EFFECTIVENESS OF PRANAYAMA ON RESPIRATORY HEALTH STATUS AMONG CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS ADMITTED IN PRAVARA RURAL HOSPITAL, LONI (BK)

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ABSTRACT:
Chronic obstructive pulmonary disease (COPD) is prevalent disease affecting 6-8% of the population in India. The respiratory diseases constitute a major problem of the world today. Every fifth death case is believed to be caused by a lung disease. The most frequent causes of death related to lung diseases are pneumonia, tuberculosis and COPD. These represent a substantial economic and social burden throughout the world. The objectives of the study were to evaluate the effectiveness of Pranayama’s on respiratory health status among COPD patients. 60 COPD patients were assessed for the level of respiratory health status followed by the implementation of Pranayama for 48 days for every four hourly. The post test was carried out after one month of intervention by using the Respiratory health status assessment Performa and computerized spirometry. The data were analyzed with descriptive and inferential statistics wherever required. Results showed that effect of Pranayama decrease the respiratory manifestations and improves the pulmonary function parameters. It is essential to raise the awareness on significance of Pranayama and seek behavioral change among COPD patients to improve the cardio pulmonary parameters.

Key words: Respiratory Health Status and Chronic Obstructive Pulmonary Disease.

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**ARTICLES**

**INTRODUCTION:**
According to the latest WHO estimates (2004), currently 64 million people have COPD and 3 million people died of COPD. WHO predicts that COPD will become the third leading cause of death worldwide by 2030. Chronic Obstructive Pulmonary Disease is a major public health problem worldwide and is expanding throughout with high prevalence. Currently around 80 million people have moderate to severe disease and represents 5% of all death globally, and projected to increase by more than 30% in next 10 years; almost 90% of deaths occur in low and middle income countries. The prevalence of COPD in India is 5% in males and 2.7% in females with the ratio of 1.6:1 around 12 million cases. The incidence and prevalence is increasing as a result of urban ambient air pollution and indoor exposure concentrations of particulate air pollution. It's a preventable and treatable disease, as the symptoms progress, they can eventually become life threatening, and patients in the advanced stages are likely to die as a result of complete respiratory system failure. The disease is associated with a significant symptom burden and poor quality of life. Patients experience poor physical functioning and live with distressing symptoms that require frequent hospital admission. There is a resurgence of interest in holistic systems of health care, mainly in prevention and management of noncommunicable and chronic diseases. Pranayama are considered as important part of modern medicine. The systematic reviews showed that the Pranayama significantly improves the lung function parameters, alters the cardiopulmonary responses and reduces the impact of disease on their lives. The yogic techniques including Pranayama are gaining importance and becoming increasingly acceptable to the scientific community. The number of patients with COPD is increasing. These patients need specific health care, including education in selfcare which has a positive effect on their physical and psychological wellbeing. Hence the study was therefore planned to assess the level of respiratory health status, and to evaluate the effectiveness of Pranayama’s on respiratory health status among COPD patients.

**MATERIAL AND METHODS:**
The Quasi - experimental study, pre test post test design without control group approach were used. The present study was conducted in 60 COPD patients in medical wards of career hospital. The subjects were selected by purposive sampling method. The computerized spirometry was used to assess the pulmonary function parameters. The assessment was carried out by the researcher through physical examination with respiratory health status assessment Performa. Pretest was conducted on first day of admission in medical wards, followed by the intervention: Pranayama’s techniques training

a). Surya bhedana
b). Bhashrika
c). Nadi shodhana

Under supervision the patients were made to practice the Pranayama’s every four hourly two sessions each till they were discharged. after, the patients were instructed to practice and they were supervised by the researcher through home visits.
The duration of intervention was 48 days. the enrolled patients were brought to Medicine OPD after the one month of Pranayama practice while the posttest was carried out by using the respiratory health status assessment Performa and computerized spirometry. The collected data was organized and analyzed based on the objectives by using descriptive and inferential statistics.

**RESULTS:**
Highest percentage 56% patients were more than 56 years of age, majority 73% were males, 63% had primary school education and 36% were illiterates, 36% were farmers, 47% had monthly income of Rs. less than 5000, most 90% were Hindus and highest percent 40% received information on Pranayama’s through mass medias.

Highest percent 48% had duration of illness less than one year, 43% had history of pollutant exposure, one third 33% of patients had tobacco chewing habit followed by 60% had smoking habits, and majority 86% followed the allopathic treatment.
The overall respiratory health status mean score was (10±2.2) which is 55.5% of the total score indicates COPD patients had moderate level impairment of respiratory health status whereas the post-test mean score was (6.26±3.5) which is 34.77% and the effectiveness was 20.78%. It interprets that the Pranayama’s significantly reduces the respiratory manifestations (t=4.62, p<0.05). (Table 1) However, the Pranayama’s had demonstrated more effectiveness on various areas of respiratory health status. (Table 2) The respiratory health status had significant association with socio demographic characteristics like age (χ² =4.61) at p<0.05 level.

Effectiveness of Pranayama on pulmonary function parameters:
The post test pulmonary function parameters scores of COPD patient’s shows that the 30 days of Pranayama’s practice has significantly improved the pulmonary function parameters like Force Expiratory Volume (FEV) (t=2.3) and FEV1/FVC% (t=2.5) at P<0.05 level, which interprets that the performing Pranayama’s produce significant changes in pulmonary functions of COPD patients. However the other parameters like Tidal Volume (TV), Inspiratory Reserve Volume (IRV), Expiratory Reserve Volume (ERV), Force Vital Capacity (FVC) and Oxygen Saturation (Spo2) had no significant improvement.

DISCUSSION:
The chronic non-communicable diseases are assuming increased importance among the adult population in both developed and developing countries. The impact of chronic diseases on the lives of people is serious when measured in terms of loss of life, disablement, family hardship and poverty and economic loss of the country.
Pranayama is the conscious, deliberate regulation of breath replacing unconscious patterns of breathing. It is considered as very important part in modern medicine. Many physicians now recommend yoga to patients at risk for heart disease and respiratory diseases; can produce different physiological responses. In our study pranayama’s showed significant improvement in the respiratory health status and pulmonary functions. The 48 days of pranayamas practice produced significant improvement in the pulmonary parameters like Force Expiratory Volume (FEV), Force Vital Capacity, FEV1/FVC% and Oxygen Saturation. Study of Ahmed QR, Sau SK and Kar SK indicated that performing pranayamas produce significant changes in FVC, FEV1 and PEFR on COPD patients
The results of this study provide the important implications for understanding the impact of COPD on patient’s health status and quality of life. The findings of this study support the multidimensional notion of the treatment strategy and emphasize the role of complementary therapies in patient care.

CONCLUSION:
The findings demonstrated that COPD patients are affected in many dimensions of their health. The result of study indicates practice of pranayama’s can improve the efficacy of respiratory muscles, reduce the severity of respiratory symptoms and prevents pulmonary complication. It is emphasized that education/training on pranayama’s is essential for the COPD patients and caregivers/family members would thereby improve their awareness and skill in performing the pranayama’s which leads to state of wellbeing.
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