's fertility. The ultimate result on the people of the rural areas of Pakistan, was their hesitation in vaccinating their children. These rumors were nullified by sincere efforts of the Polio workers and by initiation of intensive eradication campaigns such as door-to-door vaccinations by the Government of Pakistan in 1999. Afterwards, drone attacks, CIA fake vaccination campaign for Abbottabad operation, and different Pakistan Army Operations in FATA to eliminate Tehrik-e-Taliban Pakistan (TTP) which resulted millions Internally Displaced Peoples (IDPs) to migrate to IDPs camps, and various

cities of KPK. These all things promoted poliovirus spread from FATA to other parts of Pakistan³⁰.

The government of Pakistan has taken some steps to make the polio campaigns more effective after the recent concerns of the WHO over the high number of polio cases, which include:

1. The National Assembly of Pakistan unanimously passed a resolution, urging all lawmakers to ensure the implementation of the polio immunization program in their respective constituencies.
2. The Government of Pakistan made it mandatory for each person travelling from the FATA to be vaccinated before entering the settled areas to prevent the spreading of poliovirus in the settled areas of Pakistan.
3. The polio campaign was stopped in FATA because of security reasons in 2012, leaving almost over 300,000 unvaccinated children in only Waziristan where the militants had banned vaccination in mid-2012. According to a press release of the Inter Services Public Relations (ISPR), the Army will provide security to the health workers and parents in FATA during the Polio vaccination campaigns.

It is hoped that, these new measures would surely reduce the number of polio cases in Pakistan and eliminate polio from Pakistan if implemented. The elimination of terrorism and power shortage require a sincere effort to make polio free Pakistan, without which all will be ended in smoke.

CONCLUSIONS

It has been concluded that unawareness of the population of District Abbottabad, especially the knowledge about the disease, mode of transmission and its prevention are the most deficient areas. Secondly misconceptions about the nature of polio drops, and religious misinterpretations in masses, created by general public and religious leaders plus security issues related to terrorism are, the major obstacles in the real success of polio campaign. Nevertheless, there is a need for collective efforts of health professionals, community representatives, and media men to create a conducive environment.

This may help the people to motivate each other and convince those who have reservations about this campaign.

RECOMMENDATIONS

Community needs to be continuously educated on prevention of polio. Community messages need to be simple, easy to understand and preferably in the local languages. Regular feedback from the community would be helpful for more effective educational campaigns. Decision makers need to be involved through group discussions, seminars/ symposia and conferences, about polio vaccination. Government and nongovernmental organizations (NGOs) should support local communities of the areas to make the campaign successful through monitoring, by arranging group discussions, seminars, media exposure by showing videos, colored charts for illiterate to help them in understanding the drawbacks and nature of disease and continuous evaluation. Last but not the least, the latest computer technology (IT, SMS text, and GIS) must be availed to save the most precious thing, the time by avoiding duplication of efforts.

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A woman's loyalty is tested
when her man has Nothing.

A man's loyalty is tested
when he has Everything.

Unknown

