ABSTRACT

Chronic obstructive pulmonary disease (COPD) has become increasingly important cause of morbidity and mortality in the modern world. Globally about 2.9 millions adults die each year due to COPD and it ranks 5th cause of mortality world wide. In India respiratory dysfunction continues to be a major health problem, since a complex mix of socioeconomic and environmental factors such as poverty, malnutrition, illiteracy and air pollution, is prevalent. Pulmonary rehabilitation (PR) is an increasingly popular and effective option widely used for patients with moderate to severe COPD as a therapy. Although pulmonary function generally does not change, exercise tolerance can improve, together with decreased symptoms of breathlessness, improved quality of life and less need for health care services. PR combines exercise training, behavioral and educational programmes designed to help patients with COPD to control symptoms and improve day to day activities.

The aim of this experimental study is to evaluate the effect of multidimensional pulmonary rehabilitation (PR) on pulmonary functional measures, six minutes walking distance(6MWD) and health related quality of life(HRQOL) of patients with COPD. Randomized controlled trail of multiple group design was adopted for this study. A total of 165 patients with COPD were randomly assigned to three groups namely control, exercise and exercise with psychosocial support group. Each group consisted of 55 patients and the duration of the study was eight weeks.
Education on disease pathology, signs and symptoms, risk factors and their avoidance with the specific emphasise on smoking cessation, coping strategies, balanced diet, necessary life style modifications and adherence to the health practices was given to all the patients in order to equilibrate them at the start of the study.

The demonstration of breathing and physical (Upper & Lower Extremities) exercises was performed to the exercise group and exercise with psychosocial support group. The experimental group samples were advised to perform the suggested rehabilitative measures at their respective homes. Weekly telephonic call and fortnightly home visit was carried out for the exercise with psychosocial support group.

The HRQOL instrument for the present study was developed on considerations of Indian conditions and salient features of established HRQOL instruments. The newly developed HRQOL instrument consists of 30 items in the following sub aspects namely, breathing status, physical activity, Social status and emotion status.

Present study findings revealed that there is no statistically significant improvement in any of the pulmonary functional measures such as FVC, FEV₁, FEV₁ / FVC, and the PEFR either between the groups or within the subjects on interventions. Regarding 6MWD, The pre - post comparison pointed out only a low 6% (24 meters, p < 0.01) and a large 11% (42 meters, p < 0.001) improvement in 6MWD in exercise group and exercise with psychosocial support group respectively. In the present study an
improvement of 15% or more from the baseline values of the various components of HRQOL scores is considered as clinically important. The post test results revealed statistically significant and clinically important percentage improvements in all the measures of HRQOL and the total HRQOL scores in both exercise (p < 0.001; 22%) and exercise with psychosocial support (p < 0.001; 36%) groups. Whereas only a low significant (p < 0.05) and clinically non appreciable improvement (6%) have occurred in control group. A moderate and high significant correlation (r = 0.31; p < 0.001) was noticed between 6MWD and HRQOL scores. The present study indicates that an 8 weeks duration multidimensional PR programme with exercises and psychosocial support could result significant improvements in 6MWD and HRQOL.