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Title: Comparison of the effects of the diaphragmatic breathing exercise in rehabilitation to COPD subjects with normal and high body mass index

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Body: Background COPD rehabilitation is a coordinated program of exercise, disease management training, and counselling that can help COPD patients to stay more active and improve to carry out patient's day-to-day activities. COPD is an heterogeneous disease with a mixture of clinical and functional phenotypes, hence individualization of action strategies, such as pulmonary rehabilitation is very important. Aim: To compare the effects of diaphragmatic breathing exercise technique in improving quality of the life in COPDs with normal and increased BMI Material and method: We assessed 122 subjects with severe COPD, with grave smoking experience more than 20 yrs, and more than 15 cigarettes per day, with BMI more than 30. An equal number of COPDs, matched by COPD stage, sex, age, smoking experience, but with normal BMI, were evaluated like controls. All (examined group and controls) were educated how to use diaphragmatic breathing rehabilitation technique, and they practice it 3 times per day. Before study they could not walk more than 30 meters, and had dyspnoea with shortness of breath. Follow up period was 12 months. Results: Our results show fantastic significant improvement of the quality of live especially in increased BMI group. The walking distance without dyspnoea was our criteria for assessment. After rehab, in group with augmented BMI the walking distance of at least 300 meters without symptoms was represented at 108 subjects (88,5%) vs. 52 (42,6%) in COPDs with normal BMI, ($P < 0.05$). Conclusion: Our results suggest that BMI may play role in the breathing exercise rehab program in COPD patients.