

**A PROSPECTIVE OBSERVATIONAL STUDY TO ASSESS THE BARRIERS AGAINST THE IMMUNIZATION FOR DELAYED VACCINATION AND MISSED OPPORTUNITIES**

Ramakrishna Shabaraya A., Febina Razak* and Sudhamshu K. Tantry

Department of Pharmacy Practice, Srinivas College of Pharmacy, Valachil, Post Farangipete, Mangalore-574143.

***Corresponding Author: Febina Razak**

Department of Pharmacy Practice, Srinivas College of Pharmacy, Valachil, Post Farangipete, Mangalore-574143.

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ABSTRACT

Immunization is essential for public health, effectively reducing illness and death from Vaccine Preventable Diseases. Mothers play a crucial role in ensuring their children complete the full vaccination on time. Achieving a 95% immunization coverage rate is essential for sustained control of vaccine-preventable diseases. Assessing a child's immunization status helps evaluate progress towards program objectives, identifying gaps, and improving service delivery to achieve high and equitable immunization rates. As the immunization coverage is not uniform in India, this study aimed to identify the barriers against the immunization for delayed vaccination and missed opportunities affecting the immunization status. A prospective observational study at communities in Mangalore for 6 months involving 161 mothers of children under 5 years of age. Using pre-validated questionnaire, the barriers against immunization were assessed. "Forgetfulness about immunization dates or times" (27.2%) was found to be the major reason for delayed immunization. 66 (41%) children experienced delayed immunization. The present study concludes that the barrier against the immunization for incomplete or delayed vaccination and missed opportunities were forgetfulness, child health and the fear of side effects. Information dissemination through Patient Information Leaflets (PIL), promoting the use of immunization cards, employing reminders for vaccination dates, and encouraging communication with healthcare professionals can enhance vaccination rates, ultimately benefiting the health of future generations.

KEYWORDS: Immunization, Vaccine Preventable Disease, Barriers, Patient Information leaflets, Immunization status.

INTRODUCTION

Immunization is one of the most important and cost-effective strategies for the prevention of childhood sickness and disabilities and is a basic need for all children.^[1]

The World Health Organization (WHO) launched the Expanded Program on Immunization (EPI) in 1974, which aimed to vaccinate and thereby protect children against these deadly diseases.^[2] In 1985, the Universal Immunization Program (UIP) was introduced by the Government of India (GOI) and disease specific surveillance was initiated in 1997 to determine the impact of Pulse Polio Immunization (PPI) on eradication of polio.^[3]

The National Family Health Survey-3 reports that only 43.5% of children in India receive all their primary vaccines by 12 months of age.^[4] The main reasons identified for this poor coverage include inadequate community participation in routine immunization and a

lack of information and communication activities. Parents' negative perceptions of vaccination are also a significant barrier to childhood vaccination.^[5]

The immunization coverage is not uniform in India. In Karnataka, with the exception of Uttar Kannada District, which has a very high immunization coverage of 95%, and 14 districts that have shown better coverage (over 85%), the remaining 15 districts, including Bijapur District, have poor immunization coverage.

Mothers play an important role in immunization of their children. A target of 95% immunization coverage is necessary for the sustained control of vaccine preventable diseases.^[6] Assessing a child's immunization status helps to evaluate progress in achieving program objectives and improving service delivery. Additionally, evaluating immunization coverage provides evidence of whether substantial progress is being made towards achieving vaccination targets.^[7]

The primary reason for delayed and non-immunization is lack of information. Therefore, it is crucial to understand the factors that influence parents' decisions to vaccinate their children and to develop measures to overcome these barriers. Hence the study plays an important role in spreading the awareness on importance of immunization among the mothers of children under five years of age.^[7]

METHODOLOGY

Study type: Prospective Observational study

Study site: The study was conducted at communities in Mangalore.

Sample size: The sample taken for the study was 161.^[2]

Study duration: The study was conducted for duration of 6 months

Inclusion criteria

- Mothers of child below 5 years of age.
- Voluntary participants residing in Mangalore.

Exclusion criteria

- Mothers of child with diseases and/ medications.
- Mothers working as healthcare professionals.

Data source

Data(s) for the study were collected using Questionnaires through direct interaction with the mothers.

Statistical Analysis

Statistical analysis involves collecting and scrutinizing every data sample in a set of items from which samples can be drawn and a suitable statistical test was applied to analyse the data. The collected data were analyzed using Microsoft Excel.

RESULT

A total of 161 subjects were included in the study and socio-demographic characteristics of the study participants were collected from various localities of Mangalore. From the data, the mean age of the mothers were 29 years. The majority (69.5%) were housewife's and more than half (64.5%) completed degree level education. 53.4 % mothers were from rural area and 51.5 % of mothers have female child.

The demographic characteristics are summarized in Table 1.

Table no. 1: Socio Demographic details.

Socio Demographic characteristics	No. of participants	Percentage (%)
Age of mother		
20-24	13	8.07
25-29	89	55.3
30-34	40	24.8
35-40	19	11.8
Education status of mother		
Illiterate	3	1.86
Primary	12	7.4
Secondary	42	26.08
Degree	104	64.5
Employment status of mother		
Housewife	112	69.5
employed	41	25.4
Self employed	7	4.3
Business	1	0.62
Domiciliary status		
Rural	86	53.4
Urban	75	46.5
Age of child		
Neonates or Newborns (birth to 1 month)	2	1.24
Infants (1 month to 1 year)	46	28.5
Toddler (1 year to 3 years)	66	40.9
Preschool (3 years to 6 years)	47	29.1
Gender of child		
Male	78	48.4
Female	83	51.5

Table no. 2: Immunization status.

Immunization status	No. of participants	Percentage
Immunized as per schedule without fail	95	59
Immunized but not per schedule	66	40.9
Not Immunized	0	0

From total of 161, 66 participants had delayed their immunization and 95 participants children were immunized as per schedule without fail. [Table 2] [Fig1].

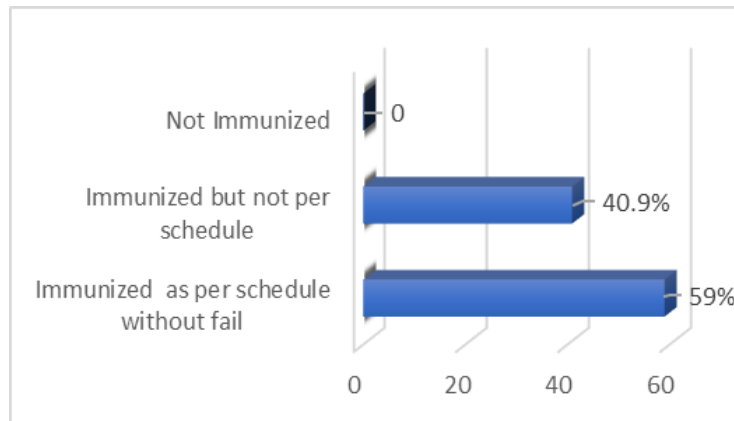


Fig 1: Immunization status.

Table no. 3: Barriers for immunization.

Barriers for Immunization	
Choose the reasons that cause delay or failure in Immunization?	Responses (%)
Unaware of immunization	13.8
Lack of trust or fear of side effects	15.6
Discouragement or disagreement in the family	2.7
Lack of time to take the child for immunization	11
Lack of transport facility to reach immunization sites	0
Due to household work/job restrictions	9.8
No caregivers available to take the child for immunization	1.2
Child was sick	21.5
Date or time of immunization schedule was forgotten	23.9
Due to financial issues	0

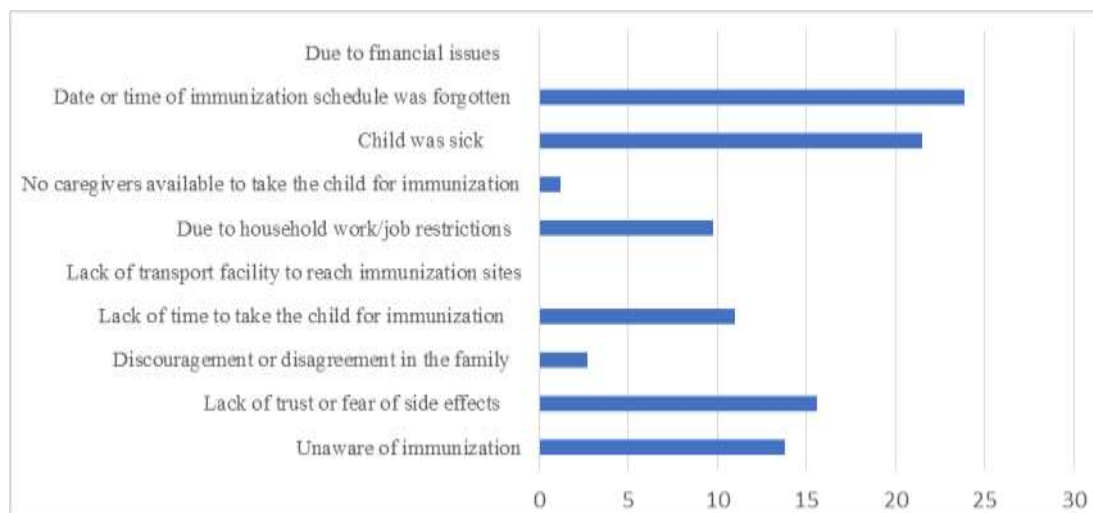


Fig 2: Barriers for immunization.

The most common barrier mentioned for delayed immunization was forgetfulness which was reported as 23.9%, followed by health of child, fear of side effects and others [Table 3] [Fig 2].

DISCUSSION

It is well documented that mothers have a great role on the child complete immunization rate and maintaining up

to date immunization status. This study demonstrated that the barriers can cause incomplete vaccination.

A short questionnaire is structured for collecting data to assess the barriers against the immunization for delayed/incomplete vaccination and missed opportunities, among mothers of children under 5 years of age.

If mothers do not perceive vaccine preventable diseases as severe enough to warrant preventive action or if do not perceive any particular benefit to their child's health from immunization, then they will be more likely to delay the vaccination doses for their children.^[2]

This study aimed at evaluating the current status of immunization among 0-5 years old children in Mangalore and identifying the barriers that prevent children from getting immunized. The most often mentioned barrier that cause for delayed immunization was forgetfulness which was reported in followed by health of child, fear of side effects, unaware of immunization schedule and others. In comparison with another study conducted by Bofarraj M.A, revealed that the main reason for delayed immunization was child sickness, forgetfulness and others.^[8] In concordance with a study, carried in Uttarakhand by Jelly P *et al* found that the most common factors reported in different regions of India and other countries were lack of knowledge, religious beliefs, cultural myths, fear of side effects, sickness of child, religion, lack of facilities etc.^[9]

This study also examines the reason associated with missed opportunities for child immunization. Children who missed the opportunities for vaccination were likely to have a delayed immunization status. Maternal reason for missed opportunities included child sickness, forgetfulness, lack of time, lack of trust and fear of side effects, unaware of immunization, and busy schedule. In concordance with a study, carried in Nigeria by Abdulraheem IS *et al* found that the concern about vaccine safety, mother health status, travelling, complication from previous injection, forgetfulness, financial problem were the reasons for missed opportunities and for delayed vaccination in children.^[6]

To control or eliminate vaccine preventable diseases, it is mandatory to increase the number of vaccinated children as per the immunization schedule and most of the reasons for delayed immunization can be overcome by educating the mothers about importance of child vaccination by using information dissemination (PIL). Regular Continuing Medical Education (CME) sessions should be conducted to enhance the knowledge of healthcare professionals. Health professionals and mass media should be used in their maximum extent to increase awareness and change attitudes regarding immunization among people especially mothers.

FUTURE PROSPECTIVES

The study would benefit from a larger sample size and an extended follow-up period for more effective implementation and also need to explore role of potential influencers inside and outside a household in uptake of routine immunization is urgent and essential.

CONCLUSION

The present study concludes that the barrier against the immunization for incomplete or delayed vaccination and

missed opportunities were forgetfulness, health of child and fear of side effects.

This study highlighted issues on the barriers or reasons that cause delay in immunization. Providing information on use of PIL, following immunization cards, using reminders to follow vaccination dates, communication with healthcare professionals can improve overall vaccination rates and improve health of future generations. Future efforts are needed to improve the vaccination rates in Mangalore.

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