Screening for panic-related anxiety in emergency department patients with cardiopulmonary complaints: A comparison of two self-report instruments

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A R T I C L E   I N F O

A B S T R A C T

The present study examined 1) the accuracy of two self-report measures for detecting panic-related anxiety in emergency department (ED) patients with cardiopulmonary complaints; and 2) whether modified scoring resulted in improved performance. English-speaking adults presenting to the ED of a large public hospital with palpitations, chest pain, dizziness, or difficulty breathing were evaluated for the presence of panic-related anxiety with the Structured Clinical Interview for DSM-IV (SCID) over a one-year period. Patients completed the panic disorder modules of the Patient Health Questionnaire (PHQ-PD) and Psychiatric Diagnostic Screening Questionnaire (PDSQ-PD). Sensitivity, specificity, area under the curve (AUC), and predictive values were compared for various cut-offs and scoring algorithms using SCID diagnosis of panic attacks (in the absence of panic disorder) or panic disorder as the reference standard. In this sample of 200 participants, the majority had a chief complaint of chest pain and 46.5% met SCID criteria for panic-related anxiety. The PDSQ-PD demonstrated only fair operating characteristics for panic attacks (AUC = 0.57) and good operating characteristics for panic disorder (AUC = 0.79). The PHQ-PD achieved adequate operating characteristics (AUC = 0.66) for panic attacks and good operating characteristics for panic disorder (AUC = 0.76) using a modified scoring algorithm or a single screening question (AUC = 0.72).

1. Introduction

Panic disorder is a prevalent and disabling anxiety disorder that affects 1.6–2.2% of adults worldwide (Weissman et al., 1997; Rubin et al., 2000; Stein et al., 2010). Because panic symptoms often appear to mimic those of common medical conditions, patients with panic disorder are more likely to initially seek care in general medical settings rather than in specialty psychiatric clinics (Katerndahl and Realini, 1995). Patients with panic disorder attend more visits to general medicine, cardiology, family medicine, and emergency medicine services when compared to outpatients with other anxiety disorders (Deacon et al., 2008). Such patients frequently present to the emergency department (ED) complaining of cardiac and respiratory symptoms, thereby contributing to overcrowding, lengthier waiting times,

and unnecessary repeat utilization of healthcare resources (Leon et al., 1995; Coley et al., 2009; Buccelletti et al., 2013). Up to 44% of ED patients with unexplained chest pain have either panic attacks or panic disorder, but data from several studies indicate that panic symptoms go virtually undetected in ED patients worldwide (Wulsin et al., 1988; Fleet et al., 1996; Foldes-Busque et al., 2010; Sung et al., In press).

Panic attacks are defined by the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2000, 2013) as discrete periods of intense fear or discomfort in which four or more of 13 physical or cognitive symptoms[1] develop abruptly and reach a peak within minutes. The formal diagnosis of panic disorder requires that the individual has experienced recurrent unexpected panic attacks with least one of the attacks being followed by one month or more of persistent concern or worry about additional panic attacks or their

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[1] Palpitations, pounding heart, or accelerated heart rate; sweating, trembling or shaking; sensations of shortness of breath or smothering; feelings of choking; chest pain or discomfort; nausea or abdominal distress; feeling dizzy, unsteady, lightheaded, or faint; chills or heat sensations; paresthesias (numbness or tingling sensations); derealization (feelings of unreality) or depersonalization (being detached from oneself); fear of losing control or going crazy; fear of dying.

consequences (e.g., losing control, having a heart attack, going crazy), and/or a maladaptive change in behavior related to the attacks (e.g., behaviors designed to avoid having panic attacks, such as avoidance of exercise or unfamiliar situations). Because panic attacks are the precursors to full-blown panic disorder, and the ED is the first point of contact for many patients experiencing panic symptoms (Katerndahl and Realini, 1995), emergency medicine clinicians are in a good position to provide early identification and intervention for panic symptoms.

Early intervention is particularly important for those with panic attacks because psychoeducation regarding the causes and management of panic attacks in those with mild or subthreshold symptoms can prevent the later development of more severe, full-blown panic disorder (Meulenbeek et al., 2010). One small randomized controlled trial found that a brief early intervention for ED patients with panic attacks (both with and without full-blown panic disorder) led to significant reductions in depressive symptoms, agoraphobic avoidance, and frequency of panic attacks over a 6-month follow up period. Participants in the control condition did not show any improvements and developed more agoraphobic avoidance during the follow-up period (Swinson et al., 1992). There is also some evidence that early intervention for ED patients with panic attacks can effectively reduce subsequent ED use for panic-related symptoms (Dyckman et al., 1999).

However, consistent screening for panic attacks in the absence of panic disorder and for full-blown panic disorder itself may be overlooked by busy ED personnel due to high patient volume, limited clinician time, and lack of in-depth training in psychiatric diagnosis. In addition, the typical ED workflow is focused on stabilizing potentially life-threatening conditions and may not include formal evaluation of panic symptoms. Clinical practice guidelines for panic disorder increasingly recommend that routine screening be conducted in primary care and emergency medicine settings, since these are the first sites of care for most panic patients (National Institute for Health and Clinical Excellence, 2011; Lim et al., 2015). Diagnosis of panic attacks or panic disorder is indicated in these settings after other general medical conditions and organic causes have been ruled out (Stein et al., 2010).

1.1. Goals of the present study

The use of an effective screening tool has potential to minimize the burden on emergency medicine personnel while simultaneously improving care for ED patients with panic symptoms. Several brief questionnaires have been developed to screen for panic disorder, but these were largely intended for use in primary care or psychiatric outpatient settings. There are no brief screening tools that have been sufficiently validated for identification of patients with panic attacks (in the absence panic disorder) and full-blown panic disorder presenting to the ED. To address this gap in the literature, we compared the diagnostic accuracy of two brief screening questionnaires, the Patient Health Questionnaire (PHQ-PD) and the Psychiatric Diagnostic Screening Questionnaire (PDSQ-PD), for detecting panic attacks in the absence of panic disorder and full-blown panic disorder in a consecutive series of adult patients who presented to the ED of a large, public hospital with chest pain or other cardiopulmonary complaints that might be suggestive of panic attacks or panic disorder. A secondary objective was to determine whether modifications to the original PHQ-PD scoring algorithm or PDSQ-PD cut-off would lead to better operating characteristics for emergency medicine patients.

1.2. Choice of screening questionnaires

The self-administered PHQ-PD and PDSQ-PD were selected due to their brevity and strong psychometric properties in medical or psychiatric populations. The PHQ-PD is freely available and has been widely used internationally. Although it is considered to be a highly sensitive screening instrument for PD (Löwe et al., 2003; Kroenke et al.,

2010; Wittkampf et al., 2011), a potential limitation to this measure is that it asks patients to make the attribution that their physical symptoms are due to an anxiety attack. We were concerned that this may make the PHQ less useful in ED settings since many emergency medicine patients are not aware that their symptoms are anxiety-related. We selected the PDSQ-PD as an alternative screener because it asks patients to rate panic symptoms without having to first classify them as an anxiety attack.

2. Method

2.1. Study overview

Patients were seen on a single occasion at their visit to the ED at the Singapore General Hospital (SGH). The series of patients was collected consecutively conditioned on the availability of the research coordinators who conducted the evaluations in the ED during regular business hours.

2.2. Study site

Singapore is a modern, highly urbanized city-state with a population of 5.6 million, including Chinese (74.3%), Malay (13.4%), Indian (9.1%), and other ethnic groups (3.2%) (Singapore Department of Statistics, 2016). The overall literacy rate is 96.8% (Singapore Department of Statistics, 2016), with most of the population literate in English (79.9%) and in two or more languages (70.5%) (Singapore Department of Statistics, 2011). The SGH Department of Emergency Medicine (ED) has a very high volume of patients and evaluates 300–500 patients per day. Triage of patients is done at their presentation to ED using the Singapore Patient Acuity Category Scale (PACS) (Society for Emergency Medicine in Singapore, 2010). Chest pain is the presenting complaint in up to 40% of the most severe triage categories (Ong et al., 2013).

2.3. Participants

Eligible participants were English-speaking men and women, at least 21 years old, assigned to PACS 2 (possibly critical) or 3 (minor emergency), who had a primary complaint of palpitations, chest pain, dizziness, or shortness of breath. We excluded patients triaged to PACS 1 (critical illness requiring resuscitation) given the need for acute management. Patients with evidence of altered mental status at triage (e.g., dementia or psychosis), poor English-language proficiency, and unwillingness or inability to complete study procedures (e.g., police case) were also excluded.

2.4. Procedures

Clinical research coordinators were stationed at the SGH Department of Emergency Medicine to identify potential participants based on the chief complaint documented by the triage nurse in the electronic medical record. The study coordinator was responsible for explaining the risks and benefits of the study, and obtaining written informed consent prior to initiating study procedures. To minimize interference with routine care, participants were seen by the emergency medicine physician before completing the study procedures. Participants completed a clinical report form, the two self-report screening questionnaires, and the panic disorder module of the Structured Clinical Interview for DSM Disorders (SCID) (First et al., 1995), administered by the study coordinator. Interviewers were not aware of results of the screening questionnaires. These were only calculated after all of the data had been collected and entered into the study database. In addition, to minimize potential order effects the SCID was administered in counter-balanced fashion; half of the participants completed the SCID prior to the screening questionnaires and