

An Assessment of Religious Impediments to Polio Vaccination in Tehsil Khwazakhela, Swat

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Abstract

The objective of this study was to assess religious impediments to polio vaccination. The study was carried out in tehsil Khwazakhela of District Swat, Khyber Pakhtunkhwa, Pakistan. A sample size of 200 respondents was selected through simple random sampling. Chi square test statistics was used to test the association between the study variables i.e. religious barriers (independent variable) and impediments to polio vaccination (dependent variable). At Bi-variate level association of impediments to polio vaccination was found significant with clergies fatwah (verdict) against polio vaccination ($P=0.040$), perceiving polio vaccine as American ploy ($P=0.001$), common superstition spread by extremists ($P=0.033$) and militants threatened the people ($P=0.028$). Propaganda based on religious misbeliefs that polio vaccination is un-Islamic drive, aimed at sterilizing young Muslim male and female had some roots amongst the masses as exhibited from the findings of the data. A well-patronized campaign over media through proper display of victims from polio with explicit display of agonies of the polio victims is essential. Religious scholars efforts in endorsing polio vaccination drive could also make it undisputed amongst the users. This will act as catalyst in removing the fears, misconceptions and myths, and other fabricated stories from the minds of locals.

Keywords: Polio vaccination; Religious impediments

Introduction

Polio is a viral disease also called infantile paralysis. It is a subgroup of picornaviridae family with three major serotypes as PV1, PV2 and PV3 respectively. Immunity against all these three types is essential for prevention against it to human being. This virus is usually transmitted through oral discharge from oral routes. Upon entrance into human body, the virus multiplies in the oral larynx and small intestine. It attacks the local lymphoid tissues and then enters into the main blood system of the body, while attacking the nervous system. The average incubation period of the virus ranges from 7-14 days but usually takes place in 2 to 35 days. Upon entering and spending 3-5 days in human, it could be isolated in blood, feces and throat and could continuously get discharged in stool for several weeks after infection [1,2]. The collected information on polio vaccination its coverage and measurement period is often a gigantic task and hard to be determined as valid [3,4].

It is essential to get the accurate information for containment of this disease, thus a number of socio economic and health variables have been put into use for assessing this issue through infant vaccination. It has been identified in Belgium that parents, doctors and nurses have a pivotal role to play in vaccination drive in any region or country across the globe. It has been detected that mother's non-willingness to vaccinate her child could be the lack of information about vaccination; fallacy that disease is better than immunization. Moreover, lack of time and other social problems could be the associated factors to no vaccination. Although Pakistan has made remarkable achievements in containment of polio, still the reoccurrence and spontaneous occurrence could be the outcome of poor vaccination drive, substandard vaccines and inappropriate immunization [5-8]. Pakistan has a dichotomous approach to health services delivery system i.e., public and private sectors. Federal government and respective provincial government constitute the public sector. Private sector contains the private hospital, maternity centers etc. EPI as an immunization program was initiated in 1978, which was converted into a proper health program in 1983. It showed a high success rate in its first year, when it succeeded in immunizing 95% children following by 81% in the subsequent five year of the kids with less than 2 years of age. It was almost eulogized at international and national level as well by an international commission

in 1985. However, today its success rate got down to 54%, despite efforts are made to improve it through trainings and refurbishing extra staff (LHWs) through improved surveillance with the aim to reaching each and every kid in the country. A number of studies across the globe have indicated the success of immunization campaign, which has led to a comprehensive dropout despite low awareness due to illiteracy, and lack of parental education as barriers [9].

Pakistan is spread over a terrain of glaciers, mountains and dispersed population size in the valley of Punjab and Baluchistan. A huge population size of almost 180 million requires huge money and energy to cope with such a challenging situation in terms of providing health services. Median schooling period for women are 10 and 3 years in urban and rural areas respectively, whereas, two third of the total population is living in rural areas [7,10-12] Other impeding factors like poor governance at both national and provincial level and 2% spending on health had further multiplied the problems. Moreover, the country leadership's least interest in immunization has also made it a worse instead of a success in Pakistan. In addition to lack of management at district level, with no accountability in malpractices has to further exacerbate the situation along with excessive power shortage, which led to low standard of vaccine due to non-availability of power [13-15]. Pakistan has also witnessed a gap in provision of these services due to natural calamities and disaster with insecurity and challenges to the writ of the state and poor infrastructure. Internal displacement of large scale of population such as in case of Swat and Waziristan could not ensure the access to such facilities /services as unabated due to logistic

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hazards. All the factors have crippled the ability and efficiencies SIAs and EPI to properly render their services in adequate delivery system in Pakistan [16-21].

For reducing infection of poliomyelitis, Global Polio Eradication Initiative was formed, but religious conflict became one of the biggest hurdles especially in tribal areas of Pakistan in effective vaccination against polio. Experts have detected polio virus from polio endemic areas of Afghanistan most of which are adjacent in the southern regions of this country bordering Khyber-Pakhtunkhwa and tribal areas of Pakistan. This transmission has opened new cases of polio in those areas which were polio free in past, especially district swat. Local Taliban's have issued Fatwahs declaring and propagating vaccination as a western aim to sterilize Muslim population. Another common myth and delusion spread by clergies is that immunization is an effort to obviate the will of Allah. This had resulted to increasing polio in the targeted areas with the occurrence of number of polio cases. Moreover, it has delayed the process of immunization led to making physically disabled human beings to face the social experiments of daily life. This study is a struggle to disclose the unknown factors behind this anti polio vaccination campaign with some practical results as suggestions of ameliorating these problems. It will not only provide safety to the children living in these areas but also stop the spread of the disease to those areas where polio immunization has been interrupted by the vaccination. Moreover, this study is an attempt to disclose the attitude of Muslim population towards immunization, and get rid of this lethal disease by exploring the religious impediments, obstructing its complete elimination from the study area.

Research methodology

The present study was limited to six selected villages namely *Shalpin, Janoo Chamtalai, Khwazakhela, Kotanai, Shin and Fatehpur* from Tehsil Khwazakhela, District Swat, *Khyber Pakhtunkhwa, Pakistan*. The study area comprised of 364 households and witnessed anti-polio vaccination cases since long in different shapes and manifestations. A sample size of 200 respondents was selected from the population of 364 households by using the analogy of Sekaran [22]. The sample size was distributed to the different strata of the universe by using proportional allocation method. The sample was drawn through lottery method of simple random sampling.

A conceptual framework of the study comprised of one independent (religious barriers) and a dependent variable (Impediments to polio vaccination) was devised. Primary data was collected through a well thought out and comprehensive interview schedule, encompassing all the essential aspects of the study. The Interview Schedule was pre-tested for its relevance to objectives of the study and the inconsistencies and ambiguities were corrected before actual data collection. The Data was analyzed through simple frequency distribution at uni-variate level. Furthermore, bi-variate analysis was carried out to ascertain the association between independent variables (Religious Barrier) and dependent variable (Impediments to Polio Vaccination). For this purpose, the dependent variable was indexed and cross-tabulated with independent variable. Chi-square (χ^2) test was used to test the association between independent and dependent variables. Following procedure was adopted to calculate chi-square test statistics as was outlined by Tai [23].

$$(\chi^2) = \sum \sum \frac{(f_{ij} - F_{ij})^2}{F_i F_j F_{ij}}$$

Where,

(χ^2) = Chi-square for two categorical variables

f_{ij} = The observed frequencies in the cross-classified category at *i*th row and *j*th column

F_{ij} = The expected frequency for the same category, assuming no association between variables under investigation

The degree of freedom was calculated as follows;

Df = (r-1) (c-1), where

Df = Degree of freedom

r = The number of rows

c = The number of columns

The assumptions for the test were that the subjects for each group were randomly and independently selected, the groups were independent and each observation qualifies for one and only one category. Furthermore, the sample size was fairly large that no expected frequency is less than 5, for r and c >2, or < 10, if r = c = 2. These assumptions, however, were violated several time in the data therefore, Fisher Exact Test which is also known as Exit Chi-square Test was used instead of simple Chi-Square to overcome the violation of Chi-Square assumptions. The relationship developed by fisher to overcome such violation is given in equation below [24].

$$\text{Fisher Exit Test Probability} = \frac{(a+b)!(c+d)!(a+c)!(b+d)}{N!a!b!c!d!}$$

Where a, b, c and d were the observed numbers in four cells of contingency table and "N" the total number of observations.

Results and Discussions

Misconception of religion

A set of beliefs involving symbols regarding as sacred, together with rituals practices in which members of the community engage is called religion institute. A religious scholar is a role model in every aspect of life but narrow-minded clergies are great hurdle in the way of imparting the true religious values to their followers. Perception of the respondents regarding religious misconception about polio vaccination is given in (Table 1).

The given table explains that out of total 6.5% respondents considered polio vaccine as permissible in Islam, however majority i.e. 76.5% denied it and 17.0% were not clear about the statement. It could be deduced from these findings that religion had some strong influence over the rate of failure of vaccination in the study area. Furthermore, 4.5% respondents accepted polio from Islamic point of view 77.5% were disagreeing and 18.0% had no idea about it. These findings again indicated the strong role of religious values in complete opposition to vaccination of polio. Out of total 5.5% respondents were of the opinion that all clergies were agree with polio vaccination, 85.0% were against and 9.5% were Uncertain. These findings clearly supported Khan and Qazi [25] who reported that misconceptions about the nature of polio drops, and religious misinterpretations in masses and religious leaders, are the major obstacles in the real success of vaccination campaign. Regarding another statement that masses are in favor of "fatwah" given by Ulama against vaccination, majority i.e.79.5% respondents showed agreement, 5.5% were against and 15.0% were uncertain to it.

Likewise, of total, 36.5% respondents were agreeing that polio vaccine is an American ploy to sterilize Muslim populations, 56.5% declined it and 7.0% were uncertain. This religious opposition to polio vaccine could be the due to anti American sentiments in the area. Yahya also found that masses refuse polio vaccines to show it as means of expressing their anti-Western feelings. Over the averting the will of

Misconception of religion	Yes	No	Uncertain	Total
People agree that polio vaccines are permissible in Islam.	13 (6.5)	153 (76.5)	34 (17.0)	200 (100.0)
People know polio disease from Islamic point of view.	9 (4.5)	155 (77.5)	36 (18.0)	200 (100.0)
All Mullas are agree with polio vaccination campaign in your area.	11 (5.5)	170 (85.0)	19 (9.5)	200 (100.0)
Masses are in favor of "fatwah" given by Ulama against vaccination in your area.	159 (79.5)	11 (5.5)	30 (15.0)	200 (100.0)
You agree with that polio vaccine is an American ploy to sterilize Muslim populations.	73 (36.5)	113 (56.5)	14 (7.0)	200 (100.0)
You are in favor of common superstition spread by extremists that vaccination is an attempt to avert the will of Allah.	8 (4.0)	188 (94.0)	4 (2.0)	200 (100.0)
The religious leader forced you to opposing polio vaccination in your area as it is un-Islamic.	9 (4.5)	189 (94.5)	2 (1.0)	200 (100.0)
Militants threats the people against polio vaccination in your area as the main cause of failure to vaccination.	22 (11.0)	107 (53.5)	71 (35.5)	200 (100.0)
Any official killed in polio vaccination in your area while declaring him as infidel to Islam.	1 (.5)	198 (99.0)	1 (.5)	200 (100.0)
Religious extremist consider polio vaccination creating immodesty.	190 (95.0)	10 (5.0)	0	200 (100.0)

Table 1: Misconception of religion.

Allah, 4.0% of the respondents were in favor of common superstition that vaccination is an attempt to avert the will of Allah but majority i.e. 94.0% were against it. Here some rays of hopes existed for the success of vaccination drive, provided local clergies were given assurance of its purity from American and western political design. These findings were in negation to Etokidem and Wondifon who found that religious beliefs are the major cause of polio vaccination program in Nigeria, Afghanistan and Pakistan.

Another statement "The religious leader forced you to opposing polio vaccination in your area as it is un-Islamic." Out of total, 4.5% respondents favored, 94.5% refuted and 1.0% were ambiguous over the above statement. Religious belief is a key determinant of utilization of immunization services. However, these findings were in contrast to Etokidem and Wondifon [26] that religious beliefs are the major cause of polio vaccination program in Nigeria, Afghanistan and Pakistan. In Pakistan, the Taliban, a Muslim fundamentalist group, has been at the forefront of opposition to immunization, alleging it a ploy to sterilize Muslim children to reduce the population of Muslims. In addition, 11.0% respondents said that militants threatened the people against polio vaccination, 53.5% were disagreeing and 35.5% respondents were uncertain about the above statement [27]. Disclosed that polio campaign was stopped in FATA due to security reasons in 2012, leaving almost over 300,000 unvaccinated children in only Waziristan where the militants had banned vaccination in mid-2012.

Any official killed in polio vaccination in your area while declaring him as infidel to Islam, 0.5% said yes, 99.0% refuted whereas 0.5% had no information over such incident. These findings were in repugnance to Riaz and Rehman that 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. Likewise, out of total 95.0% respondents acknowledged that religious extremists consider polio as creating immodesty but 5.0% declared the above statement as baseless.

A set of beliefs involving symbols regarding the sacred and profane practices, usually embodies with ritual and traditions are called religion (Table 2). Disclosed a relationship between people agree that polio vaccines are permissible in Islam with impediments to polio vaccination was found non-significant ($p > 0.05$). The religious understanding over polio vaccination has made it possible to operate for vaccination against polio. However, some resistance could be attributed to poor interpretation of social sans religious values.

Furthermore, relationship between people know polio disease from Islamic point of view with impediments to polio vaccination was found non-significant ($p > 0.05$). The ignorance on part of religious

scholars with explanation on polio has made the vaccination drive as controversial and resistance on religious basis had imminence in the study area. Likewise, the relation that all Mullas (clergies) were agreeing with polio vaccination and impediments to polio vaccination was found non-significant ($p > 0.05$). It could again be attributed in similarities to findings that misconceptions about the nature of polio drops, and religious misinterpretations in masses and religious leaders, are the major obstacles in the real success of vaccination campaign [25]. However, relationship of masses are in favor of "fatwa" given by Ulama against polio vaccination and polio impediments to polio vaccination was found significant ($p < 0.05$). It is evident that no decry/fatwa was given by local clergy against polio vaccination in the study area. However, effects of clergy against polio vaccination could have devastating results for vaccination drive.

But relationship of polio vaccinators agree that polio vaccine is an American ploy to sterilize Muslim population with impediments to polio vaccination was found significant ($p < 0.05$). It could be due to anti-American feelings people had due to certain political reasons. Masses refused polio vaccines to show it as means of expressing their anti-Western feelings Yahya Likewise, relationship between polio vaccinators are in favor of common superstition spread by extremists that vaccination is an attempt to avert the will of Allah and impediments to polio vaccination was also found significant ($p < 0.05$). The data explored a high level of religious and traditional attachments, locals had regarding their certain aspects of life. Furthermore, the relationship that religious leaders forced you to opposing polio vaccination in your area as it is un-Islamic with impediments to polio vaccination was found non-significant ($p > 0.05$). However, it could be detected from the information that no any strong opposition to polio vaccination existed. Religious beliefs are the major cause of polio vaccination program in Nigeria, Afghanistan and Pakistan [26].

Contrary to the above, relationship between militants threatened the people against polio vaccination in your area is the main cause of failure to vaccination and impediments to polio vaccination was found significant ($p < 0.05$) only threats had made things difficult for vaccination but actual steps to repute had seldom existence [27]. Also found that polio campaign was stopped in FATA due to security reasons in 2012, leaving almost over 300,000 unvaccinated children in only Waziristan where the militants had banned vaccination in mid-2012. In addition, relation that any official killed in polio vaccination in your area while declaring him as infidel to Islam with impediments to polio vaccination was found non-significant ($p > 0.05$). As obvious from the earlier findings that threats existed to polio, but not to practical nature. These findings however were in negation to Riaz and Rehman that polio eradication campaigns in Pakistan have been suffering from continuous

Attributes	Answer	Impediments to polio vaccination			STATISTICS
		Yes	No	Total	
People agree that polio vaccines are Permissible in Islam.	Yes	8(4)	5(2.5)	13(6.5)	$\chi^2 = 1.648(0.439)$
	No	99(49.5)	54(27)	153(76.5)	
	Uncertain	18(9)	16(8)	34(17)	
People know Polio disease from Islamic point of view.	Yes	5(2.5)	4(2)	9(4.5)	$\chi^2 = 0.215(0.898)$
	No	97(48.5)	58(29)	155(77.5)	
	Uncertain	23(11.5)	13(6.5)	36(18)	
All Mulas are agree with polio vaccination campaign in your area.	Yes	5(2.5)	6(3)	11(5.5)	$\chi^2 = 5.565(0.062)$
	No	112(56)	58(29)	170(85)	
	Uncertain	8(4)	11(5.5)	19(9.5)	
Masses are in favor of "fatwah" given by Ulama against vaccination in your area.	Yes	103(51.5)	56(28)	159(79.5)	$\chi^2 = 6.186(0.045)$
	No	3(1.5)	8(4)	11(5.5)	
	Uncertain	19(9.5)	11(5.5)	30(15)	
You agree with that polio vaccine is an American ploy to sterilize Muslim populations.	Yes	58(29)	15(7.5)	73(36.5)	$\chi^2 = 14.753(0.001)$
	No	61(30.5)	52(26)	113(56.5)	
	Uncertain	6(3)	8(4)	14(7)	
You are in favor of common superstition spread by extremists that vaccination is an attempt to avert the will of Allah.	Yes	5(2.5)	3(1.5)	8(4)	$\chi^2 = 6.809(0.033)$
	No	120(60)	68(34)	188(94)	
	Uncertain	0	4(2)	4(2)	
The religious leaders forced you to opposing polio vaccination in your area as it is un-Islamic.	Yes	8(4)	1(0.5)	9(4.5)	$\chi^2 = 2.909(0.233)$
	No	116(58)	73(36.5)	189(94.5)	
	Uncertain	1(0.5)	1(0.5)	2(1)	
Militants threats the people against polio vaccination in your area is the main cause of failure to vaccination.	Yes	18(9)	4(2)	22(11)	$\chi^2 = 7.161(0.028)$
	No	70(35)	37(18.5)	107(53.5)	
	Uncertain	37(18.5)	34(17)	71(35.5)	
Any official killed in polio vaccination in your area while declaring him as infidel to Islam.	Yes	1(0.5)	0	1(0.5)	$\chi^2 = 1.212(0.545)$
	No	123(61.5)	75(37.5)	198(99)	
	Uncertain	1(0.5)	0	1(0.5)	
Religion extremists consider polio as creating immodesty.	Yes	120(60)	70(35)	190(95)	$\chi^2 = 0.702(0.302)$
	No	5(2.5)	5(2.5)	10(5)	
	Uncertain				

Table 2: Showing misconception of religion with impediments to polio vaccination.

setbacks, as 27 polio workers have been assassinated since December 2012 during anti-polio immunization campaigns. Relationship between religious extremists consider polio as creating immodesty with impediments to polio vaccination was found non-significant ($p > 0.05$).

Conclusions and Recommendations

The study titled "an assessment of religious impediments to polio vaccination" with sole objectives to explore the religious impediments in the smooth polio vaccination campaign. Polio vaccine was widely misunderstood to be leading to infertility and destroying the immune system with a number of side effects. It was further detected that religion had played a negative role as in most of the study area; local clergy had issued "fatwah" against it. The obvious reason, which negatively affected the smooth vaccination drive, was the religious resentments existed in the study area. It was further found that people had taken a high effect of fatwah against this vaccination and showed little willingness to vaccinate their children. The prevalent superstition, propagation of considering polio vaccine as American ploy, and the eminent threats from militants had led to the collapse of this important vaccination campaign in the study area.

Although a proper and eminent efficient system of polio vaccination existed in the study area as a government initiative, however, coordination between various states, non-state agents and religious leaders was comprehensively lacking. A propaganda based on religious misbeliefs that polio vaccination is un-Islamic drive, aimed

at sterilizing young Muslim male and female had some roots exhibited from the findings of the data. A well-patronized campaign over media through proper display of victims from polio with explicit display of agonies from the victims is essential. Moreover, Support from clergy and other religious institution are important. Religious scholars efforts in endorsing polio vaccination drive could also make it undisputed among the users. This will act as catalyst in removing the fears, misconceptions, and myths and other fabricated stories from the minds of locals.

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