



## Parent's Knowledge and attitude towards the newly introduced IPV vaccine in capital region of India

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### ABSTRACT

**INTRODUCTION:** Over the last many years, a number of new childhood vaccines have been introduced into national immunization schedules of various countries. One factor that determines the smooth conduction of any immunization program in the wake of introduction of a new vaccine is the knowledge and attitude of parents of the target infant population. No study has been done in north India to know the Knowledge, Attitude and Practice (KAP) of parents/caregivers of the children towards the newly introduced Inactivated Poliovirus Vaccine (IPV).

**AIM OF STUDY:** This study was conducted with an aim to know the gap in KAP of respondents towards introduction of IPV vaccine.

**METHODOLOGY:** This is a cross-sectional study done in a healthcare center of east Delhi on immunization days.

**RESULTS:** Out of the total 71 infants included in the study, 35 (49.3%) were males. When asked about the knowledge of national immunization schedule, 41(57.7%) said that they are aware of the schedule while 42.3% revealed about not knowing about the whole schedule. When asked about the role of Oral Polio Virus (OPV) vaccine in the development of the child, only 49 (69%) respondents knew that the drops were given to prevent polio. When asked about the current immunization session, only 20 (28.1%) respondents knew that their child has been given 3 injections, 23 (32.4%) did not know the number of injections given and the rest gave wrong answers. Though majority (n=50, 70.4%) knew that a new vaccine has been administered to the child, only 82% of those knew that it was for prevention of polio. Sixteen (22.5%) respondents revealed that the healthcare provider has not given them any information about the new vaccine.

**CONCLUSION:** The study reveals that though the attitude of parents towards immunization is majorly positive but the knowledge is lacking.

### KEYWORDS : KAP, new vaccine, IPV.

**INTRODUCTION:** Vaccination has greatly reduced the burden of infectious diseases. Only clean water, also considered to be a basic human right, performs better [1]. In the last two decades, many new childhood vaccines like pneumococcal vaccine, meningococcal vaccine, pentavalent vaccine, Human Papilloma Virus Vaccine etc. have been introduced into national immunization schedules, and many changes continue to occur with time all over the world [2]. If South East Asian Region (SEARO) is considered then it is not only a big supplier but also a humongous consumer of vaccines. According to United Nation's Children's Fund (UNICEF), India has the largest number of births in a year and 9 million immunization sessions are held each year to immunize the birth cohort. The most recent addition in the national immunization schedule of India has been the introduction of Injectable Poliovirus Vaccine (IPV) along with the third dose of Diphtheria-Pertussis-Tetanus vaccine (DPT). This is accompanied by a switch from trivalent Oral Poliovirus Vaccine (t-OPV) to bivalent Oral Poliovirus Vaccine (b-OPV), in order to get rid of strain 2 which is responsible for 40% Vaccine Associated Paralytic Polio (VAPP) and 97% Vaccine Derived Paralytic Polio (VDPV) [3]. The complete immunization schedule of Delhi has been given in **Table 1**. Vaccines are always faced with the challenge of parental acceptability and are being put to test as far as caretaker's trust is concerned, from time to time [4]. Another concern that the caretaker's have is the number of injections the child gets at a single visit – often the higher the number of injections, higher is the discomfort that they experience [2]. According to the model developed by the Strategic Advisory Group of Experts Working Group (SAGE-WG) for vaccine hesitancy assessment: confidence (level of trust on the vaccine and the provider), complacency (poor perception of the need and value of vaccine), and convenience (issue of access both on mode and place of delivery of vaccine) are the core domains [5,6]. One factor that determines the smooth conduction of any immunization program in the wake of introduction of a new vaccine is the knowledge and attitude of parents of the target infant population. When parents have poor knowledge of the newly introduced vaccine then there is a risk of failure of the immunization program in case of adverse events. Also, their confidence and trust in

the vaccine provider plummets if the provider fails to impart the necessary vaccine information. So the fault can either be on the provider's part – where he/she fails to pass on the much-needed information due to busy schedule or ignorance, or on the parent's part- where he/she fails to imbibe the given information. No study has been done in north India to know the KAP of parents/caregivers of the children towards the newly introduced IPV vaccine.

**AIM OF STUDY:** This study was conducted with an aim to know the gap in KAP of caregivers towards introduction of IPV vaccine.

**METHODOLOGY:** This is a cross-sectional study done in a healthcare center of east Delhi on immunization days, falling between 1<sup>st</sup> March to 30<sup>th</sup> April 2016 (15 working immunization days). The health center is the urban field practice area of department of community medicine of a government run medical college. The area is a resettlement colony with a total population of 51,000. Immunization is done on Wednesdays and Fridays (except on public holidays) with the help of staff of the center and interns of medical college. Usually on an immunization day, around 50 children-parent pairs attend the immunization session, out of which around 15 come for DPT-3 or Pentavalent-3 immunization. Since the aim of the study is to know the KAP of parents regarding IPV vaccine, only those parents were interviewed whose child received the IPV vaccine along with DPT or Pentavalent vaccine. A pre-tested and semi-structured questionnaire was administered (translated in native language) to all parents/respondents after the vaccination session. The questionnaire had 3 parts – first part included questions about the demographic profile of respondents, second part included the knowledge and attitude of respondents about vaccination in general and the third part had questions pertaining to the knowledge and attitude of respondents towards the newly introduced IPV vaccine. A total of 71 responses were received (convenience sampling). Descriptive statistical analyses were used in expressing the results. SPSS version 12 was used for the same. The results were expressed in percentages and proportions. Informed consent (oral) was taken and no one refused to participate. Approval was taken from the ethical

review board of Maulana Azad Medical College.

**RESULTS:** Out of the total 71 infants included in the study 35 (49.3%) were males. The mean age of the children was  $4.6 \pm 1.27$  months. The demographic profile of the respondents was as follows: the education status of 19 (26.7%) respondents was graduation or above and the mean family monthly income was 7400 INR.

When asked about the knowledge of national immunization schedule, 41(57.7%) said that they are aware of the schedule while 42.3% revealed about not knowing about the whole schedule. While majority (n=55, 77.4%) of the respondents knew that vaccination should be started at birth, only 12 (16.9%) respondents knew about the last immunization dose to be given at 16 years. Almost half of the respondents (n=35, 49.3%) said that the last dose is administered at 5 years of age. When asked about the role of Oral Polio Virus (OPV) vaccine in the development of the child, only 49 (69%) respondents knew that the drops were given to prevent polio. Seventeen (23.9%) respondents were unaware of the role of OPV drops and rest 5 (7.1%) said that the drops were for prevention of malnutrition in the child. When asked about the importance of timely vaccination, 52 (73.2%) respondents said that they always remember the date and get the child vaccinated on time, 9 (12.6%) respondents said that if they forget the date, they get the child vaccinated as soon as they remember it, 5 respondents (7%) said that they remember the date but they delay due to other priorities and 5 respondents (7%) said that they forget the date then they miss the vaccination completely. Then they were asked about their attitude towards mild Adverse Effects Following Immunization (AEFI) like fever and swelling of site of vaccination. Majority (n=56, 78.8%) of the respondents said that mild AEFI is nothing to worry about and is definitely not a deterrent to future vaccinations. Another 13 (18.3%) respondents said that though mild AEFI is worrisome but it is definitely not a deterrent to future vaccinations. However, a small number (n=2, 2.8%) said that it is extremely worrisome and is a deterrent to future vaccinations.

When asked about the current immunization session, 21 (29.6%) said that their child received 2 injection (correct version), 20 (28.1%) respondents said that their child has been given 3 injections and an equal number of parents (4.2%) thought the child received 1 and 4 injections. Rest if them were not aware of the number of injections received. Though majority (n=50, 70.4%) knew that a new vaccine has been administered to the child, only 82% of those knew that it was for prevention of polio. Sixteen (22.5%) respondents revealed that the healthcare provider has not given them any information about the new vaccine.

#### DISCUSSION:

This study revealed that majority of parents did not have adequate information about the existing vaccination schedule or the newly introduced vaccine. The results are similar to those found in other studies [7-9]. A large proportion did not know about the whole immunization schedule, and this ignorance can lead to partial immunization of the children. Many respondents did not know that OPV drops were being administered for prevention of polio, despite of the massive national anti-polio program that has been running in the country for long. More than 25% of respondents often forget the next immunization date and fail to get their children immunized on time. Many of them miss out on the vaccination completely. There should be a procedure for sending timely reminders to parents so that complete vaccination can be assured. Messages on cellphones are the cheapest and most practical reminder solution.

The proportion of people knowing that the new vaccine is against polio in the current study (82%) is more than that found in another study in Nigeria (47%) [10]. The encouraging result that has come out is –a large majority of parents said that mild AEFI is not a deterrent to future immunizations. This result is similar to that found in another study [10]. On the other hand, the study revealed that a majority of parents did not know that the number of injections that are being

given to their child has increased from 2 to 3. Additionally, 22.5% of respondents revealed that the healthcare provider did not provide any information about the new vaccine that has been administered to the child. Such a scenario can create panic in case of occurrence of an untoward event, as keeping parents in confidence is the backbone of any successful immunization program.

The study has many limitations like the small sample size and shortage of time to interview the parents due to crowded immunization clinic. A bigger and more elaborate study should be carried on to bring out other factors leading to acceptance or non-acceptance of a new vaccine.

**CONCLUSION:** The study reveals that though the attitude of parents towards immunization is majorly positive but the knowledge is lacking. The study also revealed that a substantial number of parents are not being made aware about the new vaccine being administered to their child that can have a negative impact on the immunization program.

**CONFLICT OF INTEREST:** None

**AUTOR'S CONTRIBUTION:** AR did data collection, analysis and finalized the manuscript. PS conceived the idea of the study and helped in manuscript finalization. SG gave insights and finalized the manuscript. All authors have gone through the manuscript and approve of the manuscript.

**Table 1: The immunization schedule of Delhi for children aged 0-16 years**

Eligibility	Vaccine/s
At Birth	BCG, OPV-0, Hepatitis-0
6 weeks	OPV-1, Pentavalent-1
10 weeks	OPV-2, Pentavalent-2
14 weeks	OPV-3, Pentavalent-3, IPV
9 months	Measles, Vit A- first dose
16-24 months	DPT-1st Booster, OPV Booster, Measles 2nd dose, Viatmin A- second dose followed by a dose every 6 months till 5 years of age
2 years	Typhoid
5-6 years	DPT- 2nd Booster
10 and 16 years	TT

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