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Illness beliefs before cardiac surgery predict disability, quality of life, and depression 3 months later

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Abstract

Objective: The purpose of this study was to examine the influence of patients' presurgery illness beliefs and cardiac risk factors on health-related outcomes 3 months following cardiac surgery. **Methods:** In a prospective design, 56 patients undergoing elective cardiac surgery (coronary artery bypass grafting (CABG), heart valve surgery, or a combined procedure) were approached on admission to hospital and reassessed 3 months after surgery. Presurgery assessment included cardiac risk factors and measures of illness severity. Illness beliefs were assessed using the Illness Perception Questionnaire–Revised (IPQ-R). Outcome measures included levels of illness-related disability, physical functioning, psychological well-being, and depressive symptoms. **Results:** Physical functioning of patients improved 3 months after surgery, while disability and psychological well-being did not change significantly. Cardiac risk factors prior to surgery were unrelated to the outcomes 3 months later. With the use of hierarchical multiple regression analyses, after controlling for demographic variables and baseline scores of outcome variables, patients' beliefs about their illness predicted disability (adjusted R^2=.350, P<.01), physical functioning (adjusted R^2=.283, P<.01), and depressive symptoms (adjusted R^2=.302, P<.01). Illness severity measures did not mediate the association between illness beliefs and outcomes. **Conclusion:** Patients' beliefs about their illness before surgery strongly influence recovery from cardiac surgery. The results suggest that patients could benefit from presurgery cognitive interventions aimed at changing maladaptive illness beliefs to improve physical functioning and disability following cardiac surgery.

Keywords: Illness beliefs; Illness perceptions; Cardiac surgery; Disability; Quality of life; Depression

Introduction

The aim of cardiac surgery is to prolong life and to reduce illness-associated disability of heart disease patients. Important outcomes from surgery include additional life years and symptom reduction as well as improvements in the patient's quality of life [1,2]. However, identifying which patients benefit most from surgery is not accurately predicted from objective measures of cardiac functioning [3–5]. An alternative approach focuses on patients' perceptions about their illness [6,7]. Patients form beliefs about the identity, time course, possible causes, consequences, and the controllability of their illness [8]. These beliefs provide a framework for patients to make sense of their symptoms and guide subsequent coping strategies. Patients' illness beliefs are closely tied to emotional reactions such as fear, anger, and distress [9]. An increasing number of studies have demonstrated the importance of illness beliefs for health-related outcomes in several chronic illnesses [10–13].

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Several studies in patients with coronary artery disease have shown that certain illness beliefs, such as the expectation of severe consequences and long duration, are related to maladaptive outcomes such as higher illness-related disability [14], lower quality of life [15,16], higher levels of depression [16], a later return to work [15,17], and a poorer attendance at cardiac rehabilitation programs [18,19]. Furthermore, illness beliefs have shown to be a better predictor of disability than medical variables [17]. It should be noted that illness beliefs are lay beliefs that can be highly discrepant from expert opinions about the severity of the patient's condition and do not show strong relationships to objective measures of illness severity [10,14,17]. These findings are of particular importance, given that interventions by Petrie et al. [20] and recently by Broadbent et al. [21] have shown that it is possible to improve functional outcome by changing illness beliefs of myocardial infarction patients, thus suggesting a method for improving recovery and return to work in cardiac patients.

So far, most studies have evaluated illness beliefs in relatively stable medical conditions. It could be argued that the relationship between psychological factors and outcome is not surprising. However, heart surgery can be considered as causing a more dramatic change in the health of the patient, which might be accompanied by a rapid cognitive reappraisal and reduction of the influence of presurgery beliefs the patients hold about their illness. Therefore, it is still unknown whether illness beliefs before a critical medical intervention predict the outcome of cardiac rehabilitation months later, or whether objective measures of illness severity or changes in clinical variables due to the surgery are principal determinants of future functioning. It could be assumed that clinical measures of illness severity such as heart functioning, course of surgery, or risk factors account for the variance in health-related outcomes after surgery. It needs to be controlled whether common variance in illness beliefs and surgery outcome is mainly explained by clinical measures of illness severity, or whether illness beliefs predict outcome even after controlling for medical severity. Previous studies have shown that illness beliefs explain a moderate amount of variance after clinical variables are controlled [14,22]. This suggests that presurgery illness beliefs might already influence health-related outcomes independent of clinical measures of illness severity or the course of surgery.

The aim of the present study was to examine the relationship between presurgery illness beliefs and later illness-related disability, health-related quality of life, and depression. First of all, our major hypothesis was that illness beliefs assessed before scheduled heart surgery would predict disability, health-related quality of life, and depressive symptoms 3 months later. Second, we hypothesized that objective medical measures of illness severity would not mediate the association between illness beliefs and disability, quality of life, and depressive symptoms after surgery.

Method

Participants

Patients were recruited from an open heart surgery unit at the Marburg University Hospital, Germany. Patients aged between 18 and 80 years who were receiving coronary artery bypass graft surgery (CABG), heart valve surgery, or combined surgery were invited to participate in the study. A total of 96 patients were informed about the study and 66 agreed to participate. Three patients subsequently withdrew their agreement, one person died, and seven patients were not able to fill in the first questionnaire because of medical problems (two patients) or language problems (five patients). Thus the final sample consisted of 56 patients.

Procedure

The present study was approved by the ethics committee for medical research at the University of Marburg. With the use of a longitudinal design, patients completed informed consent procedures and the first questionnaire after admission to the unit and before undergoing surgery. Additional medical data was taken from the patient file. Three months following surgery, patients were mailed a follow-up questionnaire and responses were received from 42 patients (75% response rate). The flow of the patients through the study is shown in Fig. 1.

Assessment

Illness severity

Illness severity was assessed by three different indices before surgery: First, left ventricular ejection fraction was

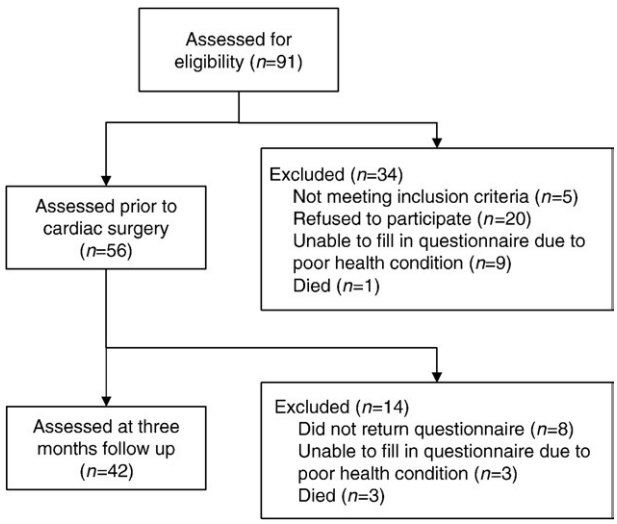

Fig. 1. Flowchart of patients through the study.