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Original Article

A Study to Assess the Knowledge of Mothers of Under-Five Children Regarding the Immunization Schedule and Vaccine-Preventable Diseases in Selected Rural Areas

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Abstract

Abstract: Immunization plays a critical role in preventing infectious diseases among children. However, gaps in maternal knowledge about the immunization schedule and vaccine-preventable diseases (VPDs) remain a significant public health concern in rural areas. This study aims to assess the knowledge of mothers regarding immunization schedules and VPDs in selected rural regions. A descriptive research design was employed, and the findings highlight the need for targeted educational interventions to improve maternal awareness and immunization coverage.

Materials & Methods: A descriptive cross-sectional study was conducted.A total of 150 mothers of under-five children were selected using a purposive sampling technique.The study was carried out in selected rural areasmadhorajpura(Phagi) Jaipur.A structured questionnaire with 25 items was used to assess knowledge regarding the immunization schedule and VPDs.Descriptive and inferential statistics (Chi-square test) were used for data analysis.

Results: The findings suggest that oral stimulation can enhance the coordination of sucking, swallowing, and breathing, thereby facilitating independent feeding. A considerable proportion (75%) of preterm babies showed improved feeding performance after oral stimulation, with only 25% demonstrating no significant improvement.

Conclusions: These findings indicate a significant benefit of oral stimulation that needs to be integrated into neonatal care through targeted interventions.

Keywords: Immunization; Maternal Knowledge; Vaccine-Preventable Diseases; Rural Healthcare; Immunization Coverage

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Introduction

Immunization is recognized as one of the most effective public health interventions to prevent morbidity and mortality from infectious diseases among children under five years of age. The World Health Organization (WHO) emphasizes the importance of routine immunization programs in reducing childhood deaths caused by vaccine-preventable diseases (VPDs) such as measles, polio, and diphtheria[1]. Despite these efforts, disparities in vaccine coverage persist, particularly in rural and underserved regions where maternal knowledge about immunization remains inadequate[2].

Several studies have highlighted that maternal awareness and education significantly influence immunization adherence[3]. Mothers who are well-informed about the immunization schedule and the importance of vaccines are more likely to ensure their children receive complete immunization on time[4]. However, in many rural areas, misinformation, cultural beliefs, and lack of access to healthcare services act as barriers to vaccine uptake[5].

The Government of India, through the Universal Immunization Program (UIP), provides free vaccines against various life-threatening diseases[6]. Despite this, reports indicate that many children in rural areas remain partially or completely unimmunized due to a lack of parental awareness and vaccine hesitancy[7]. Studies suggest that community-based educational interventions can play a crucial role in enhancing maternal knowledge and increasing immunization rates[8].

Assessing the knowledge of mothers regarding immunization schedules and VPDs is crucial for identifying gaps and designing effective interventions. Understanding the factors influencing vaccine uptake in rural settings can help health professionals and policymakers implement targeted strategies to improve immunization coverage[9]. This study aims to evaluate maternal knowledge and suggest measures for improving awareness and adherence to immunization programs[10].

Objectives

1. To assess the knowledge of mothers regarding the immunization schedule for under-five children.
2. To evaluate maternal awareness about vaccine-preventable diseases (VPDs).
3. To identify factors influencing immunization knowledge in rural settings.
4. To suggest measures for improving maternal knowledge and immunization adherence.

Hypothesis

H_0: There is no significant association between maternal knowledge and immunization adherence.

H_1: There is a significant association between maternal knowledge and immunization adherence.

Materials and Methods

Study Design: A descriptive cross-sectional study was conducted.

Sample and Sampling Technique: A total of 150 mothers of under-five children were selected using a purposive sampling technique.

Setting of the study: The study was carried out in selected rural areas madhorajpura(Phagi) Jaipur.

Data Collection Tool: A structured questionnaire with 25 items was used to assess knowledge regarding the immunization schedule and VPDs.

Data Analysis: Descriptive and inferential statistics (Chi-square test) were used for data analysis. A p-value of <0.05 was considered statistically significant.

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Results

Table 01: Knowledge of Mothers Regarding Immunization Schedule

Knowledge Level	Number of Mothers (n=150)	Percentage (%)
Inadequate Knowledge	60	40
Moderate Knowledge	52	35
Good Knowledge	38	25

Most mothers (40%) had inadequate knowledge regarding the immunization schedule. About 35% had a moderate understanding, while only 25% demonstrated good knowledge. These findings indicate a significant knowledge gap that needs to be addressed through targeted interventions.

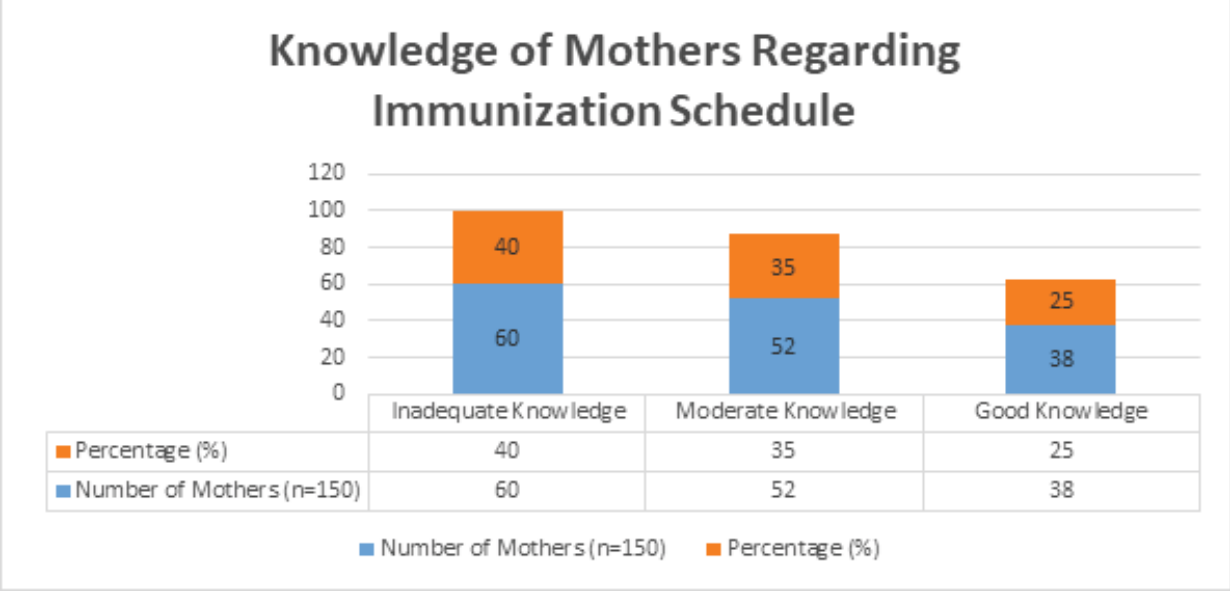

Figure o1: Knowledge of Mothers Regarding Immunization Schedule

Table 02: Awareness About Vaccine-Preventable Diseases

Awareness Level	Number of Mothers (n=150)	Percentage (%)
Low Awareness	70	46.7
Moderate Awareness	48	32
High Awareness	32	21.3

A considerable proportion (46.7%) of mothers had low awareness of VPDs, with only 21.3% demonstrating high awareness. This highlights the need for educational programs focusing on disease prevention

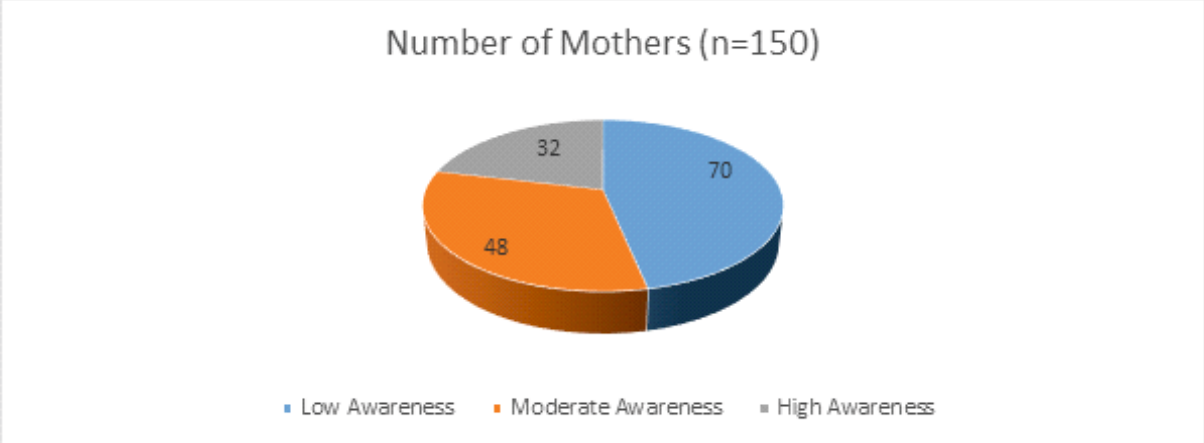

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Figure 02: Awareness About Vaccine-Preventable Diseases

Table:03 Factors Influencing Knowledge Levels

Factor	Association with Knowledge (p-value)
Mother's Education Level	**$p < 0.01$**
Access to Healthcare Information	**$p < 0.05$**
Socioeconomic Status	**$p < 0.05$**

Higher education levels were significantly associated with better immunization knowledge ($p < 0.01$). Access to healthcare professionals and socio-economic status also played a crucial role ($p < 0.05$).

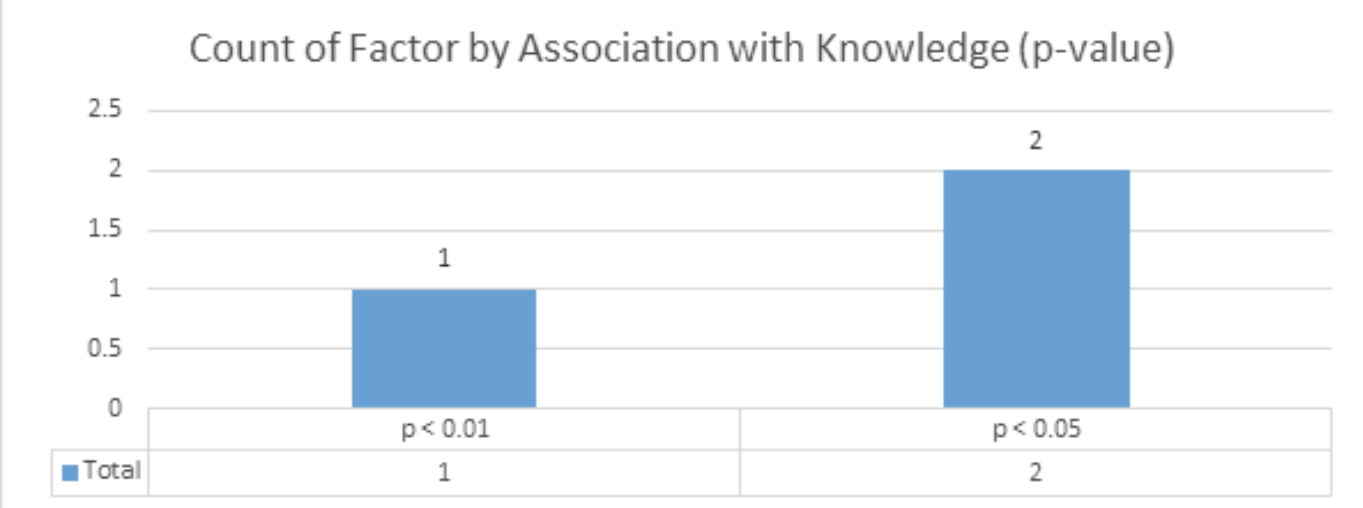

Figure: 03Factors Influencing Knowledge Levels

Conclusions

The study highlights a gap in maternal knowledge regarding immunization schedules and VPDs in rural areas. Targeted educational programs are essential to bridge this gap and improve vaccine coverage among under-five children.

Recommendations

1. Strengthening community-based education programs on immunization.
2. Enhancing healthcare provider counseling for mothers in rural areas.
3. Conducting awareness campaigns through local media and health workers.
4. Improving accessibility to immunization services in remote areas.
5. Further studies should explore long-term impacts of educational interventions.

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Conflicts of interests: The authors declare that they have no conflict of interest with regard

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