

Cardiac Rehabilitation Program for Patients with Coronary Heart Disease: A Cognitive-Behavior Group Therapy Approach

Chia-Ying Weng¹, Chin-Lon Lin², Tin-Kwang Lin^{2,3}, Chih-Wei Chen², Yi-Da Li², Chiu-Tien Hsu⁴, Su-Su Wong⁵, and Shih-An Pai¹

¹Department of Psychology, National Chung Cheng University

²Department of Cardiology, Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation

³School of Medicine, Tzu Chi University

⁴Department of Clinical Psychology Center, Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation

⁵Department of Child Development and Family Studies, Tzu Chi University

Objective: This study attempted to examine the effectiveness of a cognitive-behavior group therapy (CBGT) program in reducing hostility and producing changes in its associated cardiovascular activity during the anger-recall task among patients with coronary heart disease (CHD). **Method:** This study adopted a case-control trial. In addition to standard medical care, the 16 intervention-group patients (mean age: 58.56 ± 6.63 years; men: 75%) attended eight weekly 2-hour sessions with the following components: (1) psycho-education; (2) self-awareness; (3) biofeedback-assisted relaxation training; (4) cognitive therapy, including cognitive flexibility and positive thinking; (5) behavior therapy to foster compassion towards oneself and others; and (6) social support. In order to improve the therapy's efficacy, individualized stress-assessment reports and portable biofeedback devices (stress eraser) were provided to all participants to enhance their self-awareness and motivation to change. In Chinese culture, self-compassion is a fundamental aspect of CBGT that can reduce hostility. The 14 patients in the wait-list control (WLC) group (mean age: 57.50 ± 9.91 years; men: 78.5%) received standard medical care without clinical psychological treatment. Hostility, depression as well as anxiety, respiration rate, and blood volume amplitude (BVA) during the anger-recall task were assessed before and after intervention for the CBGT group and at identical time points for the WLC group. **Results:** Suppressive hostility ($F_{(1,28)} = 5.72, p < .05$), expressive hostility ($F_{(1,28)} = 4.58, p < .05$), total hostility ($F_{(1,28)} = 10.07, p < .05$), and anxiety ($F_{(1,28)} = 13.75, p < .05$) at post-intervention were significantly lower than at pre-intervention in the CBGT group, compared to the WLC group. Moreover, vasodilation function ($F_{(1,23)} = 4.64, p < .05$) -- indexed by BVA -- increased, and respiration rate decreased ($F_{(1,28)} = 5.24, p < .05$) in the CBGT group but not the WLC group. **Conclusion:** Patients with CHD experienced improved vasodilation function, lower anxiety, and fewer suppressive and expressive hostility behaviors following the CBGT psychosocial rehabilitation program.

Keywords: *cognitive-behavior therapy, cardiac rehabilitation, coronary heart disease, suppressive hostility, biofeedback*