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Screening tools for psychiatry disorders in cancer setting: Caution when using

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ABSTRACT

This study evaluated sensitivity/specificity of self-report instruments for the screening of psychiatric disorders/symptoms in cancer outpatients like: current/past major depression, dysthymia, alcohol abuse and dependence, tobacco abuse and dependence, panic disorder, social anxiety disorder, generalized anxiety disorder, obsessive compulsive disorder, posttraumatic stress disorder, phobias, current mania, delusion and hallucination. First, 1384 patients responded to several self-assessment instruments. Then, 400 patients, were then interviewed by telephone to confirm the presence/absence of psychiatric diagnosis. The ROC analyses showed moderate/excellent specificity (Patient Health Questionnaire-4 (PHQ-4)=0.75–0.88, Generalized Anxiety Disorder (GAD-7)=0.77, Fast Alcohol Screening Test (FAST)=0.83–0.86, Fagerström Test for Nicotine Dependence (FTND)=0.72, Brief version of the Patient Health Questionnaire-Panic Disorder Module (Brief-PD)=0.75, and Self Reporting Questionnaire – psychosis items=(0.68–0.91) but low sensitivity (PHQ-4=0.53–0.54, GAD-7=0.52, FAST=0.48–0.58, FTND=0.97, and Brief-PD=0.66)). These results suggest that sensitivity indicators should be used with caution in the cancer clinical setting.

1. Introduction

The presence of psychiatric comorbidities in cancer patients is quite common and can be associated with reduced quality of life, poor response to treatment, and hospitalization, among other issues (Dalton et al., 2009).

The estimated prevalence of psychiatric disorders in individuals with cancer is about 20–50% (Ballenger et al., 2001; Citero et al., 2003; Grassi et al., 2005; Mehnert and Koch, 2007). Approximately 25–30% of cancer patients have diagnostic criteria for anxiety or mood disorders, 17.4% for neurotic or somatoform disorders and 4% for psychotic disorders.

In this context, the diagnosis and early treatment of these disorders are necessary. Due to challenges intrinsic to the high demand for psychiatric care in clinical contexts and, often, to the absence or insufficiency of consultation-liaison psychiatry services, screening scales stand out as a useful resource for large-scale assessments and better guidance for patients in need of more specific assessments.

In this context, there is a wide variety of self-report screening instruments, mostly associated with the assessment of depression, anxiety and substance abuse. These instruments, such as PHQ-4 (Patient Health Questionnaire-4), GAD-7 (Generalized Anxiety Disorder), FTND (Fagerström Test for Nicotine Dependence), FAST (Fast Alcohol Screening Test), and SRQ-24 (Self Reporting Questionnaire), have been validated and translated into many languages and cultures and usually have appropriate psychometric properties, mostly with regard to discriminative validity (Kroenke et al., 2010).

Nevertheless, recent studies performed with patient samples with other clinical conditions have shown that the sensitivity of these instruments, as well as their positive predictive power, may be lower than reported by studies using samples from the general and primary care populations. Examples include the studies by Bunevicius et al. (2013), Lazenby et al. (2014), Pranckeviciene and Bunevicius (2015), and Brünahl et al. (2014), which were conducted among heart disease, cancer, and chronic pelvic pain patients, respectively.

Taking these aspects into account, this study aimed to evaluate the sensitivity and specificity of several self-report instruments for the screening of different psychiatric disorders in a sample of cancer outpatients.

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2. Methods

2.1. Subjects/data collection

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. Initially, as part of a larger study, a total of 1384 patients responded privately and individually to the screening instruments (exclusion criteria: severe cognitive impairment as qualitatively evaluated by the applicator, and the absence of clinical conditions that would affect responses to the instruments). 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, and the presence or absence of a psychiatric 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 (exclusion criteria), and the final sample consisted of 400 subjects. This sample is representative of the major sample ($p > 0.05$) and 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, 18.92% had 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, 34% T2, 21,1% T3 and 12.4% T4. 80.6% were N0, 13.7% N1, 4.3% N2 and 1.4% N3. 94.8% were M0 and 5.2% M1. A total of 34.1% had already undergone chemotherapy, 33.4% had undergone radiotherapy, and 71.9% had undergone surgery 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%).

This study was conducted in compliance with an appropriate internal review board and was approved by the local research ethics committee (No. HCB 537/2011), and all subjects provided written informed consent after being fully informed regarding the research procedure.

2.2. Instruments

The following self-assessment scales were used for data collection:

(a) *Patient Health Questionnaire-4 (PHQ-4)* – screens for depression (PHQ-4D – brief version of PHQ-9) and anxiety (PHQ-4A – brief version of GAD-7) indicators experienced during the prior two weeks (Kroenke et al., 2009; Pfizer, Inc. Copyright 2005) translated this version into Brazilian Portuguese.

(b) *Generalized Anxiety Disorder (GAD-7)* – screens for typical indicators of anxiety disorders experienced during the prior two weeks. This instrument includes the two items from PHQ-4A and five more items that enable screening for Generalized Anxiety Disorder (Spitzer et al., 2006). Pfizer (Pfizer, Inc. Copyright 2005) translated this version into Brazilian Portuguese.

(c) *Fast Alcohol Screening Test (FAST)* – evaluates risky or harmful use and alcohol dependence syndrome. This version was translated and validated for Brazilian Portuguese (Menezes-Gaya et al., 2009).

(d) *Fagerström Test for Nicotine Dependence (FTND)* – measures the degree of physical dependence on nicotine. This version was translated and validated into Brazilian Portuguese (Carmo and Pueyo, 2002).

(e) *Brief version of the Patient Health Questionnaire-Panic Disorder Module* (PHQ-PD) – screens for panic disorder/symptoms experienced during the two previous weeks. The version used was translated and validated for Brazilian Portuguese by Osórioet al. (2015).

(f) *Self Reporting Questionnaire (SRQ-24)* – instrument for screening for mental disorders in primary care services. The four items related to psychotic symptoms and mania were used and are scored as "Yes" or "No" (WHO, 1994). We included an additional item to screening maniac symptoms in agree with DSM-IV parameters.

(g) *Structured Clinical Interview for DSM- IV (SCID-I – clinical version)* – instrument used to obtain clinical psychiatric diagnosis based on DSM-IV criteria (Del-Ben et al., 2001). We evaluated the following diagnoses/symptoms: current/past major depression, dysthymia, alcohol abuse and dependence, tobacco abuse and dependence, panic disorder, social anxiety disorder, generalized anxiety disorder, obsessive compulsive disorder, posttraumatic stress disorder, phobias, current mania, delusion and hallucination.

2.3. Data analysis

Using Receiver Operating Characteristic (ROC) analyses, we examined cut-off values that corresponded to a specific diagnosis (distinguishing subjects with the diagnosis from normal subjects). We determined cut-off values that maximized both sensitivity (Sn) and specificity (Sp) and the accuracy associated with these cut-off values.

3. Results

Major depression and any anxiety disorder were the most prevalent psychiatric disorders with rates of 16% and 44.5%, respectively. There were no cases in this sample with mania or psychotic symptoms (delusion or hallucination). The sensitivities of the instruments ranged from 52% (GAD-7) to 92% (FTND) and the specificities ranged from 72% (FTND) to 88% (PHQ-4D-item 4).

Table 1 shows the sensitivity, specificity, and accuracy values of each instrument for the disorders. The overall results indicate moderate/excellent specificity but low sensitivity for this specific sample. More details can be found in Supplementary material.

4. Discussion

Sensitivity indicators have high value for screening for possible clinical cases in the population. The values observed in this study were mostly classified as moderate for this indicator in the different instruments, which suggests that sensitivity indicators should be used with caution in the cancer clinical setting, as the false negative rates found were approximately 50%.

Previous studies in the cancer setting also observed certain limitations, especially for brief screening tools (Mitchell, 2007; Ryan et al., 2012). Additionally, the sensitivity and specificity values for the same scale vary considerably between validation studies in the cancer population (Vodermaier and Millman, 2011).

One of the possible explanations for these findings is that in the presence of clinical comorbidities, there may be an overlap between the signs and symptoms of psychiatric disorders and those resulting from the cancer. Thus, other symptoms could become more relevant for psychiatric investigation than the common symptoms used in populations without clinical comorbidities. This