Psychological mechanisms of fear-avoidance and endurance and their influence on muscle function and training behavior

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Introduction.—There is growing evidence that fear-avoidance- and endurance-related pain behavior has an impact on the maintenance of chronic low back pain (cLBp). However, little is known about the exact mechanisms at work there. The aim of this study was to evaluate whether subgroups of patients differ in muscle strength/endurance tests and exercise training (frequency, duration, force).

Material and methods.—One hundred and thirty cLBp patients (48.5% female, mean age = 45.74 years) were investigated before and after 6 months of individual exercise therapy.

Results.—A cluster analysis was performed based on Mental Health Inventory of the Short Form-36 Health Survey (SF-36) and Avoidance-Endurance Questionnaire (AEQ) to distinguish four avoidance-endurance model-subgroups (AEM): fear-avoidance (FAR), distress-endurance (DER) eustress-endurance (EER) and adaptive responses (AR). AEM-subgroups showed the frequency distribution of 39.2% EER, 21.5% FAR, 20.8% AR, 18.5% DER. The Questionnaires (AEQ, SF-36, Visual analog scale, questions about motivation and emotion) and muscle function tests showed group differences after the intervention concerning pain severity, disability, muscle functioning and training behavior.

Discussion.—Inaccurate training behavior and muscle use have to be considered risk factors for pain maintenance. The results indicate the need for individual rehabilitation programs.

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