Short communication

Assessment and screening of panic disorder in cancer patients: Performance of the PHQ-PD

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A R T I C L E   I N F O

Article history:
Received 27 May 2014
Received in revised form 2 September 2014
Accepted 2 September 2014

Keywords:
Cancer
Panic disorder
Scale
PHQ
Anxiety
Validity

A B S T R A C T

Objective: This study's objective was to promote the transcultural adaptation of the Patient Health Questionnaire- Panic Disorder Module (PHQ-PD) for Brazilian Portuguese and to evaluate the discriminative validity of this scale in detecting PD among cancer patients.

Methods: Adult cancer outpatients (n = 400) from a specialized cancer hospital (61.50% female; 68.40% married; 56% incomplete elementary education or elementary school as the highest educational level) were assessed with the Structured Clinical Interview for DSM-IV and PHQ-PD. Using receiver operating characteristic (ROC) analyses, we determined the sensitivity and specificity values for the original PD algorithm and the PD screening.

Results: The prevalence of PD in cancer patients (8.75%) was higher than the prevalence of PD for the general population. The original PD algorithm demonstrated an accuracy of 0.66, sensitivity of 0.31 and specificity of 0.94. The PD screening question in the PHQ-PD had a sensitivity of 0.66 and a specificity of 0.75 (accuracy = 0.80).

Conclusion: PD screening questions in the PHQ-PD may be useful for identifying cancer patients with PD because of the high prevalence of PD in this population and because the questionnaire's sensitivity is greater than that of the original PD algorithm. Nevertheless, researchers and clinical practitioners should consider the original PD algorithm (five items) in the PHQ-PD when they investigate PD in patients because of the algorithm's high specificity. Individuals who are found to be positive for PD on screening should be referred for assessment and a thorough psychiatric interview that focuses on the differential diagnosis of an anxiety disorder relating to cancer.

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Introduction

Anxiety encompasses a wide range of signs and symptoms that are associated with fear, worry, and autonomic changes. Therefore, it may be difficult to distinguish between normal and pathological states. The presence of clinical comorbidities, such as cancer, enhances the symptoms of anxiety and may cause these symptoms to become clinically significant. In a study with a sample of more than 10,000 cancer patients, Linden et al. [1] reported that the prevalence of clinically significant anxiety symptoms was 19%, whereas the prevalence of subclinical anxiety symptoms was 22.6%. The higher prevalence of anxiety symptoms in cancer patients relative to the general population may be the result of the following factors: 1) an adaptive response that is elicited by cancer, 2) neurobiological mechanisms that are shared between anxiety disorders and the immune system, 3) the action of the drugs that are used for treatment, and 4) an increased prevalence of specific anxiety disorders [2,3].

Among the specific anxiety disorders, panic disorder (PD) warrants attention because the incidence of this disorder increases in the presence of other clinical comorbidities [4]. Furthermore, one study showed that there is an association between PD and the subsequent self-reported diagnosis of cancer with odds ratio of 1.8 [5]. PD is characterized by recurrent and spontaneous panic attacks and persistent concern regarding additional attacks, which afflicts patient behavior. This disorder may affect up to 5% of the population and is typically chronic with residual symptoms [6]. Nevertheless, PD is often not recognized by health professionals, particularly in the presence of other psychiatric and clinical comorbidities [4]. Therefore, a thorough investigation of PD in cancer patients is needed. Panic attacks may be associated with other anxiety disorders. However, these attacks are not considered to be spontaneous and are typically associated with a trigger. In cancer patients, a diagnosis of an anxiety disorder caused by a general medical condition must be considered when the anxiety symptoms, such as panic attacks, are linked to the clinical comorbidity.

A viable method to increase the accuracy of PD diagnoses may be specific screening scales. Several scales have been developed and validated for the diagnosis of this anxiety disorder, and these scales may be used to assess the severity of the disorder [7–9]. Instruments that are frequently used to assess PD include the Panic Disorder Severity Scale (PDSS) and the Liebowitz Anxiety Scale (LAS). The PHQ-PD has been developed to screen for PD in primary care settings. It is a six-item version of the PHQ-9, a nine-item version of the PHQ-8, which is a self-report measure of the symptoms of depression and anxiety. The PHQ-PD has been shown to have good sensitivity and specificity in detecting PD in primary care settings. The sensitivity and specificity of the PHQ-PD are comparable to those of the Mini-International Neuropsychiatric Interview (MINI), a structured clinical interview for the diagnosis of PD. The PHQ-PD has also been shown to have good inter-rater reliability and test-retest reliability.

The PHQ-PD is a self-report measure of the symptoms of PD. It is a six-item version of the PHQ-9, a nine-item version of the PHQ-8. The PHQ-PD has been shown to have good sensitivity and specificity in detecting PD in primary care settings. The sensitivity and specificity of the PHQ-PD are comparable to those of the MINI, a structured clinical interview for the diagnosis of PD. The PHQ-PD has also been shown to have good inter-rater reliability and test-retest reliability.

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Scale, which consists of seven items and must be administered by a trained clinical practitioner [10], and the Panic-Associated Symptom Scale, which provides a score that is based on the frequency and intensity of five symptoms that are considered to be essential for a PD diagnosis. This scale must be administered by a clinical practitioner [8]. Because these scales feature multiple items and must be administered by clinical practitioners, their use in screening is limited. Therefore, for PD screening, instruments that are brief, self-administered, and easy to understand are preferred.

A brief version of the Patient Health Questionnaire-Panic Disorder Module (PHQ-PD) includes five self-applied dichotomous items (yes/no) that are easy to answer [10]. Originally proposed in English, the PHQ-PD was tested in a sample of primary care patients and exhibited adequate psychometric indicators. However, the use and validity of this scale in populations with medical comorbidities have not been well tested. These studies were performed with outpatients from gynecology and medical clinic sectors and with hospitalized patients [10,11]. In distinction from other PHQ modules, such as PHQ-9 (depression) and GAD-7 (anxiety), to the best of our knowledge, no study has been conducted using PHQ-PD with samples of cancer patients [12–16].

Therefore, this study's aim was to promote the transcultural adaptation of the PHQ-PD for Brazilian Portuguese and to evaluate the discriminant validity of this scale in detecting PD among cancer patients.

Methods

Subjects

The sample in this study included 400 adult cancer outpatients from a specialized cancer hospital. The hospital is an outpatient public hospital at which approximately 3800 new cases and 45,000 returning patients with differing types of cancer are treated per year. The sample predominantly included women (61.5%) who were married (68.4%), had a low educational level (incomplete elementary education or elementary school as the highest educational level: 56%), and an inactive employment status (60.9%). Regarding cancer location, the number of individuals was selected so that it was proportional to the number of patients for each cancer type. Therefore, the sample consisted of patients with cancers in the following areas: 18.92% breast cancer, 17.04% urology, 11.55% head and neck, 10.54% gynecology, 10.11% upper digestive, 8.66% lower digestive, 6.86% non-melanoma skin cancer, 5.49% thorax/lung, 4.48% melanoma, and 2.02% sarcoma. Of these patients, 32.5% were stage T1, 80.6% were N0, and 94.8% were M0. A total of 34.1% had already undergone chemotherapy, 33.4% had undergone radiotherapy, and 71.9% had undergone surgery. Most subjects did not report a history of psychiatric (91.7%) or psychological (86.3%) illnesses or a family psychiatric history (79.4%).

Instruments

Structured Clinical Interview for DSM-IV (SCID-I — clinician version)

This instrument is used to elaborate clinical psychiatric diagnoses based on the DSM-IV and consists of 10 modules that can be applied in an independent or combined manner. It is considered the most reliable instrument in the field of psychiatric diagnostics. We used the version translated and adapted to Brazilian Portuguese [17].

A brief version of the Patient Health Questionnaire-Panic Disorder Module (PHQ-PD)

We used the Pfizer version (Pfizer, Inc. Copyright © 2005), which was translated and adapted into Brazilian Portuguese in this study.

PHQ-PD translation and adaptation

The PHQ-PD was independently translated from the original English into Portuguese by two mental health researchers with experience in anxiety disorders and instrument validation. Both researchers were Brazilian by birth and proficient in the English language. The two versions were compared, and a single final version was obtained after a consensus was reached. To further establish the validity of the instrument, two Brazilian psychiatrists with substantial experience using scales evaluated the instrument for item pertinence and formulation. This version is shown in Fig. 1.

According to Fig. 1, items A, B and C correspond to the criterion A1 of DSM-IV diagnosis of PD (“recurrent unexpected panic attacks”). D item corresponds to the A2 criterion (“persistent concern about having additional attacks”), and E item relates to the essential characteristics of a panic attack.

Data collection

Initially, as part of a larger study, a total of 1384 patients responded to several screening instruments, including the PHQ-PD, which were used to assess psychiatric signs and symptoms. These patients were invited to participate in the study during the outpatient medical consultation. The self-reported instruments were completed privately and individually. The researchers were available to answer questions. Next, approximately one-third of the patients (N = 434) were selected to participate in a second data collection phase using a random number table. These patients were interviewed by telephone to obtain their response to the SCID-I F module (a highly reliable instrument), and the presence or absence of a PD diagnosis was confirmed. This step was conducted by professionals who were trained to administer the instrument. The calculated diagnostic consistency rate was greater than 85%. Overall, 34 subjects were not located, and the final sample consisted of 400 subjects.

The timeframe for study enrollment was one year. This study was approved by the local research ethics committee (N° HCB 537/2011), and all subjects provided written informed consent after being fully informed regarding the research procedure.

Data analysis

Using receiver operating characteristic (ROC) analyses, we determined the sensitivity and specificity values for the original PD algorithm (the five questions that yielded a “yes” response) and the PD screening question (item 1: “In the last four weeks, have you had an anxiety attack with sudden feelings of fear or panic?”) [8]. The accuracy was calculated considering the percentage of data pairs classified correctly relative to the total.

Results

In this sample, 8.75% (n = 35) of the patients satisfied the criteria for a PD diagnosis using the SCID-I. Based on the original PD algorithm, 8% (n = 32) of the patients exhibited indicators of PD. However, according to the PD screening question, 20.25% (n = 81) of the patients exhibited indicators of panic attacks but did not satisfy all of the diagnostic criteria for PD. Regarding the participants who answered the PD screening question (n = 32 + 81 = 113) positively, only 20.4% (n = 23) exhibited PD according to the SCID. In contrast, 79.6% (n = 90) of the participants exhibited panic attacks that were most likely associated with other anxiety symptoms and did not correspond to a PD diagnosis.

The ROC curve areas were calculated and were 0.73 for the complete PD algorithm and 0.71 for the PD screening question. The exclusive use of the screening question favored the best discriminatory psychometric indicators, which exhibited a sensitivity of 66%, a specificity of 75%, and an accuracy of 80%. Conversely, the original algorithm favored a specificity of 94% and a sensitivity of 31% (Table 1).

Discussion

The PD screening question in the PHQ-PD was associated with moderate discriminatory values for diagnosing PD in cancer patients, which included a sensitivity of 66% and a specificity of 75%. In contrast, the full PD algorithm had a low sensitivity (31%) and a high specificity (94%). Wittkampf et al. [9] attained similar results when they evaluated...
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