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Symptoms of Depression and Anxiety Determine Fatigue but Not Physical Fitness in Patients With CAD

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Introduction: Fatigue is the most frequently reported symptom in patients with coronary artery disease (CAD) and is associated with increased morbidity and mortality as well as with decreased quality of life. Similarly, depression is also prevalent in CAD patients and has a significant negative effect on morbidity and morality of CAD patients. However, no studies have evaluated the relationship between symptoms of fatigue and symptoms of depression and anxiety in CAD patients.

Methods: A total of 1,536 (63% male; mean age 57 ± 11 years) consecutive CAD patients admitted for rehabilitation to the Institute of Psychophysiology and Rehabilitation of the Kaunas University of Medicine, Palanga, Lithuania, agreed to participate in the study. Within 3 days of admission all patients were evaluated by cardiologists for demographic characteristics, CAD risk factors, and severity of heart failure according to New York Heart Association (NYHA) classes. All patients were also evaluated for symptoms of depression and anxiety using the Hospital Anxiety and Depression Scale (HADS) and for fatigue using the Multidimensional Fatigue Inventory (MFI-20). All patients underwent physical fitness evaluation using standard exercise stress-testing procedures.

Results: Multivariate stepwise regression analyses revealed that when age, gender, education, hypertension, heart failure, NYHA class, and severity of angina were included in the model, the determination coefficients for scores on the MFI-20 subscales were low, covering less than 7% of variance. Gender was the strongest predictor of the MFI-20 scores on subscales of general fatigue (β = .211, P = .000), physical fatigue (β = .125, P = .000), mental fatigue (β = .208, P = .000) and decreased motivation (β = .138, P = .000). Education was the strongest predictor of the score on MFI-20 decreased activation subscale (β = .132, P = .000). On the other hand, NYHA class was a moderate predictor for physical fitness (β = .393, P = .000) and together with age, gender, education, hypertension, and heart failure covered 34% of variance.

When HADS scores for depression and anxiety were added, models for MFI-20 subscales strengthened significantly. HADS depression and anxiety scores were the strongest predictors of scores on the MFI-20 subscales of general fatigue (β = .298, P = .000 and β = .259, P = .000, respectively), physical fatigue (β = .243, P = .000 and β = .139, P = .000, respectively), mental fatigue (β = .298, P = .000 and β = .267, P = .000, respectively) and decreased motivation (β = .328, P = .000 and β = .113, P = .000, respectively), and together with other significant variables covered from 16% to 30% of variance. The HADS depression score was the strongest predictor for the MFI-20 subscale of decreased activation (β = .336, P = .000) and together with other significant predictors covered 19% of variance. The HADS score did not predict physical fitness and NYHA class remained the strongest predictor (β = .393, P = .000).

Conclusion: Fatigue in CAD patients has a stronger relationship with symptoms of depression and anxiety than with symptoms of CAD. On the other hand, physical fitness is mostly related to symptoms of CAD, but not to symptoms of anxiety and depression.