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Efficacy of thoracic mobility exercise on cardiopulmonary parameters and quality of life of individuals with asthma: A preliminary study

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Background & Objective: Asthma is a chronic respiratory disease which reduces patients' daily activities and impairs their health related quality of life. Several studies have shown the beneficial effect of aerobic exercise on cardiopulmonary function, however, little is known on the effect of thoracic mobility exercise (TME) on cardiopulmonary function and quality of life. This study was therefore aimed at investigating the efficacy of TME on selected cardiopulmonary parameters and the quality of life of patients with mild and moderate asthma.

Methodology: Thirty three (33) subjects diagnosed with mild – moderate asthma were recruited from the Respiratory Unit of Lagos University Teaching Hospital (LUTH). They were randomly assigned to three groups (A, B and C). Group A underwent thoracic mobility exercise (TME) and deep breathing exercise counseling sessions; Group B underwent a combination of thoracic mobility exercise and aerobic exercise with deep breathing exercise counseling sessions while Group C underwent deep breathing exercise counseling sessions only. Interventions in each group lasted for 25 to 30 minutes, twice weekly for 6 weeks. Outcome measures assessed were mini asthma quality of life questionnaire (AQLQ), asthma control test (ACT), selected pulmonary parameters (Peak Expiratory Flow Rate (PEFR), forced expiratory volume in 1 second (FEV₁), forced vital capacity (FVC), thoracic expansion at Axilla (TEA) and thoracic expansion at xyphoid process)) and selected cardiovascular parameters (Systolic Blood Pressure (SBP), Diastolic Blood Pressure (DBP)).

Results: Group A recorded a statistically significant improvement in the SBP (p=0.016), TEA, (p=0.007), QoL (p=0.030), ACT (p=0.020) and perceived exertion (p=0.030). Participants in group B recorded a significant improvement in TEx (p=0.023) and the perceived exertion (p=0.024) while in Group C (Control group) improvement was only noted in perceived exertion (p=0.017). On comparison across groups, there was no statistical significant difference in FEV₁, PEFR, FVC, TE_A, TE_X, SBP, DBP, asthma control and quality of life.

Conclusion: Thoracic mobility exercise proved effective in improving cardiopulmonary parameters (Systolic blood pressure and thoracic expansion), perceived exertion, asthma control and quality of life of patients with asthma. Similarly, aerobic exercise as well as deep breathing exercise and counseling sessions improved perceived exertion. However, comparison across the three groups showed no significant difference.

Biography

Timilehin Abraham OYEFESO is currently an Intern Physiotherapist at the Lagos University Teaching Hospital (LUTH), Lagos, Nigeria. He has a proclivity for cardiopulmonary and sports physiotherapy, health advocacy and public health. In 2016, he badged his Bachelor of Physiotherapy (B.PT) from the prestigious College of Medicine, University of Lagos, where he graduated as the Best student in Clinical practice. He is certified and also a member in a number of local and international bodies (which include NSP(Lagos), NeuroRehab Academia, Nigeria Association of Sports Medicine Inc. (NASMED), Doctors hub ng, F-MARC). He has volunteered and worked in various health care systems, and his passion to develop himself in the profession is evident in the good number of outreaches, trainings and workshops attended. He is a lover of God and believes in His divine grace. He is a singer and a teacher/tutor. He derives joy in motivating other people to become the best they thought they couldn't be.

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