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RESEARCH ARTICLE

“A KAP STUDY ON AWARENESS OF IMMUNIZATION SCHEDULE AMONG PARENTS OF CHILDREN UPTO THE AGE OF 5 YEARS VISITING IMMUNIZATION CLINIC AT TERTIARY CARE TEACHING HOSPITAL OF VADODARA, GUJARAT”

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Abstract

Introduction: Vaccination is one of the most cost-effective child survival (especially 0-5 years) interventions practiced throughout the world. Parental awareness and decisions regarding immunization are essential for increasing the rate of immunization and compliance. This study is conducted to know the knowledge, attitude and practice (KAP) of parents regarding their understanding of immunization in a tertiary care teaching hospital.

Material & Methods: This study was an observational, cross-sectional study, carried out at immunization clinic at tertiary care teaching hospital. In this study parents of children upto age of 5 years were included. Study was carried over a period of one and a half month with pretested, structured, and interviewer-administered questionnaire in regional languages for their easy understanding.

Result: At the end of study duration, a total of 215 participants were included in the study. Out of them 78.6% were aware that vaccines are mainly used for prevention of diseases. 87% of study participants felt that vaccines are beneficial for their children. Because of awareness only 10.7% delayed child's vaccination for reasons other than illness or allergy.

Conclusion: From our study we concluded that irrespective of parents' education, due to the role of health care workers in rural areas, parents had equal awareness of immunization. Furthermore, with continuous efforts of healthcare workers working in rural areas and those present at immunization clinic, 100% awareness can be achieved regarding immunization.

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Introduction:-

Immunization is the administration of all or part of a pathogen or preformed antibodies to elicit an immuno-logical response that protects from a disease. Considered one of the most cost effective health interventions of all times, immunization programs have enabled the eradication of small pox, elimination of poliomyelitis from several countries and a significant decline in incidences of measles, tetanus and diphtheria. Advances in vaccine technology have led to the introduction of potent vaccines against a wide spectrum of infections.^[1]

Vaccination is one of the most cost-effective child survival interventions which is practiced throughout the world. All countries in the world have an immunization programme to deliver selected vaccines to the targeted

beneficiaries, specially focusing on pregnant women, infants and children, who are at a high risk of diseases preventable by vaccines. In India, vaccines for preventable diseases (VPD) to reduce childhood mortality & morbidity i.e. BCG, DPT, OPV, TT came into practice in 1978, after WHO immunization programme that was launched in 1974.^[5]

Awareness in parents and decisions regarding immunization are essential for increasing the rate of immunization and compliance.

To improve parents' awareness, good knowledge regarding vaccination is required. Therefore, physicians, nurses, and other health care providers should provide parents with correct information about the risks and benefits of vaccines.

The most important factor affecting parental practice is communication between parents and the sources of information or immunization providers. Improving communication will improve parents' perceptions of the benefits and risks of vaccines.^[2]

This study was conducted to know the knowledge, attitude and practice (KAP) of parents regarding their understanding of immunization in tertiary care hospital.

The objective of this study was to know about the Immunization knowledge, attitude and practice among parents of children upto 5 years of age at tertiary care hospital and to evaluate the parent's knowledge of immunization.^[5]

Aims And Objectives:-

1. To increase awareness of immunization schedule among parents of children upto age of 5 years visiting pediatric OPD
2. To decrease morbidity and mortality in children by creating awareness among their parents at tertiary care teaching hospital of Vadodara, Gujarat.

Review Of Literature:-

Expanded Programme on Immunization was launched in 1978. It was renamed as Universal Immunization Programme in 1985 when its reach was expanded beyond urban areas. In 1992, it became part of Child Survival and Safe Motherhood Programme and in 1997 it was included in the ambit of National Reproductive and Child Health Programme. Since the launch of National Rural Health Mission in 2005, Universal Immunization Programme has always been an integral part of it.

Universal Immunization Programme (UIP) is one of the largest public health programmes targeting close of 2.67 crore newborns and 2.9 crore pregnant women annually.

It is one of the most cost-effective public health interventions and largely responsible for reduction of vaccine preventable under-5 mortality rate.

Under UIP, immunization is providing free of cost against 12 vaccine preventable diseases:

Nationally against 9 diseases - Diphtheria, Pertussis, Tetanus, Polio, Measles, Rubella, severe form of Childhood Tuberculosis, Hepatitis B and Meningitis & Pneumonia caused by Hemophilus Influenza type B

Sub-nationally against 3 diseases - Rotavirus diarrhoea, Pneumococcal Pneumonia and Japanese Encephalitis; of which Rotavirus vaccine and Pneumococcal Conjugate vaccine are in process of expansion while JE vaccine is provided only in endemic districts.

A child is said to be fully immunized if child receives all due vaccine as per national immunization schedule within 1st year age of child.

The two major milestones of UIP have been the elimination of polio in 2014 and maternal and neonatal tetanus elimination in 2015.^[3]

Parents are often the primary decision makers for healthcare issues of their children, including vaccination, hence our main research question is the knowledge of parents regarding immunization.

The immunization status of the children will be classified into two groups depending on immunization completeness: complete immunization and partial/absent immunization. When a child receives all immunization doses, this child is considered to have had complete immunization. If a child missed at least one immunization dose, then this child was considered to have had partial immunization. ^[2]

National Immunization Schedule ^[4]

Age	Vaccines given
Birth	Bacillus Calmette Guerin (BCG), Oral Polio Vaccine (OPV)-0 dose, Hepatitis B birth dose
6 Weeks	OPV-1, Pentavalent-1, Rotavirus Vaccine (RVV)-1, Fractional dose of Inactivated Polio Vaccine (IPV)-1, Pneumococcal Conjugate Vaccine (PCV) -1*
10 weeks	OPV-2, Pentavalent-2, RVV-2
14 weeks	OPV-3, Pentavalent-3, IPV-2, RVV-3, PCV-2*
9-12 months	Measles & Rubella (MR)-1, JE-1**, PCV-Booster*
16-24 months	MR-2, JE-2**, Diphtheria, Pertussis & Tetanus (DPT)-Booster-1, OPV - Booster
5-6 years	DPT-Booster-2
10 years	Tetanus & adult Diphtheria (Td)
16 years	Td
Pregnant Mother	Td-1, Td-2 or Td-Booster***

* PCV in selected states/districts: Bihar, Himachal Pradesh, Madhya Pradesh, Uttar Pradesh (selected districts) and Rajasthan; in Haryana as state initiative

** JE in endemic districts only

*** One dose if previously vaccinated within 3 years

Material & Methods:-

Study design:

Observational cross - sectional study

Study site:

Immunization clinic at tertiary care teaching hospital (Dhiraj General Hospital)

Inclusion criterion:

parents of children upto age of 5 years

Exclusion criterion:

- Parents with children more than 5 years of age.

- Not willing to participate.

Source population:

The source population was all parents-infants pair aged below 5 years.

Study duration:

1 and 1/2 Month

Study Method:-

During the study parents will be interviewed through a questionnaire including socio- demographic variables, immunization status of the children, vaccination cards, their knowledge about vaccination, its schedule, benefits and diseases prevented by it, place of vaccination and their attitude towards vaccination.

Data were collected through a pretested, structured, and interviewer-administered questionnaire developed from an extensive literature search. The collected questionnaire was checked for completeness and consistency of the data by the principal investigator on a daily basis.

Most of the questionnaires were adapted from previously conducted studies with some changes based on the local context and it consisted of five main themes:

- (1) Demographics, which surveyed parents' socio-demo-graphic information, including gender, age, educational status, occupation, residence, as well as the demographic data of the child (age, gender, term)
- (2) Source of Information
- (3) Knowledge about immunization
- (4) Attitudes toward immunization
- (5) Practices relevant to immunization.

The knowledge status of the participants was measured by six knowledge-related questionnaires. Participants were given "yes," "no," or "don't know" response options to these items.

The attitude of the participants towards children immunization were measured using five items rated on a three-points as "yes," "no," or "don't know".

The practices of participants towards children immunisation were measured using five practice- related questionnaires. Participants were given "yes," "no" response option to these items.^[6]

Statistical Methods:-

All the collected data was compiled on MS Excel and CHI-SQUARE TEST is applied and values are calculated by using www.socscistatistics.com.^[7]

Results:-

The present study was carried out in the DHIRAJ GENERAL HOSPITAL, PIPARIA, VADODARA. This was an observational cross-sectional type of study done on parents-children pair visiting pediatrics OPD.

Table 1:- Socio-Demographic Characteristics of Parents Whose Children Receiving Immunization Service in Dhiraj Hospital, Vadodara.

VARIABLES	CATEGORIES	NUMBER	PERCENT
Parents age (in years)	17-21	9	4.2%
	21-24	48	22.3%
	24-27	55	25.6%
	27-32	63	29.3%
	>32	40	18.6%
Child's age (in years)	Birth-1 year	80	37.3%
	1-2 year	39	18.2%
	2-3 year	47	21.8%
	3-4 year	30	13.9%

	4-5 year	19	8.8%
Relationship of parents to child	Mother	163	75.82%
	Father	52	24.18%
Sex of child	Male	109	50.7%
	Female	106	49.3%
Occupation of parent	Housewife	104	48.4%
	Farmer	31	14.4%
	Job	38	17.7%
	Other	42	19.5%
Educational status	No formal	35	16.3%
	Primary	83	38.6%
	Secondary	77	35.8%
	College/university	20	9.3%

Child's sex

215 responses

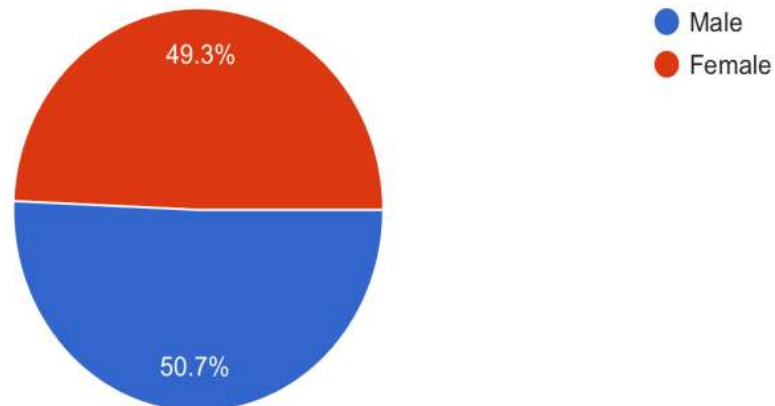


Figure 1:- Sex Ratio of Children attending Pediatric OPD at Dhiraj General Hospital, Vadodara. 215 study participants enrolled in the study with a response rate of 100%. The highest proportion of respondents 63(29.3%) were within the age group of 27-32 years.

Majority of the respondents were Mothers (70.6%) out of which 104 (48.4%) were Housewives.

Regarding educational Status of the respondents, 35 (16.3%) had not attended formal education, while 83 (38.6%) had Primary Education.

Table 2:- Knowledge of Respondent Parents Regarding Children Immunization in Dhiraj Hospital, Vadodara(n=215).

KNOWLEDGE FACTORS	RESPONDENTS CATEGORIES		
	YES (%)	NO (%)	Don't Know (%)
Did you know that immunization protects child from preventable diseases?	78.6%	21.4%	--
Is it necessary to vaccinate a breastfeeding infant?	70.2%	6.5%	23.3%
Can a child with fever be vaccinated?	23.3%	57.7%	19.1%
Is it normal for a child to suffer from fever post vaccination?	71.2%	18.1%	10.7%
Do you know the correct age to start immunization?	63.3%	36.7%	--

Do you know from where to get information about immunization?	72.6%	9.3%	18.1%
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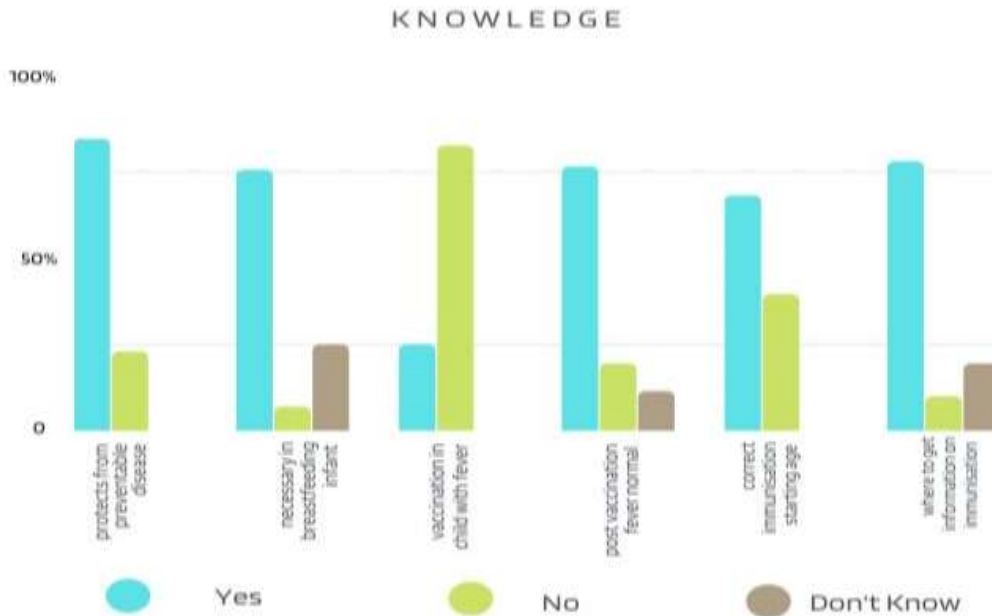


Figure 2:- Knowledge of parents about immunization in Dhiraj General Hospital, Vadodara

Based on the knowledge item assessed, around three-fourth of the study participants (78.6%) were aware that Immunization prevents Infectious Diseases.

Majority of the Respondents (70.2%) said that it is important to vaccinate Breast Feeding Infants and (63.3%) knew the correct age to start immunization.

About (72.6%) respondents knew from where to get information about immunization.

Table 3:- Attitude of Respondents Parents towards Children Immunization in Dhiraj Hospital, Vadodara (n=215).

ATTITUDE FACTORS	RESPONDENTS CATEGORIES		
	YES (%)	NO (%)	Don't Know (%)
Do you think vaccination in children is beneficial?	87%	2.3%	10.7%
Do you think vaccine side effects are dangerous?	3.3%	63.7%	33%
Do you think compliance to immunization schedule is necessary?	42.8%	34.4%	22.8%
Are you satisfied with the way vaccine was administered?	95.8%	4.2%	--
Do you think all children should be vaccinated?	90.7%	1.9%	7.4%

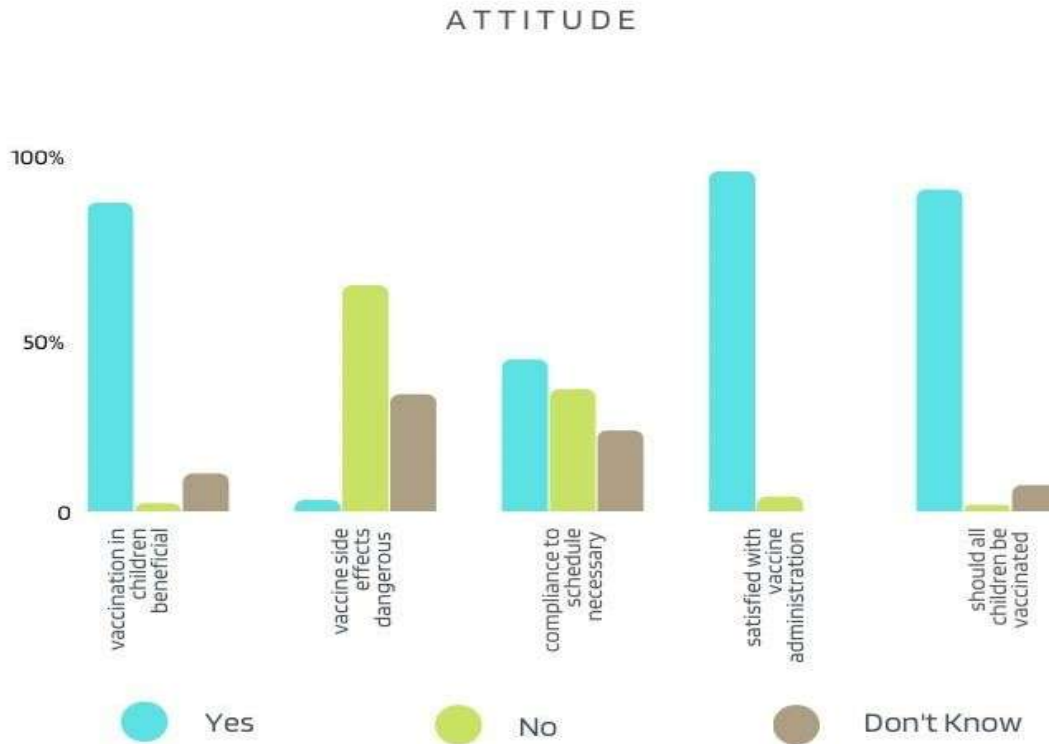


Figure 3:- Attitude of parents about children immunization at Dhiraj General Hospital, Vadodara

Based on the Attitude item assessed, majority of the respondents (87%) thought that vaccination in children is beneficial and (42.8%) thought that compliance to immunization schedule is important.

About (90.7%) respondents believed that all children should be vaccinated.

Immunization is crucial for the health of infant. On the other hand (3.3%) of respondents believed that vaccine has dangerous side effects.

Among study participants majority of parents (95.8%) were satisfied with vaccine administration.

Table 4:- Practice and Assess- Related Factors Regarding Immunization of Infants in in Dhiraj Hospital, Vadodara (n=215).

PRACTICE FACTORS	RESPONDENT CATEGORIES	
	YES (%)	NO (%)
Did the healthcare worker give you information about current vaccine?	86%	14%
Did the healthcare worker inform you about next vaccine?	92.1%	7.9%
Did side effects appears after previous vaccination?	32.6%	67.4%
Have you ever delayed your child’s vaccination for reasons other than illness or allergy?	10.7%	89.3%
Have you medicated your child post vaccination without consulting a doctor?	4.7%	95.3%



Figure 4:- Practice Assessment of Parents Regarding Child’s Immunization Dhiraj General Hospital, Vadodara.

Among the study participants, (86%) of parents were informed about current vaccine by healthcare worker, (92.1%) of the parents got information about next immunization schedule of their infant and (32.6%) of infants developed side effects after vaccination. About (10.7%) of parents delayed vaccination for reasons other than illness or allergy and (4.7%) had medicated the child post vaccination without consulting a Doctor.

Chi-Square Test

EDUCATION OF PARENT	AWARE	UNAWARE	ROW TOTAL
EDUCATED	79	28	107
UNEDUCATED	62	46	108
COLUMN TOTAL	141	74	215 (GRAND TOTAL)

Number of Categories(k) : 4
 Sample size: 215
 Chi-square test value: 6.423
 Degree of Freedom: 1
 p-value: 0.0113

Interpretation:

Since p-value is <0.05, so this indicates that education of the parent is statistically significant for awareness of immunization.

GENDER OF PARENT	AWARE	UNAWARE	ROW TOTAL
MALE	25	27	52
FEMALE	113	50	163
COLUMN TOTAL	138	77	215 (GRAND TOTAL)

Number of Categories(k): 4
 Sample size(n): 215
 Chi-square test value: 7.743
 Degree of Freedom: 1
 p-value: 0.0054

Interpretation:

Since p-value is <0.05, so this indicates that gender of the parent is statistically significant for awareness of immunization.

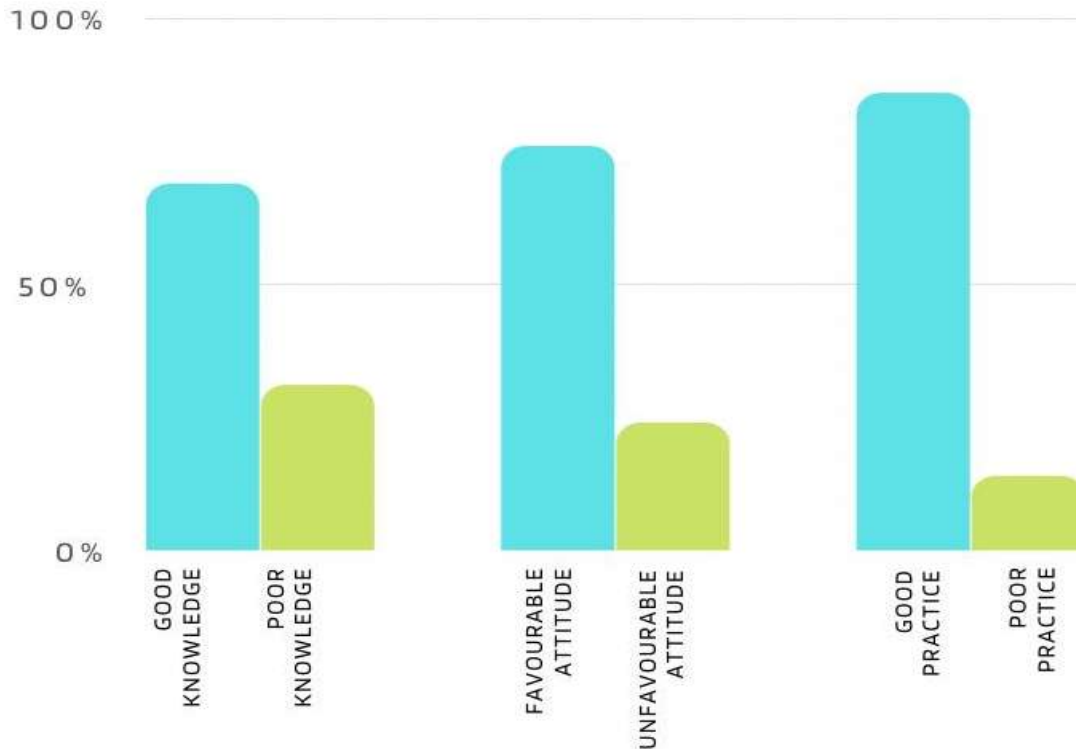


Figure 5:- Overall Parents' Knowledge, Attitude and Practice towards Children's Immunization at Dhiraj General Hospital, Vadodara.

Discussion:-

We conducted a "KAP" study on awareness of immunization schedule among parents of children visiting immunization clinic upto the age of 5 years at tertiary care teaching hospital of Vadodara, Gujarat.

Overall study had shown that 68.3% had good knowledge about immunization and 31.07% had poor knowledge.

76% showed favorable attitude and 24% showed unfavorable attitude.

86% had good practice and 14% had poor practice.

There is significant association between education status and awareness of immunization ($\chi^2=6.423$)

Also, there is significant association between gender and awareness of immunization ($\chi^2=7.743$)

Similar study was conducted by Jose et al on Awareness on Immunization among Mothers of under five Children in selected hospital at Mangalore. Overall result had shown that 30% of mothers had poor knowledge, 43.4% of mothers had average knowledge, 23.4% of mothers had good knowledge and 3.33% mothers had excellent knowledge. There is no significant association between knowledge score and selected demographic variables such as age of mother ($\chi^2= 1.28$), educational status ($\chi^2=7.03$), monthly income ($\chi^2= 0.65$). There was no significant association between knowledge and immunization among mothers of under five children.^[8]

Another study conducted by Angelillo et al on knowledge, attitudes and behavior in Italy. The study evaluates knowledge, attitudes, and behavior of mothers regarding the immunization of 841 infants who attended public kindergarten in Cassino and Crotone, Italy. The results showed that knowledge was significantly greater among mothers with a higher education level.^[9]

Our study showed significant result of education and awareness of immunization but due to the role of health care workers in rural areas uneducated parents have equal awareness of immunization. Similar study conducted by

Rahman et al, the results indicate that even in the presence of maternal illiteracy, educating mothers about the vaccines and vaccine preventable diseases may be highly effective in increasing the immunization coverage.^[10]

Conclusion:-

In this study, parental knowledge, attitude, and practice towards children immunization closely resemble to most of the study findings quoted in this study. The finding also revealed that educational status and gender of parent were found to be statistically significant predictors of parental knowledge. Parental knowledge status, educational status, and relationship of parents to the infant showed a statistically significant association with the attitude of parents. Educational status, and knowledge status of parents was also a statistically significant association with immunization practice. According to this study, massive public health education must be intensified through the provision of Information, Education, and Communication materials to enhance the knowledge, attitude, and practice of parents about immunization and vaccine-preventable diseases. It is also recommended to improve the accessibility of general care provided at the units, especially the service waiting time. The role of health care workers like ASHA worker and Anganwadi workers has played a major role to encourage people for immunization activities.

Ethical Approval:

The study was approved by Institutional Ethics Committee.

Conflict Of Interest:

None

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