SUBJECTIVE RATHER THAN PHYSICAL IMPROVEMENTS MEDIATE THE REDUCTION IN DEPRESSION ASSOCIATED WITH PARTICIPATION IN A CARDIAC REHABILITATION PROGRAM IN WOMEN

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Authors: Donna Chelle V. Morales, Beth Parker, Marie LaGassee, Edward Dostaler, Donna Polk, Hartford Hospital, Hartford, CT, University of Connecticut, Internal Medicine Residency, Farmington, CT

Background: Depression is associated with increased morbidity and mortality in patients with cardiovascular disease (CVD) and is more common in women with CVD. Participation in a cardiac rehabilitation (CR) program reduces depression in cardiac patients, although whether the reduction in depression is mediated by improvements in physical function or subjective well-being associated with program participation has not been established. Accordingly, the purpose of the present investigation was to assess relationships between changes in depression, subjective health and exercise performance in women following participation in a CR program.

Methods: A retrospective analysis of 171 women who completed a 12 week program at three Hartford Hospital CR sites from 2006-2008 was performed. Depressive affect (Beck Depression Index (BDI)), subjective health status (SF-36), exercise performance (submaximal exercise test measured in METS, exercise heart rate, exercise blood pressure) were assessed at the time of enrollment into the program and again at completion of the program. Paired t-tests were used to determine significant changes in outcome pre-CR to post-CR, and analysis of covariance (ANCOVA) was used to determine significant covariates associated with pre-post BDI scores.

Results: BDI scores (pre +7.39 SD and post +7.70 SD; p = 0.000) and SF 36 scores (pre +9.92 SD and post + 9.97 SD; p =0.000) were significantly improved by completion of CR. Significant covariates of the change in pre-post BDI scores were change in SF-36 total score (p= 0.000) and change in SF-36 mental health component score (p = 0.000). Notably, BDI scores were not significantly influenced by changes in exercise parameters (submaximal exercise test, exercise heart rate, exercise blood pressure) associated with CR (p > 0.539).

Conclusions: These results confirm that participation in a cardiac rehabilitation program ameliorates depression in women with cardiovascular disease. Furthermore, improvement in depression with cardiac rehabilitation appears to be mediated by subjective improvement in well-being and quality of life rather than measurable increases in physical function and exercise tolerance.