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The influence of respiratory biofeedback training on the breathing pattern and anxiety

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Abstract

Background: The purpose of the respiratory biofeedback method is to change the dysfunctional respiratory pattern to the normal one, and to decrease the patient's general anxiety, as biofeedback training can influence the parameters of the respiratory pattern and the level of anxiety.
Material and methods: 12 subjects (3 men and 9 women), mean age 21.9 ± 1.1, with high level of trait anxiety, were selected for recording the respiratory pattern and respiratory biofeedback (RBF). Respiratory minute volume (MV), tidal volume (TV), duration of inspiration (Ti), duration of respiratory cycle (Tt), respiratory drive (TV/Ti) and ratio of inspiration (Ti/Tt) were measured. Breathing was recorded under the following conditions: resting breathing, paced voluntary hyperventilation, the recovery period after hyperventilation, voluntary apnea and recovery period after voluntary apnea, anticipatory stress. Respiratory biofeedback consisted of 12 sessions of abdominal, deep, 10 breaths/min, visually guided by the route on the computer screen.
Results: After biofeedback, trait anxiety scores decreased in 11 subjects. TV, TV/Ti and MV after biofeedback have been decreased in all phases of research. Tt during the rest and hyperventilation periods did not change, but it was extended in all subsequent phases. RBF did not substantially change the Ti and Ti/Tt in all recording phases.
Conclusions: RBF had a greater impact on volume parameters (TV, TV/Ti, MV) and little or no impact on time parameters.
Key words: respiratory biofeedback, state and trait anxiety, breathing pattern