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ASSESSMENT AND KNOWLEDGE ABOUT POLIO VIRUS IN UNION COUNCIL QUETTA CANTT

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Objective: Objective of this study was to evaluate the knowledge of population of union council cantonment Quetta, regarding polio disease.
Methodology: This study was a questionnaire based cross sectional study which was conducted in the general population of Union Council Quetta Cantonment. A total sample of the entire registered population of the Union Council was obtained. The data was analyzed on SPSS version 20. The questionnaire consisted of twenty questions aimed to assess the knowledge of people regarding polio disease.
Results: The present study showed that though most of the parents of the children knew about polio vaccine drops and its advantages, but information about the mode of transmission was unknown among them. The main reason for occurrence of new poliovirus cases in the secured areas of Pakistan is due to the lack of accurate polio vaccination coverage and unaccountability of responsible officials. As polio can only be prevented by polio vaccination, so effective polio vaccines and effective vaccination programs are two important factors, which have affected the national polio campaign.
Conclusion: In this study majority of study subjects had good knowledge about causes, diagnosis, and prevention of polio disease. It is concluded that knowledge is a key factor for the prevention and control of polio disease, it is obvious to plan and apply appropriate health education programs, seminars and interventions regardless of the level of education of the population, to propagate the knowledge and information about causes, symptoms, transmission and treatment of polio disease in the general population.

Keyword: Polio; knowledge; Pakistan; polio virus

INTRODUCTION

Polio is an infectious disease that invades the nervous system and can cause irreversible paralysis and even death. It is highly infectious, and leaves some debilitating impacts. While it has been observed particularly in children under the age of 5, but it is not a necessary characteristic of the disease. The World Health Assembly in 1988 adopted a resolution to eradicate poliomyelitis from the globe by the end of 2000 and this goal was reaffirmed at the world summit for Children in New York, 1990. The Polio Eradication Initiative (PEI) aimed at stopping polio virus transmission in 2000, and to contain the wild polio virus by 2002. With the highest level of political commitment, financial resources and in some cases, peace building especially in politically sensitive areas; PEI has taken immense strides through implementation of recommended strategies, improving routine immunizations, Supplementary Immunization Activities (SIAs) and surveillance for Acute Flaccid Paralysis (AFP). Mopping up Immunization, these strategies have resulted in an appreciable reduction in polio cases globally, with cases seen to have undergone a notable decline of over 99% since 1988, from an estimated 350,000 cases in more than 125 endemic countries then, to 74 reported cases globally in 2015. The number of endemic countries has decreased from 125 in 2016 to 2 countries (Sathyamala, Mittal, Dasgupta, & Priya, 2005).

In 3 strains of wild poliovirus (type 1, type 2, and type 3), wild poliovirus type 2 was eradicated in 1999 and case numbers of wild poliovirus type 3 are down to the lowest-ever levels with the no cases reported, since the last one reported by Nigeria in November 2012 (Organization, 2008). It is considered to be completely eradicated from the world as of April 2016 (Garon, Cochi, & Orenstein, 2015).

The event of eradication of polio will be a cause of celebration for the world as a whole, with equal benefits for everybody, regardless of their social status or location. Economic modeling has found that the eradication of polio would save at least US$ 40–50 billion over the next 20 years (Arooj, Ali, Baber, Abbasi, & Ali, 2013), mostly in low-income countries. Most importantly, successful eradication would ensure that no child will ever have to suffer through the terrible effects of lifelong polio-paralysis again.

Pakistan is one of the four remaining countries in the world where poliomyelitis (polio) is still categorized as an endemic viral infection (Warraich, 2009). As of September 2016, there have been 15 documented cases of wild polio virus in the region. Though the polio immunization campaign in the country started in 1974, the efforts for eradication were especially started in 1994. Despite over 100 rounds of vaccination being carried out in the past decade, the infection still remains endemic. Pakistan had the world's highest number of polio cases in 2014, and as of 2015 and 2016, it has maintained this record but number of polio cases were reduced comparatively. The number of infected districts reduced from 43 to 23. Polio eradication continues to be a national emergency with the renewed commitment of the Government at every new point. The goal of the NEAP 2015-16 remains to interrupt transmission of wild poliovirus in Pakistan (Naeem, Adil, Abbas, Khan, Khan, et al., 2011).

Knowledge has always been an important factor in each field, knowledge is actually the consciousness of an object. Although certain treatments and medications are accessible for the polio disease but consequent amount of knowledge is also important for the community, many studies have reported the lack of knowledge of polio disease among the people of Pakistan (Khan et al., 2015).

This study will explore the knowledge of rural population of Quetta regarding polio disease; and will provide basic information of polio disease in rural population with aims and objective are to evaluate the knowledge of common polio disease in the population of Quetta Union Council Cantonment.

METHDOLOGY

As it was stated in previous chapter that there was a good knowledge of polio disease among different populations, in different countries including Pakistan. It was suggested that knowledge is a key factor for the prevention and control of polio disease. So, for this purpose proper education and knowledge about polio disease should be disseminated worldwide.

2. Objective

Objective of this study was to evaluate the knowledge of polio disease in general population of Union Council Cantonment, Quetta.

3. Study design

The study was cross-sectional, questionnaire based survey.

4. Study setting

This study was conducted in union council cantonment. The study was conducted in the Union Council Cantonment, Quetta, which is believed to be a major city of polio cases.

5. Study population

The study was conducted in general population of Union Council Cantonment.

6. Study sample

A sample of all the registered population of Union Council, who were registered during the study period.

7. Study instrument

The study instrument was a questionnaire designed by experts of department of Pharmacy practice, faculty of

Pharmacy, University of Baluchistan, Quetta, with help from previous articles. The questionnaire consisted eighteen (18) questions and was designed specifically to assess the knowledge regarding the polio disease. All questions were close ended, and mainly centered on general information, signs and symptoms, transmission, prevention, treatment, and cure of polio disease.

8. Study duration

This study was conducted from March 2016 to October 2016.

9. Data collection

Data collection was done by filling questionnaires, among the individuals of Union Council themselves, who were able to read and write.

10. Statistical analysis

The collected data was verified and analyzed statistically by using IBM (SPSS) Statistical Package for Social Sciences software version 20. Categorical variables were represented in frequency and percentage and continuous variables were represented as Mean±SD. Mann Whitney and Kruskal- Wallis test were used to relate different study

RESULTS

1.Demographics characteristics

The demographic data is presented in table 1. The data contain demographics components in which the first one is age group, and was categorized into various age ranges, maximum age was from 1- 40 years while minimum age of population was above 40 years. Most of the participants 280 (93.3%) were from the age group of 1-40, there were 20 (6.7%) participants in the age group of 41-80, the gender analysis showed that out of data of total population 171 (57.0%) were male and 129 (43.0%) were female. After that their occupation demography was analyzed the result showed that 170 (56.7%) were students, 80 (26.7%) government servants, 11 (3.7%) business man and other occupations were 39 (13.0%). Marital status 151 (50.3%) were married and 149 (47.7%) were unmarried. Education level 291 (97.0%) were educated and 9 (3.0%) were un-educated. Most of them 297 (99.0%) belonged to urban locality and 3 (1.0%) to rural area.

Table 1: Demographic characteristics of the responder

DESCRIPTIVES	FREQUENCY	PERCENTAGE
AGE GROUP		
1-40	280	93.3
41-80	20	6.7
GENDER		
Male	171	57.0
Female	129	43.0
MARITAL STATUS		
Married	151	50.3.
Unmarried	149	47.7
EDUCATION		
Educated	291	97.0
Uneducated	9	3.0
OCCUPATION		
Government servant	80	26.7
Student	170	56.7
Business	11	3.7
None of these	39	13.0
LOCALITY		
Rural	297	99.0
Urban	3	1.0

2 Description of Questionnaire

The questionnaire response of respondents was given in Table 2.

Table 2

S.NO	Question	F (%)	F (%)	F (%)
1.	Have you heard of the disease Polio?	290 (97.7%)	7 (2.3%)	3 (1.0%)
2.	Does Polio is caused by virus?	265 (88.3%)	31 (10.3%)	4 (1.3%)
3.	Is polio a transmittable disease?	237 (79.0%)	54 (18.0%)	9 (3.0%)
4	Do you know polio disease is caused by sharing food?	33 (11.0%)	89 (29.7%)	178(59.3%)
5.	Do you know polio caused by sharing water?	175 (58.3%)	76 (25.3%)	49 (16.3%)
6.	Do you know polio is caused by sexual relation?	170 (56.7%)	88 (29.3%)	42 (14.%)
7.	Do you know polio disease occurs specially in children up to 5 years?	245 (81.7%)	46 (15.3%)	9 (3.0%)
8.	Does Polio cause death?	44 (14.7%)	241(80.3%)	15 (5.0%)
9.	Does patient have fever when suffering from Polio?	239(79.7%)	48 (16.0%)	13 (4.3%)
10.	Is muscles stiffness symptom of polio?	239 (79.7%)	39 (13.0%)	22 (7.3%)
11	Do you know diagnosis test like (body secretions) can be helpful for diagnosis?	222 (74.0%)	40 (13.3%)	38 (12.7.%)
12	Do you know CSF (Cerebro spinal fluid) is most useful test for polio virus?	36 (12.0%)	69 (23.0%)	195(65.0%)
13	Do you know there is any cure for polio?	108 (35.0%)	172 (57.3%)	20 (6.7%)
14	Is polio preventable?	251 (83.7%)	33 (11.0%)	16 (5.3%)
15	Is polio vaccine easily available free of cost?	259 (86.3%)	28 (9.3%)	13 (4.3%)
16	Does polio vaccine use before disease?	255 (85.0%)	33 (11.0%)	12 (4.0%)
17	Does polio vaccine use after disease?	224 (74.7%)	64 (21.3%)	12 (4.0%)
18	Does permanent disability is a consequence of untreated un vaccinated and un immunized child?	242 (80.7%)	38 (12.7%)	20 (6.7%)

Table 3: Source of Information

1	**T.V**	**2**	**Radio**	**3**	**Newspaper**	**4**	**Health worker**
	35 (11.7%)		4 (1.3%)		22 (7.3%)		83 (27.7%)
5	**Family**	**6**	**Friend**	**7**	**Social Media**	**8**	**Internet**
	30 (10%)		45 (15%)		49 (16.3%)		32 (10.7%)

Table 4: Knowledge level

Good Knowledge	**59.7%**
Poor Knowledge	**40.3%**

Knowledge score

The knowledge score was analyzed and results shown in table 4.3 show that 59.7% population were those who had good knowledge regarding polio disease and 40.3% population were those with poor knowledge. Cut off level was 6 and total knowledge questions were 12 and the scoring (knowledge) less than or equal to 6 is considered as good knowledge and scoring (knowledge) greater than 6 is considered as poor knowledge.

DISCUSSION

The present study showed that though most of the parents and care givers of the children knew about polio vaccine drops and their advantages, but their information regarding the mode of transmission of the virus, leaves a lot to be desired. Among the major reasons for appearance of new cases of poliovirus in secured areas of Pakistan; is the lack of accuracy in polio vaccination coverage and unaccountability of responsible official (Lashari, 2004).

The Expanded Programme on Immunization (EPI), Pakistan set its initial goal to provide immunization services to all the children of the world by 1990, during the first year of life. But due to lack of open access to certain regions, unawareness of parents or caretakers regarding the disease and lack of fine management, EPI has to a lot more to

reach that benchmark of total eradication of polio from Pakistan (Hasan, Bosan, & Mohamud, 2010). These failures in Pakistan's polio eradication campaigns are impacting the global scenario of a polio free world. In 2011 seven poliovirus cases were detected in China, in which type 1 poliovirus strain endemic in Pakistan was identified genetically, where China spent 80 billion dollars to eliminate the virus that came from Pakistan. Polio is one of the most feared diseases of the 20th century, being incurable till this day, yet preventable. The prevention can be done through safe and effective polio vaccines both IPV and OPV, which serve as the best hope of polio eradication, for the time being. The strategy to eradicate polio is therefore based on preventing infection by vaccinating every child until transmission stops and the world is polio-free. According to global polio eradication initiative report Pakistan is one of four endemic countries, that is still facing different problems in the eradication of polio from its homeland. Despite security and violence issues, which are major hurdles for polio eradication in Pakistan, there remains a dire need to strengthen vaccination program by introducing tools of information technology (IT). The monitoring of vaccination campaigns through IT like SMS text and global information system (GIS) needs to be adopted and implemented for accurate coverage during supplementary immunization drive (Mehmood et al.) The urgently needed areas with compromised security, must be addressed on priority basis, but close monitoring of polio vaccination campaigns is of the utmost importance to ensure accountability and to affect factors behind poor coverage. As polio can only be prevented by polio vaccination (both OPV and IPV) so effective polio vaccines and effective vaccination programs are two important factors, which have affected the national polio campaign for better or worse. The problem of vaccine storage in areas where refrigeration facilities are not available or power supply is discontinued very frequently has been shown to affect the efficacy of polio vaccine, hence the rumors of ineffectiveness of the vaccine (O'Connor, 1994).

Failure of a certain crowd to vaccinate was also due in part to the rumors spread by some religious groups claiming that the polio vaccination was a conspiracy to control the population control, by reducing women's fertility. The ultimate result on the people of the rural areas of Pakistan was their hesitation in vaccinating their children. These rumors were nullified by sincere efforts of the Polio workers and by initiation of intensive eradication campaigns such as door-to-door vaccinations by the Government of Pakistan in 1999 (Naeem, Adil, Abbas, Khan, Naz, et al., 2011). Later on, drone attacks and the vaccination campaign for Abbottabad operation faked by CIA, left some jaded experiences behind and has added fuel to the already circulating rumors (Gostin, 2014).

The government of Pakistan has taken some steps to make the polio campaigns more effective after the recent concerns of the WHO over the high number of polio cases . These steps included the National Assembly of Pakistan to unanimously pass a resolution, urging all lawmakers to ensure implementation of the polio immunization program in their respective constituencies. In Baluchistan most effected districts like Quetta, Killabdulla, and Pishin were included in high risk groups because of its history of high level of polio cases. Therefore, the global initiative by WHO and UNICEF started community based vaccination program in main three districts Quetta, Killa Abdulla, Pishin. In these districts community health workers, that belong to the same community are selected to vaccinate every child of the area. This program has been proven successful because the community health workers register every child in their community base registration book. The concept of children that missed the vaccination is now completely finished due to community-based vaccination. Pakistan finished type 1, and only one case of polio was recorded in Baluchistan this year. It is hoped that, coming March 2017 we will finish tetravalent virus from our homeland Pakistan, and make Pakistan polio free.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

It is concluded that knowledge is a key factor for the prevention and control of polio disease. It is obvious to plan and apply appropriate Health Education programs, seminars and interventions regardless of the level of education of population, to propagate the knowledge and information about causes, symptoms, transmission and treatment of polio diseases in the general population because there are 40% respondents who do not have adequate knowledge and it may lead to burden of polio in Pakistan.

RECOMMENDATIONS

Community needs to be continuously educated on prevention of polio. Community messages need to be simple, easy to understand and preferably in the local languages. Regular feedback from the community would be helpful for more effective educational campaigns. Decision makers of the household need to be involved through group discussions, seminars and conferences, about polio vaccination. Government and nongovernmental organizations (NGOs) should support local communities of the areas to make the campaign successful through monitoring, by arranging group discussions, seminars, media exposure by showing videos, colored charts for illiterate to help them understand the

drawbacks and nature of disease and continuous evaluation and provide good knowledge about cold chain and how to maintain vaccine cold chain. It is really important to provide refrigerator to every basic health unit to store vaccine vials. Because polio vaccine vials need the specific temperature of -2 to -8 degrees C. Also to check the vaccine vial during the campaigns.

Study Limitations

There were some limitations of the study while assessing the knowledge among population regarding polio disease, these include duration of study; because I had to complete this study within the specified time period given by my supervisor. So the time for data collection was limited from March 2016 to October 2016 and this also affected my sampling size.

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