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RESEARCH ARTICLE

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AN EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF RESPIRATORY CARE BUNDLE AMONG DYSPNEA PATIENTS IN SELECTED HOSPITALS OF GANDHINAGAR, GUJARAT

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ABSTRACT

A study to evaluate the effectiveness of respiratory care bundle among the Dyspnea patients in selected hospitals, Gandhinagar, Gujarat. Pre-experimental research approach was used with the group pre-test post-test design. The study was conducted in selected hospital of Gandhinagar, Gujarat. The investigator used random sampling technique for selecting 30 samples. To assess the effectiveness of respiratory care bundle on dyspnoea patients. The 'general system model' was used as conceptual framework. A quantitative approach with experimental study design was used to achieve the objective of the study. Data were analysed by using descriptive and inferential statistics. The mean of post-test score is (2.8) that is lower than the mean pre-test score is (4.26) with the mean difference of (1.466) that is statistically proved which depicts the effectiveness of the respiratory care bundle on dyspnoea patients. Moreover, the calculated 't' (10.377) is greater than the tabulated 't' (2.05). The findings of the study reveals that the post-test breathing difficulty score is lower than the pre-test breathing difficulty score.

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INTRODUCTION

Dyspnea is the medical term for shortness of breath, difficult or painful breathing. Dyspnea affects the respiratory system of the body. It can range from mild to serious and temporary too long lasting it's sometimes difficult to diagnose and treat the Dyspnea because there can be many causes which is different. Dyspnea can vary in Intensity, depending on its cause and severity. The sign and symptoms include severe shortness of breath, confusion, and extreme tiredness. Dyspnea include irreversible changes such as Pneumothorax, Muscle weakness, posttraumatic stress disorder, anxiety, and depression. In India, almost 10% of all population in intensive care unit worldwide suffer from Dyspnoea, but after Covid it rises to 50% or more. To reduce dyspnoea respiratory care bundle is an effective therapy, it is an evidenced based intervention to improve quality of care to the population. Respiratory care bundle includes oral care, deep breathing exercise, and incentive spirometry. Studies suggest that respiratory care bundle may benefit health in a variety of different way like dyspnoea, Pneumothorax, and other respiratory disorders. These is used widely across health care settings with the aim of preventing and managing different respiratory conditions. In India after COVID-19 the majority of population presented with dyspnoea (48%). The respiratory system was commonly involved (61.2%). Around one third of the patients (36.4%) had dyspnoea on exertion dyspnoea and 11.8 % had dyspnoea at rest.

There exist statistically significant association between identified risk factors, especially gender, increasing age, the severity of COVID-19 infection, history of tobacco/alcohol use, and co-morbidities with outcomes. In India 15% of population suffering from dyspnoea.

Need of the Study: At the international level the ratio of dyspnoea cases in USA is reported 50%, In UK is 30%, In Canada is 30%, In China is 10% and In Australia is 40%. Dyspnoea is major disease of today, Females reported more percentage of cases than the male, according to predictors of dyspnoea prevalence: result from the BOLD study, now a days the ratio of Dyspnoea after the Covid-19 is increases from 10% to 50% or more in Indian population now a days. In Gujarat ratio of the dyspnoea is about 1.5 million. In 2020, number of acute respiratory infection cases across the West Indian state of Gujarat is amounted to over 1.5 million. A constant rise in acute respiratory infection was noted over the year from 2011-2019 in the state. A cross sectional study was conducted on the prevalence of dyspnoea among adults in Tamil Nadu. Which was a community-based study. Sample size was 480. Results of the research study states that prevalence of dyspnoea were 22% among the study population. Males (39.2%) had higher prevalence than females (12.2%). Approximately 10 – 25% of the middle aged and older population experience breathlessness in their daily activities. Dyspnoea is a common symptom affecting as many 25% of patients seen in the ambulatory setting. It can be arising from many different underlying

conditions and is sometimes a manifestation of a life - threatening diseases. Its aetiology can be designated as arising from four primary categories: respiratory, neuromuscular, cardiac, psychogenic, systemic illness, or a combination of these.

Problem Statement

“An experimental study to evaluate the effectiveness of respiratory care bundle in dyspnoea patients in selected hospitals of gandhinagar, gujarat”.

Objectives of the study

- 1. To evaluate the effectiveness of respiratory care bundle in experimental group.
- 2. To compare the post-test in experimental group.

Hypothesis:

H₀: There will be no significant difference between pre-test and post-test score of dyspnoea among the patients of selected hospitals in Gandhinagar.

H₁: There will be a significant difference between pre-test and post-test score of dyspnoea among the patients of selected hospitals in Gandhinagar.

Operational Definition

Experimental Design: In this study, experimental research design is a powerful design for testing hypothesis of casual relationship among variables.

Evaluate: In this study the evaluate means the fact and then form an opinion about something or to determine or fix the value.

Effectiveness: In this study effectiveness means to ability and capacity of producing desired output or result between pre-test and post-test.

Dyspnoea: In this study Dyspnoea means individual is suffering from trouble of breathing.

Respiratory Care Bundle: In this study, respiratory care bundle is defined as oral care, deep breathing exercise and intensive spirometry is a set of evidence-based interventions to reduce dyspnoea.

Patients: In these study patients means the individual who is suffering from trouble of breathing or acute respiratory condition including with non-invasive procedure.

METHODOLOGY

The Modified Borg’s scale is selected to assess the level of breathing difficulty in dyspnoea patients. A quantitative approach with experimental study design was used to achieve the objective of the study. The sample consisted of 30 from selected hospitals of Gandhinagar. The investigators will adopt non-probability purposive sampling technique to select the samples. Table 1 shows that 16.67% of sample (05) were in the age group 40 to 50 years, 20% of sample (6) were in the age group of 51 to 60 years, 40% of samples (12) in the age group of 61 to 70 years and 23.33% of samples (7) in the age group of 71 to 80 years. In Gender of the patients 46.67% of sample (14) were male and 53.33% of sample (14) were Female. In Education 10% of samples (3) have illiterate, 30% of samples (9) have primary education, 30% of samples (9) have secondary education, 30% of samples (9) have graduation and above. In marital status 80% of samples (24) were married, 00% of samples (0) were unmarried and 20% of samples (6) were widow. In Occupation 0% of samples (0) were unemployed, 53.33% of samples (16) were housewife, 6.67% of samples (2) had business, 20% of samples (6) were retired and 20% of samples (6) had job.

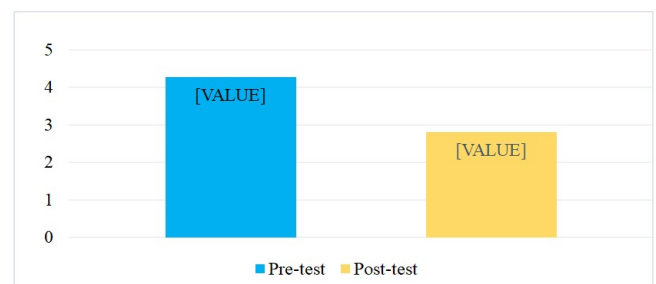
Table 1.

Sr.no	Demographic variables	Frequency(f)	Percentage (%)
1	Age		
	A. 40-50	05	16.67%
	B. 51-60	06	20%
	C. 61-70	12	40%
2	D. 71-80	07	23.33%
	Gender of the patients		
	A. Male	14	46.67%
	B. Female	16	53.33%
3	Education		
	A. Illiterate	03	10%
	B. Primary	09	30%
	C. Secondary	09	30%
4	D. Graduate & above	09	30%
	Marital status		
	A. Married	24	80%
	B. Unmarried	00	00%
5	C. Widow	06	20%
	Occupation		
	A. Unemployed	00	00%
	B. Housewife	16	53.33%
	C. Business	02	6.67%
	D. Retired	06	20%
	E. Job	06	20%

Table 2. Finding related to mean of pre-test and post-test on effectiveness of respiratory care bundle on dyspnoea patients

Test	Mean
Pre test	4.266
Post test	2.8

Table 2. The data in above indicate about the mean score of pre-test and post-test. The mean of per-test is 4.266 while the post-test mean is 2.8



Bar chart showing the comparison of Mean score of Pre-test and Post-test on effectiveness of respiratory care bundle on dyspnoea patients

Table 3. Frequency and Percentage distribution of the breathing difficulty score of the samples before and after providing the respiratory care bundle

Level of breathing difficulty	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Mild	10	33.33%	24	80%
Moderate	20	66.67%	06	20%
Severe	00	00	00	00
Total	30	100%	30	100%



A. Pre-test score

B. Post-test score

Table 4. Analysis and Interpretation of the data collected for assessment of breathing difficulty

Score	Mean	Mean Difference	Standard Deviation	Calculated "t" value	Tabulated "t" value	Degree of freedom (n-1)
Pre-test	4.266	1.466	1.048	10.377	2.05	29
Post-test	2.8		0.805			

Above Pie Graph A. shows that 33.33% of samples (10) had mild breathing difficulty, 66.67% of samples (20) had moderate breathing difficulty and 00% of samples have severe breathing difficulty And Pie Graph B. shows that 80% of samples (24) had mild breathing difficulty, 20% of samples (6) had moderate breathing difficulty and 00% of samples had breathing difficulty.

Summary: The main aim of the study is to evaluate the effectiveness of respiratory care bundle on dyspnoea patients in selected areas of Gandhinagar. The 'general system model' was used as conceptual framework. A quantitative approach with experimental study design was used to achieve the objective of the study.

CONCLUSION

This study intends to assess the effectiveness of respiratory care bundle among the dyspnoea patients in selected hospitals of Gandhinagar. The study reveals that the post-test breathing difficulty score is lower than the pre-test breathing difficulty score.

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