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A QUESTIONNAIRE STUDY TO ASSESS THE PARENTS KNOWLEDGE AND PERCEPTIONS REGARDING IMMUNISATION

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ABSTRACT

Background: Immunisation is a cornerstone of public health, significantly reducing childhood morbidity and mortality. However, immunisation coverage in India is often influenced by parental knowledge and perception.
Objective: To assess the knowledge and perceptions of parents regarding childhood immunisation and evaluate their adherence to the vaccination schedule.
Methods: This cross-sectional observational study was conducted at the Immunisation Clinic of Gulbarga Institute of Medical Sciences (GIMS), Kalaburagi. A total of 100 parents of under-five children were enrolled using convenience sampling from September 2024 to February 2025. Data were collected using a pre-tested, structured questionnaire administered through interviews. Statistical analysis was performed using SPSS, applying Chi-square and ANOVA tests with a significance threshold of $p < 0.05$.
Results: Among the participants, 72% of children were aged 1–5 years. A large majority of parents believed vaccines were safe (81%) and adhered to the vaccination schedule (90%). Trust in healthcare workers was notably high (95%). Although 67% believed vaccines could cause side effects, this perception was not significantly associated with immunisation status ($p = 0.911$).
Conclusion: Parents demonstrated positive perceptions and high compliance with immunisation schedules. Trust in healthcare providers played a key role in overcoming misconceptions and promoting adherence. Targeted educational interventions are essential to address lingering concerns and improve early vaccination uptake.

Keywords: *Immunisation, parental perception, vaccine safety, health literacy, child health.*

INTRODUCTION

Immunisation is universally acknowledged as one of the most cost-effective and powerful public health strategies to reduce morbidity and mortality among children. By safeguarding children against life-threatening infectious diseases, immunisation serves not only as a medical intervention but also as a crucial pillar of national health policy. In the Indian context, the Universal Immunisation Programme (UIP) aims to provide equitable vaccine access to all children. However, despite its wide reach and government support, disparities in immunisation coverage remain, often stemming from parents' lack of knowledge and misconceptions about vaccines [1].

Parental awareness is fundamental to the success of immunisation campaigns. Numerous studies in India highlight that a parent's knowledge, attitude, and beliefs about vaccines greatly influence their child's immunisation status. In a cross-sectional study from South India, over 80% of parents lacked awareness about newer vaccines not included in the national schedule. Misconceptions about vaccine efficacy and fear of side effects were commonly reported, especially among those with lower educational levels [2]. Similarly, in North Karnataka, researchers found that while a majority of

mothers were aware of basic vaccines like BCG and Polio, knowledge about other vaccines and their schedules was significantly lower [3].

The gap in parental knowledge is not just a matter of access to services, but also of health literacy. In a Tamil Nadu-based study, although 60% of children were fully immunised, one-fifth of parents expressed doubts about vaccine safety, and a significant number believed that immunisation could cause long-term side effects [4]. These perceptions are influenced by multiple factors, including maternal education, socioeconomic status, and exposure to reliable health information. In fact, studies consistently reveal that higher maternal education levels correlate strongly with better vaccine knowledge and compliance [5].

The knowledge-attitude-practice (KAP) gap is evident across multiple regions. In a recent study in Dehradun, even though 84.5% of parents had average to good knowledge about immunisation, nearly 20% had missed scheduled vaccine doses for their children. The most frequently cited reasons included lack of awareness about the next dose, illness in the family, and unavailability of vaccines at health centres [6]. This indicates that knowledge alone may not always translate into timely vaccination unless supported by systemic infrastructure and reminder mechanisms.

Moreover, in urban slum settings, where healthcare access is more erratic, misinformation and lack of motivation among parents significantly contribute to low immunisation coverage. In a study conducted in Bijapur, only 34.8% of children were fully immunised. The most prominent barrier was lack of information about immunisation schedules, demonstrating the urgent need for grassroots-level health education interventions [7].

Digital and mobile-based awareness campaigns have shown potential in bridging this gap. A study evaluating the Kilkari maternal messaging program in rural Madhya Pradesh found that exposure to mobile-based health messages improved male caregivers' knowledge and enhanced the timeliness of child vaccination at birth [8]. However, these digital interventions need to be scaled up with local language support and tailored content to maximise their impact.

Despite government efforts like the Mission Indradhanush to improve immunisation coverage, India still has a significant number of unimmunised or partially immunised children. A recent study from Maharashtra identified key factors affecting immunisation uptake, such as maternal education, family income, and birthplace of the child [9]. Similarly, research from Amritsar found a stark contrast between low knowledge and relatively better immunisation practices, pointing toward the impact of institutional support in driving compliance despite knowledge gaps [10].

Given these insights, it becomes imperative to systematically assess the knowledge and perceptions of parents through well-designed questionnaire studies. Such assessments can reveal the nuanced barriers to immunisation uptake and inform targeted public health strategies. Moreover, understanding demographic correlates—such as parental education, occupation, and residence—can help in tailoring communication and outreach efforts.

METHODOLOGY

1. Study Design

This was a cross-sectional observational study using a structured questionnaire to assess the knowledge and perception of parents of under-five children regarding the immunisation schedule.

2. Study Setting

The study was conducted at the Immunisation Clinic of Gulbarga Institute of Medical Sciences (GIMS), Kalaburagi, Karnataka, a tertiary healthcare facility serving both rural and urban populations.

3. Study Duration

Data collection was carried out over six months, from September 2024 to February 2025, covering routine immunisation sessions and ensuring a steady participant flow.

4. Participants – Inclusion/Exclusion Criteria

Parents or caregivers of under-five children visiting the clinic and consenting to participate were included. Those who refused consent or were unable to respond meaningfully were excluded.

5. Sampling Method

Convenience sampling was used, enrolling eligible parents present at the clinic during the data collection period.

6. Sample Size

A total of 100 parents were enrolled, based on clinic footfall and study feasibility within the specified duration.

7. Study Groups

No intervention or control groups were created. Participants were later grouped by demographic variables during data analysis.

8. Study Parameters
The study assessed knowledge of immunisation schedules, vaccine names, side effects, and perceptions regarding safety and importance of vaccines.

9. Study Procedure
Eligible participants were informed, consented, and given a questionnaire in their preferred language. Each interview took about 15–20 minutes.

10. Data Collection
Data were collected using a pre-tested structured questionnaire through interviews. Responses were recorded on paper and digitised for analysis.

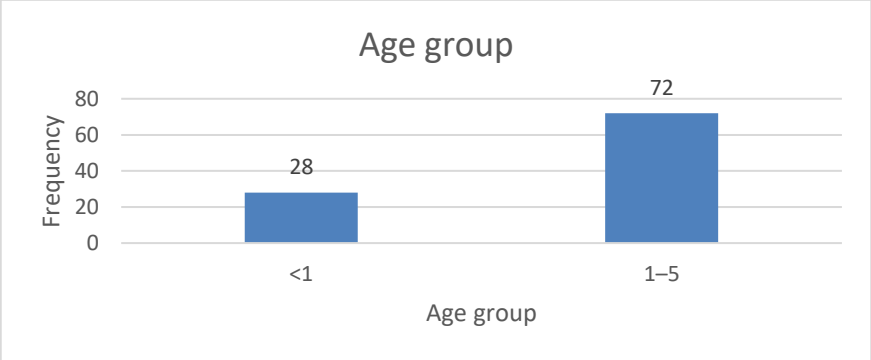
11. Data Analysis
Data were analysed using SPSS software. Descriptive statistics and inferential tests like Chi-square and ANOVA were applied with significance at $p < 0.05$.

12. Ethical Considerations
Ethical approval was obtained. Informed consent was taken from each participant, ensuring confidentiality and voluntary participation throughout the study.

RESULTS
1. Age-wise Distribution of Children
The majority (72%) of children receiving immunization were aged 1–5 years, indicating higher attendance for booster doses in later stages of the immunization schedule. This highlights the importance of early reminders for timely infant vaccination (Table 1).

Table 1: Age-wise Distribution of Children

Age group			
		Frequency	Percent
Valid	<1	28	28.0
	1–5	72	72.0
	Total	100	100.0

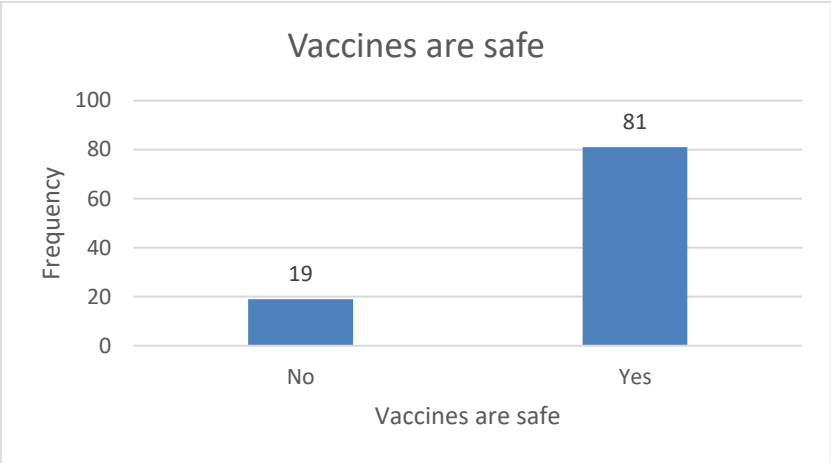


Graph 1: Age-wise Distribution of Children

2. Parental Perception of Vaccine Safety
A high proportion (81%) of parents believed vaccines are safe, reflecting overall positive attitudes toward immunization in the community (Table 2).

Table 2: Parental Perception of Vaccine Safety

Vaccines are safe			
		Frequency	Percent
Valid	No	19	19.0
	Yes	81	81.0
	Total	100	100.0



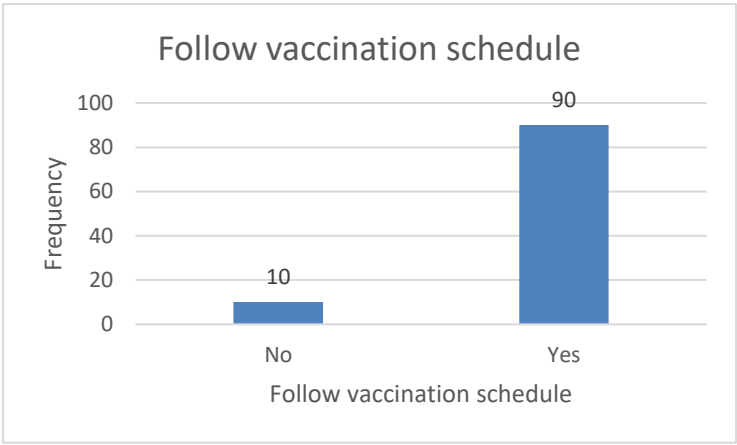
Graph 2: Parents' Opinion on the Safety of Vaccines

3. Parental Adherence to Vaccination Schedule

90% of parents reported following the immunization schedule, indicating strong program compliance and effective health service delivery (Table 3).

Table 3: Parental Adherence to Vaccination Schedule

Follow vaccination schedule			
		Frequency	Percent
Valid	No	10	10.0
	Yes	90	90.0
	Total	100	100.0



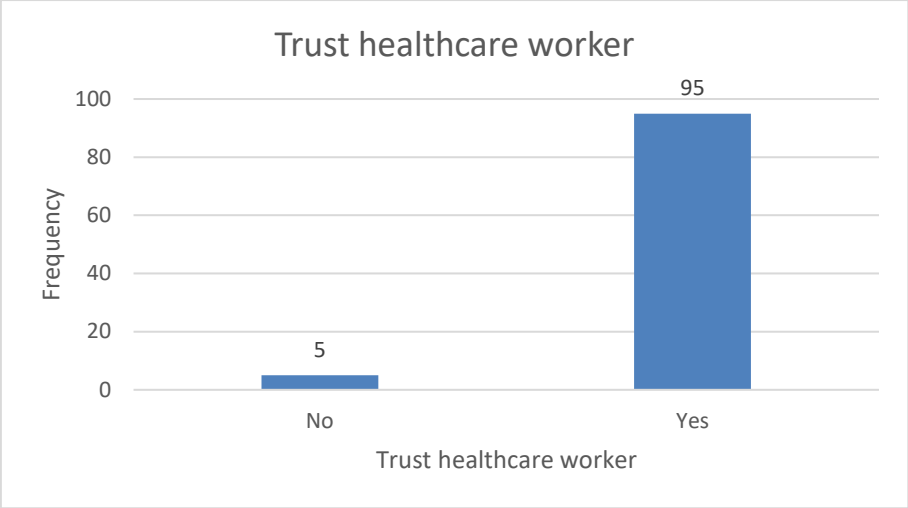
Graph 3: Compliance with Vaccination Schedule Among Parents

4. Parental Trust in Healthcare Workers Regarding Immunization

An overwhelming 95% of parents expressed trust in healthcare workers, emphasizing their vital role in promoting vaccine acceptance (Table 4).

Table 4: Parental Trust in Healthcare Workers Regarding Immunization

Trust healthcare worker			
		Frequency	Percent
Valid	No	5	5.0
	Yes	95	95.0
	Total	100	100.0



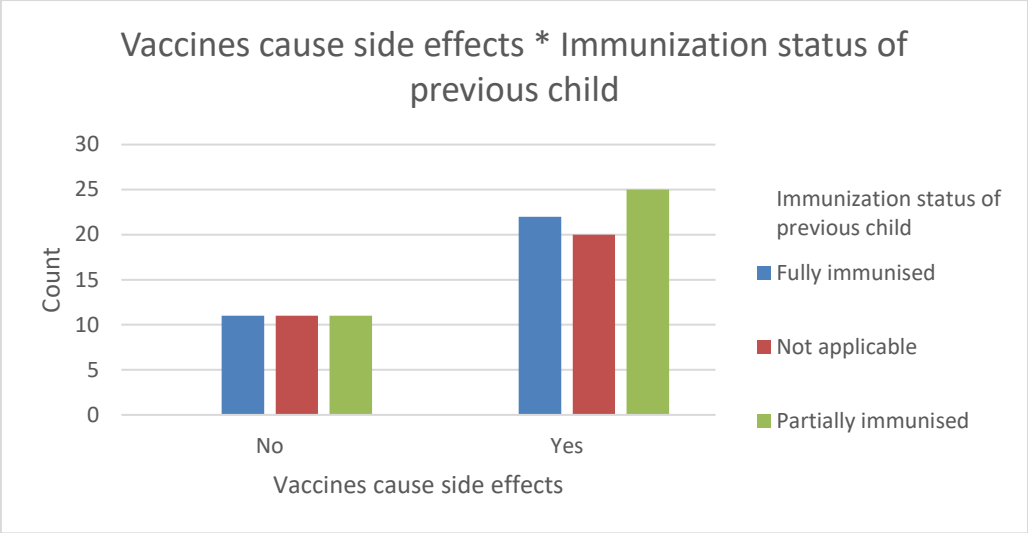
Graph 4: Level of Trust in Healthcare Workers Among Parents

5. Belief That Vaccines Cause Side Effects vs. Immunization Status of Previous Child

Although 67% believed vaccines cause side effects, this perception did not significantly affect immunization completion, indicating that side effect concerns may not be a major deterrent (Table 5).

Table 5: Belief That Vaccines Cause Side Effects vs. Immunization Status of Previous Child

Vaccines cause side effects * Immunization status of previous child							
Crosstab							
			Immunization status of previous child			Total	p-value
			Fully immunised	Not applicable	Partially immunised		
Vaccines cause side effects	No	Count	11	11	11	33	0.911
		% within Immunization status of previous child	33.3%	35.5%	30.6%	33.0%	
	Yes	Count	22	20	25	67	
		% within Immunization status of previous child	66.7%	64.5%	69.4%	67.0%	
Total		Count	33	31	36	100	
		% within Immunization status of previous child	100.0%	100.0%	100.0%	100.0%	



Graph 5: Perceived Side Effects and Immunization Status

DISCUSSION

This study explored parents' knowledge, perception, and adherence related to childhood immunization in an Indian setting. The results demonstrate a generally favorable outlook on immunization among parents, with strong trust in healthcare workers and high compliance rates, aligning well with prior Indian studies.

Firstly, the age-wise distribution shows that 72% of children attending immunization services were aged 1–5 years. This finding is consistent with the study by Jayaraj et al. (2023), which reported that while children are generally vaccinated, delays in early infant immunization remain common due to lack of timely reminders and awareness [4]. This highlights the need for improving outreach in the first year of life.

Secondly, 81% of parents in this study believed vaccines are safe. This mirrors findings from Parvathy Devi et al. (2022), where 98.1% of parents acknowledged vaccine safety and disease prevention benefits [11]. Similarly, a study by Akunuri & Dayal (2016) also noted overall positive attitudes but emphasized that concerns about side effects and lack of knowledge about optional vaccines persisted [2].

Parental compliance with the vaccination schedule was found to be 90% in this study, echoing results from Jelly et al. (2023), where although knowledge was not perfect, the majority of parents ensured their children were vaccinated on time [6]. High adherence despite knowledge gaps may reflect the success of healthcare worker outreach and routine reminders.

Trust in healthcare providers was also high at 95%, supporting earlier findings by Patil et al. (2018), where doctors were identified as the primary and most trusted information source [1]. This reinforces the importance of leveraging health workers in community sensitization efforts.

Interestingly, while 67% of parents believed vaccines might cause side effects, this did not significantly influence immunization rates, suggesting that awareness of mild side effects does not necessarily translate to hesitancy—an encouraging sign compared to other studies where fear of adverse effects led to delays or refusals (Kaur, 2018) [10].

CONCLUSION

The study highlights that while parental concerns about vaccine side effects exist, they do not significantly deter immunisation uptake when supported by trust in healthcare providers. High levels of adherence and positive attitudes reflect the success of public health interventions at the grassroots level. Nevertheless, to achieve universal immunisation, continuous education, timely reminders, and infrastructure strengthening—especially in early infancy—remain essential. The findings underscore the importance of community-centric strategies to close the knowledge-practice gap and ensure timely, complete vaccination for all children.

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