Heart-focused anxiety before and after cardiac surgery

Jürgen Hoyer[a,*], Georg H. Eifert[b], Franziska Einsle[c], Katrin Zimmermann[c], Stefanie Krauss[c], Michael Knaut[d], Klaus Matschke[d], Volker Köllner[e]

[a]*Department of Clinical Psychology and Psychotherapy, Technical University Dresden, Dresden, Germany*
[b]*Department of Psychology, Chapman University, Orange, CA, USA*
[c]*Department of Psychosomatics and Psychotherapy, Medical Clinic, Technical University Dresden, Dresden, Germany*
[d]*Department of Cardiology, Medical Clinic, Technical University Dresden, Dresden, Germany*
[e]*Department of Psychosomatic Medicine, Bliestal Clinic, Blieskastel and Saarland University Hospital, Homburg/Saar, Germany*

Abstract

Objective: We investigated the degree and course of heart-focused anxiety (HFA) in patients with cardiac diseases before and after cardiac surgery. **Methods:** We examined 90 patients undergoing coronary bypass, valve replacement, or combined surgery before surgery, 6 weeks after surgery, and 6 months after surgery. Patients completed the Cardiac Anxiety Questionnaire (CAQ), which assesses heart-focused fear, attention, and avoidance, and a set of other questionnaires assessing general anxiety, depression, and quality of life. Data were compared with an age- and sex-controlled contrast group of 72 orthopedic patients with no history of cardiac disease. **Results:** All dimensions of HFA were elevated in patients before surgery. CAQ-Fear was significantly reduced 6 weeks after surgery and at 6-month follow-up. CAQ-Avoidance was stable after surgery but declined on follow-up, while there was only a statistical tendency indicating reduction in CAQ-Attention. Approximately 20% of patients continued to experience clinically elevated levels of HFA at 6-month follow-up. Furthermore, we found decreases in global anxiety and depression, and an increase in quality of life after surgery. **Conclusions:** In contrast to global psychosocial indicators, the more specific assessment of HFA may help identify individuals with elevated levels of HFA who might benefit from interventions to help them adjust to the effects of surgery and lingering cardiac problems.
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Keywords: Heart-focused anxiety; Cardiac anxiety; Cardiac surgery; Avoidance behavior; Heart-focused attention

Introduction

Heart-focused anxiety (HFA) is common in individuals with or without cardiac disease [1]. Intense HFA is often triggered by chest pain because chest pain and other often benign cardiopulmonary physical symptoms can mimic cardiac problems. For this reason, a relatively large percentage of persons who experience chest pain and cardiac sensations repeatedly seek medical evaluations [2], and many of these individuals experience elevated levels of HFA [3]. Studies from the United States show that approximately 15–20% of all general medical visits are precipitated by cardiopulmonary symptoms [4]. Not surprisingly, the social and economic effects of health care utilization and repeated overutilization spurred by HFA are immense both in Europe and in the Unites States [5].

HFA features prominently in anxiety disorders and has been studied extensively in patients with panic disorder [6] and hypochondriasis [7]. The significance of HFA has also been examined in patients with noncardiac chest pain, also referred to as atypical or nonorganic chest pain, or syndrome X [8,9]. Apart from its role in psychological problems, HFA can be associated with various types of cardiovascular diseases (e.g., ischemic-heart-disease-related angina) and respiratory problems such as chronic hyperventilation [1]. HFA can, thus, be associated with several psychological disorders and with a variety of physical diseases. This means

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* Corresponding author. Technical University Dresden, Dresden D-01062, Germany. Tel.: +49 351 46336986; fax: +49 351 46336955.
E-mail address: hoyer@psychologie.tu-dresden.de (J. Hoyer).

that the presence of acute HFA can be indicative of a complex misinterpretation of bodily sensations or an actual cardiac crisis, or both. Differential diagnosis of diseases or disorders underlying chest pain and nonspecific ostensibly cardiopulmonary symptoms is therefore often difficult [10].

Past research has primarily focused on examining HFA in patients who do not suffer from a diagnosable cardiac or other somatic disease, whereas HFA in patients with identifiable physical diseases has been understudied. Yet many of such patients suffer not only from heart malfunctioning and the associated physical impairment but also from the psychological impact of their disease [11,12]. Even individuals for whom anxiety is normally not a problem may experience intense HFA, and may even fear dying, once they are diagnosed with a cardiac disease and must confront the heightened probability of experiencing a life-threatening cardiac crisis [13,14].

Studies assessing the quality of life of patients with cardiac diseases often use only global measures of well-being such as the EuroQoL [15], the SF-36 Health Survey questionnaire [16], or global screening inventories for anxiety or depression [17]. These measures were not designed to assess the more specific HFA in cardiology patients. Thus, more direct information about HFA in cardiology patients and the course of their anxiety over time and in relation to cardiac surgery is needed.

Eifert [8] defined HFA as a specific fear of cardiac-related stimuli and sensations because of their expected negative consequences. In line with the view of anxiety as a multifaceted phenomenon [18], HFA comprises (a) fear and worries about heart sensations, (b) heart-focused attention and monitoring of cardiac-related stimuli, and (c) cardioprotective avoidance behavior designed to minimize cardiac symptoms or complications. These three aspects of cardiac anxiety can be assessed with the Cardiac Anxiety Questionnaire (CAQ) [19].

Previous studies have examined these three aspects of HFA in several emergency room settings and populations [20–22] and cardiology hospital wards [23]. However, the course of HFA has never been examined in relation to cardiac surgery, and it is not known whether anxiety problems associated with a diagnosed cardiac disease decrease after cardiac surgery. In the present study, we therefore examined the degree and, more specifically, the course of HFA in patients with severe and reliably diagnosed cardiac diseases who were scheduled to undergo cardiac surgery. We measured HFA and nonspecific indicators of the mental health status of patients, such as general anxiety, depression, and quality of life before surgery, 6 weeks after surgery, and 6 months after surgery (follow-up).

Our general hypothesis is that HFA is elevated before surgery and decreases after cardiac surgery. Although the three aspects of HFA (fear, avoidance, and attention) might change in different time patterns, we expected all of these indicators of HFA to be lower on follow-up than before surgery (see below).

Additionally, to be able to meaningfully interpret how HFA may differ between cardiology patients and individuals with no heart disease, we also measured HFA in age- and sex-matched individuals with no history of cardiac disease.

Methods

Overview

The study was conducted as a multigroup cohort design to examine consecutive cardiology patients of the Dresden Heart Center (University Hospital) who were undergoing cardiac surgery. The study was approved by the Institutional Review Board of the Medical Clinic of the Technical University of Dresden. Types of surgery included coronary bypass for patients with coronary artery disease, valve replacement for patients with heart valve defects, and combined surgery. We conducted three assessments: 2 weeks before surgery (presurgery, t_1), 6 weeks after surgery (postsurgery, t_2), and 6 months after surgery (follow-up, t_3). To interpret HFA data from cardiology patients undergoing cardiac surgery in a meaningful way, we also collected cross-sectional data from an age- and sex-controlled comparison sample without a history of cardiac disease.

Participants

Cardiology patients

The sample of cardiology patients consisted of consecutive patients before (and after) elective cardiac surgery. We excluded patients aged <18 years, emergency cases, and patients who were either illiterate or unable to converse in German. Of a total of 278 patients who were initially contacted, 197 patients consented to participate and answered the first set of questionnaires before surgery. We were unable to obtain postsurgery data for 107 patients for the following reasons: 6 patients had died; 66 patients replied too late or with too many items unanswered; 3 patients changed their residence; and a further 31 patients failed to respond for unknown reasons. Thus, the final sample included 90 patients with a mean age of 66.9 years (S.D.=8.51), of which 67 (74%) were male, 75 (83%) were married, and 68 (76%) were pensioners. The majority of these patients (n=60; 67%) underwent bypass surgery, 22 (24%) had a valve replacement, and 8 (9%) had combined surgery. A comparison of the presurgery data of these patients with the data of those who did not complete the postsurgery questionnaire sets indicated no difference between these two groups in terms of age, sex, education, professional, and health status, or with regard to measures of general anxiety and HFA, depression, and quality of life (all t tests and chi-square tests, P>.20).

Contrast sample without cardiac problems

To evaluate the scores of cardiac surgery patients, we also examined a sample with no history of any cardiac disease.