**Original Article**

# Concerns and perceptions towards polio vaccination in the population of Rawalpindi, Pakistan

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**Objective:** To assess the concerns and perceptions towards polio vaccination in the population of Rawalpindi, Pakistan.

**Methodology:** This descriptive study was conducted in Holy Family Hospital Rawalpindi, Pakistan from May to June 2018. A Questionnaire was designed to collect data by consecutive sampling technique. Analysis was done using SPSS version 23.

**Results:** A total of 629 participants were interviewed. Out of 443 participants who got their children vaccinated, 168 (37.9%) had untrue concerns such as false religious beliefs (6.5%), lack of trust on government (57.7%) and fear of infertility (20.2%). A few of them (10.1%) erroneously believed that the polio campaign had some hidden agenda behind or that vaccine itself causes disease. Majority of participants (87.3%) had the opinion that door to door polio service will help to eradicate the disease.

**Conclusion:** Lack of trust on government and religious beliefs were two major reasons, out of several, for not having vaccination. The government should focus on creating awareness programs and eliminating false perception regarding vaccination through media mobilization. Penetrating the community through local leaders is another option. (Rawal Med J 202;46:176-179).

**Keywords:** Poliomyelitis, vaccination, immunization.

## INTRODUCTION

Polio is a highly infectious disease caused by 3 different types of polio virus belonging to picornaviridae family which invades the nervous system and is mainly transmitted through orofecal route.[1,2] The clinical features range from respiratory illness, gastroenteritis, and malaise to severe forms of paralysis.[3] Polio is associated with crippling deformities affecting thousands of lives globally.[2] In 1988, polio was endemic in 125 countries and there were 350,000 estimated cases reported leading to the development and initiation of Global Polio Eradication Initiative (GPEI) with the collaborative efforts of WHO, Center for Disease Control and Prevention (CDC), UNICEF and other partners.[1,4,5,6] The GPEI reduced the global incidence of polio by more than 99.9% with the disease remaining in only 3 countries (Afghanistan, Nigeria and Pakistan).[7]

Polio eradication in Pakistan has largely been possible due to use of Oral Polio Virus vaccine. In 2015, on WHO recommendation, vaccine was included in routine immunization to end wild type polio transmission. However, its coverage rates have been suboptimal because of reductions in its supply and also because it must be administered by health care workers from fixed points hence, no door to door services.[8,9] According to recent surveys, polio virus is circulating in DG Khan, KPK, Sindh and Baluchistan with the highest number of cases reported in KPK (20 cases) and disease burden being the maximum in Lakki Marwat district (KPK).[10]

Failure to complete eradication of polio is due to an emerging problem of vaccine hesitancy.[11] Major concerns cited for polio vaccine hesitancy in Pakistan includes Religious beliefs, lack of knowledge about polio immunization and fallacies regarding its potency.[12] In Nigeria and India misbelieves like fear of infertility, death and parents' lack of awareness of regarding polio vaccination are found.[2,13] Hence, this study was carried out to assess the concerns and perception towards polio immunization in the locals of Rawalpindi district.

## METHODOLOGY

This descriptive study was conducted from May to June 2018 in Holy Family Hospital Rawalpindi. Data were collected through consecutive sampling technique. People above the age of 18 years were included and those who do not want to participate or were suffering from mental state problems were excluded from the study.

A Performa was designed containing questions selected form WHO sample survey for the determinants of vaccine hesitancy.[14] This included questions related to demographic profile, awareness about polio disease and its vaccine, attitude towards polio immunization, trust on polio end program, and concerns regarding polio vaccine. They were both open and closed ended. Questionnaires were distributed to people approaching the hospital or in cases where the participants were not educated, they were interviewed.

**Statistical Analysis:** Statistical analysis was performed using SPSS version 23. Contingency tables were devised to seek association between different variables. $p<0.05$ was considered to be statistically significant.

## RESULTS

During the period of study, a total of 629 participants were interviewed. 7.6% of the population was uneducated and 88.4% was educated. Out of a total of 454, 443 (97.6%) people got their children vaccinated. Out of a total of 73 uneducated participants, 61(83.5%) were conscious of the disastrous consequence of polio and 520 out of 556(93.2%) were well educated and aware but surprisingly 36 (6.4%) of the educated people were not aware of the severity of polio.

We found that 92.4% were cognizant about the fact that it causes paralysis (Fig. 1). Analysis showed that 413(97.6%) participants had information about the disease and got their children vaccinated. Interestingly, 30(96.7%) partakers were not aware of the consequences of poliomyelitis but still got their children vaccinated and only one(3.2%) was neither aware of the disease nor vaccinated his children.

Out of 443 participants who got their children vaccinated, 168(37.9%) had untrue concerns such as false religious beliefs (6.5%), lack of trust on government (57.7%) and fear of infertility (20.2%). At the same time few of them (10.1%) erroneously believed that the polio campaign has some hidden agenda behind or that vaccine itself causes disease (Table 1).

**Fig. 1. Frequency of awareness of severity of disease.**

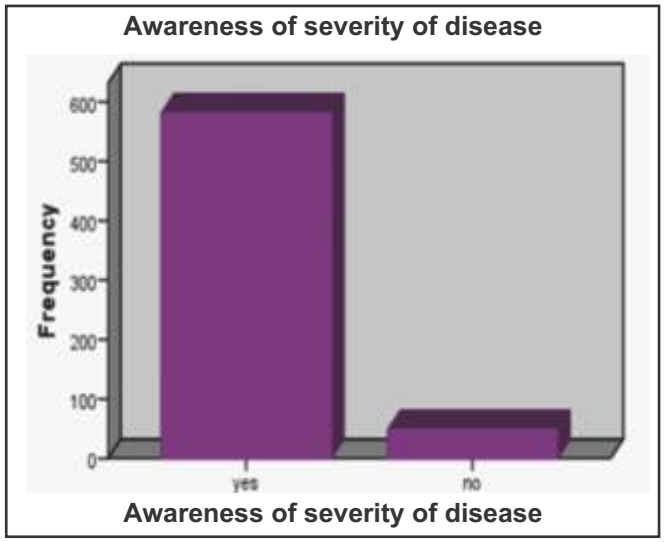


**Table 1. Vaccination concerns.**

| | | Concerns | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **Religious** | **Lack of Trust on Government** | **Fear of Infertility** | **Others** | **No concerns** | **Hidden agenda** | **Itself causes disease** |
| Vaccination | Yes | 11 | 97 | 34 | 17 | 275 | 6 | 3 |
| | no | 1 | 7 | 1 | 0 | 2 | 0 | 0 |
| total | | 12 | 104 | 35 | 17 | 277 | 6 | 3 |

**Table 2. Vaccination trust on door to door service.**

| | | Trust on door to door service | | total |
|---|---|---|---|---|
| | | yes | no | |
| Vaccination | Yes | 383 | 60 | 443 |
| | No | 3 | 8 | 11 |
| Total | | 386 | 68 | 454 |

We found that 383(86.4%) participants got their children vaccinated and had a positive perspective towards the polio eradication program. Sixty (13.5%) participants had vaccinated their children but had no trust in the affectivity of the program. However, 3(27.2%) did not vaccinate their children but had a positive viewpoint about the program, 8 (72.2%) neither vaccinated their children nor had a good point of view about the ongoing polio eradication program. People having trust on the door to door service the vaccination coverage rate was found greater than people not having trust (p=0.0001).

## DISCUSSION

Polio is one of those challenges that Pakistan is finding difficult to deal with. Pakistan along with Afghanistan and Nigeria are the only countries where polio is still endemic.[7,15] The cause may be, rigid traditional beliefs people endorse, which hold back public health priorities, also the patriarchal system in our community is not something that is strange, moreover, the false hype created against vaccine in the form of anti-vaccination campaign have misled many people.[1,2] Anti-vaccination activists have many ways to prove relation between vaccination and autism or infertility, they create fake impression of it containing pig fat or being substandard. This was reported in Brazil as well where anti vaccination movement was one of the barriers encountered towards vaccine refusal.[16]

Open talks with anti-vaccination activists and persuasion of their ideas will help to turn them in the favor of vaccination. In Nigeria, same idea of turning anti vaccination activist into pro-vaccination activist led to endorsement of vaccination campaigns.[17] A similar research, conducted in regions of Quetta and Peshawar, showed that major concerns fall in the category of social and religious elements.[18] Other studies from Pakistan also reported political, religious and security issues as major hindrances factors.[12,19]

Other concerns reported in our study for vaccine refusal were fear of infertility, its own pathological nature and hidden agenda behind it. Similarly, in a research conducted in India following factors were sorted out as major components causing vaccine hesitancy in their population; parental education, vaccine efficacy, vaccine safety, disease susceptibility perception etc.[20]

A study showed that our service delivery of good quality and effective communication exist between the provider and the utilizers.[21] However in Pakistan, relation was sought between maternal education and child polio vaccination uptake and was found that maternal illiteracy was directly related to incomplete or no vaccination against polio.[22] Likewise, in a study from Kenya, association between maternal education status and child vaccination was looked at and it was evident that women who were even marginally educated, were inclined to vaccinate their children as compared to those who were uneducated.[23]

Some solid measures at community level are also required. Mass media mobilization is one of the most convenient and effective method which is showing good result but to get even more benefits out of it we have to involve journalists and community leaders; conducting informative programs, writing newspaper articles etc. as this has shown good results in vaccine acceptance rates in Nigeria.[17] On small scale village headmen, teachers, religious leaders and on larger scale political leaders can be involved to persuade, motivate and counsel the public regarding polio vaccination, as found in Baluchistan where, with the efforts of religious leaders for imparting knowledge about the need of polio vaccination in the residents, the situation has improved.[24]

## CONCLUSION

Lack of trust on government and religious beliefs are two major reasons, out of several, for no vaccination.

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