A PRE-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING SPIROMETRY TEST RELATED TO RESPIRATORY DISORDERS AMONG NURSING STUDENTS IN KULAR COLLEGE OF NURSING, KHANNA DISTRICT LUDHIANA, PUNJAB.

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Introduction

Respiratory diseases constitute a major global health problem and are among the leading causes of morbidity and mortality. These conditions affect the organs and tissues responsible for gas exchange and range from mild disorders like the common cold to severe illnesses such as pneumonia, lung cancer, COPD, and asthma. Management includes both pharmacological therapy (e.g., bronchodilators, corticosteroids) and non-pharmacological approaches such as spirometry.

Spirometry is one of the most widely used pulmonary function tests in primary care. It measures the volume and flow of air that can be forcibly exhaled from the lungs, helping diagnose and monitor respiratory conditions such as asthma, COPD, pulmonary fibrosis, cystic fibrosis, and chronic bronchitis. Parameters such as FEV1, FVC, and FEV1/FVC ratio help detect airway obstruction and restrictive lung diseases. Spirometry thus plays an essential role in early detection, monitoring disease progression, and evaluating treatment effectiveness.

Aims and Objectives

The main aim of the study was to assess the effectiveness of a structured teaching programme (STP) on knowledge regarding spirometry test among nursing students.

Objectives

1. To assess the pre-test knowledge score regarding spirometry test related to respiratory disorders among nursing students.

2. To evaluate the effectiveness of the structured teaching programme on knowledge regarding spirometry.

3. To find the association between post-test knowledge scores and selected demographic variables of the students.

Materials and Methods

A pre-experimental one-group pre-test–post-test design was used to evaluate the effectiveness of a structured teaching programme on the knowledge of 100 nursing students (B.Sc. Nursing 3rd year, 4th year, and Post Basic Nursing 2nd year) at Kular College of Nursing, Kishangarh, Khanna, Ludhiana, Punjab. The study was conducted from 10 June 2021 to 10 July 2021.

A quantitative research approach and convenient sampling technique were adopted. The tool consisted of two parts:

- **Demographic profile**

- **Structured knowledge questionnaire** on spirometry

After obtaining institutional permission and written informed consent, the pre-test was administered. Then the structured teaching programme related to spirometry was delivered to the participants. The post-test was conducted after four days to determine the effectiveness of the intervention.

Data were analyzed using descriptive and inferential statistics (frequency, percentage, mean, standard deviation, and t-test), with the significance level set at **p = 0.05**.

Key Pre-Test Findings

- In the pre-test, 80% of the students demonstrated good knowledge regarding the spirometry test.

- Eleven percent of the participants showed very good knowledge.

- Nine percent of the students had average knowledge.

- None of the participants were found to have poor or excellent knowledge in the pre-test phase.

Key Post-Test Findings

- In the post-test, 67–68% of the students demonstrated very good knowledge, indicating a substantial improvement after the structured teaching programme.

- Nineteen to twenty-one percent of the students achieved an excellent level of knowledge.

- Eleven to fourteen percent continued to have good knowledge following the intervention.

- No participants were found to have poor or average knowledge in the post-test phase.

Results

The results reveal that the structured teaching programme was effective in enhancing the knowledge of nursing students regarding spirometry.

Pre-test vs Post-test Comparison

- A marked improvement was observed in knowledge levels from pre-test to post-test.

- The number of students with *excellent* and *very good* knowledge increased significantly after the STP.

- No participant remained in the poor or average category after the intervention.

Hence, the STP effectively improved knowledge regarding spirometry among nursing students.

Discussion

The findings align with the objectives of the study. The pre-test results showed that although most students had some understanding of spirometry, there were considerable gaps in knowledge. After administering the structured teaching programme, post-test results indicated significant improvement.

A quantitative research approach and one-group pre-test–post-test design were appropriate for evaluating the effectiveness of the intervention. The improvement in knowledge scores can be attributed to the structured, well-organized, and targeted nature of the teaching programme.

No significant association was found between post-test knowledge scores and demographic variables, indicating that the structured teaching programme was effective across all groups regardless of age, academic year, or other characteristics.

The findings support the importance of educational interventions in strengthening clinical knowledge among nursing students, especially for essential diagnostic procedures such as spirometry.

Summary

The study assessed the effectiveness of a structured teaching programme on knowledge regarding spirometry test among nursing students. A total of 100 students participated using a one-group pre-test–post-test design. After obtaining consent, a pre-test was conducted, followed by the delivery of the structured teaching programme. The post-test was conducted after four days.

Data analysis demonstrated a significant improvement in knowledge scores after the intervention. The structured teaching programme was found to be effective in enhancing students' understanding of spirometry and its relevance in respiratory care.

Conclusion

The study concludes that the structured teaching programme had a significant positive effect on the knowledge of nursing students regarding spirometry test.

- In the pre-test, majority (80%) had good knowledge, but none had excellent knowledge.

- In the post-test, the majority (68%) had very good knowledge, followed by 21% with excellent knowledge.

Thus, the structured teaching programme was **effective** in increasing knowledge about spirometry. No significant association was found between post-test knowledge and demographic variables.

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