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A study to determine the efficacy of certain breathing exercises for patients with chronic obstructive pulmonary disease patients suffering from diseases in a certain tertiary area in Nellore, Andhra Pradesh

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Abstract

Every year, chronic obstructive pulmonary disease (COPD) claims the lives of more than three million individuals, making it the third leading cause of mortality across the globe. By the year 2030, it is anticipated that this will have happen. In the coming years, chronic obstructive pulmonary disease will advance to the position of third leading cause of death. Chronic obstructive pulmonary disease (COPD) is a progressive and irreversible airway disease that is characterized by emphysema and chronic bronchitis. It causes symptoms such as shortness of breath, coughing, and sputum. As the disease progresses, individuals who have COPD experience a worsening of their health-related quality of life (HRQOL), including a greater impairment in their ability to work and a decline in their participation in social and physical activities. As a result, incorporating the exercise of pursed lip breathing into their daily routine will result in an improvement in both their breathing pattern and their quality of life.

Keywords: COPD, HRQOL, Breathing, Excercises, Airway, Daily Activities

Introduction

Aims and Objectives

1. To determine the patient's breathing pattern when they have chronic obstructive pulmonary disease.
2. The purpose of this study is to evaluate the effectiveness of several breathing exercises among individuals with chronic obstructive pulmonary disease.
3. The objective of this study is to determine the relationship between the efficiency of several breathing exercises and the demographic factors of patients suffering from chronic obstructive pulmonary disease.

The Methods and The Materials

In terms of materials and methods, the interventional evaluator approach was the research methodology that was utilized for the study. A one-group pre-test and post-test design was utilized for the research project, which was carried out in the respiratory unit of Nellore City, Andhra Pradesh, India. There was no control group involved. The selection of sixty COPD patients was accomplished through the use of a non-probability purposive sampling technique. During the first day, a pre-test assessment of the breathing pattern was performed with the use of the borg rating scale. Additionally, a pursed lip breathing exercise was performed for twenty minutes, twice a day. This exercise was continued for fifteen days, and then a post-test was administered on the fifteenth day. Data were gathered, collated, and analyzed using descriptive and inferential statistics in order to determine how well they met the objectives of the study.

As a result, the average scores on the post-test. When comparing the selected breathing exercise among COPD patients at rest, the pre-test score was 3.48 with a standard deviation of ± 1.25 . This was in contrast to the post-test score of 0.91 with a standard deviation of ± 0.85 . The statistical Student's paired t test indicates that the difference in the selected breathing exercise among COPD patients was found to be 18.98, which is determined to be statistically significant at a level of significance of 0.05%. Additionally, the performance of chosen breathing exercises among COPD patients during activity pre-test was found to be

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greater, with a score of 7.95 and a standard deviation of 1.50, as compared to the performance during activity post-test, which was 2.76 with a standard deviation of 1.02. According to the results of the statistical Student's paired t test, the difference in the breathing exercise that was chosen for COPD patients was determined to be 18.98, which is statistically significant at the 0.05% level of significance. Based on the statistical analysis, it can be concluded that the effectiveness of certain breathing exercises among COPD patients was effective both while they were at rest and when they were engaged in activity during the post-test. At the 5% level of significance, the tabulated values were significantly higher than the calculated values. Additionally, the computed p-value was significantly greater than the accepted level of significance, which is 0.05. Because of this, there is no statistically significant correlation between the efficiency of certain breathing exercises and demographic factors.

The findings of this study indicate that individuals with Chronic Obstructive Pulmonary Disease who participated in the pursed lip breathing exercise for a period of twenty minutes, twice a day, for a period of fifteen days saw a statistically proven improvement in their breathing pattern. Because of this, the exercise of pursed lip breathing was not only extremely practicable but also cost-effective and non-invasive. Consequently, the researcher came to the conclusion that the exercise of pursed lip breathing can be utilized as an effective intervention for the purpose of enhancing the breathing pattern of individuals who suffer from chronic obstructive pulmonary disease.

For the purpose of this study, an interventional evaluative approach was utilized as the research methodology. This research was carried out in the respiratory unit of Nellore City in the state of Andhra Pradesh, India. The study utilized a one group pre test post test design, and there was no control group included. The selection of sixty COPD patients was accomplished through the use of a non-probability purposive sampling technique. During the first day, a pre-test assessment of the breathing pattern was performed with the use of the borg rating scale. Additionally, a pursed lip breathing exercise was performed for twenty minutes, twice a day. This exercise was continued for fifteen days, and then a post-test was administered on the fifteenth day. Data were gathered, collated, and analyzed using descriptive and inferential statistics in order to determine how well they met the objectives of the study.

Results

There were 36.70 percent of the subjects who had a family income of Rs. 20001 or more, 30 percent who had between Rs. 15001 and Rs. 1,000,000, 18.30 percent who had between Rs. 10001 and Rs. 15000, and 15 percent who had between Rs. 9000 and Rs. 10000. There were a total of 36.7% of the subjects who had completed primary school, 21.70% who had completed secondary school, 18.3% who were illiterate, 18.3% who had completed higher secondary school, 3.3% who had graduated, and 1.70 percent who had completed postgraduate studies.

Thirty percent of the subjects were farmers, in addition to 28.3 percent working in private services, twenty percent working as laborers, 13.3 percent working for the government, and just 8.3 percent coming from other professions. Tobacco chewers made up 33.30 percent of the

subjects, while household smokers made up 26.7 percent, cigarette smokers made up 23.3 percent, passive smokers made up 13.30 percent, and other smokers made up 3.30 percent of the subjects. The majority of the participants, 33.30 percent, had duration of disease that was between two and three years, 23.30 percent had duration of disease that was between three and four years, and more than four years. Seventy percent of the individuals were aware of breathing exercises, whereas thirty percent of them were completely unaware of what breathing exercises were. More over twenty-three percent of the subjects had information from their families, twenty-three percent got information from their acquaintances, and thirteen point thirty percent had information from the mass media and other sources. The bulk of the individuals, 35%, attended the hospital more than six times, 23.30% visited between three and four times, 21.70% visited between five and six times, and 20% visited the hospital one to two times.

Evaluation of breathing patterns in patients suffering from chronic obstructive pulmonary disease The distribution of individuals with COPD according to the different levels of breathing exercises performed while they were at rest

When the subjects were at rest, 3.33 percent of them were engaging in very little activity. 48.33% of the population was engaging in mild activity, while 48.33% were engaging in moderate active. At rest, the mean score for the breathing exercise was 3.48 ± 1.25 before the post-test, and it was 0.91 ± 0.85 after the post-test. Eighty percent of the participants had very light activity, while 18.33 percent had light activity, and one point six percent had no activity at all. There was a significant difference in the selected breathing exercises performed by COPD patients while they were at rest before and after the test. The overall comparison of chosen breathing exercises among COPD patients at rest pre and post test reveals that the score at rest pre test was higher, coming in at 3.48 with a standard deviation of ± 1.25 . This is in contrast to the score at rest post test, which was 0.91 with a standard deviation of ± 0.85 .

According to the results of the statistical Student's paired t test, the difference in the breathing exercise that was chosen for COPD patients was determined to be 18.98, which is statistically significant at the 0.05% level of significance. As a result, the level of selected breathing exercises among COPD patients participating in the post-test at rest was found to be helpful, according to statistical interpretation. Consequently, the hypothesis H1 is accepted, while the hypothesis H0 is rejected. Consequently, the hypothesis H1 is accepted, while the hypothesis H0 is rejected.

Conclusion

The findings of this study indicate that individuals with Chronic Obstructive Pulmonary Disease who participated in a pursed lip breathing exercise for a period of twenty minutes, twice a day, for a period of fifteen days experienced a statistically substantial change in their breathing pattern. Consequently, the exercise of pursed lip breathing was inexpensive, did not need any intrusive procedures, and was extremely practicable. In light of this, the researcher came to the conclusion that the exercise of pursed lip breathing can be utilized as an effective intervention for the purpose of enhancing the breathing pattern of patients who suffer from chronic obstructive

pulmonary.

Conflict of Interest

Not available

Financial Support

Not available

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