

# Understanding The Dynamics Of Polio Refusal Cases In Dera Ismail Khan, Pakistan

Aamir Abbas<sup>1</sup>, Muhammad Imran<sup>2</sup>, Dr. Subhash Guriro<sup>3</sup>, Dr. Jaishry Mehraj<sup>4</sup>, Dr. Sundeep Sahitia<sup>5</sup>, Dr. Shabbir Ahmad<sup>6</sup>

<sup>1</sup>College of Aviation Safety Management, Air University Islamabad, Pakistan

<sup>2</sup>M.Sc Sociology, Ghazi University D.G.Khan, Pakistan

<sup>3</sup>Associate Professor, Department of Social and Development Studies, Sindh Madressatul Islam University Karachi, Pakistan

<sup>4</sup>Integral Global Health Inc., Islamabad, Pakistan

<sup>5</sup>World Health Organization (WHO), Islamabad, Pakistan

<sup>6</sup>World Health Organization (WHO), Islamabad, Pakistan

## Abstract:

Refusal of the oral polio vaccine is a threat to the health of the children but on the other hand parents are also not willing to get vaccination for their children. Polio vaccine commonly refused in tribal areas including the Khyber Pakhtunkhwa Province (KPK). Objective of the study was to find out the demographic characteristics of the respondents, causes of polio vaccine refusal and to clarify the concepts of the respondents who refuse the oral polio vaccine of their children in Dera Ismail Kha. Population of the study was wards and parents of children who refused to get polio vaccination of their children from four tehsil of district D.I. Khan. In present study the total 120 cases were recruited for the data collection by using systematic random sampling technique. Every 5<sup>th</sup> refusal case was chosen from the four tehsil of district D.I. Khan based on registered refusal cases of polio vaccine from each tehsil. The data were collected with the help of the well-structured interview schedule. It was most appropriate method because most of the respondents were illiterate and they were not aware about the importance of this research. Appropriate statistical formula through SPSS 22 is used as data analysis tool. It is also identified that majority of the respondents have less knowledge of polio vaccination, majority is living in rural areas, their household monthly income is very low and parents education level is also very low.

It was also explored during the study that misconception by people and unislamic laws, swine urine, misconception created by people, causes of other diseases for children and non reliable methods and practices were significant causal factor of polio refusal in D.I Khan.

It is suggested that government should step forward and should encourage these people to vaccinate their children for better health indicators of Paksitan to make Pakistan polio free country.

**Keywords:** Causes; Refusal; Polio; D.I.Khan; Pakistan.

## 1. Introduction:

Refusal of the oral polio vaccine is a threat to the health of the children but on the other hand parents are also not willing to get vaccination for their children. In other words they are contributing to increase the polio cases in the country. Refusal cases of the polio vaccine are faced by the polio immunization staff. Parents are hesitant to get vaccination of their children due to

excessive polio campaigns. Polio vaccine commonly refused in tribal areas including the Khyber Pakhtunkhwa Province (KPP), Pakistan and it is considered Un-Islamic practice. It is the dire need of the time to identify that “Why oral polio vaccination is being refused and who are the ultimately responsible for the non-vaccinations of children?”

Poliomyelitis, often called polio or infantile paralysis, is an infectious disease caused by the poliovirus. Polio is a fatal disease caused by the polio virus and this kind of virus directly affects the children under the age of five years. It is a highly contagious virus definite to human. The virus usually enters the environment in the faces of someone who is infected. In those areas where sanitation system is poor, the polio virus system spreads easily. It is a serious disease that affects the nerves of the spine and often makes a person permanently unable to move particular muscles. Worldwide it's a big issue, especially in the developing countries of Africa and south Asia. Pakistan is also a developing country and 6<sup>th</sup> largest country, according to the population.

Unlike other developing countries Pakistan is also facing the menace of polio. In Pakistan the ratio of polio patients, increasing day by day particular in the children of tribal areas. Polio is a serious health problem, but the majority of peoples remain unable to give the polio vaccine to their children. Unawareness about the benefits of polio vaccinations, unavailability of polio vaccine, and lack of financial resources are the main factors making the people unable to give polio vaccinations to the children. Why polio vaccinations refused and who is responsible for the non-vaccinations of children? Polio vaccinations refused commonly by the parent for giving to the children because they are unaware about the benefits of polio vaccinations. For the purpose to unveil those factors that why parents refuse to get polio vaccination for their children, the researcher decided to conduct a research study under the title "Refusal cases of Polio in KPK (A Case study of Dera Ismail Khan). On 22 February, 2013 Pakistan polio monitoring cell announced that polio campaign ended due to no need to vaccinate the children because Pakistan became polio free country, but unfortunately in 2013 very high cases of polio were observed. There may causes behind the increased polio patients such as unawareness about the benefits

of polio vaccine, social cultural constraints and lack of security for the polio vaccinations campaigns.

According to the findings of Sayeed (1980) that due to the misconception and misinformation of islamist militants the vaccine commonly refused in tribal areas and it is made out of pig and alchole therefore these two things considered Haram and Un-islamic practice and considered against the Islam. Why? But Islam gives us the advice to use medicine for the care of health such our Holy Prophet Muhammad (SAW) recommended the honey and Hijama for the treatment or healing. Our Prophet Hazrat Muhammad (SAW) that Allah almighty created different disease and their treatment, meaning that there is no disease which have no treatment. Our Holy Prophet Hazrat Muhammad (SAW) said that when I fell ill, Allah give me health and no need for treatment.

In Pakistan there many of polio immunization worker has been killed by the people of tribal areas by considering it as un-Islamic practice. More than 100 people are killed during polio campaigns in the year of 2012. As Islamist militants considered that anti-polio vaccine as Western conspiracy to disinfect muslims. The militant considered that Polio vaccinator are mostly spies of CIA. Provisions of security to the polio vaccinations campaigns are the responsibility of law enforcement authorities. To remove the hurdle from the way of polio vaccinations campaigns and to avoid the children from polio it is necessary to take the different steps such as to conduct polio vaccinations campaigns about the benefits of polio vaccinations.

According to findings of Habib (2013) in 2010, about 140 children were died due to polio and among them one half belongs to tribal areas. There are many people of tribal areas are against the polio vaccination as it is un-islamic, the most of the people are considered that polio immunization workers are spies of USA, the

people are also illiterate and did not know the benefits of polio vaccination for their children health. The vaccination campaigns start in tribal areas but many polio immunators are killed in these areas.

One of the main hurdle in way of polio vaccination is little amount of salaries and packages given to the polio immunization staff. As result of this the polio immunization staff does not work whole heartedly. In order to provide such kind of workers which work hard for immunization of polio it is necessary to increase the salaries of the immunizations staff. It was also reported by EPI staff that lack of awareness among the people of tribal areas included in the factors causes the misconception behind polio vaccination. So it is needed that different kinds of awareness programs may be conducted through media about the benefits of polio vaccinations. The refusal cases of the oral polio vaccine are common and wide spread in the tribal areas and Khyber pakhtun kwah areas. But the present research is limited to the only refusal case of polio vaccine a case study of Dera Ismail Khan.

### 1.1 Objectives:

The objective of the study are as following:

- To know about the demographic characteristics of the respondents
- To know about the factors causing OPV refusal .
- To clarify the concepts of the peoples of the tribal area (Dera Ismail Khan) KPK Pakistan regarding the benefits of polio vaccination

### 1.2 Hypothesis:

Hypothesis of the study are as following:

H<sub>1</sub>: Religious factor is the main factor causing refusal cases of OPV

H<sub>2</sub>: Misconception created by people is a factor causing refusal of OPV

H<sub>3</sub>: Infertility is a main factor causing refusal of OPV

### 1.3 Significance Of The Study:

This study tends to emphasize on the causes of polio refusal cases in KPK “ A case study of Dera Ismail Khan)”.The following study will be significant because there were few researches which had been conducted on this topic. The intention of this study is to look deeper in to those factor which influence in refusal of oral polio vaccination. The present study will give policy makers possible ways that respondents could be persuaded to accept the polio vaccine for their children.

### 1.4 Ethical Considerations:

Present study has been assessed as a nonresearch public health activity. Prior to conducting interviews, all participants has been provided verbal consent. Participants received information about the project and its procedures and benefits and were assured that their responses would be confidential. Participants are well informed that their participation will be voluntary and would not affect their future access to healthcare and other social services.

## 2. LITERATURE REVIEW:

According to findings of (Train & Khalil, 1999), There are many reasons of non-vaccinations of polio of the children in tribal areas. The people of tribal areas are mostly illiterate and do not know the benefits of polio vaccination for their children, but they believe in many misinformation by Islamist militants that the polio vaccine is Haram, the Polio immunization workers considered themselves insecure in the tribal areas. It is therefore necessary to arrange awareness campaigns for the benefits of polio vaccination and told them about the polio free life of their children and remove the misconception from their minds which are promoted by Islamist militants and others religious people. Because multiple doses of OPV are needed to develop adequate immunity in countries in which polio is highly endemic, every child <5 years of

age has to be reached with OPV during each SIA, irrespective of immunization history. SIAs are intended to complement, not replace, routine immunization against polio (WHO, 2014). World Health Organization (2014) explored that The current plan to attain global polio eradication requires the vaccination of every entitled child in all parts of the world.

Polio is a viral disease which had an adverse effects on the children under the age of 5 years. Cases of polio are increasing with every passing day in Pakistan particularly these cases are in large number among the children of under 5 years of tribal areas. Most of polio refusal cases are from the tribal areas. According to the findings of Sayeed, (1980), It is stated that it is misconception among the people of tribal areas that polio vaccination is against the Islamic laws and practices, which is totally wrong against the Islam.

According to findings of Bhutta, (2013), It is identified by considering polio vaccination is un-islamic practice. The people of tribal areas has killed the many polio immunization workers, which is also a great hardal to combat menase of polio cases in Pakistan.

In December, 2013 the polio vaccination drive has been postpond due to non-availability of polio vaccine. The senior surgeon of Khyber Agency was reported that the health authorities could not get polio vacciane stock from the Islamabad, therefore the polio vaccination campaigns postpond on the above mentioned reasons. Most of polio cases in the world are reported in Afganistan, Pakistan and Nigera. Still

these polio cases are frequent among the children under the age of 5 years.

In 2013, total 93 polio cases were reported whereas, in 2014 polio cases increases upto 306, which were alarming figures and eve opener for the Government and policy makers (WHO, 2014). With military operations in Federal Administered Tribal Aera, Pakistan, these cases subssentially decreases upto 54 reported in 2015 (Global Polio Eradication Initiative and Monitoring, 2015). FATA were at the great risk for polio cases, however these polio cases subssentially decrease upto 20 cases in 2016 because of the military operations in FATA. In 2017 total 8 numbers of polio cases were reported in Pakistan.

There are several misconception of polio immunization of the children of under the 5 years age in Tribal areas. Most of the wards and parents who refuse to vaccinate their children, they donot have sufficient knowledge about the benefits of polio vaccine for their children.

According to findings of Train and Khalil, (1999), it is recommended to keep the people of FATA aware about the benefits of polio vaccine. Tehrik-i-Taliban propagandize that vaccines are primarily produced by western countries, therefore it is made out of pig fat or contain alcohol, these two things are forbidden in islam and considered as Haram. Therefore, the people of undeveloped areas can belive easily and they start to refuse for the polio vaccination to their children (Polio Eradication initiative-WHO).

Missed children and parental refusals during the national anti polio drive in 2013 in Pakistan .

Area	Children Missed	Children missed due to parental refusals
AJK	438	32
Balochistan	622,354	5068
FATA	477,329	889
Gilgit-Baltistan	217	3
Islamabad	2895	251
KPK	501,870	24,968
Punjab	126,380	910

Sindh	609,084	14,978
<b>Total</b>	<b>2,340,567</b>	<b>47,099</b>

According to above said data, most of the refusal cases are in the Khyber Pakhtunkhwa, which is serious threat to the children of KPK and FATA. Despite the fact that polio vaccine has been scientifically prove as harmless and had many side effects on the children. Expect illiterate people many others qualified people refused seniors official is publish in Express Tribune revealed that 11 Doctors from Peshawar including eight fathers of which two are current employed in Lady Reading Hospital, Peshawar are refused to vaccinate their children for polio vaccination. Beside two from Pakistan Air Force and others six are from Water and Power Development Authority (WAPDA), Peshawar are refused for polio vaccination (Express Tribune, March 2017).

According to findings of (Mansuri and Baig, 2003) that due to misconception and misinformation of tribal areas about the polio vaccination and lack of awareness and education the people refused to vaccinate their children. The Government officials start a different awareness programme and remove the misconception of the people through social media. The media awareness campaigns tell the people about the benefits about the polio vaccination.

Due to lack of education and awareness about the polio vaccination, the people of tribal areas are against the polio and they killed the polio immunization workers. Therefore the Government announced the high security measures and provided high salary packages and others facilities for the making free polio country Pakistan. Many of the polio workers killed during the campaigns and their family serve very difficult life. Therefore the polio immunization workers having life threat during the campaigns and in their normal life. They must be provided

high salary packages and others basic needs for their life.

As the people of tribal areas are mostly living in mountains and refused to vaccinate the polio vaccination to their children on the non-availability of basic needs in their areas. They refused for the polio vaccination due to alternate demands, which are they better education, better living standard, better social security, sanitation and other basic needs (Foods, Shelter and clothing).

### 3. Methodology:

Present study has designed to determine the causes of polio refusal cases in KPK “ A case study of Dera Ismail Khan”. Population of the study was wards and parents of children who refused to get polio vaccination of their children from four tehsil of district D.I. Khan. Total number of polio refusal cases of D.I. Khan are 585 from four tehsil. In present study the total 120 cases were recruited for the data collection by using systematic random sampling technique. Every 5<sup>th</sup> refusal case was chosen from the four tehsil of district D.I. Khan based on registred refusal cases of polio vaccine from each tehsil. Dera Ismail Khan is a city of KPK, Pakistan and its population is expanding rapidly. There are four tehsil in DI Khan which are subdivided in different wards, formal settlement and informal settlement areas. Most of the population lives in rural areas, where the majority of the population resides in very poor and miserable conditions. The data were collected with the help of the well-structured interview schedule. It was most appropriate method because most of the respondents were illiterate and they were not aware about the importance of this research. Appropriate statistical formula through SPSS 22 is used as data analysis tool. All the data would be processed and analyzed statistically. After data

analysis, it is presented in the shape of appropriate co relation analysis and cross tabulation..

#### 4. Results and Discussion:

The purpose of this chapter is to give a general and comprehensive profile of the sample. Before

analyzing the relationship between the independent and dependent variables it seems to give federal information about the sample. The sample of the present study consisted of 120 respondents.

**Table 4.1: Demographic characteristics of the respondents**

Variable	Frequency	Percentage	Variable	Frequency	Percentage
<b>GENDER</b>			<b>NO OF CHILDREN UNDER FIVE YEARS</b>		
MALE	96	80.0	1 CHILDREN	92	76.7
FEMALE	24	20.0	2 CHILDREN	28	23.3
<b>AGE GROUP</b>			<b>FAMILY SIZE</b>		
18-25 YEARS	34	28.3	3-5 MEMBER	66	55.0
26-33 YEARS	40	33.3	6-8 MEMBER	50	41.7
34-41 YEARS	34	28.3	>9 MEMBER	4	3.3
41-49 YEARS	12	10.0	<b>HOUSEHOLD MONTHLY INCOME</b>		
<b>RESIDENTIAL AREA</b>			< 10 Thousand	7	5.8
RURAL	89	74.2	11-15 Thousand	18	15.0
URABAN	31	25.8	16-20 Thousand	26	21.7
<b>JOB STATUS OF TH HEAD OF FAMILY</b>			21-25 Thousand	22	18.3
UNEMPLOYED	60	50.0	26-30 Thousand	21	17.5
EMPLOYED	36	30.0	> 30 Thousand	26	21.7
OWN EMPLOYED	24	20.0			

Above mentioned table indicates that during the house hold survey male 80% followed by 20% female were recruited for the present study and majority of the respondent's age was 18-25 years 28.9% followed by 26-33 years 33.3%, 34-41 years 28.3% and 41-49 years 10%. It is indicated

74.2% respondents are living in rural areas while reiminig 25.8 % are living in urban areas. Further regarding the no of children under the age of five years 76.7% respondents have 1 children under the age of 5 years while 23.3% have 2 children less than 5 years of age. Results of the

table determine that majority of the respondent 55% are consist of 3-5 members of family size followed by 6-8 members 41.7% and remaining 3.3% respondents family size was consist of more than 9 family members. Furthermore regarding the household monthly income results indicates that that majority of the respondents 21.7% house hold monthly income was 16-20 thousand PKR followed by 21.7% respondents income is more than 30 thousand PKR, 18.3% income is between

21-25 thousand PKR, 17.5% respondents are those whose house hold monthly income is 26-30 thousand PKR, 15% income is 11-15 thousand PKR and remaining 5.8% of the respondents house hold monthly income was less than 10 thousand PKR. It is also evident that among these respondents 50% were unemployed followed by 30% employed and remaining 20% were associated with their own business or they were self employed.

**Table 4.2: Education level of parents**

Variable	Frequency	Percentage	Variable	Frequency	Percentage
<b>FATHER LEVEL OF EDUCATION</b>			<b>MOTHER LEVEL OF EDUCATION</b>		
ILLITERATE	31	25.8	ILLITERATE	39	32.5
PRIMARY	22	18.3	PRIMARY	18	15.0
MIDDLE	15	12.5	MIDDLE	11	9.2
MATRIC	14	11.7	MATRIC	10	8.3
INTERMEDIATE	11	9.2	INTERMEDIATE	8	6.7
GRADUATE	7	5.8	GRADUATE	3	2.5
MASTER	7	5.8	RELIGIOUS	31	25.8
RELIGIOUS	13	10.8			

Above mentioned table 4.2 computes the variable of parents education level so regarding father education level statistics shows that 25.8% respondents were illiterate followed by primary 18.3%, middle 12.5%, matric 11.7%, intermediate 9.2%, graduate 5.8%, master 5.8% and remaining 10% respondents have religious education.

Furthermore, regarding the mother level of education statistics shows that 32.5% respondents wives were illiterate followed by primary 15%, middle 9.2%, matric 8.3%, intermediate 6.7%, graduate 2.5% and remaining 25.8% respondents wives have religious education.

**Table 4.3: Knowledge and Awareness regarding polio disease**

<b>Do you have knowledge of polio disease</b>			<b>Do you think that the children under 5 years of victims of polio</b>		
	Frequency	Percent		Frequency	Percent
To Great Extent	37	30.8	To Great Extent	44	36.7
To Some Extent	25	20.8	To Some Extent	29	24.2
Not At All	58	48.3	Not At All	47	39.2
<b>Do you think that polio is viral disease</b>			<b>Do you think that polio is a threat for your children</b>		
To Great Extent	39	32.5	To Great Extent	32	26.7

To Some Extent	30	25.0	To Some Extent	62	51.7
Not At All	51	42.5	Not At All	26	21.7

Above mentioned table 4.3 computes the variable of knowledge and awareness of the respondents regarding polio disease. Majority of the respondents determine that 48.3% response was that they don't know at all about the knowledge of polio disease followed by 30.8% to great extent and 20.8% to some extent.

Regarding the perception that polio is a viral disease. Majority of the respondents 42.5% response was that they don't know at all about that polio is a viral disease followed by 32.5% to great extent and 25% to some extent.

Further perception about children under 5 years of age are victim of polio disease. Almost 39.2% respondents response was that they don't know at all about that children under 5 years of age are victim of polio disease followed by 36.7% to great extent and 24.2% to some extent.

Regarding the perception of respondents that polio is a threat for their children. Results shows that 51.7% respondents response was to some extent that they don't know at all about that children under 5 years of age are under a great threat of polio disease followed by 36.7% to great extent and 24.2% to some extent.

**Table 4.4: Leading cause of polio refusal vaccination for your children**

Variable	Frequency	Percent
Infertility	9	7.5
Pre term maturity	4	3.3
Poor mental growth	7	5.8
Poor mental retardation	8	6.7
Un islamic laws and pratices	45	37.5
Swine fat composition	5	4.2
Misconception by people	32	26.7
Swine urine	3	2.5
Cause of other disease	4	3.3
Non reliable method	3	2.5

Above mentoned table 4.4 computes the variable that what is leading casuse of polio refusal cases in D.I.Khan. Above mentioned table indicates that majoirity of the respondents 37.5% refuse polio immunization of their children because they consider it that it is an unislamic laws and practices followed by the other refusal causes are 26.7% misconception created by the people,

infertility 7.5%, poor mental retardation 6.7%, poor mental growth 5.8%, swine fat composition 4.2%, ptre term maturity 3.3%, polio is a causal factor of other diseases 3.3%, non realiable method 2.5% and remaining 2.5% respondents said thay they refuse polio immunization because its vaccine contains the swine urine .



**Table 4.4: Analysis of factors causing OPV refusal**

<b>One sample T test with test value = 2</b>			
<b>Variable</b>	<b>Mean</b>	<b>Mean Diff</b>	<b>Sign 2 tailed</b>
INFERTILITY	2.1167	.11667	.317
PRE TERM MATURITY	1.9833	-.01667	.891
POOR MENTAL GROWTH OF THE CHILDREN	2.8667	.86667	.000
POOR MENTAL RETARDATION OF THE CHILDREN	2.0333	.03333	.780
UN ISLAMIC LAWS AND PRACTICES	2.2417	.24167	.061
SWINE FAT COMPOSITION	2.0833	.08333	.473
SWINE URINE	2.6750	.67500	.000
MISCONCEPTION CREATED BY PEOPLE	2.5250	.52500	.000
CAUSE OF OTHER DISEASES FOR CHILDREN	2.3167	.31667	.001
NON RELIABLE METHOD	2.7500	.75000	.000

Results of the table 4.8 computes the key factors which cause refusal of polio vaccine by the parents of the children under five years. The one sample t test is applied with reference value 2. All the key factors having mean score more than 2 have been taken as the significant causal factors of polio vaccine refusal. The items of factors causing polio vaccine refusal variable such as infertility, PTM, poor mental growth of the children, poor mental retardation of the children, unislamic laws and practices, swine fat composition, swine urine, misconception created by people, causes of other diseases for children and non reliable methods have significant mean score above referred mean score value 2, meaning existing hypothesis accepted in above mentioned items.

## 5. Conclusion & Discusison

Findings of the present study concluded that Pakistan is facing different health and environmental problems. Not with standing the significant reduction in refusal cases , every unvaccinated child continues to pose a major challenge. It is a cause of grave concern that polio teams across the country have still missed

484,344 children during the last polio round, stated WHO.

It is also identified that majority of the respondents have less knowledge of polio vaccination. It is also highlighted that majority of the respondents are living in rural area and their parents level of education is also very low. Their house holds monthly income is also very low so during the study it was stated by the respondents that they seek better opportunities for their children and alternate demands rather than polio vaccination.

It was also explored during the study that misconception by people and unislamic laws and practices were significant causal factor of polio refusal in D.I Khan.

## Recommendation:

Govt of Pakistan, health minitistries of all provinces and other health agencies should aware the parents regarding importance and necessity of polio vaccination for children under the age of five years in Pakistan.

Misconception should be eliminated among the parents to get a healthy future of their children.

Religious teacher and reformers should educate the parents and society regarding the elimination of misconception about polio vaccination.

Through electronics and print media people should be given awareness about the importance of polio vaccination for the children.

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