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Effectiveness of community-based brief pulmonary rehabilitation programme (PRP) in Nurse Allied Health Clinic (Respiratory) (NAHCR) in Kowloon East Cluster (KEC)

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Introduction

Introduction:

The Kowloon East Cluster covers a population of just over one million people (1). The prevalence of male and female smokers in Hong Kong was 18.6% and 3.2% respectively in 2015 (2). NAHCR in KEC has been established since 2009. It provides multi-disciplinary community-based rehabilitation service for patients with respiratory diseases at 5 general out-patient clinics in KEC.

The ultimate purpose of the programme was focused on disease prevention, early detection, health promotion and prompt intervention to reduce the need for secondary care. Brief Pulmonary Rehabilitation Programme (PRP) was targeted on patients with chronic obstructive pulmonary disease (COPD) having functional impairment.

Objectives

To evaluate the effectiveness of community-based brief pulmonary rehabilitation programme (PRP) of Nurse Allied Health Clinic (Respiratory) (NAHCR) in Kowloon East Cluster (KEC)

Methodology

Ambulatory patients with COPD having functional impairment were recruited into a 6-sessions brief PRP provided by a team of physiotherapist, occupational therapist

and nurse. Content of the brief PRP consisted of patient health education, bronchial hygiene management, exercise training, inspiratory muscle training (IMT), coping skills training and stress management. Outcome measures included body mass index (BMI), forced expiratory volume in 1 second (FEV1); modified Medical Research Council (mMRC) dyspnoea scale; 6-min walk distance (6MWD). The BODE index (3) was then computed. All these outcomes were assessed before and after the brief PRP.

Result

The clinical outcomes of the patients of the period from January 2015 to December 2016 were reviewed. 1,123 new patients were referred to NAHCR in 2015. The mean age was 66. 89.2% were male patients. 276 patients (24.6%) had been diagnosed COPD. Among the 851 smokers without known history of COPD, 324 of them were detected to have COPD with a detection rate of 38%.

61 patients with COPD having functional impairment participated in the brief PRP. Pre- and post-Brief PRP outcomes were analyzed by paired sample t-test. There were significant improvement in FEV1(%) (Pre: 49.22 +/- 16.01 vs post: 53.45 +/- 18.36, 4.22 +/- 11.91, 95% CI 0.80 to 7.65, p=0.02*) and mMRC dyspnea scale (Pre: 1.45 +/- 0.78 vs 1.32 +/- 0.66, -0.13 +/- 0.40, 95% CI -0.24 to -0.01, p=0.03*). There was also significant improvement in 6MWD (m) (Pre: 365.64 +/- 97.47 vs post: 392.74 +/- 100.69, 27.10 +/- 61.59, 95% CI 7.14 to 47.07, p=0.01*). Recent studies showed that lower values of difference in 6MWD in the range of 25 to 35m (4-7) should be regarded as a minimal clinically important difference. Our results showed that the 6MWD improvement was 27.10m +/- 61.59m which was clinically significant. Community-based six sessions of brief PRP provided by NAHCR was effective in improving the functional ability of patients with COPD having functional impairment.