



Clinical implications of panic symptoms in dental phobia



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ABSTRACT

The occurrence of panic symptoms in various anxiety disorders has been associated with more severely impaired and difficult-to-treat cases, but this has not been investigated in dental phobia. We examined the clinical implications of panic symptoms related to sub-clinical and clinically significant dental phobia. The sample consisted of 61 patients at a university dental clinic who endorsed symptoms of dental phobia, 25 of whom met criteria for a formal diagnosis of dental phobia. Participants with dental phobia endorsed more panic symptoms than did those with sub-clinical dental phobia. In the total sample, greater endorsement of panic symptoms was associated with higher dental anxiety, more avoidance of dental procedures, and poorer oral health-related quality of life. Among those with dental phobia, certain panic symptoms exhibited associations with specific anxiety-eliciting dental procedures. Panic symptoms may serve as indicators of clinically significant dental phobia and the need for augmented treatment.

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Dental anxiety is increasingly recognized as a major public health concern, as it affects 10–20% of adults in the United States (Doerr, Lang, Nyquist, & Ronis, 1998; Locker, Liddell, & Shapiro, 1999; Milgrom, Fiset, Melnick, & Weinstein, 1988; Sohn & Ismail, 2005) and leads to underutilization of dental care and poor oral health (Berggren & Meynert, 1984; Hakeberg, Berggren, Carlsson, & Grondahl, 1993; Ng & Leung, 2008; Thom, Sartory, & Jöhren, 2000; Thomson, Stewart, Carter, & Spencer, 1996). It is also associated with low oral health-related quality of life, such as problems with sleep and impaired social and occupational functioning (Berggren, 1993; Cohen, Fiske, & Newton, 2000; Kaufman, Bauman, Lichtenstein, Garfunkel, & Hertz, 1991; Kent, Rubin, Getz, & Humphris, 1996). Although the terms “dental anxiety” and “dental phobia” are often confounded in the literature, the diagnosis of dental phobia (i.e., specific phobia of dental procedures) represents a subset of dental anxiety in that it not only involves anxiety about dental procedures but also requires interference or distress

related to the anxiety and avoidance of dental procedures (Gordon, Heimberg, Tellez, & Ismail, 2013). As the majority of the published studies on dental anxiety have not included a diagnostic assessment, there is a dearth of available data comparing correlates of dental anxiety and dental phobia; however, given the interference component of dental phobia, individuals who meet criteria for dental phobia likely experience heightened problems with quality of life and physical health. Although one of the major concerns regarding dental phobia is avoidance of dental care, many dentally phobic individuals who attend appointments experience significant distress and exhibit poor compliance with dental procedures (ter Horst & De Wit, 1993). Furthermore, patients with high dental anxiety are more likely to be referred for sedation during dental treatment, which is an expensive and potentially hazardous technique (Boyle, Newton, & Milgrom, 2009). Developing effective psychological interventions for dental phobia has important public health implications, such as a potential reduction in overutilization of emergency dental care and sedation (Kanegane, Penha, Borsatti, & Rocha, 2003), calling for a better understanding of this condition and informed directions for treatment.

A major change introduced in the DSM-5 is that panic attacks can now be used as a clinical specifier across disorders to indicate potentially more severe and difficult-to-treat cases (American Psychiatric Association [APA], 2013; Batelaan et al., 2012; Craske et al., 2010); however, there is a lack of research examining the

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prevalence and clinical implications of panic symptoms in dental phobia. Although panic attacks are the defining feature of panic disorder, they are often associated with other anxiety disorders, particularly specific phobia (Kessler et al., 2006). Data from the National Comorbidity Survey Replication indicate that 21.1% of individuals who experience panic attacks, but who do not meet criteria for panic disorder, have a specific phobia, which is the highest rate of co-occurrence between panic attacks and an anxiety disorder other than panic disorder (Kessler et al., 2006). Of the specific phobias, dental phobia may be among the most highly associated with panic attacks. In a sample of 59 individuals with both panic disorder with agoraphobia and specific phobia, dental phobia was one of the two most commonly endorsed phobias, with 40.7% of individuals meeting diagnostic criteria (Starcevic & Bogojevic, 1997). Although panic attacks appear to be associated with dental phobia, more data are needed documenting the prevalence of panic symptoms and attacks in dental phobia to clarify the degree to which panic is a component of this disorder.

Examining the occurrence and intensity of panic symptoms associated with dental phobia will also help inform the debate about whether it is appropriate to categorize dental phobia as a subtype of blood-injection-injury (BII) phobia (i.e., phobia of blood, injury, needles, and invasive medical procedures), as it is classified in DSM-5 (APA, 2013; van Houtem et al., 2013). One of the major defining features of BII phobia is that, unlike other specific phobias, it involves a biphasic physiological response to phobia-related stimuli (Öst, Sterner, & Lindahl, 1984; Ritz, Meuret, & Ayala, 2010). Whereas individuals with other types of phobia typically exhibit increased heart rate and blood pressure when they encounter phobia-related stimuli, individuals with BII phobia exhibit an initial increase followed by a subsequent sharp decrease in heart rate and blood pressure, which can lead to vasovagal fainting (Öst et al., 1984). Existing research on cardiac response in dental phobia suggests that the biphasic response pattern may not apply, as individuals with dental phobia who are exposed to phobia-related stimuli (e.g., shown pictures of dental treatment procedures) typically exhibit an acceleration in heart rate that is not followed by a deceleration (e.g., Leutgeb, Schafer, & Schienle, 2011). Examining dental phobia-related panic symptoms can help further determine whether or not dental phobia appears to involve the biphasic physiological response pattern that is indicative of BII phobia, as some panic symptoms are suggestive of this response (e.g., fainting). Clarifying which panic symptoms are the most relevant to dental phobia will help address the question of whether or not dental phobia should be considered a subtype of BII phobia.

The presence and severity of panic symptoms among patients with dental phobia has several important clinical implications. First, the presence of panic in various anxiety and mood disorders has been associated with greater disorder severity and comorbidity, as well as poorer treatment response (Feske et al., 2000; Frank et al., 2000, 2002; Goodwin & Hoven, 2002; Goodwin & Roy-Byrne, 2006; Hinton et al., 2008; Jack et al., 1999; Roy-Byrne et al., 2000). These findings support the use of panic attacks as a clinical specifier across most disorders, as introduced in DSM-5 (APA, 2013). Panic symptoms in dental phobia may also serve as clinical indicators of complex cases in need of more comprehensive assessment and intervention. However, no existing studies have examined the clinical correlates of panic symptoms in dental phobia, so it is unclear if panic attacks should be used as a clinical specifier for dental phobia. Second, panic symptoms may be differentially associated with various anxiety-eliciting dental procedures (e.g., drilling/filling, X-rays), suggesting specific treatment targets for different presentations of dental phobia. For instance, individuals who primarily fear oral X-rays may experience panic attacks characterized by choking sensations, whereas individuals who fear other types of dental procedures may exhibit a

different constellation of panic symptoms. There is some evidence that panic symptoms are differentially associated with variations in anxiety pathology (Rachman et al., 1987; Rapee et al., 1992), but this has not been examined in dental phobia. Third, examining the prevalence of panic in dental phobia can inform the importance of targeting panic symptoms in therapy for this disorder. Most existing empirically supported therapies for dental phobia do not directly address panic symptoms (Gordon et al., 2013); however, incorporating techniques such as interoceptive exposure, an empirically supported treatment for panic symptoms in panic disorder (Craske et al., 1991), might improve the efficacy of therapy for dental phobia. Dental phobia-related panic symptoms may serve as an additional barrier to receiving dental care, as patients who exhibit high physiological arousal (e.g., high blood pressure) at the beginning of a dental appointment can be denied treatment because they are at increased risk for experiencing cardiovascular complications during dental procedures (Brand et al., 1995; Little, 2000). Therefore, if panic is prevalent in dental phobia, targeting panic symptoms in therapy for dental phobia could improve phobic individuals' access to dental care. Further studies examining the presence and implications of panic symptoms in dental phobia are needed to clarify if panic symptoms are an important aspect of dental phobia to address in assessment and treatment.

As a preliminary step toward evaluating the presence and implications of panic symptoms in dental phobia, the present investigation tested the following hypotheses among a group of individuals with varying levels of dental phobia symptoms: (1) individuals with clinically significant dental phobia would endorse more panic symptoms than those with sub-clinical dental phobia, (2) experiencing higher numbers of panic symptoms would be associated with greater self-reported dental anxiety, greater avoidance of dental procedures, and poorer oral health-related quality of life, and (3) different panic symptoms would be associated with specific anxiety-eliciting dental procedures.

1. Method

1.1. Participants

The current sample was comprised of 61 adults (59.0% female; $M_{age} = 40.89$, $SD = 12.98$, range = 19–69) seeking dental care at various clinics within Temple University's Kornberg School of Dentistry in north Philadelphia, PA. The racial/ethnic composition of the present sample was generally consistent with that of north Philadelphia (United States Census Bureau, 2010): approximately 50.8% of participants identified as black, 37.7% identified as white/Caucasian, 3.3% identified as Asian or Pacific Islander, and 8.2% identified as other. The primary inclusion criterion for the present investigation was endorsement of symptoms of dental phobia during the diagnostic interview, the Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV; Brown et al., 1994). Of 120 individuals screened, 65 met this criterion. However, four of these individuals were missing data on panic symptoms and were therefore excluded from all analyses, resulting in a total sample of 61 participants.

1.2. Measures

Semi-structured diagnostic interview. The ADIS-IV (Brown et al., 1994) is a semi-structured clinical interview for assessing DSM-IV (APA, 1994) criteria for current anxiety, depressive, somatoform, and substance use disorders. The ADIS-IV has demonstrated good to excellent inter-rater reliability for the diagnosis of all assessed disorders (κ 's = .56–.81; Brown et al., 2001), with the exception of dysthymic disorder ($\kappa = .31$). All diagnosticians

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