

## Communication Strategies for Polio Eradication in Pakistan: The Case Study of Polio Vaccination Campaign in South Punjab

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### Abstract

*This study has a plan to measure the level of knowledge and perceptions regarding polio vaccination in south Punjab, Pakistan. To examine the dominant source of awareness concerning utilized communication channels in the Polio vaccination campaign a total of 200 respondents (100 couples) were selected as the study's sample by applying the systematic random sampling technique. The findings of the study revealed that the majority of the respondents shared the poor knowledge about Polio. As it was found that, females were more conscious and responsible towards their children as compared to their counterparts. It was also found that males were the decision making authority regarding the polio vaccination of their children. The females seemed more convinced as compared to male respondents towards polio immunization. But, they had sufficient knowledge about the importance of polio vaccination. The television was the major information source of Polio vaccination among most of the respondents.*

**Key Words:** Polio Vaccination; Development Communication, Demography, knowledge; Health Behavior; Media, Communication

**JEL Classification:** I10, I12, I19, I15, J10

### Introduction

Polio is considered a highly viral and serious disease in the world especially the developing world is facing tremendous challenges. Pakistan is one of following Afghanistan. It had got a severe situation in Pakistan in the last couple of years by passing this paralysis to the childhood population in the country. Overall situations in the world are in control except for a few countries. This disease has become a serious cause of disability as the children less than 5 years of age could easily become its victims. Poliovirus is of three types while type 2 of WPV has been completely removed from the world while the first two types are continuing to damage. The transmission routes of poliovirus are infected faces, which spread through the environment from nose to mouth and continue to infect the children. The victim of the poliovirus may get respiratory disorders; paralysis (full or partial) and sometimes it could cause death but occasionally not most of the time (Centers for Disease Control and Prevention (CDC), 2017).

As of 30 June 2018 three wild poliovirus cases have been reported from the Dukki district in Baluchistan, while no wild poliovirus case has been found in Pakistan's high-risk core reservoir areas. While the number of wild poliovirus cases remains at the lowest level in history, the environmental surveillance system indicates that polio continues to circulate across multiple areas of the country with 13% of environmental samples tested positive for the wild poliovirus, compared to 15% at the same time last year (End Polio, 2018).

### Current Situation in Pakistan

Pakistan has been included in the top three ranked poliovirus transmission countries along with Afghanistan and

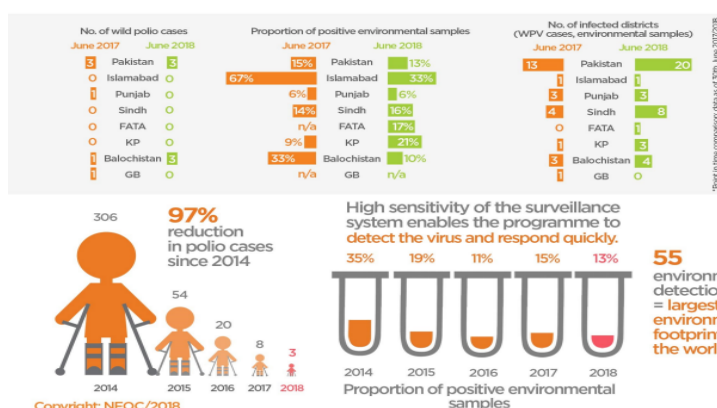
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Nigeria is one of only three countries in the world with ongoing wild poliovirus transmission, alongside Afghanistan and Nigeria. During the previous two years, Pakistan has made remarkable progress in poliovirus eradication by launching an effective campaign including vaccination programs along with educating and countrywide awareness schemes. Poliovirus victims have been significantly reduced. Compared to 2014 to 2015 polio registered cases have been reduced to more than 300 to only 54. Similarly, the detecting trend in polio registered cases continued and only 20 cases were recorded in 2016. It is worth mentioning only cases were recorded in 2017. This shows that polio eradication efforts have been remained effective in minimizing the immunity gap. Hopefully, Pakistan will achieve very soon the goal of even interrupting the diffusion of polio (End Polio, 2018).



Source: End Polio, 2018 (Official Website)

## Communication Strategies to Eradicate Polio

Communication Strategies framework for Polio is a planned, organized as well as a suggestion based deliberate procedure that purposes to promote measurable behavioral and communal transformation for maximum coverage of Oral poliovirus vaccines (GEPI factsheet, 2016).

It has been observed that in the past polio eradication strategies have been focused on training and educating the health workers about polio and polio vaccination. This could not bring meaningful results. New strategies' have been launched to change the public perception at keeping the socioeconomic norms and ground realities. It is based on the trusting building of health workers and the sustainable health benefits to the family and community (Polio Communication Global Guide, 2016). Former polio communications strategies targeted individuals with evidence about polio vaccination. The latest polio strategy is exactly planned to address the dynamic awareness as well as societal values that discourage caregivers from immunizing their children (Polio Communication Global Guide, 2016).

According to Harvard polls in Pakistan, it has been closely observed that due to various misconceptions due to lack of knowledge about polio were prevailing among people who resulted in low vaccine rates in Pakistan. Even having access to immunization people refused to vaccinate their children. The finding revealed that 30% of the parents in Pakistan believe that polio is a curable disease if their children got sick they will be recovered, therefore, they avoided vaccination. Furthermore, one-third of people belonging to rural areas were not aware of the Oral Polio Vaccine (OPV) as it is highly recommended whenever it is offered to maximize the protection against the poliovirus. The results also divulged that 1 out of 10 parents even had not heard about polio. The researchers disclosed that the reasons behind this attitude were due to ignorance and illiteracy.

Pakistan has been ranked in 5<sup>th</sup> position in the populous counties of the world with more than 180 million people. The majority (63%) of the people in Pakistan still are living in rural areas while 37% are living in the urban areas of the country. The literacy rate is 52% and the health sector is being continuously neglected aspect

of the country and Pakistan consumes only 0.7 percent of the total GDP on health. That is the major reason behind not being able to counter the continuous threats of diseases like polio (Economic Survey, 2017-18).

## **Objectives of the Study**

- ❖ To measure the level of knowledge and perceptions regarding the Polio vaccination among the families of south Punjab
- ❖ To explore the misconceptions associated with Polio vaccination and routes of transmission of polio in south Punjab
- ❖ To explore the difficulties accessing health care facilities and vaccination of polio
- ❖ To measure the impact of the Polio vaccination campaign concerning their awareness about the program
- ❖ To examine and measure the dominant and credible source of awareness concerning utilized communication channels in the Polio vaccination campaign

## **Research Questions**

- RQ1:** What is the perception of families about Polio vaccination about the information sources utilized in the communication campaign?
- RQ2:** Do they have vaccinated their children?
- RQ3:** What is the common misconception about Polio vaccination in urban and rural living people of southern Punjab?
- RQ4:** What is the level of knowledge about polio among families of south Punjab?

## **Hypotheses**

- H1:** It is more likely that the knowledge about polio and its immunization would be greater among females as compared to their counterparts.
- H2:** It is more likely that age, education, and background would be significantly contributing to improved knowledge about polio and its immunization.
- H3:** Television would be the dominant source of knowledge/information regarding Polio vaccination as compared to other communication channels among families of south Punjab.

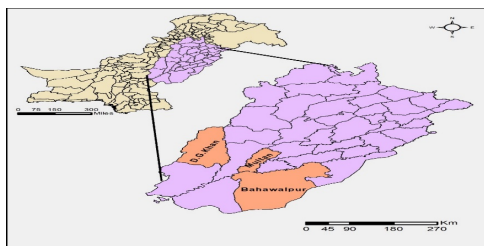
## **Research Methodology**

This research study is aiming to explore and investigate the impact of the polio vaccination campaign of rural and urban families in south Punjab Pakistan to measure their attitudes and perceptions towards the disease and its vaccination program. The core aims of this research were to measure the knowledge, perceptions, and misconceptions about polio and its vaccination. The researcher has used the survey method as the research design of this study to collect the data. Survey research is considered as a valued and efficient tool of data collection to measure and examine the perceptions, opinions in the field of social sciences. Government and small-scale research studies and baseline surveys are designed carefully for measuring the opinions of the people towards specific issues.

A sample of 200 families who had their children less than five years of age, was taken from the most populous cities of south Punjab including Bahawalpur, Multan and Dera Ghazi Khan by applying the simple random sampling technique of probability sampling. From each city, one urban and one rural union council was selected based on their population strength to draw the sample. The selected respondents were asked for their consent to participate in the study. They were given the pre-constructed questionnaire to respond while some were asked questions who were unable to fill out the questionnaire themselves. The questionnaire was comprised of closed-ended questions to take the perceptions and opinions of the families regarding the Polio vaccination campaign. The questionnaire was screened after a small-scale pilot study from 20 randomly selected couples for validating the questionnaire. The obtained responses were used for data analysis in SPSS (IBM Version 20) software to generate the results to answer the research questions and to test the hypotheses. MS Excel sheet was used for

developing the coding sheet. Chi-square and proportion tests were performed to measure the significance of the results and to draw conclusions.

Map of Study Area:



Source: Author 2020

## Results and Findings

This research study examined the effects of the Polio Campaign headed by Government and non-government institutions regarding polio to measure the knowledge and perception of the families towards polio immunization. The socio-demographic features of the respondents are given as under;

**Table 1.** Socio-Demographic features of the families of South Punjab

Variables	Number	Percentage
<b>Age Group</b>	-	-
18-30 years	42	21 %
31-40 years	90	45 %
41-50 years	32	16 %
51-60 years	18	9 %
More than 60 years	18	9 %
<b>Gender</b>	-	-
Male	105	53 %
Female	95	47 %
<b>Employment Status</b>	-	-
Employed	120	60 %
Unemployed	80	40 %
<b>Educational Qualification</b>	-	-
Illiterate	30	15 %
Primary or Matriculation	71	36 %
Intermediate	53	26 %
Graduate	24	12 %
Postgraduate or higher	22	11 %
<b>No. of Children</b>	-	-
No children	23	12 %
1-2	78	39 %
3-5	89	44 %
6 or more	10	5 %
<b>Background</b>	-	-
Urban	90	45 %
Rural	110	55 %

N=200

The above table indicates the socio-demographic characteristics of the respondents concerning their age, gender, employment status, educational qualification, number of children, and their background. The data presented in

the table indicates that the majority of the sample 45% were between the ages of 31-40 years while 21% were between 18-30 years old. Similarly, the female ratio of the entire sample was 47% while the male was 53%. In the employment status, 60% were employed while 40% were unemployed respondents including males and females. Most of the respondents were between primary/matriculation to intermediate while 15% were illiterate (this ratio was greater among the rural respondents). Moreover, 44% of the respondents revealed that they have 3-5 children while 39% responded to have 1-2 children. 55% of the entire sample was living in rural areas of the selected divisions of south Punjab while 34% were living in the urban areas of these areas.

**Table 2.** Knowledge about Polio and its Immunization among Respondents

Questions (Awareness of polio)	Correct (%)	Incorrect (%)
Polio is a viral disease	137 (69%)	63 (31%)
Polio is also called childhood paralysis because only less than 5 years old children are affected	154 (77%)	46 (23%)
Symptoms are not developed in major cases	80 (44%)	120(56%)
The major risk of poliovirus is due to not being vaccinated	195 (97%)	5 (3%)
Traveling to affected areas of the polio epidemic is risky for children	17 (8%)	183(92%)
the fecal-oral and respiratory routes are the causes of polio breakout	18 (9%)	182(91%)
Polio can also be transmitted through contaminated food and water	113 (57%)	187(63%)
Polio is curable	147 (73%)	53 (27%)
After polio diagnosis, infected children should be isolated to avoid transmission to others	13 (7%)	187(93%)
To prevent polio vaccination is the only effective strategy	200 (100%)	0 (0%)
During minor sickness polio, drops should not be given	25 (13%)	175(87%)
Polio could cause death among patients	100 (50%)	100 (50%)

**Note:** Knowledge was assessed by giving a score of 1 to correct answer and 0 to wrong answer. The scale measured knowledge from maximum 13 to minimum 0. Scores of <8 were taken as poor knowledge, while a score of 10 as good knowledge of Polio. Mean knowledge score was 07.87 ± 2.89.

The above table represents the data concerning the existing knowledge of the families of south Punjab concerning polio and its immunization. The data shown in the table indicates the responses of the respondents and their correct and incorrect answers to the questions posed in the questionnaire. The responses were measured with a scale of 13-0 points to measure the correct and incorrect answers. It depicts the prevailing misconceptions about polio and its immunization that the majority of the respondents gave incorrect answers as the average score was less than 8. Even they also revealed that it's curable. Similarly, some also scored well by giving correct answers, especially about immunization by considering it important to avoid polio infections. But there were also prevailing misconceptions about polio as it can be transmitted through lungs, causes death, and should not be given in mild disease, etc.

**Table 3.** Cross Tabulation of Knowledge of Polio and its Immunization with Demographics of Respondents

Variables	Good	Poor	n	P-Value	Significance
<b>Age Group</b>	-	-	-		
18-30 years	31 (74%)	11 (26%)	42	P-value >0.05	**
31-40 years	58 (64%)	32 (36%)	90	P-value >0.05	**
41-50 years	11 (34%)	21 (66%)	32	P-value <0.05	
51-60 years	17 (94%)	1 (6%)	18	P-value >0.05	**
More than 60 years	14 (78%)	4 (12%)	18	P-value >0.05	**
<b>Gender</b>	-	-	-		
Male	61 (58%)	44 (42%)	105	P-value <0.05	

Female	85 (89%)	10 (11%)	95	P-value >0.05	**
<b>Employment Status</b>	-	-	-	P-value <0.05	
Employed	111 (93%)	9 (7%)	120	P-value <0.05	**
Unemployed	44 (55%)	36 (45%)	80	P-value <0.05	
<b>Education</b>	-	-	-	P-value <0.05	
Illiterate	27 (90%)	3 (10%)	30	P-value >0.05	**
Primary or Matriculation	65 (92%)	6 (8%)	71	P-value >0.05	**
Intermediate	53 (100%)	0 (0%)	53	P-value >0.05	**
Graduate	24 (100%)	0 (0%)	24	P-value >0.05	**
Post graduate or higher	22 (100%)	9 (0%)	22	P-value >0.05	**
<b>No. of Children</b>	-	-	-		
No children	2 (9%)	21 (91%)	23	P-value <0.05	
1-2	70 (90%)	8 (10%)	78	P-value >0.05	**
3-5	88 (99%)	1 (1%)	89	P-value >0.05	**
6 or more	10 (100%)	0 (0%)	10	P-value >0.05	**
<b>Background</b>	-	-	-	P-value <0.05	
Urban	90 (100%)	0 (0%)	90	P-value >0.05	**
Rural	84 (76%)	26 (24%)	110	P-value >0.05	**

Proportional test of statistical significance applied to test the significant score between good and poor knowledge about polio and its immunization among respondents of different demographic characteristics -P-value >0.05= Significant -P-value <0.05= non-significant where \*\* in the table indicates significance

The above table shows the cross-tabulation of knowledge about Polio vaccination and demographic variables. The data indicates the significant difference of knowledge about polio and demographic characteristics of the respondents with reference to their age, education, background, no of children, and gender. It can be safely said that the age factor was also contributing towards seeking knowledge about Polio vaccination and the risk of getting an infection. Similarly, the respondents with higher education were more likely to have better knowledge about polio vaccination/immunization as compared to those having less or no educational qualification. The degree of knowledge among females was also found higher as compared to male respondents. Employment status was also contributing towards knowledge about Polio vaccination as unemployed shared the poor knowledge score about polio as compared to employed. The background status was significantly linked with the knowledge of polio immunization.

**Table 3.** Sources of knowledge about Polio and its Immunization among Respondents

Source/Channel	Frequency	Percentage
Radio	76	9 %
TV	219	27 %
Posters	66	8 %
Pamphlets	47	6 %
Peers	57	7 %
Internet	51	6 %
Research Articles	22	3 %
Newspapers)	111	14 %
Seminars	77	10 %
Workshops	34	4 %
Conferences	7	2 %
Health Experts/Medical Clinics	39	4 %

N=806 (the increase in N indicates that most of the respondents responded to have multiple sources of information regarding polio and immunization campaign messages)

The above table depicts the sources of knowledge/information about Polio vaccination among the urban and rural families of south Punjab. The data presented in the table communicates the vivid picture that electronic and print media were the leading channels of transmitting information and knowledge about polio and its vaccination.

All other sources were less informative for the respondents of selected areas of south Punjab like health clinics, workshops, peers, seminars, posters, internet, and conferences.

## **Discussion and Conclusion**

Efforts made to eradicate Poliovirus from the world has been very successful. Despite so much achievement against this disease, there are still high risks of its spreading once again if it's not eradicated from the remaining three countries. Pakistan had done a significant development with a higher number of declines in the polio infection rates as it was decreased from 115 to 29 in the last year. This reduction rate indicates that apart from facing tremendous challenges and obstacles to make polio-free Pakistan especially in the KPK and Baluchistan tan provinces, Pakistan is very close to eradicating it. However, even after a great fight with polio, Pakistan remains on the front of the world for being reported 80% of the worldwide cases currently. Due to a lack of immunization in some areas of the state, efforts are being made to remove each risk of polio infection.

The findings of this study revealed that the existing knowledge among the families of the south Punjab region was not good enough to be considered satisfactory regarding polio, its routes of transmission, reasons for infections, and its immunization. It was found that 73% were of the view that it is a curable disease. Similarly, there were many misconceptions about polio especially its symptoms, routes of transmission, and other risks of infections. There were also misconceptions that polio vaccination is being utilized as a family planning strategy to control the population. The rural residing couples were having the poor knowledge and the majority of the respondents in all selected regions of south Punjab gave incorrect answers towards polio and its causes. Even some were feeling the risks to travel in the high-risk areas as their children might get infected with polio. The attitudes of some families towards the polio-infected children were also not found positive as 93% suggested to keep the infected children isolated so the other may not get infections. It can be concluded that most of the answers regarding polio, its immunization, and its routes of transmission and symptoms were found unsatisfactory below average.

There was also a significant difference in knowledge among the respondents as the findings communicated the vivid picture that the young respondents with the lesser age group were less likely to have good knowledge as compared to the older ones. Similarly, the educational status was significantly linked with the knowledge as it was hypothesized that the respondents with less or no education were more likely to share the misconceptions and poor knowledge on the measurement scale as compared to the educated ones. Even they also shared the risks of getting a vaccination for their children. It was because due to lack of awareness as southern Punjab is the less developed region concerning healthcare facilities especially, the rural areas of south Punjab are even lacking hospitals. The status of living and employment status was also the contributing demographics towards existing knowledge of polio and its vaccination. Another dominating and interesting results of the study showed that females were more sensitized as compared to their counterparts concerning knowledge about polio and its vaccination program. But this trend was only found in urban areas while rural women were not having significant information about polio and vaccination program. Television and other channels of electronic media were the leading sources of creating awareness about Polio vaccination as compared to other interpersonal channels. The majority of the respondents ranked TV as the major source of information among them.

To combat polio by eradicating it from all the vulnerable areas of Pakistan, the Government of Pakistan especially, the provincial government should work speedily to make polio-free Pakistan. The role of religious personals and *Khateeb*/Imam could be very helpful in creating awareness especially in the remote areas of south Punjab. The prevailing dominant misconceptions about Polio vaccination should be addressed immediately to ensure the implementation of the vaccination program. The polio outbreak strategy should be implemented to identify new cases to avoid further infections through implemented vaccination programs in the community. The high-risk areas should be the priority of the stakeholders especially, the areas in KPK, FATA, and Baluchistan. There should be a strategic approach in all high-risk regions concerning the eradication program of Polio by maintaining and increasing immunity against polio in the entire country via different vaccination campaigns including routine immunizations.

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