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Assessment of Knowledge, Attitude and Practices of Parents Regarding Vaccination for their Children - A Hospital Centered Observational Study

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ABSTRACT:

Background: Vaccination is one of the most effective public health strategies for reducing childhood morbidity and mortality. Parents' knowledge, attitudes, and practices (KAP) play a crucial role in complete immunization. Understanding these factors helps in improving vaccination coverage and addressing barriers within the community. **Purpose:** The study aimed to assess the knowledge, attitude, and practices of parents regarding vaccination awareness for their children receiving immunization services at Navodaya Medical College Hospital and Research Centre, Raichur. **Materials and Methods:** A Prospective Observational study was conducted among 140 parents/guardians attending the immunization clinic. Data were collected using a structured questionnaire covering socio- demographic characteristics and KAP-related factors. The results were analysed and presented using descriptive statistics such as frequencies and percentages. **Results:** Most parents were aged between 20–29 years, and the majority were mothers and residents of rural areas. Knowledge levels varied, with 62.9% recognizing that vaccines prevent infectious diseases, but only 34.3% were aware of specific Expanded Programme on Immunization (EPI) target diseases. Attitudes toward vaccination were generally positive, with more than half agreeing that compliance with the immunization schedule is important and that all children should be vaccinated.70% reported being informed about the next immunization date. However, gaps were noted in awareness of vaccine side-effects and in communication regarding vaccine types and doses. **Conclusion:** Parents exhibited positive attitudes and acceptable practices towards childhood immunization, but notable gaps in knowledge and persisting misconceptions remain. Strengthening parental education, improving counselling by healthcare workers may enhance vaccination awareness and compliance.

Keywords: Vaccination, Parents, Knowledge, Attitude, Practices, Children.

INTRODUCTION:

Vaccines are one of the most valuable inventions of public health that has reduced child mortality and the burden of infectious diseases worldwide in a great extent. It protects against several life-threatening diseases such as diphtheria, polio, measles, tuberculosis, and hepatitis etc. Vaccination or immunization programs not only safeguard individual children but also protect entire communities by establishing immunity. When vaccination coverage exceeds 80%, the spread of infection is significantly reduced, benefiting even those who are not vaccinated. However, despite advances in vaccine technology and implementation, millions of children remain either partially immunized or completely unvaccinated, leading to continued outbreaks of preventable diseases.[1]

Parental knowledge is the main factor of immunization awareness. Many parents are aware that vaccines prevent certain diseases but are less informed about which diseases are covered, how many doses are required, and the appropriate ages for vaccination. In India, many parents have a general belief in the value of vaccines but limited knowledge about the vaccination schedule or the need for booster doses. Misconceptions such as "once vaccinated, a child is protected for life" remain common. This lack of complete understanding can delay or interrupt the vaccination process. Parental education, healthcare communication, and access to accurate information are critical in addressing these gaps. [1, 3]

Practice, the final process of KAP, refers to the actual implementation of vaccination behaviour. While knowledge and attitude form the foundation beginning, practice refers how effectively they bring it into action. Even when parents understand and accept vaccination, they may fail to follow through due to barriers such as distance to health centers, vaccine unavailability, lack of transportation, and lack of time. In Lebanon, for example, high knowledge and positive attitudes among mothers were not always matched with proper practice due to economic problems and vaccine shortages in rural regions. This shows that practical challenges can limit vaccination uptake even among informed and willing parents. [2, 3]

Socio-demographic factors also have a key role on vaccination awareness and practice. Parent's education, occupation, income, and

place of residence determine how likely they are to complete their children's immunization. Mothers with higher education levels are generally more aware of the benefits of vaccination and better way to access health services. Rural families often face more difficulties such as long distances to healthcare centers, poor transportation, and limited vaccine availability. Lower income groups may prioritize daily needs over preventive healthcare, which affects vaccination adherence. Addressing these difficulties through targeted reachout and free vaccination campaigns can significantly improve coverage. [3, 5]

Cultural and social factors contribute to low vaccination rates in some communities. Traditional beliefs and local myths may however discourage immunization or promote natural immunity through exposure to diseases. Additionally, misinformation spread through social networks and unverified media sources can lead to fear and confusion among parents. [4]

The attitude of parents toward vaccination strongly influences their willingness to vaccinate their children. Most parents see vaccination positively as protection and care, but fear of side effects, misinformation, and cultural myths can create hesitation. In many regions, rumors about vaccines causing infertility or serious side effects discourage parents from completing the schedule. Some also think that healthy children do not need vaccines or that mild illnesses are contraindications for vaccination. These misconceptions, when not corrected by healthcare workers, lead to missed or delayed doses. Strengthening positive attitudes through counselling, community education, and trust in health services helps to reduce vaccine hesitancy. [6, 7]

Maternal involvement and family support are also crucial for achieving complete vaccination. Mothers are usually the primary caregivers and decision-makers for their children's health, but encouragement from fathers and other family members enhances compliance. Antenatal counselling, regular follow-up, and reminder systems can improve adherence to the vaccination schedule. Health workers should ensure that parents maintain vaccination cards and understand the importance of each dose. The inclusion of immunization education in school and community programs can sustain awareness from generation to generation. [5, 7]

The main objective of the present study was to assess the mothers' knowledge, attitude and practices regarding immunization and to determine factors associated with a child's immunization status. Awareness must be combined with easy access to vaccines, reliable health services, and strong communication strategies.[8]

Governments and health organizations should invest equally in education and infrastructure to reduce both informational and logistical barriers. Promoting accurate information, addressing myths, and ensuring access will strengthen the public's trust in vaccines. Through all these combined efforts, the global goal of universal immunization coverage can be achieved, ensuring that every child grows up protected, healthy, and free from vaccine-preventable diseases. [9,10]

So, the study was carried out to assess the Knowledge, Attitude and Practice among parents towards vaccination practice for their children. In order to highlight the importance of vaccination practice of Government of India, so as to improve Quality of life of pediatric population and to attain Sustainable Development Goal (SDG).

MATERIALS AND METHODS:

Study site:

The study was conducted at Navodaya Medical College Hospital and Research Centre, Raichur, Karnataka.

Study period:

The study duration was 6 months from February 2025 to July 2025.

Study method and sample size:

A Prospective Observational, Pre-validated, questionnaire-based study was conducted with consecutive sampling and parents/guardians whose children were immunized were taken for the study. Prior permissions were taken from Author who developed the questionnaire.

Inclusion criteria:

- Parents/guardians who gave consent to be part of the study.

- Parents/guardians whose children aged between birth to 1 year came for immunization at our hospital were included.
- Both male and female.

Exclusion criteria:

- Parents/guardians who were not willing to participate are excluded from the study.

Sample size calculation:

The response rate was

p = 0.90, 5% Margin of error

$n = Z^2pq/d^2$, here q = (1-p)
(1-P)

So, $n = (1.96)^2 (0.9) (1-0.9) / (0.05)^2 = 138$.

Sample size above 138 ~ 140

Where,

Z = Value for 95% Confidence Interval

p = Prevalence at 95% confidence interval, Z value = 1.96 q = (1-P)

d = Margin of error at 5%

Statistical analysis:

Collected data was entered in the SPSS Version 20 and was analysed using descriptive statics such as percentage, mean, standard deviation etc. Excel has been used to generate graphs, tables etc.

RESULTS & DISCUSSION

Most parents were young mothers with mean age of 27 years and standard deviation ± 1.44, reflecting the typical age group actively involved in child health decisions. The dominance of rural respondents and varying education levels indicates that access to information may differ across groups. These demographic patterns may influence awareness and utilization of immunization services. Data was depicted in table 1.

Table 1: Socio-Demographic Characteristics of Parents whose Children Receiving Immunization Service in study hospital (n = 140)

Sl No	Variable	Categories	Number	Percentage (%)
1	Parents age (in years)	15-19 20-24 25-29 30-34 ≥35	20 45 48 16 11	14.3 32.1 34.3 11.4 7.9
2	Child's age (in months)	Birth-1 month 1-2 months 2-3 months 3-9 months 9-12 months	20 23 28 44 25	14.3 16.4 20 31.4 17.9
3	Relationship of parents to the child	Mother Father Other	93 28 19	66.4 20 13.6
4	Sex of the infant	Male Female	73 67	52.1 47.9
5	The position of the index infant	1 2-3 ≥ 4	56 75 9	40 53.6 6.4
6	Marital status of the parents	Single Married Divorced Widowed	7 104	5 74.3

			19 10	13.6 7.4
7	Religion	Hindu Muslim Others	80 26 34	57.1 18.6 24.3

As shown in table 2, The majority being housewives and rural residents suggests that mothers are primary caregivers yet may face barriers related to mobility and health literacy. Educational differences also highlight the need for tailored counselling approaches. These factors can contribute to the variations in knowledge and practice observed later.[4]

Table 2: Continued Socio-Demographic Characteristics of Parents whose Children Receiving Immunization Service in study hospital (n = 140)

Sl No	Variable	Categories	Number	Percentage (%)
1	Occupation	House wife Civil Servant Merchant Student Other	76 9 11 12 32	54.3 6.4 7.8 8.6 22.9
2	Educational status	No formal education Primary education Secondary education College/ University	11 35 57 37	7.9 25 40.7 26.4
3	Residence	Urban Rural	47 93	33.6 66.4

While most parents recognize the general importance of vaccination, awareness of specific EPI diseases and side-effects remains low. This gap indicates limited exposure to detailed immunization information during health visits. Strengthening communication by healthcare workers could enhance informed decision-making. Details are shown in table 3.[4]

Table 3: Knowledge of Respondent Parents regarding Infants Immunization in study hospital (n = 140)

Sl No	Knowledge Factors	Respondents Categories	
		Yes (%)	No (%)
1	Have you heard of the EPI target diseases?	48 (34.3)	92 (65.7)
2	Vaccination prevents infectious disease.	88 (62.9)	52 (37.1)
3	Infants should start a vaccination programme just after birth.	77 (55)	63 (45)
4	Is it necessary to vaccinate a breastfeeding infant?	74 (52.9)	66 (47.1)
5	Is vaccination harmful?	56 (40)	84 (60)
6	Are you agreeing to immunize your baby's full dose?	94 (67.1)	46 (32.9)
7	Do you know about the side-effects of EPI vaccines?	31 (22.1)	109 (77.9)
8	Do you know when the next vaccination date is for your infant?	87 (62.1)	53 (37.9)

Parents showed largely positive attitudes toward immunization, reflecting trust in vaccines and public health systems. However, persistent misconceptions, such as fear of side-effects or beliefs that vaccines cause sickness, point to the influence of misinformation. Addressing these attitudes is crucial for reducing vaccine hesitancy**.** Details were shown in table 4.[4]

Table 4: Attitude of Parents regarding Infants Immunization in study hospital (n = 140)

Sl No	Attitude Factors	Respondents Categories		
		Agree (%)	Neutral (%)	Disagree (%)
1	Do you think compliance with the immunization schedule is important?	88 (62.9)	20 (14.3)	32 (22.8)
2	Do you think vaccination side- effects are dangerous?	50 (35.7)	31 (22.2)	59 (42.1)
3	Do you think vaccination important only for non-serious diseases?	55 (39.3)	14 (10)	71 (50.7)

4	Do you think vaccination makes infants sick?	51 (36.4)	14 (10)	75 (53.6)
5	Do you think all children should be vaccinated?	79 (56.4)	18 (12.9)	43 (30.7)
6	Do you think vaccination makes infants for death?	24 (17.1)	22 (15.7)	94 (67.1)
7	Have you recommended vaccines to others?	83 (59.3)	21 (15)	36 (25.7)
8	What do you think about vaccination benefits?	78 (55.7)	24 (17.1)	38 (27.2)
9	Do you think infants took usually too many vaccines?	85 (60.7)	24 (17.1)	31 (22.2)

As shown in table 5, most parents reported satisfactory practices and good interaction with healthcare staff, supporting consistent immunization uptake. However, gaps in receiving details about vaccine type and dose, along with long waiting times, may affect the overall vaccination experience. Improving counselling quality and reducing service delays can further enhance compliance.[4]

Table 5: Practice and Access-Related factors regarding Infants Immunization in study hospital (n= 140)

Sl No	Practice Factors	Respondents Categories	
		Yes (%)	No (%)
1	Are you happy when your infant got a vaccine?	99 (70.7)	41 (29.3)
2	Did the health team greet you?	87 (62.1)	53 (37.9)
3	Are you given information about the current vaccine?	98 (70)	42 (30)
4	Did the health care worker tell you the type of vaccine your infant taken?	89 (63.6)	51 (36.4)
5	Did the health care worker tell you the dose of the vaccine your infant was taken?	62 (44.3)	78 (55.7)
6	Did the health care worker tell you the next immunization schedule?	98 (70)	42 (30)
7	Did your infant develop a problem after vaccination?	52 (37.1)	88 (62.9)
8	How many times do you visit the health facility?	Once 2-3 times 4-5 times	27 (19.3) 76 (54.3) 37 (26.4)
9	Traveling time	< 15 minutes 15-29 minutes 30-60 minutes > 60 minutes	22 (15.7) 61 (43.6) 41 (29.3) 16 (11.4)
10	Waiting time	< 15 minutes 15-29 minutes 30-60 minutes > 60 minutes	16 (11.4) 17 (12.1) 96 (68.6) 11 (7.9)
11	Time spent on immunization	< 5 minutes 5-10 minutes > 10 minutes	32 (22.9) 67 (47.9) 41 (29.2)
12	Means of transport	On Foot By vehicle	117 (83.6) 23 (16.4)

As shown in Table 5, most respondents reported satisfactory immunization practices, with a majority expressing happiness with vaccination services and receiving information about the vaccine and next immunization schedule. However, gaps were observed in communication regarding vaccine dosage, and more than half of the respondents experienced waiting times of 30–60 minutes, indicating service delays. Overall, access to immunization services was moderate, with most caregivers reaching the facility on foot and within 15–29 minutes, reflecting reasonable accessibility but scope for improvement in service efficiency. [4]

CONCLUSION:

We found that the parents who participated in our study hold positive attitudes and acceptable practices toward childhood vaccination, even though their overall knowledge remains limited in several key areas. While most parents recognize the importance

of immunization and follow the schedule, many are still unaware of specific vaccine-preventable diseases and possible post-vaccination reactions. Misconceptions such as vaccines causing sickness or being necessary only for minor illnesses were also observed.

Despite these gaps, parents showed strong willingness to vaccinate their children and recommend vaccination to others. Health-care providers played an important role in guiding parents, though communication regarding vaccine type, dose, and side-effects needs further strengthening. Practical barriers such as long waiting times also require attention to improve the immunization experience.

Overall, the findings suggest that enhancing parent education, improving counseling by health workers, and minimizing system-related obstacles can significantly strengthen vaccination awareness and uptake. Reinforcing these aspects will help ensure better immunization coverage and improved child health outcomes in the community.

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CONFLICT OF INTEREST: The authors declare that no conflict of interest exists.

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