Introduction

Veterans have a higher prevalence of chronic obstructive pulmonary disease (COPD) than the general population. COPD is the fourth leading cause of death in the United States, and the World Health Organization predicts that it will be the third leading cause of death by 2030. COPD is characterized by decreased exercise tolerance, dyspnea, diminished health-related quality of life, leg fatigue and difficulty to perform routine daily chores like recreational and self-care activities. Exercise training is an important intervention that helps in improving exercise tolerance in patients with COPD.

According to clinical records at VA Caribbean Healthcare System (VACHS) in San Juan, Puerto Rico from January, 2011 to October, 2013 there were 1,456 patients in which COPD was a primary or secondary diagnosis and 633 admissions due to COPD exacerbation. At the VACHS, patients with mild to very severe COPD have been receiving Cardiac Rehabilitation since 2008.

Objectives

The aim of this study was to determine the effects that Cardiac Rehabilitation Program (CRP) had in functional capacity, quality of life and dyspnea in patients with COPD who completed the CRP at the VACHS in San Juan, PR from January 1, 2011 to December 31, 2013.

Methodology

A retrospective record review of the pre and post data of the Six Minute Walk Test (6MWT), the Short Form -36 Questionnaire (SF-36) and Dyspnea scores of patients with mild to severe COPD enrolled in the outpatient CRP of VACHS between January 1, 2011 to December 31, 2013 was done. These data was obtained from the Scott Care Tele-Rehab Advantage II Data Bank System.

Patients received an educational program consisting of lectures on cardiovascular disease, cardiac risk factors and lifestyles modification, benefits of exercise, energy conservation, stress management, and breathing exercises (pursed-lip and diaphragmatic breathing). The physical therapy (PT) intervention during Phase II consisted of 8 sessions that included two aerobic machines. During the PT sessions patients were monitored using a telemetry unit from the Scott Care Tele-Rehab Advantage II System. During Phase III they performed 8 sessions that included one aerobic machine and strengthening exercises monitored using a Polar Model FT4.

The occupational therapy (OT) intervention of phase II consisted of 8 sessions, 4 sessions performing a woodwork project and 4 sessions of dancing (tropical Latin dance including salsa, merengue and cha-cha-cha). In phase III of the CRP patients also received 8 sessions of recreational therapy playing Nintendo Wii (boxing and bowling), pool and domino games.

Results

The total participants consisted of 37 males and 1 female. The ages fluctuated from 40 to 84 years old. Two patients (5%) had mild COPD, twenty five patients (66%) had moderate COPD, ten patients (26%) had severe COPD and one patient (3%) had very severe COPD according to COPD Gold Classification System. Nine patients (24%) used supplementary oxygen via nasal cannula at 2-3 Litters of oxygen.

Discussion

The major findings of this study demonstrated that 16 interventions of an outpatient (CRP) in patients with COPD is associated with increased exercise capacity showed by the 6MWT, reduced dyspnea during activities and improved health related quality of life.

The SF-36 is divided into 8 domains, each one of them pertaining to a particular domain related to quality of life. It was found that the intervention did not have effect on Social Functioning and Mental Health showing that COPD patients perceive greater improvement in the physical aspects of their health than in the psychosocial aspects. Physical Functioning, Role-Physical and Role-Emotional were the ones that showed more significant improvement with a (p<0.001).

Conclusions

The results of this study demonstrated that COPD patients who completed the CRP at the VACHS from 2011 to 2013 showed improvement in functional capacity, quality of life and dyspnea. The results obtained in this study should help to encourage the establishment of a Pulmonary Rehabilitation Program at VACHS in San Juan, PR.