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Innovating Pulmonary Rehabilitation To Bring It Closer To Patients: A Community-Based Program

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Rationale: Despite the well-established benefits for the management of chronic obstructive pulmonary disease (COPD), a small percentage of patients have access to pulmonary rehabilitation (PR). Therefore, international guidelines have been recommending innovative methods to implement PR. This study aimed to assess the short- and long-term results of implementing community-based PR programs.

Methods: This was a retrospective study including 95 patients with COPD (73% male; 68±10years; FEV₁ 71±25%predicted) who participated in a community-based PR program (i.e., exercise training, 2*week and psychoeducation, 2*month). A subsample of 14 patients with COPD (86% male; 67±8years; FEV₁ 74±19%predicted) who stopped after 12 weeks and returned up to 2 years later was studied. All patients received individual tailored exercise recommendations to train at home. Patients were assessed before their enrolment (T0), after completing 12 weeks of PR (T1) and the subsample at their return (T2). Medical Research Council (mMRC) questionnaire, St. George's Respiratory Questionnaire (SGRQ) and 6-minute walk distance (6MWD) were collected. Comparisons between assessments (i.e., T0 and T1, T1 and T2) were performed using Wilcoxon signed-rank tests. Bonferroni correction was used to adjust for multiple comparisons.

Results: After PR, patients presented significant improvements in all outcome measures (p<0.001). In the subsample, patients presented significant differences between T0 and T1 in 6MWD (p=0.001) and SGRQ (p=0.013), but no differences were found in mMRC (p=0.125). Between T1 and T2 patients stopped PR for a median of 16.5 months (interquartile range 9-24months) and presented significant differences in 6MWD (p=0.005) and SGRQ (p=0.030), particularly at SGRQ activities score (p=0.005), but no differences were found in mMRC (p=0.188) (Table 1).

Sample	Outcome	T0	T1	T2	p (T0-T1)	p (T1-T2)
Short-term PR	mMRC	2 [1-3]	2 [1-2]	-----	<0.001*	-----
	6MWD (m)	454±105	487±114	-----	<0.001*	-----
	SGRQ total	36±19	31±19	-----	<0.001*	-----
Long-term PR	mMRC	2 [2-2.25]	2 [1-2]	1 [1-1.25]	0.125	0.188
	6MWD (m)	413 [393-476]	473 [412-527]	519 [480-573]	<0.001*	0.005*
	SGRQ symptoms	47 [28-71]	33 [22-40]	39 [16-56]	0.020*	0.191
	SGRQ activities	45 [30-54]	30 [10-55]	42 [28-67]	0.042*	0.005*
	SGRQ impact	15 [3-28]	10 [0-20]	10 [0-20]	0.119	0.156
	SGRQ total	26 [17-45]	26 [17-45]	26 [17-45]	0.013*	0.156

Data are presented as mean±standard deviation or median [interquartile range].

Conclusions: The community-based PR program led to patients' significant improvements in all outcome measures. Therefore, community-based programs seem as effective as hospital-based, even if conducted with less severe patients, and might be a promising practice to increase patients' access to PR and consequently improve their quality of life and well-being. Also, patients seem to be able to continue exercising at home when individual tailored programs are recommended however, after stopping PR, their health-related quality of life declined significantly. Thus, patients seem to need help to manage the disease, namely in daily activities. This knowledge can potentially help health professionals to guide long-term self-management strategies according to patients' needs.

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