



Effectiveness Of Structured Teaching Programme On Knowledge Regarding Pulmonary Rehabilitation Among Clients With Chronic Obstructive Pulmonary Disease At A Private Hospital, Indore, Madhya Pradesh

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Abstract

Background: Chronic Obstructive Pulmonary Disease (COPD) is a progressive respiratory disorder that significantly affects quality of life. Pulmonary rehabilitation is a proven non-pharmacological intervention that improves functional capacity, symptom control, and self-management. However, lack of adequate knowledge among patients limits its effective utilization.

Objective: To evaluate the effectiveness of a structured teaching programme (STP) on knowledge regarding pulmonary rehabilitation among clients with COPD.

Methods: A quantitative evaluative research approach with a pre-experimental one-group pre-test post-test design was adopted. The study was conducted at a selected private hospital in Indore, Madhya Pradesh. A total of 200 clients diagnosed with COPD were selected using non-probability purposive sampling. Data were collected using a structured knowledge questionnaire. Following the pre-test, a structured teaching programme on pulmonary rehabilitation was administered. Post-test was conducted after seven days.

Results: The mean post-test knowledge score was significantly higher than the mean pre-test score. Paired *t*-test revealed a statistically significant improvement in knowledge at $p < 0.05$, indicating the effectiveness of the structured teaching programme.

Conclusion: The structured teaching programme was effective in improving knowledge regarding pulmonary rehabilitation among clients with COPD. Incorporating such educational interventions into routine clinical practice can enhance patient participation and long-term disease management.

Keywords: Chronic obstructive pulmonary disease, pulmonary rehabilitation, structured teaching programme, patient education, knowledge

Introduction

Chronic Obstructive Pulmonary Disease (COPD) is one of the leading causes of morbidity and mortality worldwide and poses a major public health challenge in India. It is characterized by persistent respiratory symptoms, airflow limitation, and progressive decline in lung function. Breathlessness, chronic cough, fatigue, and frequent exacerbations adversely affect daily activities and overall quality of life.

Pulmonary rehabilitation is a comprehensive intervention that includes exercise training, breathing techniques, nutritional counseling, energy conservation, and patient education. Evidence shows that pulmonary rehabilitation improves exercise tolerance, reduces dyspnea, decreases hospital admissions, and enhances psychosocial well-being. Despite its benefits, many patients with COPD lack adequate knowledge regarding pulmonary rehabilitation, leading to poor compliance and underutilization.

Structured teaching programmes are effective educational strategies used by nurses to improve patients' understanding, motivation, and self-care practices. By providing systematic and need-based information, structured teaching can empower patients to actively participate in their care. Therefore, this study aimed to assess the effectiveness of a structured teaching programme on knowledge regarding pulmonary rehabilitation among clients with COPD.

Objectives

1. To assess the pre-test level of knowledge regarding pulmonary rehabilitation among clients with COPD.
2. To assess the post-test level of knowledge regarding pulmonary rehabilitation among clients with COPD.
3. To evaluate the effectiveness of the structured teaching programme on knowledge regarding pulmonary rehabilitation.
4. To find the association between post-test knowledge scores and selected demographic variables.

Hypotheses

- **H₁:** There will be a significant difference between pre-test and post-test knowledge scores regarding pulmonary rehabilitation among clients with COPD at $p < 0.05$.
- **H₂:** There will be a significant association between post-test knowledge scores and selected demographic variables.

Methodology

Research Design

A **pre-experimental one-group pre-test post-test research design** was adopted to evaluate the effectiveness of the structured teaching programme on knowledge regarding pulmonary rehabilitation among clients with chronic obstructive pulmonary disease (COPD).

Research Approach

A **quantitative evaluative research approach** was used to assess the change in knowledge levels before and after the implementation of the structured teaching programme.

Setting of the Study

The study was conducted at a **selected private hospital in Indore, Madhya Pradesh**, which provides outpatient and inpatient services to clients diagnosed with chronic obstructive pulmonary disease.

Population

The target population comprised **clients diagnosed with chronic obstructive pulmonary disease (COPD)** who were attending the selected private hospital during the period of data collection.

Sample Size

A total of **200 clients with COPD** were selected as the sample for the study.

Sampling Technique

Non-probability purposive sampling technique was used to select the study participants based on the inclusion and exclusion criteria.

Inclusion Criteria

- Clients diagnosed with chronic obstructive pulmonary disease
- Clients aged **40 years and above**
- Clients who were **willing to participate** in the study
- Clients who were able to **understand Hindi or English**

Exclusion Criteria

- Clients who were **critically ill** at the time of data collection
- Clients with **cognitive impairment** or inability to comprehend the teaching programme

Description of the Tool

The data collection instrument consisted of two sections:

Section A: Socio-Demographic Variables

This section included items related to the participants' background information such as **age, gender, educational status, duration of illness, smoking history, and previous exposure to information regarding pulmonary rehabilitation.**

Section B: Structured Knowledge Questionnaire

This section comprised a **structured knowledge questionnaire** developed to assess clients' knowledge regarding pulmonary rehabilitation. The questionnaire covered the following areas:

- Meaning and concept of pulmonary rehabilitation
- Components of pulmonary rehabilitation
- Breathing exercises (pursed-lip breathing and diaphragmatic breathing)
- Physical activity and exercise training
- Nutritional aspects
- Lifestyle modification and self-care measures

Validity of the tool was established through expert opinion from specialists in **nursing and pulmonology.**

Reliability of the knowledge questionnaire was ensured using the **test-retest method**, which demonstrated acceptable consistency.

Intervention: Structured Teaching Programme

The structured teaching programme (STP) was developed based on literature review and expert guidance. The content of the programme included:

- Overview of chronic obstructive pulmonary disease
- Concept, goals, and importance of pulmonary rehabilitation
- Demonstration and explanation of breathing exercises (pursed-lip breathing and diaphragmatic breathing)
- Importance of physical activity and exercise training
- Nutritional management and energy conservation techniques
- Measures for prevention of disease exacerbations

The duration of the teaching programme was **45–60 minutes**. Teaching aids used included **charts, posters, PowerPoint presentation, and demonstration** methods to enhance understanding.

Data Collection Procedure

The data collection was carried out in the following phases:

1. **Pre-test:** Assessment of baseline knowledge regarding pulmonary rehabilitation using the structured knowledge questionnaire.
2. **Intervention:** Administration of the structured teaching programme to the participants.
3. **Post-test:** Assessment of knowledge using the same questionnaire after **seven days** of the intervention.

Plan for Data Analysis

Data were analyzed using both descriptive and inferential statistics.

Descriptive Statistics

- Frequency and percentage distribution
- Mean and standard deviation

Inferential Statistics

- **Paired t-test** to determine the effectiveness of the structured teaching programme by comparing pre-test and post-test knowledge scores
- **Chi-square test** to assess the association between post-test knowledge scores and selected socio-demographic variables

The level of significance was set at $p < 0.05$.

Results

Table 1

Distribution of Clients According to Level of Knowledge on Pulmonary Rehabilitation in Pre-test and Post-test (n = 200)

Knowledge Level	Pre-test Frequency (n)	Pre-test Percentage (%)	Post-test Frequency (n)	Post-test Percentage (%)
Inadequate	92	46.0	18	9.0
Moderate	78	39.0	52	26.0
Adequate	30	15.0	130	65.0
Total	200	100	200	100

Interpretation:

In the pre-test, the majority of clients (85%) had inadequate to moderate knowledge. In the post-test, most clients (65%) achieved adequate knowledge, indicating improvement after the structured teaching programme.

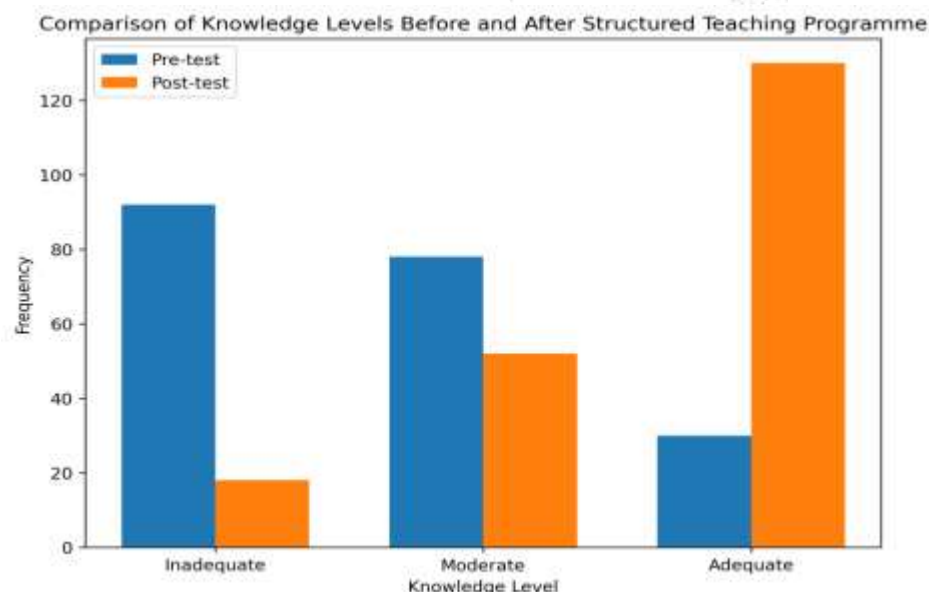


Table 2

Comparison of Mean Pre-test and Post-test Knowledge Scores on Pulmonary Rehabilitation (n = 200)

Test	Mean Score	Standard Deviation (SD)	Mean Difference	t value	p value
Pre-test	11.42	3.18			
Post-test	19.86	2.94	8.44	28.67	< 0.05*

*Statistically significant at $p < 0.05$

Interpretation:

The mean post-test knowledge score was significantly higher than the mean pre-test score. The paired t -test revealed a statistically significant difference, indicating that the structured teaching programme was effective in improving knowledge regarding pulmonary rehabilitation.

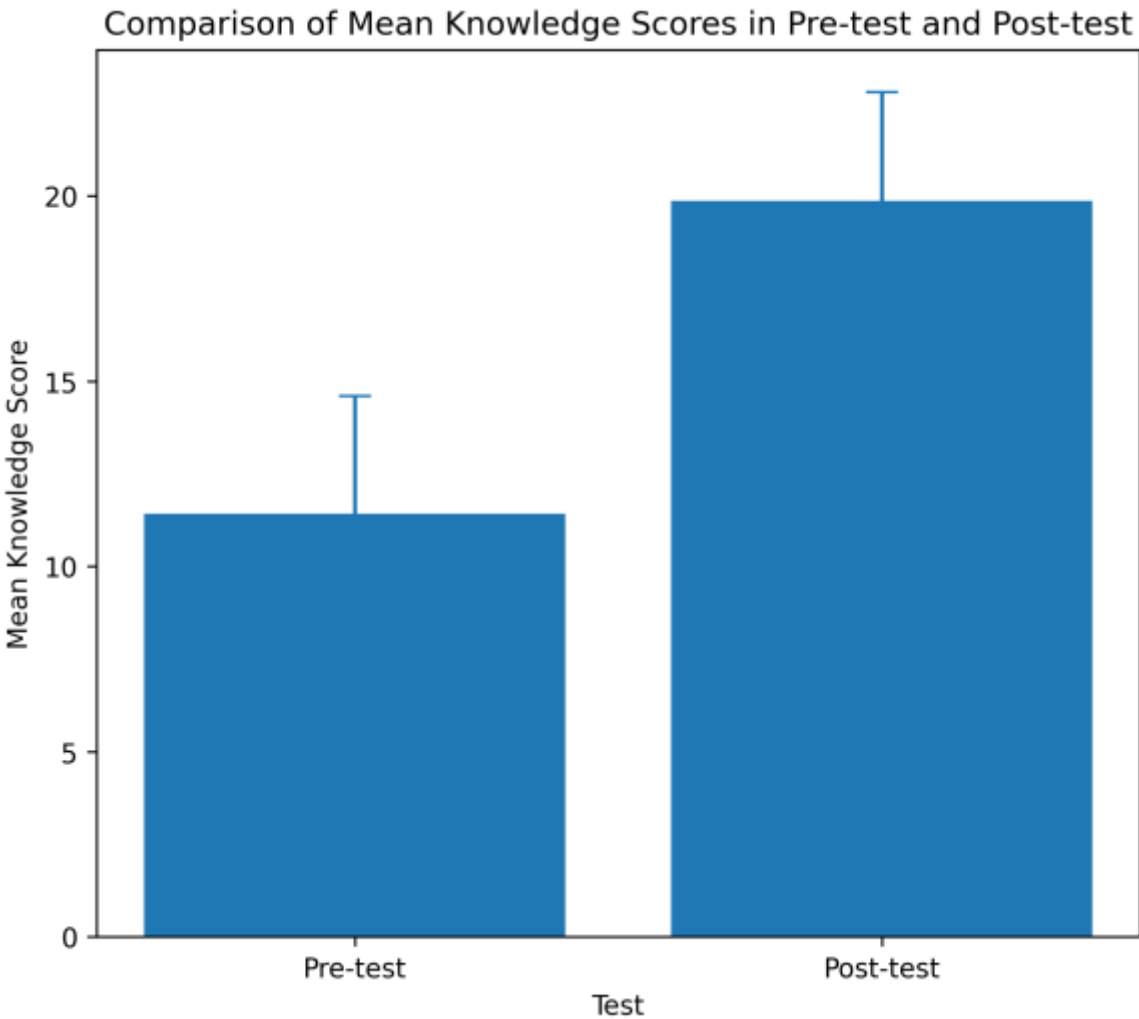


Table 3**Association Between Post-test Knowledge Scores and Selected Demographic Variables (n = 200)**

Demographic Variable	χ^2 Value	df	p Value	Significance
Age	9.24	3	0.026	Significant
Education	14.87	4	0.005	Significant
Duration of Illness	8.11	2	0.017	Significant
Smoking History	6.98	2	0.031	Significant
Gender	1.82	1	0.177	Not Significant

Interpretation:

Post-test knowledge scores showed a statistically significant association with **age, educational status, duration of illness, and smoking history**, whereas no significant association was found with gender.

Overall Result Summary

The findings revealed that most clients initially had inadequate to moderate knowledge regarding pulmonary rehabilitation. After the implementation of the structured teaching programme, there was a marked improvement in knowledge levels. The paired *t*-test confirmed a statistically significant increase in mean knowledge scores ($p < 0.05$). Furthermore, selected demographic variables such as age, education, duration of illness, and smoking history showed significant association with post-test knowledge scores.

Discussion

The findings revealed that the structured teaching programme significantly improved knowledge regarding pulmonary rehabilitation among clients with COPD. Patient education plays a vital role in improving adherence to pulmonary rehabilitation and promoting self-management behaviors. These findings are consistent with previous studies that emphasized the importance of nurse-led educational interventions in chronic respiratory diseases.

Conclusion

The study concluded that the structured teaching programme was effective in enhancing knowledge regarding pulmonary rehabilitation among clients with chronic obstructive pulmonary disease. Regular implementation of structured educational interventions in hospital settings is recommended to improve long-term outcomes and quality of life in COPD patients.

Recommendations

- Replication of the study with a control group
- Long-term follow-up to assess practice and clinical outcomes
- Incorporation of pulmonary rehabilitation education into routine nursing care

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