

**Nurse's Knowledge and Practice of Expanded Program on Immunization (EPI) in Outpatient Department at Rajshahi Medical College Hospital**

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<p><b>*Corresponding Author:</b> Mominul Islam</p> <p><b>Citation:</b> Mominul Islam <i>et al.</i>; (2024); Nurse's Knowledge and Practice of Expanded Program on Immunization (EPI) in Outpatient Department at Rajshahi Medical College Hospital. <i>iraetc j. nur. health care</i>; 2(2) 29-35</p>  <p>This work is licensed under a Creative Commons Attribution- NonCommercial 4.0 International license.</p>	<p><b>Background:</b> The Expanded Program on Immunization (EPI) is crucial in reducing the burden of vaccine-preventable diseases. As frontline healthcare providers, nurses play a pivotal role in administering vaccines and educating patients about the importance of immunization. Understanding their knowledge and practices regarding EPI is essential for improving vaccination coverage and efficacy. <b>Objective:</b> This study aimed to assess the knowledge and practice of nurses regarding the EPI in the Outpatient Department at Rajshahi Medical College Hospital (RMCH). <b>Method:</b> A descriptive cross-sectional study was conducted from November 14 to April 2015, involving n=50 nurses from the Outpatient Department at RMCH. A structured questionnaire collected data on demographics, knowledge, and practices related to EPI. Data were analyzed using descriptive statistics, and percentages were calculated to describe the findings. <b>Results:</b> The majority of the nurses were female (74%), aged 40-50 years (40%), and married (84%). Most nurses had a Diploma in Nursing (44%) and had served for 11-20 years (44%). Regarding knowledge, 70% of the nurses correctly identified immunization as specific protection, while 74% understood herd immunity related to subclinical infection. In terms of practice, 88% of the nurses kept and maintained records related to patients, and 90% demonstrated sufficient practice against the EPI. <b>Conclusion:</b> The study revealed positive knowledge and practices among nurses regarding the EPI. However, there were limitations in physical and educational facilities, highlighting the need for improved infrastructure and education to enhance practice standardization and provide better patient care.</p> <p><b>Key Words:</b> Expanded Program on Immunization, Nurses, Knowledge, Practice.</p>	

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**INTRODUCTION**

Immunization is one of the most effective strategies in preventing avoidable diseases among children [1]. The inception of the Expanded Programme on Immunization (EPI) in 1974 marked a significant step forward, extending immunization services beyond smallpox to encompass six preventable diseases: diphtheria, measles, pertussis, poliomyelitis, tetanus, and tuberculosis [2]. Initially, the EPI aimed to achieve 90% coverage for all antigens by 2000, but this goal was not realized globally.

This realization led to the emergence of supportive initiatives, including the Global Alliance for Vaccines and Immunization (GAVI), which has significantly increased funding for immunization [3]. Improving immunization coverage must be evidence-based, addressing feasibility, acceptability, and local practices [4]. Moreover, ensuring a child receives immunization necessitates that the mother is mentally, physically, and socially well. Studies indicate that mothers in a supportive environment are more likely to ensure their child is immunized [5]. The EPI, initiated by the World Health Organization, standardized the vaccination schedule and expanded the list of recommended vaccines to include Hepatitis B, yellow fever, and Haemophiles influenzae meningitis [6].

In 1999, the GAVI was established to enhance the EPI's reach and impact, aiming to improve child health in the poorest countries [7]. Current EPI goals include global polio eradication and reducing measles-related deaths [8]. The GAVI has set specific targets to achieve EPI goals, including routine immunization coverage and introducing new vaccines in low-income countries [9]. These initiatives underscore the importance of immunization in global health and the ongoing efforts to enhance its accessibility and efficacy.

## OBJECTIVE

### General objective

- To assess nurses knowledge and practice of the Expanded immunization program at the outpatient department of Rajshahi Medical College Hospital.

### Specific objective

- To assess the nurses knowledge of the Expanded program on immunization.
- To observe the technique the nurses maintained during the Expanded immunization program.
- To determine the effect of socio-demographic characteristics of nurses on the practice of Expanded programs on immunization.
- To achieve and maintain effective vaccination coverage for children, according to WHO.
- To reduce the child mortality and morbidity rate.

## METHODOLOGY

### Study Design

The study utilized a descriptive cross-sectional design to explore nurses knowledge and practice of the Expanded Program on Immunization (EPI) at the Outpatient Department of Rajshahi Medical College Hospital. This design allowed for examining the relationship between nurses knowledge and practice regarding EPI. The study aimed to provide a comprehensive understanding of how nurses in this setting manage immunization practices and their knowledge levels related to EPI.

### Inclusion Criteria

- Full-time staff nurses working in the Outpatient Department and five wards under the Pediatric and Gynecological units of Rajshahi Medical College Hospital.
- Nurses with roles and responsibilities connected with direct patient care.
- Nurses with at least three years of diploma in nursing education.
- Nurses with at least 6 months of working experience in the respective units.

### Exclusion Criteria

- Part-time or temporary staff nurses.
- Nurses without direct patient care responsibilities.
- Nurses with less than three years of diploma in nursing education.
- Nurses with less than 6 months of working experience in the respective units.

### Data Collection

Data collection was conducted through structured questionnaires developed by the researcher. The questionnaires comprised four sections: demographic information for nurses, nurses knowledge and practice of the Expanded Program on Immunization (EPI), demographic information for patients attending the Outpatient Department, and patients knowledge of EPI. The study was carried out at Rajshahi Medical College Hospital, and data were collected from November 2014 to April 2015. Data were analyzed using descriptive statistics.

### Data Analysis

Data analysis was performed using IBM SPSS Statistics version 26. Descriptive statistics, such as frequencies and percentages, were used to analyze demographic data and questionnaire responses. The relationship between nurses knowledge and practice of the Expanded Program on Immunization (EPI) was examined using appropriate statistical tests. The findings were presented using tables and charts to represent the results.

### Ethical considerations

Ethical approval was paramount in this study. Ethical clearance was obtained from the Principal of Rajshahi Nursing College and permission from the Director of Rajshahi Medical College Hospital. Informed consent was obtained from all participating nurses. Confidentiality and anonymity were ensured throughout the study, with no names or addresses revealed on the questionnaires. Participants were assured that their participation was voluntary and that they could withdraw from the study at any time without prejudice.

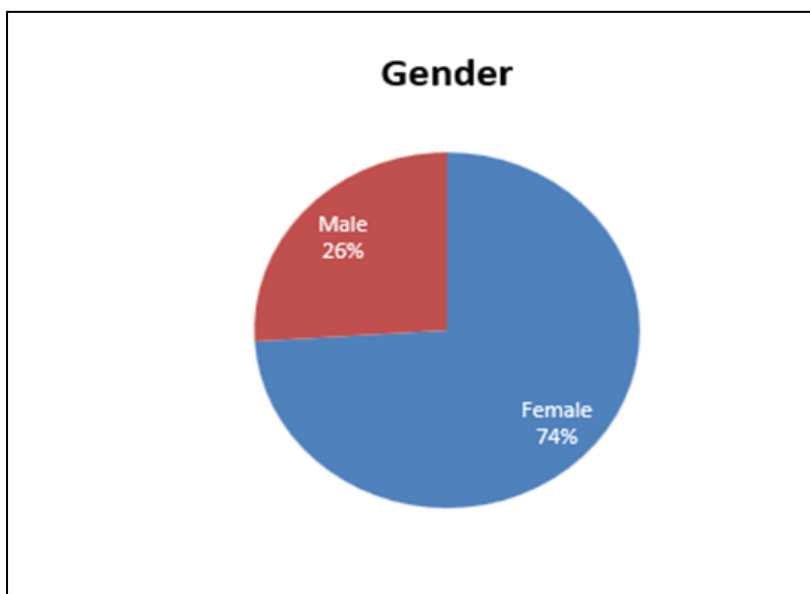
## RESULT

The results of nurses knowledge and practice of expanded programs on immunization in the outpatient department at Rajshahi Medical College Hospital are described in this chapter.

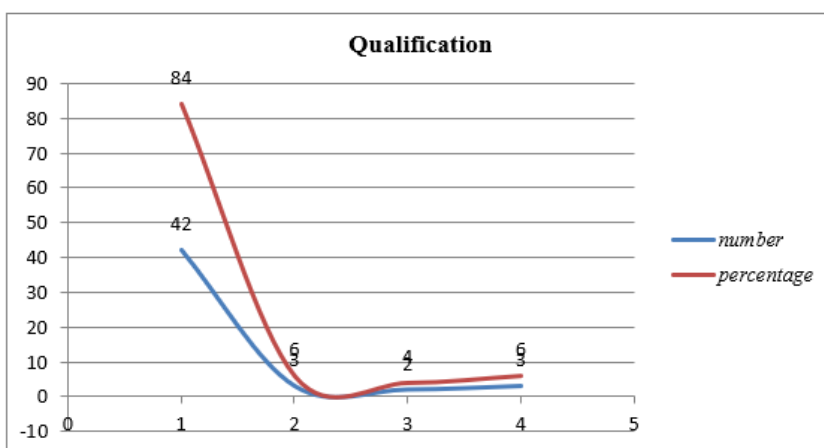
**Table 1: Age distribution of the respondents**

Variable	Number	Percentage
<b>Age Parameters</b>		
21-30 years	4	8%
31-40 years	15	30%
41-50 years	20	40%
Above 50 years	11	22%
<b>Gender</b>		
Female	37	74%
Male	13	26%

The largest age group was 41-50 years (40%), followed by 31-40 years (30%), and above 50 years (22%), with the smallest percentage below 30 years (8%). Gender-wise, 74% were female, and 26% were male. This data suggests a mature respondent group, potentially influencing the study's findings and recommendations.



**Figure 1: Gender distribution of the respondents**



**Figure 2: Professional qualification of the respondents**

Most staff nurse respondents (84%) held diplomas in nursing and midwifery, while 6% had a B.Sc in Nursing, 4% had a B.Sc in Public Health Nursing, and another 6% had an MPH/M.Sc degree. This distribution reflects a predominance of respondents with basic nursing qualifications, potentially impacting their approach to immunization practices.

**Table 2: Length of service of the respondents**

Variable	Number	Percentage
<b>Length of service</b>		
1-10 years	9	18%
11-20 years	22	44%
21-30 years	15	30%
Above 30 years	4	8%

Most staff nurse respondents (44%) had a length of service between 11–20 years, followed by 30% serving for 21–30 years. 18% had a length of service between 1–10 years, and 8% had served for 31–40 years. This distribution indicates a significant proportion of experienced nurses in the 11–30-year range, with a smaller percentage at the beginning and end of their careers.

**Table 3: Nurses knowledge and practice-related findings regarding Expanded Program on Immunization**

Question	Number	Percentage
<b>Immunization is?</b>		
Health promotion	15	30%
Rehabilitation	0	0%
Specific protection	35	70%
<b>Do you keep and maintain all records related to the patient?</b>		
Date of vaccination	44	88%
Movement of the patient	6	12%
Do not know	0	0%

Regarding the meaning of immunization, 70% of respondents answered "Specific protection," while 30% answered "Health promotion." For the query about maintaining patient records, 88% answered "Date of vaccination," 12% answered "Movement of the patient," and 0% replied "Do not know." These responses indicate a strong understanding among respondents regarding the purpose of immunization and a high awareness among healthcare providers about the importance of maintaining vaccination records.

**Table 4: Question to patients attendance of Expanded Program on Immunization about nurses activity**

Question	Answer			
	Yes		No	
	N	%	N	%
Have you heard about childrens immunization?	46	92	4	8
Do you know about appropriate care after immunization?	18	36	32	64
Do you face any problems after immunizing your child?	36	72	14	28
Did the nurse teach you about care after immunization?	45	90	5	10
Does the nurse spend enough time nurses with you?	35	70	15	30
Do the nurses come when you call for them?	48	96	2	4
Do they give information about maintain further immunization schedules?	47	94	3	6
Do the nurses check that before the immunization schedule?	50	100	0	0
What will be the benefits of appropriate immunization for children?	47	94	3	6

The responses indicate a high awareness and engagement with immunization practices among the surveyed individuals. Most (92%) have heard about childrens immunization, and 70% understand its benefits. However, there are gaps in post-immunization care awareness, with only 36% knowledgeable in this area. Despite this, 72% reported facing problems after immunization, suggesting a need for improved post-care education. Nurses play a crucial role, with 90% teaching about post-immunization care and 94% providing information on further immunization schedules. The high response rates for nurse attendance (96%) and thorough checks before immunization (100%) indicate a strong healthcare provider presence and adherence to protocol, ensuring safe and effective immunization practices.

**DISCUSSIONS**

The study at Rajshahi Medical College Hospital assessed nurses knowledge and practices regarding the Expanded Program on Immunization (EPI) among patients attending the Outpatient Department [10]. The hospital was chosen for its status as a teaching and referral hospital, assuming that care standards would be high [11,12,13].

The study's findings shed light on various aspects of immunization practices and highlight areas for improvement in nursing care within this important healthcare setting.

One key area addressed in the study is the handling and management of vaccines to ensure their optimal potency. Proper storage, transport, and handling practices are crucial to maintaining vaccine efficacy and avoiding wastage [14,15]. The study mentions the implementation of a "first expiry and first out" (FEFO) system to ensure vaccines are used before expiry and the use of cold chain equipment to monitor and maintain the temperature of vaccines [16]. These practices are essential for preserving vaccine effectiveness and preventing unnecessary wastage.

The majority of respondents were in the 41-50 age group (40%), with fewer respondents in younger (8% below 20 years) and older age groups (22% above 51 years). Most nurses had completed S.S.C. education (82%), 12% had H.S.C. only, and 4% had B.Sc\BA degrees. Only 2% had Masters degrees. Regarding knowledge-related questions, the study found that most nurses understood immunization as providing specific protection, with a smaller percentage associating it with health promotion [17,18]. Interestingly, none of the nurses associated immunization with rehabilitation. These highlight potential gaps in understanding or awareness among nursing staff regarding immunization's broader benefits and purposes beyond protection from specific diseases.

Our study's findings show a need for improvement in nurses' knowledge and practices related to immunization. Despite their academic training, many nurses did not meet the minimum competency level expected in the study. This underscores the importance of ongoing training and education for nurses to ensure they have the necessary knowledge and skills to provide quality care in immunization programs [19]. Overall, the study provides valuable insights into the current state of nurses' knowledge and practices regarding immunization and highlights areas for improvement to enhance the quality of care provided in immunization programs. Furthermore, the study's findings can be contextualized within the broader literature on nurses' knowledge and practices regarding immunization. Previous studies have highlighted similar trends, with nurses often demonstrating a good understanding of the importance of immunization but lacking in-depth knowledge about specific vaccines and their administration [20,21]. This suggests a need for targeted educational interventions to improve nurses' knowledge.

A critical aspect of immunization programs that the study addresses is the role of nurses in providing education and information to patients. The finding that 90% of nurses reported teaching patients about care after immunization is encouraging, as patient education is crucial for ensuring the effectiveness of immunization programs [22]. However, the study also highlights areas where improvement is needed, such as ensuring that nurses spend enough time with patients and promptly respond to their calls for assistance. The study conducted at Rajshahi Medical College Hospital makes a valuable contribution to the literature on nurses' knowledge and practices regarding immunization. By highlighting areas for improvement and providing recommendations for future research, the study provides valuable insights that can inform efforts to enhance the quality of care provided in immunization programs.

### **Limitations**

One limitation of the study was the possibility of bias, as nurses interested in immunization may have been more likely to volunteer. To address this, future studies could invite nurses from multiple hospitals to participate in surveys about their knowledge and practices regarding immunization. This study provides valuable insights into the knowledge and practices of nurses regarding Immunization at Rajshahi Medical College Hospital. The findings highlight the importance of continuous education and training for nurses to ensure the optimal delivery of immunization services. Further research in this area is warranted to enhance nurses' knowledge and practices regarding immunization.

### **CONCLUSION**

The study reveals positive knowledge and practices among nurses regarding the Expanded Program on Immunization (EPI) at Rajshahi Medical College Hospital. However, improvements in infrastructure and education are needed to enhance practice standardization and provide better care. Ongoing training and education are essential to ensure optimal delivery of immunization services.

### **Recommendations**

- Implement regular training programs for nurses to enhance their knowledge and skills regarding immunization practices.
- Improve infrastructure and educational facilities to support standardized practices and better patient care.
- Conduct broader surveys across multiple hospitals to ensure a representative sample and further understand nurses knowledge and practices regarding immunization.

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**Study purpose:** To assess nurses knowledge and practices regarding the Expanded Program on Immunization (EPI) at Rajshahi Medical College Hospital.

**Key findings:** The majority of nurses had good knowledge of immunization as specific protection, but gaps existed in understanding herd immunity and rehabilitation. Nurses demonstrated strong adherence to record-keeping practices and patient education.

**Newer findings added to what is known:** The study provides detailed insights into nurses knowledge and practices regarding EPI, highlighting the need for ongoing training and education to enhance immunization practices.

### Abbreviations

- EPI: Expanded Program on Immunization
- Ig A: Immunoglobulin A
- BCG: Bacille Calmette-Guerin
- D.P.T.: Diphtheria, Pertussis and Tetanus
- GAVI: Global Alliance for Vaccines and Immunization
- WHO: World Health Organization

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