The Effectiveness of Outpatient Smoking Cessation Therapy and Related Factors on Health Promotion in a District Teaching Hospital in Southern Taiwan

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Background

Chronic obstructive pulmonary disease (COPD) could lead to poor cardiopulmonary endurance, which affects quality of life and increases the risk of re-hospitalization or mortality. However, studies investigating associated factors of cardiopulmonary endurance for COPD inpatients are scant.

Objectives

To investigate whether and how age, gender, COPD severity, body composition, dyspnea, respiratory muscle strength, and lower limb muscle strength and endurance were related to cardiopulmonary endurance in elderly inpatients with COPD

Intervention

This was a cross-sectional study using a systematic sampling of older COPD inpatients. Data of demographic characteristics such as age, gender, and COPD severity were collected, and body mass index (BMI) was calculated. Degrees of dyspnea were assessed by modified Medical Research Council (mMRC) dyspnea scale. Respiratory muscle strength was reflected by the maximal inspiratory pressure (PImax) and the maximal expiratory pressure (PEmax). Lower limb muscle strength and endurance were assessed by a hand-held dynamometer (HHD) and 30-second sit-to-stand (30-s STS) test, respectively. Finally, cardiopulmonary endurance was assessed by 6-minute walk test (6MWT).

Results

A total of 83 older COPD inpatients participated. The mean age was 74.01 ± 6.93 years. The cardiopulmonary endurance was significantly associated with age, COPD severity, dyspnea, respiratory muscle strength, lower limb muscle strength and endurance (all $p < .001$). Predictors of cardiopulmonary endurance were COPD severity ($\beta = -42.12$, $p = .011$), dyspnea ($\beta = 58.16$, $p = .001$), and lower limb muscle endurance ($\beta = 17.35$, $p < .001$). These predictors explained 53% variance of cardiopulmonary endurance in older COPD inpatients.

Conclusions

Cardiopulmonary endurance of hospitalized COPD older adults should be strengthened by improving conditions of COPD severity, dyspnea, and lower limb muscle endurance.

Key Words: Aged; Cardiopulmonary endurance; Chronic obstructive pulmonary disease; Dyspnea; Muscle endurance; Muscle strength; Older inpatients; Respiratory muscle strength