Role of Personal Resources in Depression and Stress in Heart Transplant Recipients

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ABSTRACT

Background. Heart transplantation is the primary option for heart failure treatment and increases the survival rate and the quality of life for recipients. However, this surgical intervention induces numerous psychological problems, such as depression and anxiety. Protective factors and personal recourses are a significant force behind healthy adjustment to life stresses. The aim of this study was to assess the role of personal recourses in terms of depression and stress in heart transplant recipients.

Methods. The study involved a sample of 131 post-heart transplant patients. Standardized instruments were used to measure the key constructs: Beck Depression Inventory Short Form for prevalence of depression, Perceived Stress Scale for prevalence distress, and Sense of Coherence (SOC-29), Life Orientation Test, and General Self-Efficacy Scale for measuring personal resources.

Results. We found that sense of coherence, optimism, and self-efficacy proved to be significant predictors for the prevalence of both depression and stress.

Conclusions. These result suggest that the assessment of coping strategies and sense of coherence in heart transplant recipients requires exploration. Evaluating coping strategies and sense of coherence before surgery seems significant and begins with developing skills in this domain.

HEART transplantation is one of the most critical of all transplantations owing to its life-maintaining function. Heart transplantation is an established therapy for end-stage heart disease [1,2]. Organ transplantation significantly improves both the quality of life and the psychosocial situation. However, the quality of life of a healthy person is rarely obtained and the persistence of psychological symptoms is found [3]. The available literature emphasizes the possibility of a new heart triggering a new set of stressors, psychological challenges, and adaptive demands [4]. Mood disorders, such as depression, are some of the most common psychiatric illnesses observed in cardiac transplant patients [5]. Moreover, a cardiac transplant as a chronic disease may adversely affect the patient's well-being and psychological condition [6]. Patients' reactions toward their diseases are very diverse and depend on the clinical picture, disease symptoms, psychological approach to the perception of the illness, and personality traits, including personal resources, temperament, strategies for coping with stress, and numerous situational factors [7–10].

Positive psychology evaluates and nurtures the best values in human life. The fundamental goal of positive psychology is to foster the development of strengths in humans, their values and virtues, to give to a person the opportunity to live their life to the fullest, to develop and to perfect themselves in the pursuit of happiness [11,12].

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Personal resources are crucial components in coping with stressful life events. They can be defined as general features of the external, interpersonal, and personal world that play a regulatory role in obtaining and maintaining proper health status. Personal resources prevent the triggering of stressors, prevent further development of chronic stress, and promote effective stress management strategies. Personal resources are specific functional abilities that may be present in both the environment, the person, and their mutual interactions. Personal resources can be further divided into external (physical, biological, and social factors) and internal (spiritual, psychological, and biological) factors [13,14].

According to the literature, psychological and behavioral variables, such as personal resources (coping strategies, sense of coherence, optimism, self-efficacy) affect patients' adjustment to life with a transplanted heart, as well as the quality of their lives [8,15].

Modern health psychology devotes much attention to the scope of problems concerning personal and social resources, viewing them as factors conducive to health and the quality of life. According to Moos and Shaefer [16], personal resources are "relatively constant personal and social factors which exert their influence on individual attempts to cope with turning points in life and stress transactions." Important internal resources mentioned in the literature involve the following: optimism, sense of self-efficacy, locus of self-control, self-esteem, and a sense of coherence (SOC) [17]. These resources affect the quality of managing difficult and stressful life situations, and may improve one's resistance to negative consequences of stressful events, both physical and psychological [18]. The stress and the coping theories suggest that the impact of caregiving on the caregiver's life depends to a greater extent on personal psychological resources (ie, SOC) than on objective caregiving demands or social resources. Many previous studies have reported a reverse correlation between the SOC, optimism, sense of self-efficacy, depression and stress, whereas strong SOC was related to a lower rating of stress and lower level of depression [19–21]. The aim of this study was to estimate the prevalence of depression and stress in terms of personal recourses in heart transplant recipients. We proposed a hypothesis according to which:

1. There is a relation between depression and stress, and personal recourses (consequences of stressful events, SOC, optimism, and self-efficacy);
2. There is a difference between the presence of stress and depression, and the level of personal recourses (strong SOC, high level of optimism, and high level of self-efficacy vs low level); and
3. Depression and stress predictors are present.

MATERIAL AND METHODS
Participants

This single-center cross-sectional study was conducted at the Cardiovascular Surgery and Transplantology Department, the John Paul II Hospital in Cracow, Poland. Data were collected from June 2012 to June 2014. The study protocol was approved by the bioethics committee of Jagiellonian University, Cracow, Poland (KBET/246/B/2012) and all participants provided information regarding consequences of stressful events with their written consent. Inclusion criteria covered age of over 18 years and minimum time elapsed since transplantation of 3 months. A cohort of 200 patients was included. The study sample consisted of 131 subjects. Participants were primarily males (75.57%). Most of the subjects were married and lived within the area. The mean age of the participants was 54.37 ± 13.19 years and the average time since transplantation was estimated at 9.90 ± 5.43 years (median, 11).

Instruments

This study was performed as a survey and medical record review. The following instruments were applied. The Sense of Coherence, Polish version consists of 29 seven-point Likert-type items for measuring the comprehensibility, manageability, and meaningfulness of the subscale. A higher total SOC-29 score indicates a stronger SOC. Validity and reliability were confirmed in previous studies.

The Generalized Self-Efficacy Scale developed by Schwarzer adopted into Polish by Juczyński. It includes 10 items for measuring the general sense of self-efficacy. Higher scores indicate stronger sense of self efficacy. The Life Orientation Test was developed by Carver et al., with the Polish adaptation by Juczyński. It consists of 10 items for measuring dispositional optimism. Higher scores indicate stronger dispositional optimism.

The Brief COPE is a 28-item scale which consists of 14 coping strategies. The Short Form of the Beck Depression Inventory was used. The Beck Depression Inventory is the most prominently and frequently cited self-report tool for measuring depression. The 13-item questionnaire provides an assessment of 4 major components of depression: behavioral, affective, cognitive, and physiological. Numerical values assigned to each statement ranging from 0 to 3 indicate increasing severity. According to Beck's clinical criterion, a score between 8 and 15 indicates moderate depression and above 16 indicates severe depression.

The study also involved the use of the Perceived Stress Scale to measure the degree of stress affecting one's life. Scores of approximately 13 were considered average, whereas scores of ≥20 were indicative of high (severe) levels of stress.

Statistical Analysis

Data were registered and analyzed using IBM SPSS Statistics. Descriptive statistics (means and standards deviations for continuous measures) were examined in the sample. Comparisons between groups were performed by using Mann-Whitney U test and t tests. To analyze the bivariate between the dependent (depression and the quality of life) and independent variables (SOC, coping strategies) Pearson or rho Spearman correlations were estimated. For all tests, a significance level of $P < .05$; $P < .01$ was predetermined.

RESULTS
Depression and Stress

The average Beck Depression Inventory score for the study population was 6.24 ± 5.31. Overall, 53 individuals (40.45%) reported symptoms of depression. Before transplantation, only 4.5% of the study participants were treated for depression. The mean perceived stress score was estimated at 17.06 ± 5.79. Severe stress was prevalent in 37.40% of the sample (scores of ≥20). Nondepressed