

Knowledge and practice of Rotavirus Vaccination among Rural mothers having children Under 5 years of age residing in Parandur village - A Cross sectional study.

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Abstract

BACKGROUND: Children are a vulnerable group in the society. They need special care to survive with good health. Rotavirus is one of the leading causes of diarrhoea among children under 5 years of age. It is responsible for approximately 37% of all diarrhoea-associated hospitalizations and 2,15,000 deaths annually.

OBJECTIVES: To assess the level of knowledge and utilisation of Rotavirus vaccination among Rural mothers having children Under five years of age.

METHODOLOGY: A Cross sectional study was conducted among 112 rural mothers having children under five years of age with a structured and validated questionnaire. The results were analysed using SPSS version 21.

RESULTS: This study showed that Rural mothers with children under the age of five had poor level of knowledge regarding Rotavirus immunisation and more than half of them had not vaccinated their children when due. Younger maternal age, maternal illiteracy and low socioeconomic status were associated with low level of knowledge and poor vaccination status. Lack of Mothers' knowledge of Rotavirus vaccination and their vaccination status of their kids was found to have a very strong negative correlation.

CONCLUSION: The study reveals the urgency in need of health education and motivation of the general public regarding Rotavirus vaccination, which will in turn help in high vaccination rates of the same and prevention of Rotavirus infections.

Keywords: Knowledge, Practice, Rotavac, Mothers of under 5 children.

INTRODUCTION

Diarrhoea is one of the major public health problems in developing countries like India. It is the second most common cause of mortality in children under the age of five that claimed the lives of 3,70,000 children in 2019. [1]

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Each year, around 5,25,000 children under the five-years of age suffer from diarrhoea. Globally, paediatric diarrheal disease accounts for an incidence of 1.7 billion each year. Diarrhoea is one of the biggest risk factors of malnutrition in children under the age of five. [2]. Worldwide, Rotavirus infection affects children under the age of five. It is one of the 13 infectious diarrheal diseases that was reported by the Global Burden of Disease (GBD 2016). Study. The infection may go unnoticed, resulting in self-limiting watery diarrhoea or induce an acute gastroenteritis with severe dehydration, vomiting and sometimes fatal fever.[3]

In India, the prevalence of childhood diarrhoea varies between 9 to 20 %. Diarrhoea is also identified as primary cause of death in children under the age of five. Infants between the age of 6 and 24 months are at the highest risk.[4]

Vaccination is one of the most cost-effective public health interventions to combat Rota virus. It provides quick and effective protection against preventable morbidity and mortality. Even after full-fledged implementation of universal immunisation, vaccine preventable diseases (VPDs) still cause more than 5 lakh deaths per year in India. This highlights the necessity for further action. Even though India is one of the world's top producers and exporters of vaccines today, one-third of the world's children live here without receiving any vaccination. [5]

Since the 1970s, India's National vaccination policy has changed based on research and public health considerations.

India became the first country in Asia to launch Rotavac (an Indigenous product by Bharat Biotech) under the Universal Immunization Program (UIP) in March 2016. [6]

Currently, more than 100 countries have granted licences for the second-generation rotavirus vaccines RotaTeq® (Merck and Co, Inc, Pennsylvania, USA) and Rotarix™ (GSK Biologicals, Rixensart, Belgium). All these vaccines were proven to have high effectiveness against severe rotavirus diarrhoea. [7]

Vaccination has successfully reduced the rates of hospitalizations of children with rotavirus infection. Following the introduction of the rotavirus vaccine, a similar decline in diarrhoea-related mortality was also observed among younger children (35% in Mexico and 22% in Brazil). [8]. While the locally produced Rotavac vaccine tested in India is being challenged, clinical trials for Rotarix and RotaTeq®, two vaccines that have been tested in many developed and developing countries have not been conducted in India.[9]

Knowledge & Practice of the general public is necessary for successful implementation of any program and dearth in the literature dealing with the same has been noted. Hence this study was done to assess the Knowledge & Practice regarding Rotavac vaccination among rural mothers having children under 5 years of age residing at Parandur village of Tamil Nadu, India.

METHODOLOGY:

This Community based Cross-sectional study was conducted at Parandur village of Kanchipuram district in Tamil Nadu, India. After obtaining voluntary Informed Consent from the participants, data collection was done between August to December 2020.

Mothers residing at Parandur village, having children under five years of age are included in the study excluding mothers who have been residing in the area for less than a year.

The total population of Parandur was 2556 as on April 2020. Mapping of the village was done and households with target population was identified with the help of Village Health Nurse (VHN) & Anganwadi workers of Parandur PHC. A total of 198 households were finalised for the sampling frame.

All the mothers in the sampling frame were requested for their participation. Out of 198 mothers, 112 of them consented to participate. Mothers who gave consent were contacted by house to house visit and data was collected by interview method using a pretested Semi-structured questionnaire. Data once collected was entered in Microsoft Excel & analysed using SPSS software version 21. The continuous variables were expressed in frequencies and categorical variables as percentages.

RESULTS:

A total of 112 mothers with children under 5 years of age participated in this study. The mean age of the mothers was 24.47 \pm 2.58 years. Equal participation was seen from mothers aged less than 24 years 55(49%) and more than 24 years 57(51%). Majority of the participants 96 (86%) had a child less than 12 months of age. Graduates 6(5%), professionals 3(3%) and illiterates 10(9%) represented very minimal proportions in our study. Nearly half of the participants were from lower SES that is 50 (45%) according to Modified BG Prasad classification. (Table 1).

The proportion of mothers with good knowledge about Rotavac vaccination that is 51 (45%) & proportion of mothers with children who had completed their Rotavac vaccination is almost equal i.e. 54 (48%). (Table 2).

Younger age, illiteracy & Poor Socio Economic status (SES) were found to have statistical significant association with lower knowledge of the mothers in regards with the Rotavac vaccination (Table 3).

These 3 factors were also found to have statistical significant association with the poorer vaccination status of their children despite it being due (Table 4).The age of the children was not found to have influenced the mother's knowledge as well as the children's vaccination status.

Pearson's correlation showed a very high negative correlation ($r = -0.986$, $p = 0.000$) between Low level of mother's

knowledge regarding Rotavac vaccination and their child’s Rotavac vaccination status.

Table 1: Socio demographic profile of the participants (n = 112)

Variables		Frequency	Percentage (%)
Mother’s age	< 24 years	55	49%
	24 years and above	57	51%
Child’s age	< 12 months	96	86%
	13 to 24 months	7	6%
	> 25 months	9	8%
Educational status of the mother	Illiterate	10	9%
	Primary school	25	22%
	Middle school	20	18%
	High school	29	26%
	Intermediate/diploma	19	17%
	Graduate	6	5%
Socioeconomic status	Class 1	18	16%
	Class 2	16	14%

	Class 3	28	25%
	Class 4	30	27%
	Class 5	20	18%
Mother’s knowledge on Vaccination	Low knowledge	61	55%
	Good knowledge	51	45%
Vaccination status of the child	Vaccinated	54	48%
	Not vaccinated	58	52%

Table 2: Knowledge of the participants regarding Rotavac vaccination & Rotavac vaccination status of their children (n = 112)

Variables		Frequency	Percentage (%)
Mother’s knowledge	Low knowledge	61	55%
	Good knowledge	51	45%
Vaccination status of the child	Vaccinated	54	48%
	Not vaccinated	58	52%

Table 3: Association of Socio demographic variables with Knowledge of the participants (n = 112)

Variables		n	Low knowledge	Good knowledge	x ²	p value
Mother’s age	< 24 years	55	67.3%	32.7%	7.149	0.008*
	24 years and above	57	42.1%	57.9%		
Child’s age	< 12 months	96	53.1%	46.9%	3.190	0.203 (ns)
	13 to 24 months	7	85.7%	14.3%		
	> 25 months	9	44.4%	55.6%		
Educational status of the mother	Illiterate	10	100.0%	0.0%	91.588	0.000*
	Primary school	25	100.0%	0.0%		
	Middle school	20	100.0%	0.0%		
	High school	29	13.8%	86.2%		
	Intermediate/diploma	19	5.3%	94.7%		
	Graduate	6	0.0%	100.0%		
Socioeconomic status	Class 1	18	22.2%	77.8%	20.610	0.000*
	Class 2	16	31.3%	68.8%		
	Class 3	28	50.0%	50.0%		
	Class 4	30	76.7%	23.3%		
	Class 5	20	75.0%	25.0%		

*Statistical significance, ns – not significant

Table 4: Association of Socio demographic variables with Vaccination status of the participants’ children (n = 112)

Variables		n	Vaccinated	Not vaccinated	x ²	p value
Mother’s age	< 24 years	55	34.5%	65.5%	8.087	0.004*
	24 years and above	57	61.4%	38.6%		
Child’s age	< 12 months	96	49.0%	51.0%	1.297	0.523 (ns)
	13 to 24 months	7	28.6%	71.4%		
	> 25 months	9	55.6%	44.4%		
	Illiterate	10	0.0%	100.0%	101.22	0.000*
	Primary school	25	0.0%	100.0%		
	Middle school	20	0.0%	100.0%		

Educational status of the mother	High school	29	89.7%	10.3%		
	Intermediate/diploma	19	100.0%	0.0%		
	Graduate	6	100.0%	0.0%		
	Professional	3	100.0%	0.0%		
Socioeconomic status	Class 1	18	88.9%	11.1%	24.561	0.000*
	Class 2	16	68.8%	31.3%		
	Class 3	28	50.0%	50.0%		
	Class 4	30	26.7%	73.3%		
	Class 5	20	25.0%	75.0%		

*Statistical significance, ns – not significant

DISCUSSION:

Out of 112 mothers with children under 5 years of age, in this study, 45% had good knowledge regarding Rotavac vaccination and 48% of their children have completed their Rotavac vaccination.

In India, there is a dearth in the literatures dealing with the knowledge & attitude of rural mothers regarding Rotavac vaccination. Our study concluded that, more than half of the participants had low knowledge regarding Rotavac vaccination and had not vaccinated their children against rotavirus infection. Study conducted by Francesco Napolitano et al in Italy showed similar results. [10] It is commonly recognised that rotavirus gastroenteritis may cause major health consequences for children, this lack of understanding suggests that full information about rotavirus infection and related immunisation is not being extensively communicated. Therefore, it is essential to improve the people's knowledge through effective paediatrician vaccine recommendations and educational interventions using any opportunity to interact with a population interested in immunisation, such as prenatal classes or by parents who use the vaccination service for their children. [11,12]

CONCLUSION:

This study revealed the low level of Knowledge & Practice of the rural mothers with children under 5 years of age with regards to Rotavac vaccination. Low level of knowledge and poor vaccination status was associated with younger age of the mother, illiteracy of the mother & their poor SES. Very high negative correlation was seen between Mother's knowledge regarding Rotavac vaccination and their child's Rotavac vaccination status.

This shows the urgency in need of health education and motivation of the general public regarding Rotavac vaccination, which will in turn help in achieving high vaccination rates of the same and reduction of Rotavirus associated diarrhoeal cases.

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