The effect of pulmonary rehabilitation on quality of life and sleep disturbance of patients with chronic pulmonary disease

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INTRODUCTION- sleep disturbance is one of the most complaint of patients with chronic lung disease.

Chronic obstructive pulmonary disease (COPD) patients often complain of chronic insomnia, with up to 50% of patients reporting they have difficulty falling asleep, staying asleep, or they have unrefreshing sleep. Exercise has been introduced to improve sleep quality. It is believed that pulmonary rehabilitation (PR) have positive effect on sleep disturbance in patients with chronic lung disease specially COPD by their symptom relief, improving exercise tolerance and quality of life. The aim of this observational study was to evaluate sleep quality in patients with chronic lung disease (COPD & non-COPD) and the role of PR as a non-pharmacologic treatment to improve sleep quality.

METHOD- All subjects suffered from chronic lung diseases participated in a 6-weeks (2 sessions/week), center-based, out-patient PR study, according to the type and severity of disease. Baseline and post-PR status were evaluated by spirometer, sleep questionnaire (Pittsburgh Sleep Quality Index [PSQI]), a disease-specific questionnaire of health related quality of life (St George Respiratory Questionnaire [SGRQ]) and their functional status, before and after PR.

RESULT- 73 patients with mean age of 62 years old, were involved in our study. 68.5% (50) of patients were male and 31.5% (23) were female. 80% of patients suffered from sleep disturbance according to Pittsburgh questionnaire (8.1) which was 8.4 in COPD and 7.34 in non- COPD patients. It seems that sleep is more problematic issue for female than male in all-cause respiratory diseases. Mean FEV1 of patients was 58.3% in COPD and 53.7 % in non-COPD. After 12 sessions of PR, the study demonstrated good improvement in quality of life by SGRQ (46.75 vs 37.08, P value= 0.00), FEV1 (58.36% vs 66.2% P value=0.019) in COPD and 2% improvement (53.7% vs 55.4%, P value= 0.014) in non-COPD) and 6MWT (from 280.1 to 342 m, P value= 0.00) in COPD and from 288.96 m to 316.5m (P value= 0.014) in non-COPD patients, which was significant statistically. Moreover, the study shows a dramatic improvement in sleep quality according to the questionnaire in both COPD (8.42 vs 6.71, P value=0.001) and non-COPD (7.34 vs 6.34, P VALUE= 0.077) groups.

CONCLUSION- Pulmonary rehabilitation is an effective non-pharmacologic treatment to improve quality of life and correct sleep disturbance in patients with COPD and non-COPD and should be a part of their clinical management. It is better that sleep results be confirmed by PSG.