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POLIO VACCINE;

INACTIVATED POLIO VACCINE INTERVENTION AND POLIO ERADICATION CAMPAIGN ; KNOWLEDGE AND ATTITUDE OF YOUNG DOCTORS

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ABSTRACT... Objectives: To assess knowledge and attitude of young doctors serving in Tertiary care Hospitals regarding the IPV intervention and polio eradication campaign. **Study Design:** A cross sectional descriptive study. **Setting:** Five Tertiary Care Hospitals in Rawalpindi and Islamabad. **Period:** Oct 2015-Nov 2015. **Methods:** Proportionate random sampling technique was used to select a sample of 100 doctors working in pediatrics wards and out patients departments (OPD). After taking informed consent the data was collected using a standardized Questionnaire to measure level of awareness among this cohort of Health care providers. Data were entered and analyzed using SPSS version 21. Baseline distinctiveness (demographic) was summarized by descriptive statistics. The statistical inference was drawn using Chi square test, p value of ≤ 0.05 was considered as significant. **Results** The study sample comprised of 47 males and 53 females. Mean age of participants was 29.8 ± 5.7. There were 15% House Officers, 45% Post Graduate Trainees, 30% Medical Officers and 10% consultants in the sample. Majority of doctors (65%) expressed disinterest and doubt about polio immunization while 40% suggested focus on sanitation and health promotion before immunization. Among the participants only 29% had attended polio surveillance training workshop in last 2 years and participated in polio National Immunization days. There was no significant association between knowledge about IPV and years of experience(x^2 =2.68, p= 0.433). **Conclusion**: This study suggests that there was inadequate knowledge of doctors in tertiary care hospitals regarding IPV and polio eradication efforts in Pakistan.

Key words: Attitude, knowledge, Healthcare professional, Inactivated Polio Vaccine.

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INTRODUCTION

The only country which remains polio endemic till today is the Pakistan. Pakistan had the highest incidence of poliomyelitis in a decade with over 60% of all cases in endemic countries and 34% of cases worldwide were recorded here which risks being the last country to interrupt transmission.[1] The burden of disease in Pakistan has significantly reduced however there were 53 reported cases of polio all across the country in 2015.[2] Until recently, transmission of wild poliovirus has remained endemic in Federally Administered tribal Areas (FATA) and Khyber Pakhuntkhawa (KP) with 16 cases each from these two areas.[3]

In last 15 years, to reach out the children with immunization in all over the country, polio eradication efforts has made major changes. Results of immunization on childhood morbidity and mortality are great, but its full potential has yet been reached.[4]

To overcome challenges and reach most vulnerable children, the National Emergency Action Plan was announced in Aug 2015. Bivalent OPV[1,3] has replaced pentavalent vaccine –(against diphtheria, tetanus, pertussis, hepatitis B and Hib - and pneumococcal vaccine) Trivalent OPV at 2 weeks period that is given at 14 weeks alongside the third dose of OPV. All this needs support of policy makers and various steps for introduction of new vaccine.[5] Even before the consensus of introduction a certain vaccine in to the country, a strong base is needed for the effectiveness of the vaccine for preventing the polio needs to be established.[6]

With solid efforts of government and other health agencies, a large proportion of vulnerable infants and children in Pakistan still remain unimmunized. Vaccine hesitancy is influenced by a number of factors including issues of confidence in vaccine or provider, inability to perceive a need for a vaccine and lack of accessibility.[5,7]

However, lack of education, information, counseling activities and community participation in routine immunization are the main reasons for poor coverage in Pakistan.[8] According to research from USA, immunization providers has critical role in contributing high immunization rates.[7] Studies conducted in India have revealed that physicians and Health care providers provide leadership in their communities and are among key opinion leaders for health care at the national and state level. Evidence indicates that lack of knowledge about new vaccines in the population and among healthcare workers is a prime barrier for access to Immunization campaigns.[9,10]

Health care providers, who work in the public sector in urban areas, provide health care primarily to patients from the lower and middle socio-economic strata of society.[11] Their perceptions covering various aspects of polio immunization including the introduction of Inactivated Polio Vaccine (IPV) and their practices in this regard are of immense importance for the success of polio eradication in Pakistan. Therefore the study was carried out to assess the level of knowledge and attitude of Health care providers so that they can be motivated by updating their level of knowledge regarding the importance of immunization and is key during this final phase of polio eradication in Pakistan.

METHODS

A total of 100 Health care providers were recruited in the present, descriptive cross sectional survey. Proportionate random sampling technique was used to select the sample of doctors. The population of sampling units in the Tertiary Care Hospital was divided into sub-groups and the sample was selected separately from each stratum. The time duration of the study was 2 months (Oct 2015-Nov 2015). The study was conducted in the Pediatrics department and OPD of in five Tertiary Care Hospitals in Rawalpindi and Islamabad after taking permission from the Institutional Ethics Committee. A formal informed consent was obtained from all the participants before the start of the study. The inclusion criteria outlined in advance before recruiting Health care professionals was those working in Pediatric and out patients department. The data collection was performed by administering validated questionnaire. The self-designed structured questionnaire comprised of two parts. The first part had questions about demographic details of the respondents, their basic training and experience in their field.

There were 13 questions in the second part of the questionnaire to assess the knowledge and that is being developed after context analysis and literature search. Feedback was taken from researchers and pediatricians for face and content validity. Questionnaire was given to respondents and responses were taken from them by giving them adequate time. Baseline distinctiveness (demographic and HRQOL) were summarized by descriptive statistics. The statistical inference was drawn using Chi square test and p value of ≤ 0.05 was considered as significant. Data was entered and analyzed in SPSS version 21.

RESULTS

The study sample comprised of 47 males and 53 females. The response rate was 100%. Mean age of the participants was 29.8 $\pm$ 5.7. Out of all the participants there were 15% House Officers, 45% Post Graduate Trainees, 30% were Medical Officers and 10% were consultants as shown in Table-I.

The knowledge of IPV in the respondents revealed that only 11% were aware of the recommended age for IPV administration whereas only 27%were aware of maximum number of doses of IPV. Nearly half of the respondents (47%) believed that IPV is capable of protecting the children from all 3 polio viruses. Almost half of the participants (52%) believed that IPV is introduced to reduce risk of polio cases and interrupt transmission of polio. While only 37% had the perception that switch from Trivalent OPV to bivalent OPV will facilitate to reduce vaccine derived poliomyelitis. Only half of

the participants (52%) agreed that IPV and OPV evoke immune responses that are different and IPV is capable to protect children from all 3 polio viruses alone (47%) as shown in Table-II.

Variables	Group	Frequency(n)
Gender	Male Female	47 53
Qualification	MBBS MCPS FCPS/MD	67 3 1
Service (Years)	<1 1-5 6-10 >10	33 50 12 5
Designation	House Officer Medial Officer PG Trainee Registrar Consultant	45 14 25 15 1

Table-I. Demographic details of participants (n=100)

	Statements	Frequency of correct answer
1.	IPV is introduced to reduce risk of polio cases and interrupt transmission of polio.	52%
2.	Switch from trivalent OPV to bivalent OPV will facilitate to reduce vaccine associated and vaccine derived poliomyelitis	37%
3.	Countries must introduce IPV in 2015-2016	28%
4.	Maximum doses of IPV recommended are two	27%
5.	Recommended age for IPV administration is 14 weeks	11%
6.	Switch from trivalent OPV to bivalent OPV will take place worldwide in April 2016.	34%
7.	In bivalent OPV type of poliovirus present are type 1-3	44%
8.	It is compulsory to continue to use IPV and OPV both for Polio eradication	45%
9.	IPV and OPV evoke immune responses that are different	53%
10.	IPV is capable to protect children from all 3 polio viruses alone	47%
11.	If IPV and OPV given to the same child at same time it is safe	29%
12.	There is difference of quality of immune response to trivalent OPV compared to bivalent OPV	64%
13.	Attended Polio surveillance training workshop in last 2 years	29%
14.	Participated in polio National Immunization days	29%

Table-II. Responses of doctors of tertiary care hospitals on Inactivated Polio Vaccination and Polio Eradication (n=100)

Among the participants only 29% had attended polio surveillance training workshop in last 2 years and participated in polio National Immunization days. Majority of doctors (65%) expressed disinterest and doubt about polio immunization while 40% suggested focus on sanitation and health promotion before immunization the detail is given in table 2. There was no significant association between knowledge about IPV and years of experience (x^2 =2.68, p= 0.433). There was insignificant association between previous training in IPV and knowledge of IPV(x^2 =0.98, p= 0.4).

DISCUSSION

For polio eradication from Pakistan, perceptions of physicians regarding safety and protectiveness of polio vaccine so they may motivate the parents to vaccine their child. According to our study results, physicians are involved in childcare and to advice the care providers but did not show sufficient knowledge regarding IPV introduction in the country.

A similar study conducted in India showed that continued support of the medical profession is critically important so that there is no complacency among key opinion leaders in efforts to eradicate polio.[12,13] The inadequate knowledge of the physicians could be due to the fact that IPV is being used primarily by pediatricians in the private sector and therefore the cohort working in public sector was not familiar with it.

In Pakistan OPV has been used as the primary eradication strategy, and most countries in the world have achieved polio eradication using only OPV. The IPV has recently been licensed in the country and is being used as part of the Expanded Program of Immunization (EPI) since August 2015. Another reason may have been due to the timing of the study; IPV was introduced in Pakistan in August 2015 while this survey was conducted between September 2015 and November 2015, and the impact of launch of IPV was not evident while this study was being conducted.

Only a quarter of the respondents in our study were aware of its introduction in 2015 and the

world wide switch of OPV to IPV. This could be due to indifference of this urban cohort of physicians to the new developments in national health care strategies or inadequate electronic media coverage given to the strategy. Research conducted in Greece revealed that IPV was best accepted by caregivers in countries by repeated strong, clear and simple messages regarding the effectiveness of the new vaccines for caregivers.[14]

In our study one interesting finding was that a quarter among the participants had attended polio surveillance training workshop in last 2 years and participated in polio National Immunization days. Increasing experience and attending training were insignificantly associated with knowledge of doctors about Polio Vaccine. However evidence reveals that following the decision to introduce IPV in Srilanka and Nigeria the first comprehensive guidelines on IPV for healthcare professionals were developed.[13,15] The guidelines covered information on rationale for introduction, IPV safety and immunity and they were then distributed to health facilities, and healthcare workers were trained on IPV introduction.

The cohort of Physicians in our study expressed the need for robust health education and promotion for behavior change of people as decisive factors for success of the Polio Eradication Campaign. This finding was similar to research conducted in other parts of the world.[16]

To build and maintain the trust of parents, the confidence of the physicians is very important and survey result may positively influence the polio eradication efforts. Since less than half of the physicians perceived the IPV and OPV to be given at the same time. Policy makers and planners have great interest in these findings when they are working on the awareness strategy for healthcare providers during end stage or post eradication stage. An effective implementation of polio eradication strategy should be hallmark for eradication efforts, when organizing the training for healthcare providers. To interrupt the polio transmission, it is very important to install the confidence in both parents and healthcare providers.

There were few limitations of the study and limitations were small sample size, study conducted in the urban area and it was a cross sectional study. There was a social desirability bias in the responses as PHC physician surveys were done in person.

CONCLUSION

This study suggests that there was inadequate knowledge of doctors in tertiary care hospitals regarding IPV and polio eradication efforts in Pakistan. The findings provide valuable input enabling policy makers develop measures to improve inactivated polio vaccination awareness among health care providers and encourage them to be patient advocates regarding importance of polio vaccination for health prevention and promotion.

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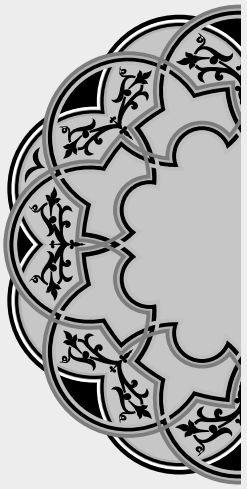

"Only ride with the people you walked with."

The God Father

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