Journal of Affective Disorders 164 (2014) 63–68

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Preliminary communication

Somatic, but not cognitive, symptoms of anxiety predict lower levels of physical activity in panic disorder patients

Cristiano Tschiedel Belem da Silva [a,b,*], Felipe Schuch [a,b], Marianna Costa [a], Vania Hirakata [c], Gisele Gus Manfro [a,b]

[a] Anxiety Disorders Outpatient Program, Hospital de Clínicas de Porto Alegre (HCPA), Department of Psychiatry, School of Medicine, Federal University of Rio Grande do Sul (UFRGS), Brazil
[b] Post-graduation Program in Medical Sciences: Psychiatry, School of Medicine, Federal University of Rio Grande do Sul (UFRGS), Brazil
[c] Biostatistics Unit, Hospital de Clínicas de Porto Alegre (HCPA), Brazil

ARTICLE INFO

Article history:
Received 6 November 2013
Received in revised form
9 April 2014
Accepted 9 April 2014
Available online 18 April 2014

Keywords:
Dimensions
Somatic
Anxiety
Exercise
Panic
Cardiovascular

ABSTRACT

Background: Anxiety disorders have gathered much attention as possible risk factors for the development of cardiovascular disease (CVD), possibly mediated by an unhealthy lifestyle (e.g. low physical activity). However, prospective studies on anxiety disorders and CVD show conflicting results. A possible explanation is that somatic symptoms of anxiety may have a more specific cardiovascular effect than cognitive symptoms across different anxiety disorders. The present study investigated the association between cognitive and somatic symptoms of anxiety and physical activity (PA) in a sample of panic disorder (PD) outpatients.

Methods: One-hundred and two outpatients with a lifetime diagnosis of PD from a previously studied cohort were contacted. Patients were evaluated throughout the MINI, the Beck Anxiety Inventory (BAI) and the International Physical Activity Questionnaire (IPAQ). After performing a multivariate regression analysis, groups were divided into high and low somatic anxiety.

Results: Patients with high somatic anxiety showed a significantly higher prevalence of low level of PA as compared to those with low somatic anxiety (62.5 versus 34.3%; χ^2= 5.33; df=1; P=.021). Somatic symptoms of anxiety remained the only important predictors of low level of PA (odds ratio [*OR*] 2.81; 95% *CI* 1.00–7.90; p=.050) in the multivariate model.

Limitations: The main limitations of the present study are the cross-sectional design and the small sample size.

Conclusions: Results support specific effects of somatic symptoms of anxiety on risk for low level of PA, which might explain inconsistent results regarding CVD risk in the literature.

1. Introduction

Anxiety disorders have been consistently associated with increased incidence of coronary heart disease (CHD) (Roest et al., 2010). Although the underlying mechanisms linking these conditions are still unclear, current research points out that anxiety may interact with stress, inflammatory pathways, endothelium damage and low level of physical activity (PA), leading to cardiovascular outcomes (Belem da Silva et al., 2013; Hoge et al., 2009; Stillman et al., 2013; Sabourin et al., 2011).

Anxiety disorders and CHD are highly prevalent, chronic and disabling conditions, but few studies have explored interventions that could jointly address anxiety and cardiovascular symptoms. Meta-analytical data have already shown positive effects of aerobic exercise on the reduction of CHD risk factors (Kelley and Kelley, 2008); however, little is known about its efficacy in decreasing anxiety symptoms. While a recent meta-analysis (Jayakody et al., 2013) found out that physical exercise was superior to placebo in reducing anxiety symptoms, one of the included studies failed to show PA's superiority against antidepressants in treating patients with panic disorder (PD) (Broocks et al., 1998). Nevertheless, considering that antidepressants might be associated with important side effects (Stage and Kragh-Sørensen, 2002; Aursnes and Gjertsen, 2008) and thus low adherence, especially in panic disordered patients, interventions targeted to encourage PA still sound appealing for these individuals.

* Correspondence to: Hospital de Clínicas de Porto Alegre, Ramiro Barcelos, 2350 - Room 2202, Porto Alegre 90035-003, Brazil Tel./fax: +55 51 3359 89 83.
E-mail address: cristianotbs@hotmail.com (C.T. Belem da Silva).

http://dx.doi.org/10.1016/j.jad.2014.04.007
0165-0327/

On the other hand, adherence can still be an issue with exercise prescription across different populations. An evaluation of the effectiveness of the National Exercise Referral Scheme in the UK showed that 40% of primary-care patients did not complete the prescribed programs (Murphy et al., 2012). Interestingly, another study found that increased baseline physical activity might predict better adherence to exercise programs (Morgan, 2005). Considering that better adherence might be a potential advantage of exercise over medication prescription for anxiety disorders, identifying those individuals at greater risk of low baseline PA, and thus more resistant to exercise recommendations, can be quite relevant. Similarly, the way individuals perceive the condition they have, also known as "illness cognition", may also play a role in PA adherence. A recent study (Reges et al., 2013) suggested that perceived susceptibility to heart disease might enhance attrition to exercise prescription. Moreover, anxiety sensitivity (AS) and negative affect, two intermediate phenotypes associated with most of the anxiety disorders (Joiner et al., 2002; Brown et al., 1998), might also play a role in physical activities adherence. In other words, the effectiveness of recommending and prescribing PA to alleviate anxiety symptoms might depend on features other than categorical DSM diagnoses, tailoring our practice towards a more personalized approach. One possibility is that patients with more somatic anxiety features are more prone to not adhere to exercise prescription. Therefore, studying different patterns of exercise practice within PD populations might aid in developing more effective PA treatment programs, helping to identify reliable predictors of better adherence and to develop better approaches for those at greater risk of attrition.

Therefore, the aim of the present study is to investigate the association between anxiety and PA, as measured by a structured and validated instrument, in a clinical sample of outpatients with a lifetime diagnosis of PD. Furthermore, we sought to examine the role of individual somatic symptoms of anxiety on the risk for decreased PA levels.

2. Methods

2.1. Study sample

One hundred and two patients from the Anxiety Disorder Outpatient Unit of Hospital de Clínicas de Porto Alegre (HCPA), Brazil, cohort were re-contacted between November 2011 and December 2012 in order to participate in this study. All of them had a lifetime DSM-IV diagnosis of PD, as assessed by our trained staff-members by means of Mini International Neuropsychiatric Interview (MINI) (Sheehan et al., 1998). Research assistants called the patients retrieving our original identification database. Patients were asked screening questions about their general and cardiovascular health. They were excluded if reporting any unstable cardiovascular disease that could possibly impair PA practices or if they were current smokers. Seven individuals reported current unstable cardiovascular disease, three subjects had known type II Diabetes and ten were current smokers; thus, they were all excluded from the present study. Ten patients withdrew possibly due to impairing avoidance. The study was approved by our local Institutional Review Board (protocol number 11-0376) and a written informed consent was obtained from all participants.

2.2. Procedures

Once participants were recruited, they were scheduled to a one-hour interview in a private room, with no accompanying relatives performed by a trained psychiatrist or psychologist. Patients were then evaluated throughout a psychiatric clinical interview and the Mini-International Neuropsychiatric Interview 5.0 (MINI), a structured diagnostic interview that was used to assess DSM-IV and ICD-10 psychiatric disorders (Sheehan et al., 1998). This instrument is widely used, being extensively validated worldwide, including a Portuguese–Brazilian version (Amorim, 2000). The clinical interview consisted of general assessment of previous medical illnesses, focusing on cardiovascular diseases. We asked for available tests/exams whenever available to confirm clinical diagnoses.

Anthropometric measures were also taken during the interview. Patients were weighted wearing light clothes and were asked to take off their shoes. A standard scale, inspected by the national weight and measures agency, was used and recorded to the nearest .1 kg. BMI was calculated as weight/height^2 (kg/m^2).

Moreover, self-report questionnaires were given to participants to be completed at home as follows:

2.2.1. BAI

The Beck Anxiety Inventory (BAI) was used in order to assess anxiety symptoms dimensionally. It is a self-report structured scale designed to measure the severity of anxiety symptoms (Beck et al., 1988). It has shown adequate psychometric properties in Brazilian clinical samples (Cunha, 2011). It is a likert scale that contains 21 items, each of which ranging from 0 (absent) to 4 (severe). According to the literature (Kabacoff et al., 1997), the BAI has a two-factor structure: Factor I (items 1–3, 6–8, 11–13, 15, and 18–21) can be summed to form somatic-BAI subscale and Factor II (items 4, 5, 9, 10, 14,16, and17) refers to BAI-subjective component.

2.2.2. IPAC

PA was assessed using International Physical Activity Questionnaire (IPAQ) short version. IPAC is a questionnaire designed to access PA on a weekly basis. It has been validated in a wide 12-country epidemiological study that included Brazil (Craig et al., 2003). This instrument is composed of three items, each of them subdivided in two sub-items: the first focuses on the number of days per week and the second informs the mean daily time spent on each category of PA. An overall Metabolic Equivalent of Task (METS) score is computed multiplying both sub-items and a weighted score for each category. According to the scoring protocol, PA levels were classified as (1) high if the patient participated in a vigorous-intensity activity for at least 3 days, accumulating at least 1500 MET-min/week or participated for 7 or more days in any combination of walking moderate-intensity or vigorous-intensity activities achieving a minimum of 3000 MET-min/week; (2) moderate if the patient joined vigorous activities for 3 or more days a week, for at least 20 min per day or participated in a moderate-intensity activity or walking for at least 30 min per day or a combination of walking, moderate-intensity or vigorous-intensity activity for 5 or more days a week, achieving a minimum of 600-MET-min/week; (3) low if the participants did not meet any of the former criteria of PA. The criteria used for IPAQ categorization follow the American College of Sports Medicine (ACMS) recommendations and the Center for Disease Control and Prevention (CDC) recommendations (Pate et al., 1995).

2.3. Data analysis

The SPSS version 20.0 was used in order to perform all analysis. The patients were categorized into two groups (somatic and cognitive) according to BAI somatic and cognitive factors, as previously described in the methods section. We considered patients with high somatic anxiety those with somatic factor scores above the median of the sample (>9). Those individuals with scores equal or lower than the median of the BAI somatic