

The Correlation between Incidence of Falls and Quadriceps Muscle Strength among Patients with COPD from Two Selected Government Hospitals in Colombo District

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Skeletal muscle dysfunction is one of the extrapulmonary manifestations in patients with chronic obstructive pulmonary diseases (COPD). Quadriceps muscle strength plays an important role in maintaining the postural stability of a human. The objectives of the study were to determine the incidence of falls and to identify the probability of risk of falls among COPD patients in relation to quadriceps muscle strength among patients who presented to the National Hospital for Respiratory Diseases, Welisara, and the Chest Clinic at the Medical Research Institute, Sri Lanka. This descriptive cross-sectional study was conducted among 35 COPD patients between 40-60 years of age. The quadriceps strengths of bilateral lower limbs were measured using the one repetition-maximum (1RM) strength test and the incidence of falls was assessed using an interviewer-administered questionnaire. The test results indicated a significant positive correlation between the incidence of falls and right side 1RM ($p=0.019$, $r=0.395$) and left side 1RM ($p=0.033$, $r=0.362$). The results showed a significant positive relationship between the probability of risk of falls and right side 1RM ($p=0.030$, $r=0.601$) and left side 1RM ($p=0.040$, $r=0.537$). According to the results of the study, a significantly positive correlation between the incidence of falls and the quadriceps muscle strength of COPD patients was identified. Further, the results show an increase in the probability of falls risk with the reduction of quadriceps muscle strength.

Keywords: *quadriceps muscle strength, COPD, falls Incidence*