

# A Study to Evaluate the Effectiveness of a Planned Teaching Programme on the Knowledge of Nursing Students Regarding Management of Bronchial Asthma

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## Abstract

**Introduction:** A prevalent chronic respiratory condition that affects people all around the world is bronchial asthma. Adequate information is necessary for optimal care since nursing students play a crucial role in managing asthma patients.

**Materials and Methods:** A one-group pre-test and post-test pre-experimental design was used. A suitable sampling strategy was used to choose 60 nursing students for the investigation. Prior to and following the proposed teaching program, knowledge was evaluated using a standardized knowledge questionnaire.

**Results:** The results showed that knowledge had improved following the intervention, with the mean post-test score being considerably higher than the pre-test score.

**Conclusion:** The planned teaching programme was effective in enhancing the knowledge of nursing students regarding management of bronchial asthma.

**Keywords:** Bronchial Asthma, Nursing Students, Planned Teaching Programme, Knowledge, Management

## Introduction

One of the most common chronic illnesses in the world is asthma. Asthma flare-ups, increased ER visits, missed school days, and a lower quality of life might result from ignorance about asthma. The efficacy of educational intervention programs on asthma control for school-age children and their parents outside of inpatient clinic settings is investigated in this systematic review.<sup>1</sup>

In order to achieve the third Sustainable Development Goal (SDG), which calls for a one-third decrease in premature mortality from non-communicable illnesses

by 2030, current data on chronic respiratory diseases (CRDs) is essential for their prevention, control, and treatment. From 1990 to 2019, we provide national, regional, and worldwide estimates of the burden of CRDs and the risks associated with them.<sup>2</sup>

Millions of children worldwide suffer from asthma, a prevalent, persistent, non-communicable respiratory condition. Children's and their caregivers' quality of life may be negatively impacted by mild to severe asthma flare-ups. Exacerbations of asthma frequently lead to emergency hospital visits, activity intolerance, and absences from work or school. School-based asthma education initiatives are one way to address this

health issue and try to improve health outcomes.<sup>3</sup>

262.4 million people worldwide suffer from asthma, a chronic respiratory disease. The development of self-management skills, such as trigger avoidance, and the dissemination of information on the illness process are both crucial aspects of asthma education. There are several contexts in which education can be given. In addition to avoiding attendance at healthcare venues, the home setting enables educators to reach populations (such as the impoverished) who would encounter care challenges (such as transportation constraints) in a familiar setting.<sup>4</sup>

Childhood asthma is a complicated illness with a range of clinical manifestations and potential treatment resistance. Children with acute asthma flare-ups are frequently admitted to emergency departments (EDs), and many of them are treated there exclusively. Accurate documentation of observations, good history taking, and examination can all help determine the severity of an exacerbation. In emergency departments, nurses should be able to identify the clinical signs and symptoms of acute asthma, evaluate its severity, and offer care recommendations. Nurses should be somewhat knowledgeable with first-line care, including when and how to assist in administering these treatments.<sup>5</sup>

Many children and young people do not use their inhalers appropriately, despite the fact that doing so is essential to managing asthma. School nurses are in a unique position and play a significant role in evaluating kids' inhaler technique and understanding. This article addresses typical inhaler technique mistakes made by students as well as knowledge gaps related to asthma inhaler use. There are recommendations for helping students improve their inhaler technique as well as a tool for evaluating inhaler use. School nurses actively support better asthma care for students by evaluating inhaler technique and understanding early in the school year.<sup>6</sup>

Asthma in children is becoming a more serious health issue. The most prevalent chronic condition in children, asthma is a major reason for ER visits, hospital stays, and absences from school. When it comes to managing asthma, school nurses are crucial. Examining obstacles to asthma care for school nurses in the classroom is the goal of this integrative review. The results showed that school nurses face several obstacles while trying to manage asthma. Lack of

resources and assistance, lack of time, communication difficulties, inadequate knowledge, and ignorance of school nurses' expertise were the six themes that surfaced. Barriers to managing asthma are created by students, parents, primary care physicians, school administration, personnel, and school nurses themselves.<sup>7</sup>

Low-income kids who are at risk of having poor asthma control can be reached through school-based asthma education. An asthma education program called Iggy and the Inhalers (Iggy) was introduced in a metropolitan school system in the Midwest. Conducting a thorough program evaluation was the aim of this assessment. The goals included fostering cooperation between school nurses and asthma providers while raising children's understanding of asthma and families' awareness of asthma care.<sup>8</sup>

Among school-age children under the age of eighteen, asthma is the most prevalent chronic illness. It is a significant contributor to morbidity, missed school days, and an increase in hospital admissions. In Alabama, low-income, minority adolescents are disproportionately affected by asthma. By addressing social, behavioral, environmental, economic, and medical determinants of health, better asthma control and self-management can significantly improve health, prevent disease, and reduce health disparities.<sup>9</sup>

In order to address the educational demands of nursing students who will care for patients with chronic illness after graduation, more clinical sites are necessary. Collaborations between academic practices and nursing schools can boost clinical training capacity, enable aspiring nurse practitioners (NPs) to apply knowledge and skills in the context of providing care, and possibly improve patient outcomes with minimal risk.<sup>10</sup>

### **Objectives**

1. To assess the pre-test knowledge of nursing students regarding management of bronchial asthma.
2. To evaluate the effectiveness of a planned teaching programme.
3. To compare pre-test and post-test knowledge scores.

### **Hypothesis**

H<sub>1</sub>: There will be a significant difference between pre-test and post-test knowledge scores of nursing students

regarding management of bronchial asthma.

**Materials and Methods:**

**Research Approach:** Quantitative research approach was adopted for the study.

**Research Design:** Pre-experimental one group pre-test and post-test design was used.

**Research Setting:** The study was conducted in a selected nursing college.

**Population:** The population comprised all nursing students studying in the selected college.

**Sample Size:** A total of 60 nursing students were included in the study.

**Sampling Technique:** Non-probability convenient sampling technique was used.

**Inclusion Criteria**

- Nursing students who were willing to participate
- Students available during data collection

**Exclusion Criteria**

- Students who were absent during data collection
- Students who had prior specialized training on asthma management

**Tool for Data Collection**

- Section A: Socio-demographic variables
- Section B: Structured knowledge questionnaire (30 MCQs) regarding management of bronchial asthma

**Validity and Reliability**

- Tool was validated by experts in nursing and medical field
- Reliability was established using test-retest method ( $r \approx 0.8$ )

**Pilot Study**

Conducted on 10% of sample to assess feasibility and clarity of tool

**Data Collection Procedure**

- Pre-test conducted using structured questionnaire
- Planned Teaching Programme administered on same day
- Post-test conducted after 7 days

**Ethical Consideration**

- Permission obtained from concerned authority
- Informed consent taken from participants
- Confidentiality maintained

**Data Analysis**

- Descriptive statistics: Mean, Standard Deviation, Frequency, Percentage
- Inferential statistics: Paired t-test

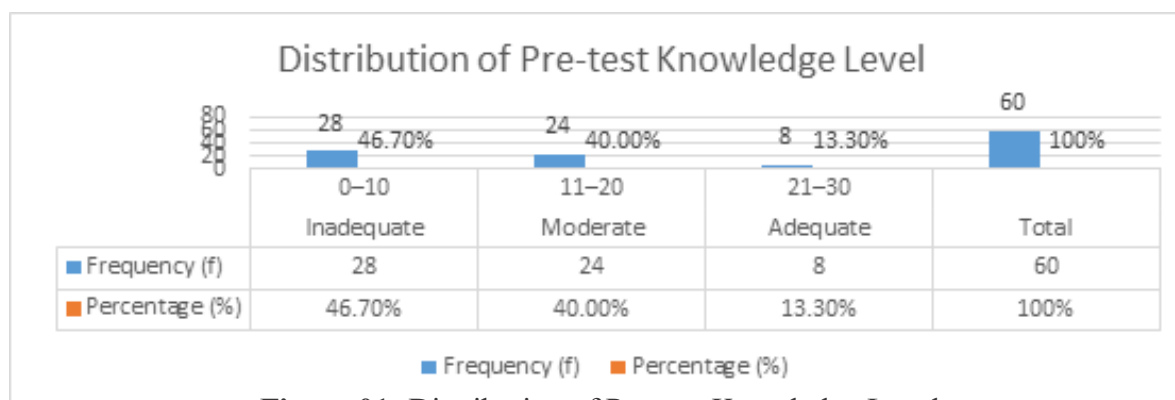
**Results**

**Objective 1: To assess the pre-test knowledge of nursing students**

**Table 1: Distribution of Pre-test Knowledge Level (N=60)**

Knowledge Level	Score Range	Frequency (f)	Percentage (%)
Inadequate	0–10	28	46.7%
Moderate	11–20	24	40.0%
Adequate	21–30	8	13.3%
<b>Total</b>		<b>60</b>	<b>100%</b>

**Interpretation:** Majority (46.7%) had inadequate knowledge in pre-test.



**Figure 01: Distribution of Pre-test Knowledge Level**

Objective 2: To evaluate the effectiveness of planned teaching programme

**Table 2: Comparison of Pre-test and Post-test Knowledge Scores (N=60)**

Test	Mean Score	Standard Deviation (SD)
Pre-test	12.5	3.2
Post-test	22.8	2.6

**Interpretation:** Post-test mean score is higher than pre-test, indicating improvement.

**Table 3: Paired t-test Showing Effectiveness (N=60)**

Variable	Mean Difference	t-value	p-value
Knowledge	10.3	15.2	<0.05

**Interpretation:** Significant difference found → Teaching programme effective.

Objective 3: To compare pre-test and post-test knowledge levels

**Table 4: Distribution of Post-test Knowledge Level (N=60)**

Knowledge Level	Score Range	Frequency (f)	Percentage (%)
Inadequate	0–10	2	3.3%
Moderate	11–20	10	16.7%
Adequate	21–30	48	80.0%
<b>Total</b>		<b>60</b>	<b>100%</b>

Summary: The study's conclusions showed that the nursing students' pre-test knowledge was low. Nonetheless, a notable increase in knowledge was noted in the post-test following the execution of the intended instructional program. This suggests that the intended educational program was very successful in improving nursing students' understanding of bronchial asthma care.

### Discussion

The study's conclusions show that nursing students' initial understanding of bronchial asthma care was inadequate. A notable improvement was noted following the execution of the intended teaching program. These results are in line with earlier research showing that structured educational interventions greatly increase nursing students' knowledge. Therefore, ongoing education programs are crucial for enhancing clinical competency.

### Conclusion

The study found that nursing students' understanding of bronchial asthma care was much enhanced by the designed educational program.

### Recommendations

- A larger sample can be used for similar investigations.
- It is possible to conduct comparative research

comparing various teaching approaches.

- Nursing students should regularly participate in training programs.
- Research can be repeated in several contexts.

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**Conflicts of interests:** There is no conflict of interest

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