Original Research Article

Knowledge of parents regarding polio vaccination in unvaccinated children less than 5 years of age: A cross sectional study

Abstract

Aim: The purpose of this study was to determine the Knowledge of parents regarding polio vaccination in unvaccinated children less than 5 years of age.

Study Design: Cross sectional study

Place and duration: Department of Pediatrics, Shaheed Mohtarma Benzair Bhutto Medical University, Larkana Pakistan from February 2018 till August 2018

Methodology: All parents of unvaccinated children of either gender with age from 2 months to less than 5 years of age visiting to hospital outpatient department for any reason were included in the study. Information about the OPV immunization status, demographics, education of the family earner, occupation and income, accessibility of vaccination center in terms of distance, behavior of immunization staff, parents' views regarding vaccines were recorded. Questions were asked about vaccination schedule.

Results: Mean age of the child and respondent's age was 2.96 ±0.89 years and 31.40 ±3.96 years respectively. Male preponderance was found to be higher 146 (63.50%). Adequate knowledge about polio was found in 58 (25.20%) parents.

Conclusion: The Knowledge of parents regarding polio vaccination was found unsatisfactory in unvaccinated children less than 5 years of age.

Keywords: Unsatisfactory, Unvaccinated Children, Polio Vaccination

Introduction

Childhood immunization is most cost effective way of preventing the serious infectious diseases. The success of any programme depends upon the coverage rate of vaccines. Many lethal diseases can be prevented by routine childhood immunization. About million deaths are prevented all over the world due to basic routine vaccines.[1] There are lot of issues that hinders proper immunization in children including misinformation about vaccine side effects, and disease due to vaccines. Parents lack of knowledge regrading indications and contraindications cause poor vaccine coverage rate. Most of the parents believe that vaccine cannot be given in mild febrile illness, this is a reason behind missed vaccines in children.[2]

Lot of studies done in past to determine the reasons for incomplete immunization in children. They found that misconception about vaccines was the most common reason for vaccine programme failure. Expended programme of immunization coverage in Pakistan is still low due to poor parental knowledge and beliefs regarding the vaccines. There is need to educate parents regarding the benefits, indications and contraindications of routine childhood vaccines. Counselling sessions should be arranged in this regard.[3] Polio is still endemic in few countries including African region and some other developing countries in the world. Although routine immunization coverage in these countries is improving, but still it is a great need to intensify polio vaccination.[4]

Poliomyelitis is still prevailing in Pakistan because in certain areas parents don't vaccinate their children. They have different myths and beliefs that should be addressed. By doing this government's goal of eradicating vaccine Preventable diseases like polio will be accomplished.[5]

In Pakistan the literature is not available regarding polio vaccination and its awareness in terms of knowledge and attitude, among parents of children under 5 years. The estimates of NGOs show very low coverage. In a study from Peshawar Pakistan it was noted that only 64.2% children were completely vaccinated and most common reason behind this was lack of awareness about immunization.[6] In an Iraqi study, out of 528 parents 66.1% had adequate knowledge-practice scores. Among the knowledge questions the lowest correct response to a statement was 10.6%.[2] about 20-40% of respondents indicated insufficient knowledge regarding childhood vaccination.[7] Condition in Pakistan is alarming due to persistence and increasing number of poliomyelitis cases in young children. The current study was planned to determine the Knowledge of parents regarding polio vaccination in unvaccinated children less than 5 years of age

Methodology:

This cross sectional study was conducted at Department of Pediatrics, Shaheed Mohtarma Benzair Bhutto Medical University, Larkana from February 2018 till August, 2018. A Non probability consecutive sampling technique was used. Permission was taken from the ethical review committee of the university. A total of 230 parents of unvaccinated children were included in the study. The sample size was calculated by using WHO sample size calculator taking Confidence level of 95% , anticipated population proportion = 10.6 %[2] and absolute precision required = 4%.

All parents of unvaccinated children of either gender with age from 2 months to less than 5 years of age visiting to hospital outpatient department for any reason were included in the study. In this study a total of 230 parents were interviewed for their knowledge for polio vaccine. Parents meeting the inclusion criteria were interviewed from outpatient department visiting along with the children for any reason. They were interviewed by trained interviewer trainee herself and by trained medical students of year 3 and above. All the participants were briefed about the study and informed written consent was obtained from all the subjects. Information about the OPV immunization status, demographics, education of the family earner, occupation and income, accessibility of vaccination center in terms of distance, behavior of immunization staff. Questions were asked from parents regarding the immunization schedule. Whole information was recorded on especially designed proforma.

SPSS version 22.0 was used for data analysis. Descriptive statistics was used to calculate mean and standard deviation for Quantitative Variables including age of child and age of respondent. Frequencies with percentages was presented for Qualitative variables like gender of the child, respondent (father/mother), education of parents, household income, parent's knowledge about polio vaccination. Effect modifiers like gender of the child, parent age, gender of the parents, educational status, and family monthly income status was stratified to see the impact of these on outcomes. Post stratification Chi square test was applied and $p < 0.05$ was taken as significant.

Results:

Mean child age and respondent's age was 2.96 ±0.89 years and 31.40 ±3.96 years respectively. Majority of the child 150 (65.20%) had >2 years of age while majority of the respondent 145 (63%) had >30 years of age. Male preponderance was found to be higher 146 (63.50%) as

compared to females 84 (36.50%). Most of the respondents were 136 (59.10%) while 94 (40.90%) respondents were mother. Educational status of majority of the respondents was ≤matric 133 (57.80%) followed by ≥Intermediate 49 (21.30%) and illiterate 48 (20.90%). Household income of majority 154 (67%) of the participant was 15,000-30,000 rupees followed by <15,000 rupees 40 (17.40%) and >30,000 36 (15.70%). Adequate knowledge about polio was found in 58 (25.20%) parents. Stratification was done to see the effect of respondent's age, respondent's gender, parent's education and household income on the outcome. Results are shown in table 1-4.

Table 1: Comparison of respondent's age with knowledge n=230

Respondent's Age (in years)	Knowledge		Total	p-value
	Adequate	Inadequate		
≤30	28 (32.9)	57 (67.1)	85 (100)	0.039
>30	30 (20.7)	115 (79.3)	145 (100)	
Total	58 (25.2)	172 (74.8)	230 (100)	

n (%)

Table 2: Comparison of respondent gender with knowledge n=230

Gender of the respondent	Knowledge		Total	p-value
	Adequate	Inadequate		
Father	36 (26.5)	100 (73.5)	136 (100)	0.599
Mother	22 (23.4)	72 (76.6)	94 (100)	
Total	58 (25.2)	172 (74.8)	230 (100)	

n (%)

Table 3: Comparison of parent's education with knowledge n=230

Parent's Education	Knowledge		Total	p-value
	Adequate	Inadequate		
Illiterate	10 (20.8)	38 (79.2)	48 (100)	0.007
≤Matric	43 (32.3)	90 (67.7)	133 (100)	
≥Intermediate	5 (10.2)	44 (89.8)	49 (100)	
Total	58 (25.2)	172 (74.8)	230 (100)	

n (%)

Table 4: Comparison of household income with knowledge n=230

Household Income (in rupees)	Knowledge		Total	p-value
	Adequate	Inadequate		
<15,000	3 (7.5)	37 (92.5)	40 (100)	0.014
15,000-30,000	43 (27.9)	111 (72.1)	154 (100)	
>30,000	12 (33.3)	24 (66.7)	36 (100)	
Total	58 (25.2)	172 (74.8)	230 (100)	

n (%)

Discussion

The immunization coverage in Pakistan needs improvement. Factors such as knowledge, attitude and practices of parents and patients are also known to contribute to success or failure of immunization program. In our study, adequate knowledge about polio was found in 58 (25.20%) parents. About 90% of respondents were in favor of vaccination.

In our study male preponderance was found to be higher 146 (63.50%) as compared to females 84 (36.50%). Most of the respondents were 136 (59.10%) while 94 (40.90%) respondents were mother. Educational status of majority of the respondents was ≤matric 133 (57.80%) followed by ≥Intermediate 49 (21.30%) and illiterate 48 (20.90%). In a similar international study women participants (55%) were more than the man respondents (45%). A total of 50% women declared secondary education and 30% declared high education. A total of 71% responded in the favor of

vaccines while 11% responded against vaccinations. Contrary to our study most of the parents had good knowledge about vaccines. About 76% women and 56% man had a good knowledge about immunization issues. [8] Although vaccines are available globally but its poor coverage is alarming. This is a main hindrance in poliomyelitis eradication. In a study from Pakistan 27.9% parents refused to vaccinate their children. Most of the mothers were uneducated and they had the issue of food insecurity. Parents with high food insecurity were more likely to refuse vaccination of their children compared with parents with minimal food insecurity. [9]

Many factors influence parents to vaccinate their children including socioeconomic status, their trust in the public health system and the parent-physician relationship. In our study most of the families were poor, their household income in majority was 154 (67%) 15,000-30,000 rupees followed by <15,000 rupees 40 (17.40%) and >30,000 36 (15.70%). In a study from Lebanon vaccine response rate was 79.5%. Better knowledge and attitude were significantly associated with better vaccine coverage rate. [10] Moreover a study from Peshawar Pakistan concluded that poor knowledge and negative attitude towards polio vaccine was the main reason for polio eradication failure. Although most of the parents (65.1%) had sufficient knowledge about polio disease and its vaccines but their religious beliefs were the main hindered behind the poor coverage. [11] The overall full basic immunization coverage in Pakistan is still low. In our study mean child age was 2.96 ±0.89 years and majority of the child 150 (65.20%) had >2 years of age. In a current study from Sindh Pakistan the basic immunization rates were 69.1% for under five weeks' old children. Study concluded that child's age, number of living children, parents' education level, wealth, the source of mother and child health information, number of antenatal care, and assistance during delivery were associated with completing basic immunization.

Conclusion:

The Knowledge of parents regarding polio vaccination was found unsatisfactory in unvaccinated children less than 5 years of age.

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