The effect of pulmonary rehabilitation on quality of life and activity tolerance in chronic obstructive pulmonary disease

A thesis submitted in partial fulfillment of the requirements for the Degree of Master of Nursing

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Feb/ 2013
ABSTRACT

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Background: The chronic obstructive pulmonary disease (COPD) is one of the most common chronic diseases worldwide that have no definite cure. The goals of care in chronic patients are symptoms reduction, improvement of independency as well as quality of life and activity tolerance. The aim of this study is to investigate the effect of pulmonary rehabilitation program on quality of life and activity tolerance in chronic obstructive pulmonary disease.

Methods: This research is a quasi-experimental study and a clinical trial on 60 patients with mild to moderate forms of chronic obstructive pulmonary disease (COPD) admitted to the hospital for lung wards Firoozgar and Imam Khomeini (RA). The patients have been sampled simply and randomized divided into two groups, intervention (n=30) and control (n=30) groups. One of the control groups was excluded during the study due to severe stages of the disease, and an intervention group patients died in hospital and did not continue pulmonary rehabilitation program.

The control group received only routine care and the intervention group participated in pulmonary rehabilitation program in addition to the usual care. Pulmonary rehabilitation program included self care and self management education, nutrition recommendations, stress reduction methods, effective cough, breathing exercises, control of breathing in crucial situations, and muscle stretching exercises that instructed by researcher in 3 parts of 30 minutes. Then patients were asked to perform practices at home 3 times per week, for 8 weeks and they have been followed up them by telephone weekly. The data gathering tools were demographic and disease related questionnaires, general health-related quality of life instrument (SF-36) and St. George's Respiratory Questionnaire. Data were collected at baseline and after 8 weeks of intervention, then has been analyzed with SPSS software version 16.0 and descriptive and deductive statistical tests (Chi-square, Fisher exact test, Independent and paired T tests) were applied.

Results: The results showed that average quality of life in intervention and control group before the study was averagely 40.49. The t statistical test showed a meaningful statistical
difference before and after interference in experience group as experience group reported very high quality of life after intervention while control group had mild increase in health-related quality of life. Also, t statistical test (P=0.000) showed a meaningful statistical difference between the intervention and control groups on the health-related quality of life after the study. Regarding activity tolerance, statistical test showed an improvement in intervention group while control group remain without change. Also, t statistical test (P=0.000) showed a significant statistical difference between the intervention and control groups regarding activity tolerance after the study (P=0.000).

**Conclusion:** It can be concluded that pulmonary rehabilitation program is effective in increasing of activity tolerance and improving health-related quality of life in the patients with COPD.

**Keywords:** Pulmonary rehabilitation program, health-related quality of life, activity tolerance, Chronic obstructive pulmonary disease.