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Course of symptom change during anxiety treatment: Reductions in anxiety and depression in patients completing the Coordinated Anxiety Learning and Management program

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ABSTRACT

When treating anxious patients with co-occurring depression, research demonstrates that both types of symptoms independently improve. The current analyses examined how reductions in anxiety and depression may be interrelated both during treatment, as well as over time following treatment. Participants were 503 individuals with one or more DSM-IV anxiety disorders who completed a collaborative care anxiety management program. Anxiety and depression were assessed at each treatment session (i.e., session by session data) and also at 6, 12, and 18-month post-baseline assessments (i.e., long-term outcomes data). Mediation analyses examined changes in symptoms in session by session data and long-term outcomes data. Anxiety and depression changed reciprocally in session by session data; change in anxiety mediated change in depression to a greater extent than vice versa. In the long-term outcomes data, change in anxiety mediated change in depression. However, the reverse mediation model of the long-term outcomes period revealed that accounting for changes in depression altered the effect of time on anxiety. Thus, temporal change during active treatment may share similarities with those related to maintaining gains after treatment, although differences arose in the reverse mediation models. Limitations of the methodology and implications of anxiety treatment for depression outcomes are discussed.

1. Introduction

Anxiety is a common and disabling problem in the general population. Epidemiological studies indicate that anxiety disorders are among the most prevalent of mental health disorders, with almost 30 percent of individuals in the US being affected in their lifetimes (Kessler et al., 2005). Anxiety disorders are associated with significant distress, functional impairment, and reduced quality of life (Rapaport et al., 2005; Olatunji et al., 2007; Beard et al., 2010). Moreover, costs associated with anxiety are significant, making identification and treatment of anxiety disorders a significant public health issue Dupont et al. (1996).

Anxiety is not treated in isolation, however. Depression and anxiety co-occur at high rates (e.g., Mineka et al., 1998; Kaufman and Charney, 2000; Brown et al., 2001), and the presence of comorbid depression detrimentally impacts course, chronicity, and relapse rates in anxious patients (Bruce et al., 2005; van Balkom et al., 2008). Given their high co-occurrence, understanding the reciprocal interactions of the two categories of symptoms during treatment is highly relevant. For example, level of depression

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could adversely affect adherence with treatment components, including homework-based aspects that require substantial motivation and effort to complete (e.g., Telch, 1988, although empirical data about the effect of comorbid depression on anxiety treatment is mixed; see for example Emmrich et al., 2012). Conversely, anxiety treatments contain aspects of therapy that are likely to reduce depression symptoms or alter shared vulnerability factors such as negative affect (e.g., treatments that require exposure increase behavioral activation). Thus, understanding the interplay of anxiety and depression in the context of treatment and maintenance of gains is a critical part of understanding how interventions might operate within anxious patients.

Empirical data suggest that both depression and anxiety typically respond to evidence-based treatment. Although individuals with comorbid depression and anxiety may initially present with greater symptom severity, both cognitive behavioral therapy (CBT) and pharmacotherapy appear to decrease distress broadly, including reductions in disorder-specific symptoms and comorbid symptoms (e.g., Rudolph et al., 1998; Mennin and Heimberg, 2000; Russell et al., 2001; Persons et al., 2003; Norton et al., 2004; Joormann et al., 2005; Kring et al., 2007; Allen et al., 2010; Tourian et al., 2010). The reason for this broad response, however, is unknown. For example, depression may remit once anxiety symptoms become more manageable, allowing for re-engagement with natural reinforcers in the environment that boost mood. Alternatively, treatments may alter anxiety and depression simultaneously, possibly by operating on higher order constructs such as neuroticism or negative affect that convey vulnerability to emotional disorders (e.g. Brown and Barlow, 2009).

In the interest of addressing the question of treatment mediators, to date three studies examined how changes in anxiety affect depression and vice versa during the course of anxiety interventions. In the first, Moscovitch et al. (2005) modeled change in a cognitive behavioral therapy (CBT) program for social anxiety disorder (SAD). Results indicated that changes in anxiety preceded changes in depressive symptoms during treatment. This finding was replicated in a second study in patients with SAD examining changes in symptoms as a result of medication treatment (Dempsey et al., 2009). Aderka et al. (2011) later extended this methodological approach to a sample of youths receiving Prolonged Exposure for posttraumatic stress disorder (PTSD). Consistent with the prior two studies, changes in posttraumatic stress symptoms mediated changes in depression.

These trials provide excellent insight into change processes within these specific disorders and treatments but, as noted by the authors, a number of limitations exist. First, these studies are limited to individuals with SAD and PTSD and their respective, disorder-specific treatments, limiting generalizability to other disorders. In addition, the studies exclusively examined symptom changes during the course of treatment. The present set of analyses sought to expand upon this work in a number of ways. We extended the approach of prior studies to a more diverse set of anxious patients. Participants in the current study were a large group of individuals diagnosed with one or more anxiety disorders taking part in the Coordinated Anxiety Learning and Management (CALM) program (Roy-Byrne et al., 2010). CALM is unique in that participants were recruited from and treated in primary care settings and provided with transdiagnostic treatment that could include both CBT and/or medication. Moreover, multiple assessment time points allowed for observation of change both over each weekly treatment session (i.e., session by session data) and over a post-treatment period utilizing assessment data obtained 6, 12, and 18 months post-baseline (i.e., long-term outcomes data). Multiple assessment points permitted examination of temporal precedence in the mediation models. We hypothesized that, consistent with prior studies, anxiety would mediate changes in depression during the active portion of treatment. Given the paucity of data on long-term change, we treated models predicting change in anxiety and depression after acute treatment as exploratory without a priori predictions.

2. Methods

2.1. Participants

Participants were individuals participating in a randomized controlled effectiveness trial comparing the CALM intervention to usual care (UC; clinicaltrials.gov Identifier NCT00347269; for a detailed description of the study see Roy-Byrne et al., 2010 and Craske et al., 2011). All individuals met diagnostic criteria for at least one of the following anxiety disorders, which are commonly reported in primary care settings: panic disorder (PD), SAD, generalized anxiety disorder (GAD), or PTSD. Participants could meet diagnostic criteria for more than one anxiety disorder. These individuals were recruited through primary care physicians in 17 primary care clinics from four U.S. cities (Seattle, WA, San Diego, CA, Los Angeles, CA, Little Rock, AR). Potential participants were referred from primary care providers at these clinic locations based on the presence of suspected anxiety as determined by a brief anxiety screener administered within the primary care office. Final eligibility was determined by a study clinician. All procedures were approved by the Institutional Review Board at each institution.

In total, 1004 primary care patients were randomized between June 1, 2006 and April 1, 2008. Our aims were to examine the process of change in the CALM intervention so only those participants randomized to CALM ($N=503$) were included. Eligible participants were between the ages of 18 and 75, met diagnostic criteria for one or more of the target anxiety disorders, and scored 8 or greater on the Overall Anxiety Severity and Impairment Scale (OASIS; Campbell-Sills et al., 2009), indicating clinically meaningful distress and impairment. Exclusion criteria included presence of life-threatening medical conditions, significant cognitive impairment, active suicidality, Bipolar I disorder, current substance use disorders (except alcohol abuse and marijuana abuse), current enrollment in a CBT program, and inability to speak either English or Spanish.

2.2. Intervention

The CALM intervention allowed participants to select their preferred treatment modality: CBT, medication, or a combination of the two interventions (approximately 35%, 9%, and 56% of the sample, respectively). Within each of these treatment modalities, the representation of each of the disorders was similar (CBT: GAD 42.3%, PD 25.2%, PTSD 10.8%, SAD 21.7%; medication: GAD 42.9%, PD 25.0%, PTSD 8.3%, SAD 23.8%; combined: GAD 41.9%, PD 25.0, PTSD 9.1%, SAD 24.3%) and overall a majority of the sample ($N=308$) met criteria for more than one anxiety disorder. Across treatment modalities, participants completed approximately nine sessions ($M=8.70$, $SD=4.6$). The CBT program was administered by a trained Anxiety Clinical Specialist (ACS), who was a social worker, nurse, or masters- or doctoral-level psychologist trained to deliver the intervention (see Rose et al., 2011 for a comprehensive description of training of ACS staff on CBT delivery). Participants attended intervention sessions until they achieved clinical remission (an OASIS score less than 5, described below), declined further services, or needed additional care not addressed by this treatment protocol. Components of the CBT program included five generic modules of anxiety treatment (self-monitoring, psychoeducation, exposure fear-hierarchy building, breathing retraining,