

Adherence to Exercise Training in COPD Patients: Factors that Predict Patient Adherence and Non-Adherence: A Report

Renukadevi Mahadevan*

Department of Cardio-Respiratory Pulmonary Rehabilitation, JSS College of Physiotherapy, Mysore, India

*Corresponding author: Renukadevi Mahadevan, Departments of Cardio-Respiratory Pulmonary Rehabilitation, JSS College of Physiotherapy, Mysore, India, Tel: +91-9741200271; E-mail renukaramya01@gmail.com

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Abstract

Objectives: To know the percentage of adherence to 12 weeks of exercise training program and to know the reason for non-adherence and the factors enhanced them to adhere to the exercise rehabilitation program.

Methodology: One hundred and thirty four patients with COPD who were referred for rehabilitation participated in this study. Qualitative study using semi-structured interviews was conducted for COPD patients aged 45-70 years, referred for pulmonary rehabilitation over a 2-year period. There were two method of intervention carried for two different groups, conventional constant load training group and another was high intensity interval training group. The intervention was for 12 weeks. The mode of training was treadmill aerobic training. The frequency was 3 days in a week. Attendance of more than 75% is considered as adherent to the exercise training. The interview conducted to the subjects dropped from the training and to subjects adhered to the intervention. Wide range of open ended questions as well as probing questions, such as why they had decided to attend or not attend the exercise training program, and why they had decided to continue or drop out were asked. Interviews were carried out and audio-taped with the consent of the participant.

Results: One hundred and thirty four patients included in the study. The adherence to exercise by both conventional constant load training and HITT was 44.7% and drop out was 55.22%. The adherence to conventional constant exercise training was (30) 41.6% and the drop out was 58.3%. The adherence to high intensity interval training was 48.3% and the drop out was 51.6%. The reason for non-adherence for both the type of intervention was not affordable (29.72%), no attender (family support) to accompany (13.51%), LTOT use (9.45%), breathless and leg fatigue (10.81%), absent of therapist (6.75%), travelling distance (6.75%), hospitalizations (18.91%), felt that they can do at home (2.70%), shifting/migration (1.35%). The adherence to the programme was positively influenced by other patients attending the exercise rehabilitation, and increased self-confidence Twenty five percent were accountable to factors beyond patient's control having medical reasons like exacerbations/hospitalizations and absent therapists. The adherence of COPD patients to exercise rehabilitation program for twelve weeks is moderate. The factors predominantly led to non-adherence was unaffordability, less family support, breathless and leg fatigue and less predominantly was travelling distance, migration/shifting and can manage to do exercise at home. Hospital admission/exacerbation, absent of therapist or change in the schedule. The factors led to adherence were, influenced by other patients attending the exercise rehabilitation, self-confidence, understanding the benefits of training and influence of the referred doctor.

Keywords: Chronic obstructive pulmonary disease; Pulmonary rehabilitation; Self-motivated

Introduction

Chronic obstructive pulmonary disease (COPD) is a major cause of disability and death in Canada and throughout the world. It was reported in 2012 to be the third leading cause of death in the world [1]. COPD rates are expected to continue to rise steeply with an ever increasing mortality rate [2,3]. It is clear that the efforts to improve the health of those living with COPD need closer attention.

In response to the rising morbidity and mortality associated with this disease, a pulmonary rehabilitation program was developed to optimize the prevention and management of COPD [4]. Pulmonary rehabilitation (PR) is a multidisciplinary approach to optimizing the physical and social functioning as well as the autonomy of the patients. PR offers the best chance to manage the symptoms and reduce health

resource use [5,6]. Recent research indicates that PR programs increase health related quality of life in patients with COPD [7,8]. Nevertheless, available PR programs remain underused by COPD patients [9].

Experimental

The major goal of rehabilitation is to provide symptom relief, effective management of COPD which has shown to reduce the rate of exacerbations, hospitalizations, possibly mortality and to improve health related quality of life [10]. PR for COPD patients has been shown to be an effective non-pharmacological intervention; however uptake and completion of programmes is frequently low [11]. Uptake for PR is poor with attendance reported as being as low as 50%. In addition 23%-31% of patients who start the course fail to complete [12]. The cost, attitudes and beliefs for exercise training in PR varies considerably between countries. Exercise training is one of the components of pulmonary rehabilitation. It is well documented that

exercise training for COPD patients improve the quality of life, and decrease hospitalization and therefore decreased the mortality [13]. Exercise implementation may be influenced by local health system characteristics, program organization, and by individual patient characteristics varies considerably between countries. There is an acute need to understand the factors that predict non-adherence and adherence to PR with a view to improve uptake. The purpose of this study is to know reason for non-adherence and the factors enhanced them to adhere to the exercise rehabilitation program (Figures 1-4).

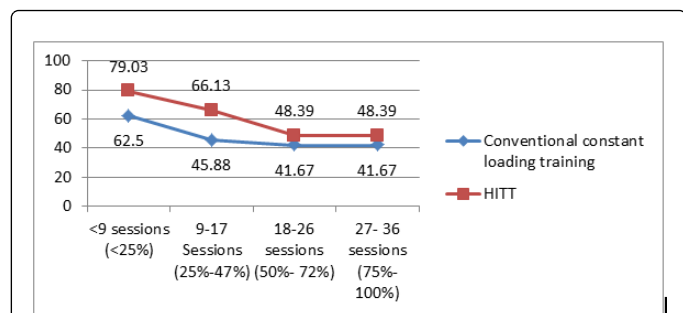


Figure 1: Trend of adherent percentage to exercise training in both the groups (n=134).

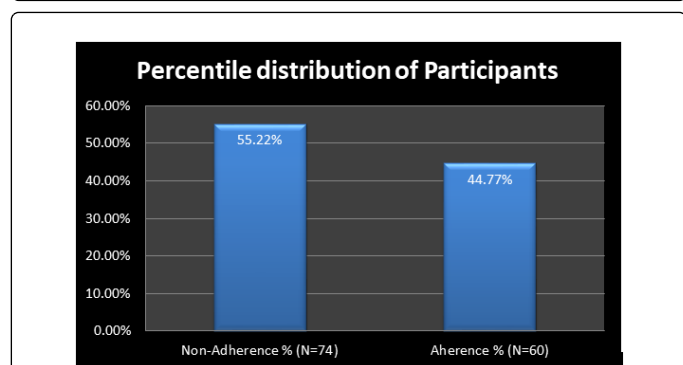


Figure 2: Percentage of non-adherence to 12 week exercise programme in both groups (n=134).

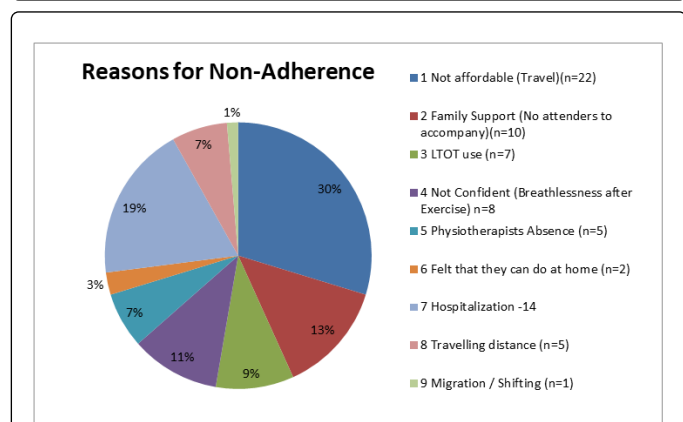


Figure 3: Reason for non-adherence to exercise training program of both groups.

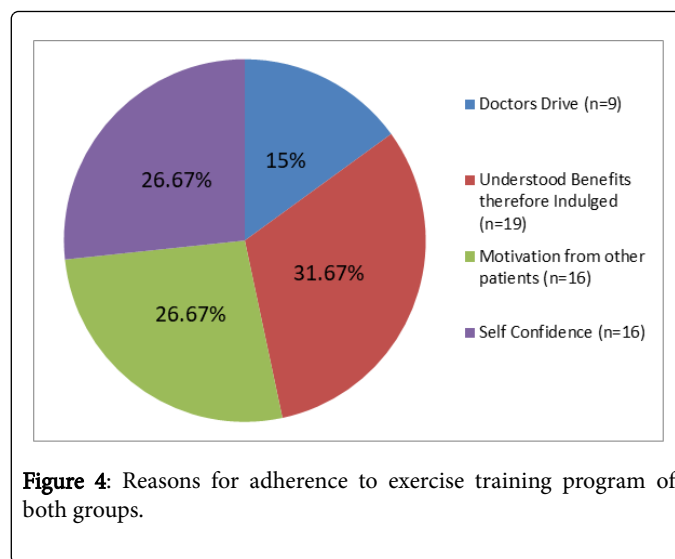


Figure 4: Reasons for adherence to exercise training program of both groups.

The reason for adherence to the exercise regimen to end was the influence of the referring doctor (15%), understood the benefits and self-motivated (31.66%), positively influenced by other patients attending the exercise rehabilitation therefore motivated (26.66%) and increased Self-confidence (26.66%).

Results and Discussion

Strategy to enhance adherence will not only improve patient health outcomes but also the health status of patients and reduce the economic and societal burden associated with COPD.

The adherence to exercise training of both conventional constant load training and HITT was 44.7% and drop out was 55.22%. The adherence to conventional constant exercise training was 41.6% and the drop out were 58.3% for both groups the adherence rate is moderate. The reason for non-adherence is predominantly due to unaffordability, hospitalization, less family support, breathless with leg fatigue and travel distance.

Most of the patients enrolled were from rural area and they even had problem to afford for medication had to also bare travel cost which led to dropout. In a study it was found that patients travelled for less than seven min were likely to remain in the exercise training program than patients travelling for longer periods of time [14]. In this study the patient dropped as most of them were travelling more than 30 minutes.

In recent studies the patients with COPD following pulmonary rehabilitation reported the most consistent barriers to adherence were chest infection and disease exacerbation or hospitalization, likewise in this study 25% of patients not adhered to exercise regimen was due to the same reason. The reason for exacerbation can be lack of knowledge about the disease management [15]. The reason for non-adherence due to breathless and leg fatigue is reported in conventional constant load training as interval training had rest period and therefore no report on episodes of leg fatigue and breathlessness which led to anxiety is reported.

The factors for adherence to exercise training program reported by the patients were predominantly due to influenced by other patients attending the exercise rehabilitation and self-confidence therefore the

implementation of buddy system may influence this factor which in turn increase the adherence rate.

The reason for non-adherence was due to unaffordability, less family support, and travel distance, because most of the patients were from rural area. Most of the patients were old and many had to travel more distance with oxygen support which demanded family support. Patients travelled less than seven minute, adhered to exercise training [16]. The reason for non-adherence due to breathless and leg fatigue is reported from the patients whose grades of disease was severe to very severe.

In this study 25% of patients not adhered to exercise regimen was Hospitalization/Acute exacerbation and absent of therapist or change in schedule.

The factors for adherence were predominantly due to influence of other patients attending the exercise rehabilitation and self-confidence. The aspect of enjoyment, increased confidence and self-esteem could be emphasized in addition to the physical benefits of attending PR [17]. Fraser and Spink, reported that the cohesion shown by the group, were important determinant [18]. In this study 27% of the patients adhered as they met other patients which had motivated them for participation. The referring doctor was found to have a role in influencing the uptake of PR. In this study 15% of them adhered due to doctor's reference.

To enhance uptake and completion of pulmonary rehabilitation programs, more attention is required to transportation. Simple, cost-effective approaches may encourage more patients with COPD to participate in a therapeutic intervention which now has a strong evidence base Implementation of buddy system may influence this factor which in turn increase the adherence rate. The referring doctor was found to have a role in influencing the uptake of PR. It should be possible to develop a strategic package aimed at helping referring doctors to promote adherence.

Strategy to enhance adherence will not only improve patient health outcomes but also the health status of patients and reduce the economic and societal burden associated with COPD The adherence of COPD patients to exercise rehabilitation program for twelve weeks is moderate.

The factors predominantly led to non-adherence was unaffordability, less family support, breathless and leg fatigue and less predominantly was travelling distance, migration/shifting and can manage to do exercise at home.

Hospital admission/exacerbation absent of therapist or change in the schedule.

The factors led to adherence were, influenced by other patients attending the exercise rehabilitation, self-confidence, understanding the benefits of training and influence of the referred doctor.

Conclusion

The adherence of COPD patients to exercise rehabilitation program for twelve weeks is moderate. The factors predominantly led to non-adherence was unaffordability, less family support, breathless and leg fatigue and less predominantly was travelling distance, migration/shifting and can manage to do exercise at home. Hospital admission/exacerbation, absent of therapist or change in the schedule The factors

led to adherence were, influenced by other patients attending the exercise rehabilitation, self-confidence, understanding the benefits of training and influence of the referred doctor.

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