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## Awareness of Paediatric Vaccination and Its Importance in the Community



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### ABSTRACT

The aim of our study is to assess the awareness and importance of paediatric vaccination among parents in the community. The knowledge of parents is important factors for better vaccine coverage. Parent's knowledge can help them to take proper decision regarding vaccination of their child. Awareness regarding vaccines is important for community acceptance and also for maintaining their confidence in the existing vaccines. The study was carried out in urban and rural healthcare Centers in Coimbatore, Tamil Nadu. The materials such as National Immunization Schedule 2017, self-prepared knowledge assessing questionnaire and awareness pamphlet were used to assess the knowledge and to provide awareness counseling. Statistical analysis was done using chi-square test. Out of 200 parents, 12.5% have good knowledge about vaccination, 66.5% and 21% have average and poor knowledge respectively. Lack of awareness (6.5%) is the second lead cause of neglecting vaccine next to 'no time' (7.5%) and followed by forgetfulness (6.5%), misconception (1%). Regarding completion of vaccine, 80% were fully vaccinated and 20% were partially vaccinated. When the parents knowledge increased the completion of vaccination status also been improved. In our study majority of the parents had average knowledge/awareness regarding vaccination. Awareness on vaccination is directly associated with increased vaccination coverage. Health workers played a major role in creating awareness among parents.

## INTRODUCTION

The World Health Organization (WHO) has defined vaccination as the process whereby a person became resistant to an infectious disease, typically by the administration of a vaccine [1]. Children are suffering from certain infectious diseases because of the neglected vaccines [2]. India has approximately 10 million of unimmunized children's. In 2005-2006 family health survey reports states that only 43.5% of children in India received all of their primary vaccines by 12 month of age. It is estimated that 1.7 million children died from vaccine preventable diseases in 2010. It was also noted that 19.3 million children has been incompletely vaccinated, leaving them susceptible to vaccine preventable disease [3]. According to the District level household survey, during the year 2012-2013 only 56% of the children aged 12-23 months in Tamil Nadu was fully vaccinated [4]. Immunization awareness to parents is essential for their child care. Effective awareness programs to the parents should be conducted to convey the benefits as well as risks of not being immunized [5].

Present study was conducted to create awareness regarding pediatrics vaccination, to assess vaccination status and about parent's knowledge. This study also characterizes reasons for non-vaccination, as it is a key to increase the coverage rates and implement interventions for control and elimination of vaccine preventable disease.

## MATERIALS AND METHODS

### Study setting and criteria:

This is an observation cross sectional study involving parents among community. Study carried out in urban Centre, Peelamedu rural Centre, Vedapatti. Parents whose children undergoing vaccination of less than 12 years were included for the study and caretakers of the children were excluded. The study duration for this study is 6 months (February 2018-August 2018). Sample size of the study is 200.

### Study tools: Data Collection Form

This form is designed to collect the information from the participants. It include details like name, age weight, DOB of children's, name, age, education status of mother, last vaccination taken, adverse events, neglected vaccine name and reason, missed opportunity, source of information.

## **Assessment tool**

### **Knowledge assessment questionnaire on vaccination**

It consists of a set of 17 statements which is prepared by own and validated using ePIQ questionnaire among 15 persons including doctors, pharmacist, public. The participant is supposed to tick yes, no, don't know depending upon their knowledge. Each correct answer fetches a score of 1, wrong answer fetches a score of 0.

### **Pamphlet information**

It contains information about vaccination, how it works on the body, importance of vaccine, side effects of vaccine and how to prevent it, vaccine schedule also included<sup>[6]</sup>.

### **Ethical Considerations**

Ethical clearance and approval for the study was obtained from The Institutional Human Ethics Committee, PSG Institute of Medical Science and Research. The study presents no more than minimal risk of harm to the participants. Written consent was obtained from all the participants after explaining the purpose of the study, risk/benefits, confidentiality of records, right to refuse or terminate the participation in the study at any time.

### **Statistical analysis**

Statistical Package for Social Science (SPSS) version 16 for windows was used for analysis. The following statistical analysis has been done: Chi-square: For establishing significant association between the groups. Results with  $P < 0.05$  were considered as statistically significant.

## **RESULT**

Total of 200 parents have been interviewed in the study out of which 100 from Urban and 100 from Rural. The sociodemographic detail of the parents collected shows that majority of the participants were mother (93%), between the age group of 26- 30 years (38%). Most of the parents have 2 children (63%). Education status of the parents shows 43% have primary education followed by Undergraduate (25.5%).

**Table No. 1: Socio demographic details of parents**

Characteristic	Total Number (n=200)	Rural Percentage (n=100)	Urban Percentage (n=100)
<b>Gender</b>			
Father	14(7%)	1%	13%
Mother	186(93%)	99%	88%
<b>Age Group</b>			
≤25	34(17%)	20%	14%
26 -30	77(38%)	44%	33%
31 -35	61(30.5%)	26%	35%
≥36	28(14%)	10%	18%
<b>Number of Children</b>			
1	63(31.5%)	32%	31%
2	126(63%)	61%	65%
3	10(5%)	6%	4%
4	1(0.5%)	1%	0%
<b>Education Status</b>			
PG	24(12%)	10%	14%
UG	53(25.5%)	15%	38%
Secondary	37(18.5%)	23%	14%
Primary	86(43%)	52%	34%

The majority of the parents prefer to get vaccination in government hospital (60%) than private hospital (40%). Regarding completion of vaccination, 80% are fully vaccinated only 20% are partially vaccinated.

**Table No. 2: Vaccination status**

Characteristic	Total Number (n=200)	Rural (n=200)	Urban (n=200)
<b>Place of Vaccination</b>			
Private	80(40%)	29%	51%
Government	120(60%)	71%	49%
<b>Vaccination coverage</b>			
Fully	160(80%)	78%	82%
Partial	40(20%)	22%	18%

The most missed vaccine is MMR/MR vaccines (10.5%), followed by DTP vaccines (4.5%) and OPV (4.5%), typhoid vaccines (4%) and HEP B vaccine (3.5%). BCG is the vaccine which was not neglected by anyone.

**Table No. 3: Neglected vaccines**

VACCINE	NUMBER	PERCENTAGE (%)
MMR/MR	21	10.5
DTP	9	4.5
OPV	9	4.5
THYPHOID	8	4
VARICELLA	8	4
HEP B	7	3.5
HEP A	5	2.5
ROTAVIRUS	5	2.5
PENTA	4	2
IPV	3	1.5
PNEUMOCOUS	2	1
TT	1	0.5
BCG	0	0

There are many reasons to neglect vaccine. Lack of awareness (6.5%) is the second lead cause of neglecting vaccine next to 'no time' (7.5%) and followed by forgetfulness (6.5%), misconception (1%).

**Table No. 4: Reason for neglecting vaccine**

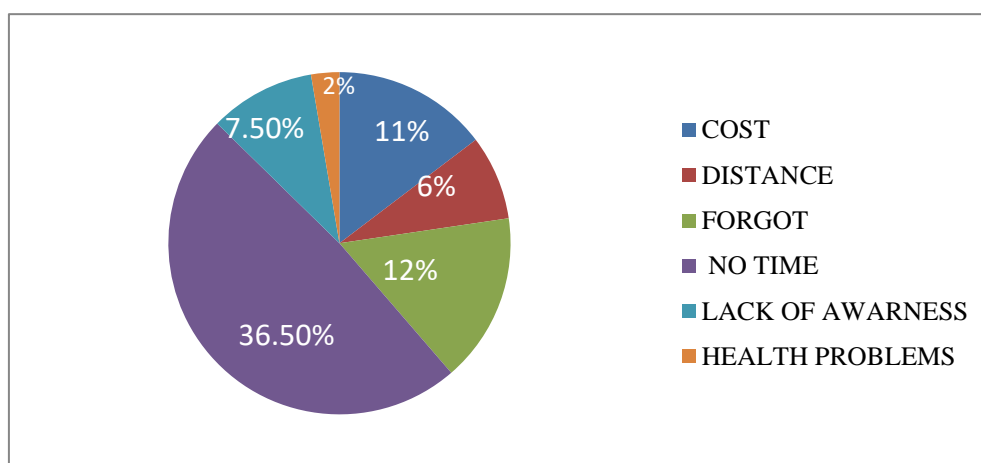
REASON	NUMBER	PERCENTAGE (%)
No Time	15	7.5
Forgot	13	6.5
Lack of Awareness	13	1
Health issue	3	1
Misconception	1	0.5
Migration	1	0.5
No Card	1	0.5
Distance	1	0.5

When considering knowledge 12.5% have good knowledge about vaccination, 66% have average knowledge and 21.5% have poor knowledge.

**Table No. 5: Assessment of knowledge**

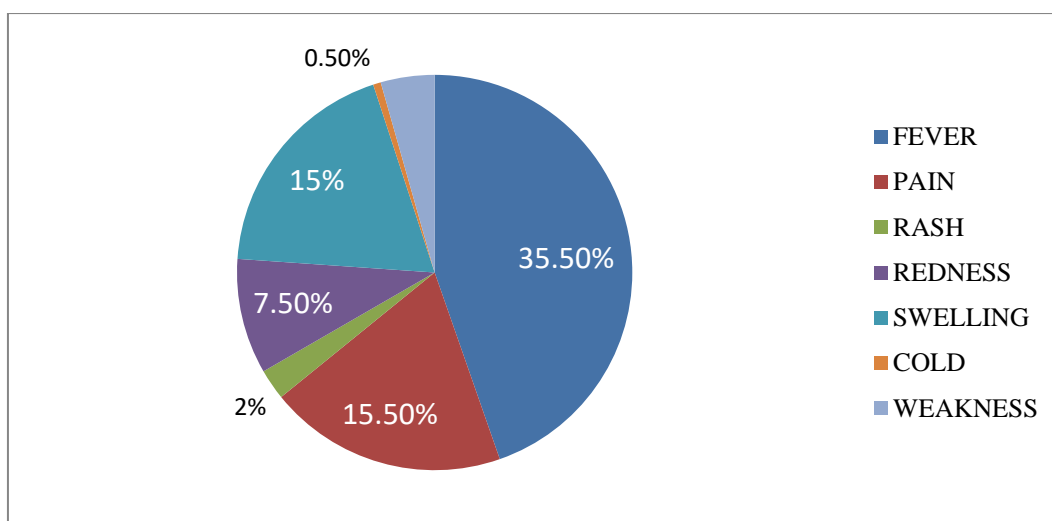
STATUS	TOTAL (n=200) %	Rural Percentage (n=100) %	Urban Percentage(n=100) %
Good	25	12	13
Average	66	60	72
Poor	21.5	28	15

Most of children have got fully vaccinated but there are some (33.5%) who delayed vaccination due to several reasons. ‘No time’ (36.5%), ‘forgot’ (12%), ‘cost’ (11%), lack of awareness (7.5%), distance from home to center (6 %) and health problems (2%).



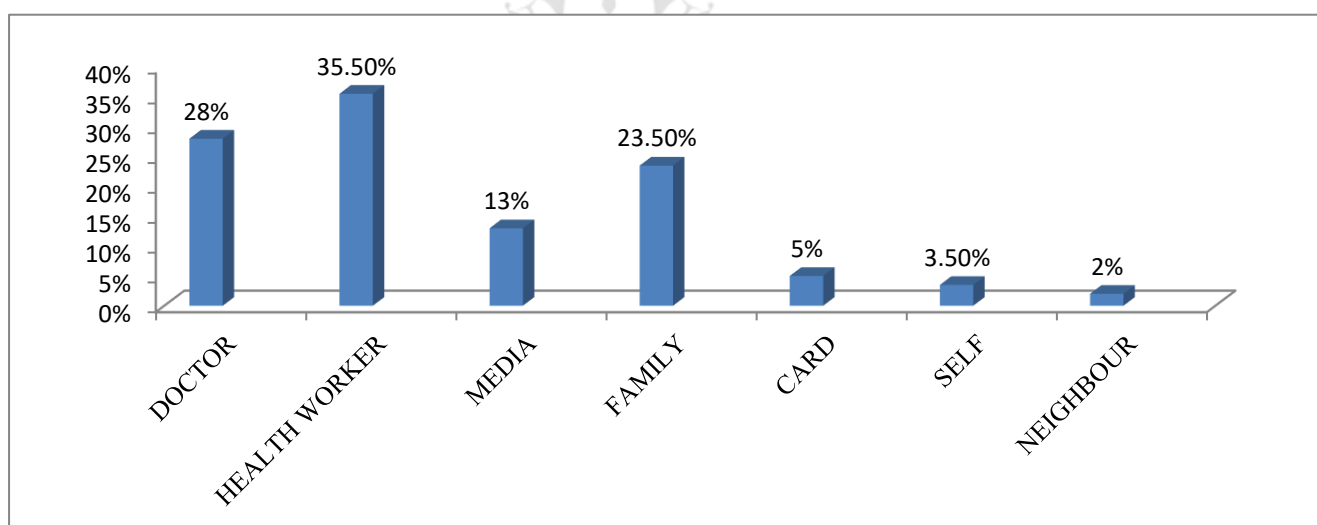
**Figure No. 1: Reason for delaying vaccine**

Most of the children (61.5%) suffer from side effects after the vaccination. The commonly occurring side effect are fever 35.5% followed by pain 15.5 %, swelling 15%, redness 7.5%, weakness 3.5%, rash 2% and cold 0.5%.



**Figure No.2: Side effects of vaccines**

The source of information plays an important role in the vaccination. Parents acquire knowledge regarding vaccinations through health workers 35.5%, followed by doctor 28%, family members 23.5%, media (TV/ Poster) 13%, vaccination card (given from center) 5%, self 3.5% and neighbors 2%.



**Figure No. 3: Source of information**

Parenteral knowledge vs. Vaccination coverage (P-0.002), has significant association in which average and good knowledge of the parents shows good vaccination coverage among the children. Also we found significant association between education status vs. vaccination coverage (P-0.00), in which higher education has good vaccination coverage among the children.

## DISCUSSION

The parents participated in the present study showed that the mothers constituted the majority of the sample 186(93%). Mothers were available in homes for care during day time. Most of the area mothers were taking care the vaccination. [7, 8]

Parent's knowledge/awareness regarding vaccination is one of the major factors which contribute to their children's vaccination decision and their immunization completeness. Parents knowledge of childhood immunization in responses to questions were assessed and it was found that majority of the parents have average knowledge in both urban (72%) and rural (60%). A study conducted in Mangalore by Soundarya Mahalingam *et al.*,<sup>[9]</sup> says that the parents in urban setup have average knowledge (86.5%). Other study conducted in Karnataka<sup>[3]</sup>, says that parents had average knowledge (68%) regarding vaccination. Good vaccination coverage was found in urban areas when compared to rural areas. Lack of awareness (6.5%) is the second lead cause of neglecting vaccine next to 'no time'(7.5%) and followed by forgetfulness (6.5%), misconception (1%). Inadequate awareness is the main reason for partial vaccination in the study conducted in slum areas of South Delhi by Kar *et al.*,<sup>[10]</sup> and in State of Madhya Pradesh by Yadav *et al.*,<sup>[11]</sup>. Neglecting vaccines can be overcome by creating proper awareness regarding the importance of vaccines to the parents.

Parental awareness regarding vaccination was majorly contributed by health workers 35.5%, followed by doctor 28%, family members 23.5% and others. Studies conducted in Kerala by Nadeem *et al.*,<sup>[12]</sup> and in Aurangabad by Aravind K *et al.*,<sup>[13]</sup> shows that 35.5% and 60% of health workers provided awareness regarding vaccination to the parents. Same way the studies conducted in Maharashtra<sup>[14]</sup>, Karnataka<sup>[15]</sup>, Pondicherry<sup>[16]</sup> also constituted that health workers are majorly contributing in awareness. Active participation of the health workers can provide awareness to the parents regarding completion of vaccination which can ultimately lead to the improvement in vaccination coverage.

Parents prefer to get their child vaccinated in the government hospital (60%) followed by private hospitals (40%). The cost differences of vaccines in government and private hospitals are high and most of the vaccines in government hospitals are free of cost. In both urban and rural parents prefer to get vaccinations from government hospitals. Another study conducted by Rabbanie Taiq Wani *et al.*,<sup>[17]</sup> in Srinagar says that majority of parents prefer to get their child vaccinated in Government hospital (88.33%).



In the vaccination schedule the BCG vaccine has 100% coverage. The reason for this high coverage's due to the fact that this vaccine is administered within 24 hrs of child birth and while at the hospital. The MR/MMR vaccine has a very low coverage of 10.5% and main reason for that being the long gap between the DPT3 and MR/MMR doses. Similar trend was observed in the case study conducted by Murugesan D 2017 in Kanchipuram district <sup>[18]</sup> and study conducted by Yadav S *et al.*,<sup>[19]</sup> in urban slums of Jamnagar city. Same way various regions like Bangladesh<sup>[20]</sup>, Tripura<sup>[21]</sup>, and Ethiopia<sup>[22]</sup> also report similar drop in MR/MMR vaccine. A further look at the study shows that the drop rate keep on increasing for vaccines to be taken at the later stage (2–12 years) of the child's life. Soon after the child birth hospital staff and health workers educate the parents on the importance of vaccination, thus the vaccination coverage at the period is high. This reach and awareness session is lost at the later stages leading to the high drop in vaccine coverage. By analyzing this study it is factually evident that proper awareness can lead to high coverage and absence of the same is causing a significant drop. To increase the coverage of vaccines like MR/MMR that is taken on the later stages (2-12 years) of the child's life, it is important to provide continued awareness.

Administering the vaccines may lead to common local and systemic side effects. In this study 61.5% children suffered from various side effects after vaccination, of which the most common side effect was fever (35.5%). Occurrence of side effects after vaccinations has prompted many parents (7.8%) to discontinue the vaccinations. The study conducted in Bhopal<sup>[23]</sup> shows similar trend with fever as the common side effect of 86%. The parents who participated believe that the immunization should continue despite the side effects since suffering the side effects was better than suffering with the disease. From various studies its evident that side effects is not something to be afraid of and the reason for discontinuing vaccinations, rather proper awareness should be given to parents on the side effects and how it is a small price to pay for better life.

## CONCLUSION

Awareness on vaccination are directly associated with increased vaccination coverage. Urban areas are found to have good vaccination coverage when compared to the rural this is because of good knowledge of the parents among the urban. Lack of awareness (6.5%) is the second lead cause of neglecting vaccine next to 'no time' (7.5%) and followed by forget (6.5%), misconception (1%). The importance of vaccinations is been counselled to the parents through the pamphlets. Most of the parents were aware about the side effects of vaccination. Health

workers play a major role in creating vaccination awareness among parents. Awareness regarding vaccination is considered to be an imperative factor for the completion of vaccination. The importance of MR/MMR vaccine administration must be conveyed to the parents in order to overcome its high dropout rate. Vaccination awareness program can be organized which ultimately lead to improvement in vaccination coverage and child health.

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