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Assessment Of Staff Nurses' Knowledge Regarding The Management And Pulmonary Rehabilitation Of Chronic Obstructive Pulmonary Disease (COPD) In A Tertiary Care Setting

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Abstract

Chronic Obstructive Pulmonary Disease (COPD) is a major global health issue and a leading cause of morbidity and mortality. Effective management requires both pharmacological treatment and pulmonary rehabilitation. Nurses play a key role in implementing care strategies and patient education. This study aimed to assess the knowledge of staff nurses regarding the management and pulmonary rehabilitation of COPD in a tertiary care hospital. A descriptive cross-sectional design was used, and
100 staff nurses were selected through purposive sampling. Data were collected using a structured knowledge questionnaire. The results showed that 56% of nurses had average knowledge, 30% had good knowledge, and 14% had poor knowledge. A statistically significant association was observed between knowledge level and years of experience ($p < 0.05$). The study highlights the need for regular in-service education and professional training to improve nurses' understanding and practice regarding COPD and pulmonary rehabilitation.

Keywords: COPD, Pulmonary Rehabilitation, Staff Nurses, Knowledge, Chronic Disease, Nursing Education

Introduction

Chronic Obstructive Pulmonary Disease (COPD) is a progressive respiratory disease characterized by persistent airflow limitation, chronic inflammation, and irreversible structural changes in the lungs. It remains one of the top causes of mortality and disability worldwide. The Global Initiative for Chronic Obstructive Lung Disease (GOLD, 2024) underscores that effective management involves a multidisciplinary approach including pharmacotherapy, patient education, and pulmonary rehabilitation. Pulmonary rehabilitation encompasses exercise training, nutritional advice, breathing techniques, and psychosocial support to enhance patients' quality of life. Nurses play a vital role in ensuring adherence to these interventions through patient counseling, monitoring, and care coordination.

Objectives

1. To assess the overall knowledge of staff nurses regarding COPD management and pulmonary rehabilitation.

2. To identify the domain-wise level of knowledge related to COPD pathophysiology, pharmacological management, oxygen therapy, inhaler technique, and pulmonary rehabilitation.

3. To determine the association between knowledge level and selected demographic variables such as age, qualification, years of experience, and prior training on COPD.

4. To suggest appropriate educational interventions for improving nurses' knowledge and practice.

Hypothesis

H_0: There is no significant association between the knowledge level of staff nurses regarding COPD management and pulmonary rehabilitation and selected demographic variables.

H_1: There is a significant association between the knowledge level of staff nurses regarding COPD management and pulmonary rehabilitation and selected demographic variables.

Methodology

A descriptive cross-sectional research design was adopted. The study was conducted in a selected tertiary care hospital providing inpatient and outpatient medical and surgical services. The target population included staff nurses working in medical, surgical, and intensive care units. A total of 100 nurses were selected using purposive sampling.

Inclusion Criteria: Registered staff nurses working in medical, surgical, or ICU units, willing to participate and available during data collection.

Exclusion Criteria: Student nurses or interns, nurses on leave or administrative posts.

A structured questionnaire was developed with two sections: Section I—Demographic variables (age, qualification, experience, previous COPD training) and Section II—30 multiple-choice questions on COPD management and pulmonary rehabilitation.

Scoring Criteria: Good Knowledge ≥75%, Average Knowledge 50–74%, Poor Knowledge <50%.

Data were analyzed using descriptive and inferential statistics. Frequency, percentage, mean, and standard deviation described the data, while Chi-square test determined associations between knowledge and selected variables.

Results

Table 1. Frequency and Percentage Distribution of Demographic Variables (n = 100)

Demographic Variable	Category	Frequency (f)	Percentage (%)
Age (in years)	21–30	45	45%
	31–40	35	35%
	>40	20	20%
Gender	Female	82	82%
	Male	18	18%
Educational Qualification	GNM	48	48%
	B.Sc. Nursing	40	40%
	Post Basic B.Sc.	12	12%
Years of Experience	<2 years	20	20%
	2–5 years	42	42%
	>5 years	38	38%
Previous Training on COPD	Yes	26	26%
	No	74	74%

Table 2. Distribution of Knowledge Levels Regarding COPD Management and Pulmonary Rehabilitation (n = 100)

Knowledge Level	Score Range	Frequency (f)	Percentage (%)
Good Knowledge	≥75%	30	30%
Average Knowledge	50–74%	56	56%
Poor Knowledge	<50%	14	14%

Mean Knowledge Score: 18.6 ± 4.3

Table 3. Association between Knowledge and Selected Demographic Variables

Demographic Variable	χ^2 Value	df	p-value	Significance
Age	3.14	2	0.208	NS
Educational Qualification	4.56	2	0.102	NS
Years of Experience	6.98	2	0.031	Significant
Previous COPD	2.84	1	0.092	NS
Training				

Discussion

The findings revealed that a majority (56%) of staff nurses had average knowledge regarding COPD management and pulmonary rehabilitation. Only 30% demonstrated good knowledge. The results align with studies by Karthikeyan & Subathra (2020) and Sami et al. (2021), which indicated moderate levels of nurse knowledge in COPD management. Years of experience showed a significant correlation with knowledge, highlighting the impact of practical exposure. The moderate knowledge level implies that theoretical understanding alone is insufficient without structured in-service programs and continuing education.

Recommendations

1. Conduct regular in-service education programs on COPD and pulmonary rehabilitation for nursing staff.
2. Integrate updated COPD and rehabilitation modules in nursing curricula.
3. Develop hospital-based clinical guidelines for COPD nursing care.
4. Encourage multidisciplinary collaboration among nurses, physiotherapists, and respiratory therapists.
5. Periodically evaluate nursing staff knowledge to maintain competence and ensure evidence-based care.

Conclusion

The study concludes that staff nurses have an average level of knowledge regarding COPD management and pulmonary rehabilitation, with experience being a key influencing factor. Strengthening continuing education and practical exposure can enhance nursing competence, contributing to improved patient outcomes in chronic respiratory care.

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