

Impact of Mass Media Campaigns on Attitude Change toward Polio Vaccination

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Keywords	Abstract
Mass Media Campaigns, Attitudes Change, Demographic Characteristics, Polio Vaccination	<i>Poliomyelitis spread by virus and it is irreversible disease and can be prevented by vaccinating the children. Oral Polio Vaccine (OPV) is considered the most effective vaccine in polio eradication. Being the source of information media are used for spreading news regarding polio vaccine. This research explored the impact of mass media campaigns on attitude change towards polio vaccination among residents of District Dera Ismail Khan. Twenty to sixty years age and above were the population of the study. Non-Probability sampling method was used to collect data through well-structured close ended questionnaire. Sample size of the study was 520. The results of this study indicate that attitudes about polio vaccination among various demographic characteristics differ significantly.</i>

1. INTRODUCTION

Poliomyelitis (common name: Polio) is a viral disease which paralyzes the children aged up to fifteen years. This virus affects the Central Nervous System (CNS) and leads to paralysis. It can be fatal if the virus severely affects the respiratory system. This virus enters the human body with contaminated water or food. The virus can live and survive only in human body. It is an irreversible disease and can be prevented by vaccinating the children. Every child is at risk until and unless the polio virus circulates.

In 1908 two Austrian physicians Karl Landsteiner and Erwin Popper found polio a viral disease. Then in 1931 Mcfarlane Burnet and Dame Jean Man Namara identified three types (P1, P2, and P3) of Wild Polio Virus (WPV). Type 2 and 3 virus is considered eradicated worldwide in 2009 and 2012 (Nadeem, 2016).

The history of polio campaigns in Pakistan traced back to 1974. Involving international donors, the country started official efforts to eradicate polio in 1994. The National Immunization Days (NIDs) were launched by PM Benazir Bhutto vaccinating her daughter Asifa with Oral Polio Vaccine (OPV). Supplementary Immunization Activities (SIAs) were launched in Pakistan in 2000 when 119 polio cases were registered across the country. From 20000 polio cases every year Pakistan has reported 12 positive cases in 2018 of which half of the cases were recorded in Khyber Pakhtunkhwa (KP) Tribal Districts (GPEI, 2019).

Efforts to make Pakistan polio free have been made by the Emergency Operational Centre (EOC). Unfortunately, the polio virus is still not surrounded and there still much more left to do to eliminate WPV. The world is now coming in closer towards polio eradication since World Health Assembly meeting held in 1988. The focus of the meeting was improvement in communication tools in polio eradication strategies (Obregón et al., 2009).

Since then communications played vital role in polio vaccination campaign and mass media promotion is thought to be the suitable way of changing one's opinion regarding an idea. Studies have emphasized the need to increase the communication skills of the health workers in persuading the parents and to change their attitude for OPV. Khan et al., (2015) found in their study the attitude of the respondents was quite negative about polio vaccination. Garon et al., 2016) suggests converting the parent's attitude towards repeated vaccination it is necessary to study their minds and to prepare a constructive strategy for the fulfillment of their needs. Larson, 2018) explores, higher the exposure to media messages about the benefits of vaccine higher will be the acceptance towards vaccination. If the audience are exposed to negative messages about vaccination their attitude will be negative. Speaking of the attitude Napolitano et al., 2019) study shows that, more than 50% of the respondents who have not received any vaccine had significantly positive attitude towards vaccination. Among the respondents who consider vaccination useful and those who seek advice from doctors have high positive attitude towards vaccination.

Polio aroused as one of the serious threats to human life in 20th century. Having caused so many deaths, it grabbed the attention of organizations working in health sector. A lot of work has been done to eradicate polio from the society & unluckily Pakistan and Afghanistan still not eradicated WPV. This research explored the attitude of people regarding polio vaccination with different demographic variables. In this study the researcher tried to understand how the background information affects attitude about polio vaccination. Focus of the study is on changing attitude of the respondents and exploring the liking and disliking of Polio vaccination by the people. The findings of the study are crucial in understanding how media messages are planned. Health department, EOC and marketing agencies can get help from the findings of this study. Utilizing and framing best tools in communication campaigns advertisers could be able to make better policy keeping in view different demographics.

1.1. Objective of the study

To explore the relationship between different demographic characteristics with attitude towards polio vaccination campaign

2. METHODOLOGY

Survey method was used to satisfy the objectives of the study. The study is descriptive by nature, where the researcher described the relationship between various variables under study. Cross sectional research design was used in this study to collect data which mean that data was collected at one point of time from the sample selected for the purpose. According to 2017 census D I Khan have a population of 1,627,132 individuals, and out of total population of Dera Ismail Khan District 1,264,901 rural areas while 3, 62,231 people are living in urban areas of the district (Huda & Burke, 2017). Under convenient sampling technique sample size of the study was 520. Data is collected from both rural and urban population while using closed ended questionnaire.

2.1. Measurement of the concepts

To understand that how the background information affects media consumption and or attitude about polio vaccination measured through question i.e.

1. Age of the respondents was checked through following question containing different categories.
 - a. 20 to less than 30
 - b. 30 to less than 40
 - c. 40 to less than 50
 - d. 50 to less than 60
 - e. 60 and above
2. Following question was asked by the researcher to explore ethnicity of the respondents.
 - a. Pashtun
 - b. Saraiki
 - c. Urdu Speaking
 - d. Other (specify)
3. Educational level was measured by asking following question.
 - a. Literate
 - b. Illiterate
4. Residential Pattern of the respondents was measured through following question.
 - a. Rural
 - b. Urban
5. Attitude level of the respondents was measured through statement i.e.
 - a. Polio vaccine is safe for my children,
 - b. Polio vaccine is Haram,
 - c. Polio has adverse effects,
 - d. Polio vaccine is linked with infertility,
 - e. Polio vaccine is linked with AIDS,
 - f. Polio is part of western agenda,
 - g. Polio vaccination is not necessary,
 - h. Only polio is being focused not other diseases,
 - i. Polio vaccines are not capable of preventing the disease,
 - j. Quality of vaccine is not well maintained and
 - k. Excessive campaigns result in over dose.Each item in the list has 5-point Likert Scale, ranging from, strongly disagree (1) to strongly agree (5). Cronbach Alpha=.86

2.2. Hypotheses

H₁: There is significant difference between attitudes of people with different age groups towards polio vaccination.

H₂: There is significant difference in the attitudes of people with different ethnicities towards polio vaccination.

H₃: There is significant relationship between level of education and people attitude towards polio vaccination.

H₄: There is significant difference between attitudes of rural and urban people towards polio vaccination.

3. RESULTS

There are two major sections in the results section. The univariate analysis of all demographic factors makes up the first part. This presentation aims to provide a thorough understanding of the nature of the data and the survey's various respondents' responses. Testing of hypotheses comprises up the second section. For statistical analysis of these hypotheses, One-way ANOVA and Independent Sample t-test were applied. All of the hypotheses had an alpha level of .05. The results are presented in the following six separate tables followed by its explanation.

Table 1: Frequency distribution of demographic variables

		F	%	Cf %
Gender	Male	318	61.2	61.2
	Female	202	38.8	100.0
Age	20 to < 30	180	34.6	34.6
	30 to < 40	132	25.4	60.0
	40 to < 50	99	19.0	79.0
	50 to < 60	64	12.3	91.3
	60 and above	45	8.7	100.0
Ethnicity	Pashtuns	183	35.2	35.2
	Non-Pashtuns	337	64.8	100.0
Education	Literate	343	66.0	66.0
	Illiterate	177	34.0	100.0
Residential Pattern	Rural	410	78.8	78.8
	Urban	110	21.2	100.0
	Total	520	100.0	

The above table shows the distribution of different demographic variables (gender, age, ethnicity, education and residential pattern), which shows that 61.2% were male and 38.8% were female respondents out of the total sample. Age wise distribution of the sample suggested that people with 20 to less than 30 years of age were 34.6%, 30 to less than 40 years of age were 25.4%, 40 to less than 50 years were 19.0%) 50 to less than 60 years were 12.3%, and respondents with 60 years and above age group were 8.7%). Ethnic distribution of the sample shows that Pashtuns were 35.2%, while Non-Pashtuns were 64.8%. Out of total sample 66.0% were literate and 34.0% were illiterate. 78.8% were from rural areas and 21.2% were from urban areas.

Table 2: Descriptive analysis of attitude towards polio vaccination of various age group people

Age in Years	N	M	SD
20 to less than 30	180	3.90	.73
30 to less than 40	132	3.37	.82
40 to less than 50	99	3.30	.96
50 to less than 60	64	3.04	.97
60 and above	45	3.30	.86
Total	520	3.49	.90

The descriptive analysis of five age groups showed that the younger people with age group of 20 to less than 30 years (M= 3.90; SD= .73) has higher mean value and lower standard deviation than the other age groups. The mean values of all the other age groups are lower than the total mean value (M= 3.49), while the mean value of first group is higher than the total mean value. Similarly, the standard deviation of all the other groups except the first one is either higher than or close to the total standard deviation. The standard deviation of first age group is much lower than the total standard deviation.

Table 3: Difference between attitudes of various age group people towards polio vaccination

	SS	Df	MS	F	Sig.
Between Groups	50.05	4	12.51	17.60	.000
Within Groups	366.03	515	.71		
Total	416.08	519			

One-way ANOVA was used to measure the attitude of different age group people towards Polio vaccination (Group 1= 20 to < 30; Group 2= 30 to < 40; Group 3= 40 to < 50; Group 4= 50 to < 60, and group 5= 60 and above. At alpha=.05, the result suggested significant difference among various age groups [F (4,515) = 17.60, $p=.000$]. Post-Hoc test (Bonferroni) was used for multiple comparisons. This test showed that Group 1 (M= 3.90; SD= .73) was significantly different from all other age groups. While there was no significant difference among the remaining age groups. These results reject the null hypothesis that there is no significant difference among attitudes of different age groups towards polio vaccination. The results support the first research hypothesis (H1) of this study “There is significant difference between attitudes of people with different age groups towards polio vaccination”. These results suggest that the youngest people have comparatively more positive attitude towards the polio vaccination than the older people.

Table 4: Difference in attitude between Pashtun and non-Pashtun people towards polio vaccination

Ethnicity	N	M	SD	T	df	Sig
Pashtun	183	3.16	1.00	-6.43	518	.000
Non-Pashtun	337	3.67	.78			

To compare the mean score of Pashtun and Non-Pashtun people’s attitude towards polio vaccination, independent sample *t*-test was used. The result showed that there was statistically significant difference in Pashtun (M= 3.16; SD= 1.00) and non-Pashtun (M= 3.67; SD= .78) people; $t(518) = -6.43, p = .000$ (two tailed), towards polio vaccinations. The Non-Pashtun people have more positive attitude towards polio vaccination than Pashtun, as higher values on the scale indicate positive attitudes. According to Cohen Kappa 1988 principle, the magnitude of difference is very small ($\eta^2 = .07$).

Table 5: Difference between literate and illiterate people regarding attitude towards polio vaccination

Education Status	N	M	SD	T	df	Sig	η^2
Literate	343	3.58	.93	3.17	518	.002	.02
Illiterate	177	3.32	.81				

Independent sample *t*-test was used to compare the mean score of literate and illiterate people’s attitude towards polio vaccination. The result suggested that there was statistically significant difference in literate (M= 3.58; SD= .93) and illiterate (M= 3.32; SD= .81) people; $t(518) = 3.17, p = .002$ (two tailed). According to Cohen Kappa 1988 principle, the magnitude of difference is very small ($\eta^2 = .02$).

Table 6: Difference between attitudes of rural and urban residents towards polio vaccination

Residential Pattern	N	M	SD	T	Df	Sig	η^2
Rural	410	3.54	.93	2.63	518	.009	.013
Urban	110	3.29	.75				

Independent sample *t*-test was used to compare the mean values of rural and urban people's attitude towards polio vaccination. The result shows that there was statistically significant difference in rural (M= 3.54; SD= .93) and urban (M= 3.29; SD= .75) population; $t(518) = 2.63$, $p = .009$. Therefore, the null hypothesis is rejected. According to Cohen Kappa 1988 principle, the magnitude of difference is very small ($\eta^2 = .013$).

4. DISCUSSION AND CONCLUSION

The findings of the present research study suggest that there is significant differences between attitudes of different age groups toward polio vaccination as the first age group 20 to < 30 years have more knowledge about polio as compared to others/elder. Previous studies also reached at the same conclusion. For example Khan M. U et al. (2015) stated that young respondents had a better knowledge about polio than those of elders. Khwaja et al., (2012) points out that 40% of Karachi population consists of Pashtuns and 90% of the cases recorded in the Pashtun community living in Karachi. This is in line with current findings showing that Non-Pashtuns have more positive attitudes towards polio vaccination as compared to Pashtuns. There is significant relationship between level of education and attitude towards polio vaccination. Educated families have more knowledge and acceptance towards polio vaccination than those who have little or no education. Previous studies also reached at the same conclusion. For example Khan et al. (2016) stated that education plays important role towards the awareness and acceptance of Polio and high educated families have much more positive attitude, acceptance and show little/no resistance towards vaccines. The current findings showing that rural residents have slightly high acceptance towards polio vaccination than urban people. Shah et al. (2011) study also indorsed the current study finding that, this polio vaccination's acceptance is far better in cities as compared to rural areas. The differences between rural and urban resident may be due to poor infrastructure, poor management in rural areas, access to main media is not effective as it is in the cities and thus it can be seen the variation in the attitudes between rural and urban resident. However, Nadeem (2016) explaining the reasons behind not eradication of polio in Pakistan are poor infrastructure, issues of traveling, poor management, mistrust on the polio vaccines, repeated polio campaigns and the security issues of Polio workers. Similarly, Jain (2014) point out that, in rural areas, number of missed polio cases was higher owing to the problem of reach and travel distance was a big reason behind the issue of missed cases in Polio Campaigns. The researcher point out that, overcoming these issues will result in Polio eradication.

4.1. Policy implications and recommendations

Hopefully through this knowledge more effective programs and policies can be introduced to eradicate and protect children from polio. Proper research is required on not achieving the vaccination goal through media messages. Government and advertising agencies should focus on the questions in the care giver's minds and answer them. Through proper communication policy vaccine hesitancy can be minimized in every corner of the country. While making polio message

contents should be strong and real time stories of the victim families should be reported in news so that everyone is informed about the harm poliomyelitis can bring to a child. With more positive attitude better vaccination status can be achieved.

Present study was carried with a Non-Probability sampling; feature study should be conducted using a probability sample to compare the results with the present study and to generalize the results on entire population. The current research was limited to Pashtun and Non-Pashtun ethnicities while, another study should be carried out to explore the difference among other ethnicities of the city. The current study was carried out in the city of Dera Ismail Khan which is the mixture of different cultures whom share similarities. Future study should be conducted in a place where population is clearly heterogeneous.

Note: This research paper is part of MPhil thesis of Raz Muhammad

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