Journal of Anxiety Disorders 57 (2018) 66–75

Contents lists available at ScienceDirect

Journal of Anxiety Disorders

journal homepage: www.elsevier.com/locate/janxdis

Predictors of treatment outcome for the unified protocol for transdiagnostic treatment of emotional disorders in children (UP-C)

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ARTICLE INFO

Keywords:
Child
Anxiety
Transdiagnostic
Intervention
Predictor

ABSTRACT

Various efficacious treatment packages exist for youth anxiety, and cognitive behavior therapy (CBT) is now considered to be a well-established treatment for child anxiety disorders (Higa-McMillan, Francis, Rith-Najarian, & Chorpita, 2016). Improving outcomes for the significant proportion of anxious youth who demonstrate inadequate response to CBT is imperative, but our understanding of who does and does not benefit is incomplete. Further, there are no known empirical studies of predictors of treatment response for youth who receive a transdiagnostic intervention for anxiety or depression, and it is therefore unclear whether predictors of response to a transdiagnostic treatment for children are similar to those found in previous studies of anxiety-specific treatments. This study investigated potential predictors of outcome following administration of the *Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Children* (UP-C; Ehrenreich-May et al., 2018). Participants were 60 children ages 6–13 ($M = 9.47$, $SD = 1.68$) with a primary anxiety diagnosis (with or without comorbid depression) who received a 15-week UP-C group treatment. Consistent with prior literature on CBT for anxiety, social anxiety emerged as a consistent predictor of poorer response to the UP-C. Inconsistent with prior literature, depression, symptom severity, parent psychopathology, and child age were not significant predictors of poor outcome. Results indicate some differences between predictors for transdiagnostic versus anxiety-focused treatments, but point to a need for both types of interventions to better target social anxiety in children.

1. Introduction

Childhood anxiety disorders are prevalent and cause significant impairment (Bittner et al., 2007; Merikangas et al., 2010). Eighteen percent of children report levels of anxiety that impact their functioning (Costello, Egger, & Angold, 2005; Kessler et al., 2005). Untreated anxiety disorders are often chronic and persistent across development, often leading to future anxiety and mood disorders in such youth through adulthood (Achenbach, Howell, McConaughy, & Stanger, 1995; Copeland, Angold, Shanahan, & Costello, 2014; Pine, Cohen, Gurley, Brook, & Ma, 1998). Efficacious psychotherapeutic treatments have been developed for anxiety disorders in youth, of which cognitive behavioral therapy (CBT) demonstrates the greatest level of empirical support.

Although CBT is now considered to be a well-established treatment for youth with anxiety disorders (Higa-McMillan, Francis, Rith-Najarian, & Chorpita, 2016), a significant proportion of youth treated with CBT do not achieve diagnostic remission and/or retain clinical levels of anxiety symptoms following treatment. For example, Hudson et al. (2009) found that only 45.1% of children participating in a CBT intervention achieved remission of their principal anxiety diagnosis at post-treatment (a percentage not significantly different from that of children in a supportive attention group), and nearly 70% of participants still met criteria for at least one clinical anxiety diagnosis post-treatment. Another study comparing individual CBT for child anxiety, family CBT for child anxiety, and an attention control condition found that 43% of participants receiving individual CBT and 45% of participants receiving group CBT continued to meet clinical criteria for their pre-treatment principal anxiety diagnosis at post-treatment (Kendall et al., 2008). These diagnostic remission rates are similar to those observed in a large-scale randomized trial comparing CBT monotherapy, sertraline, and their combination in the treatment of child anxiety, in which between 54% and 65% of CBT participants (depending upon outcome measure) failed to achieve remission of anxiety at post-treatment, and between approximately 41% and 48% of CBT participants failed to achieve remission of anxiety at 36-week follow-up (Piacentini et al., 2014). A significant proportion of youth receiving CBT for an anxiety disorder clearly do not achieve optimal benefit, but our

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https://doi.org/10.1016/j.janxdis.2018.05.004
Received 13 January 2018; Received in revised form 28 April 2018; Accepted 7 May 2018

understanding of who does not benefit is incomplete.

Transdiagnostic interventions are treatment approaches that apply a set of core intervention principles to the treatment of multiple disorders and may hold the potential to target diagnostic profiles and co-morbidity identified by prior literature as predictors of poorer treatment response. Two of these transdiagnostic treatments, the *Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Children* and the *Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Adolescents* (UP-C and UP-A, respectively; Ehrenreich-May et al., 2018) have a growing body of data supporting their efficacy in treating both anxiety and depression symptoms in youth (Ehrenreich-May et al., 2017; Kennedy, Bilek, & Ehrenreich-May, 2018; Queen, Barlow, & Ehrenreich-May, 2014). However, similar to outcomes following CBT, a proportion of youth treated with transdiagnostic treatments continue to exhibit clinically significant symptoms (Chu et al., 2016; Ehrenreich-May et al., 2017; Kennedy et al., 2018; Weersing et al., 2017). Currently, research into predictors of transdiagnostic treatment outcomes for youth does not exist. Therefore, the current investigation examines potential predictors of treatment outcome following administration of a transdiagnostic group treatment for children ages 7–13 with an emotional disorder diagnosis (UP-C; Ehrenreich-May et al., 2018).

While the literature on transdiagnostic treatment predictors is limited, research into CBT outcomes for youth anxiety disorders has identified a variety of predictors, including demographic, diagnostic, and symptom severity predictors. The findings on demographic predictors of CBT treatment outcomes for youth with anxiety disorders are mixed. Overall, age and gender are not associated with CBT treatment outcomes (Bennett et al., 2013; Hudson et al., 2015; Treadwell, Flannery-Schroeder, & Kendall, 1995), although Ginsburg et al. (2011) found that older age was associated with poorer treatment outcomes in the Child Anxiety Multimodal Treatment Study (CAMS) trial. Additionally, Ginsburg et al. (2011) found that minority status was associated with poorer treatment outcomes, but other investigators have found no differences in treatment outcomes associated with ethnicity (Treadwell et al., 1995). Regarding socioeconomic status (SES), Jakubovski and Bloch (2016) found that lower SES was a significant predictor of poorer treatment outcomes. However, other studies have not observed an association between income or SES and treatment outcomes (Southam-Gerow, Kendall, & Weersing, 2010). Therefore, demographic factors seem to be inconsistent predictors of treatment outcomes following CBT for youth anxiety.

A number of diagnostic predictors of CBT treatment outcomes have also been identified, including the presence of depressive disorders and social anxiety disorder. Regarding depression, children who present to treatment with a comorbid depressive disorder or elevated depressive symptoms tend to exhibit poorer response to CBT for anxiety than children without depressive symptoms (Berman, Weems, Silverman, & Kurtines, 2000; Lundkvist-Houndoumadi & Thastum, 2017; Southam-Gerow et al., 2001), although not in all studies (see Nilsen, Eisemann, & Kvernmo, 2013; Ollendick, Jarrett, Grills-Taquechel, Hovey, & Wolff, 2008). Similarly, prior investigations have revealed that the presence of social anxiety disorder at pre-treatment predicts poorer CBT treatment outcomes in university-based and community clinics (Kerns, Read, Klugman, & Kendall, 2013; Wergeland et al., 2016), and youth with social anxiety appear to do better when provided with combined treatment (CBT plus medication) compared to CBT alone (Compton et al., 2014). Taken together, these results suggest that current single-domain psychosocial interventions for anxiety may pose some limitations in treating youth with significant depressive symptoms and social anxiety, and the broader symptom focus of transdiagnostic interventions may positively affect symptom presentations predictive of poorer treatment outcome.

Baseline symptom severity is another predictor that has been explored in the literature, and the findings on this variable have been somewhat mixed. Some investigations have shown that greater anxiety symptom severity at baseline predicts poorer CBT treatment outcomes for youth with anxiety disorders. Wergeland et al. (2016) found that, in community clinics, higher baseline anxiety symptoms were associated with lower odds of recovery from the principal anxiety disorder following treatment and higher anxiety symptoms at one-year follow-up. Compton et al. (2014) also found greater anxiety disorder severity to be predictive of higher anxiety symptom ratings following CBT for youth anxiety disorders. However, Berman et al. (2000) found that parent-rated child baseline anxiety disorder severity was not predictive of CBT treatment response for anxious youth. In addition to child symptom severity, presence and severity of parent psychopathology have also been identified as predictors of poorer outcomes for youth anxiety. Both higher baseline symptoms of parent depression and anxiety have been associated with poorer CBT outcomes for anxious youth (e.g., Berman et al., 2000; Hudson et al., 2015; Wergeland et al., 2016).

In the current study, we investigated whether predictors of treatment outcome for child anxiety (such as those identified above) differ when treatment is delivered in a transdiagnostic format. The *Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Children* (UP-C; Ehrenreich-May et al., 2018) is an emotion-focused, evidence-based treatment that targets neuroticism in youth with emotional disorders between the ages of seven and 13. UP-C brings together cognitive-behavioral and mindfulness-based techniques in a single treatment package flexible enough to address multiple emotional disorder presentations. Furthermore, the UP-C also includes the introduction of specific skills for parents targeting core "emotional parenting behaviors" that are common among parents of youth with emotional disorders (e.g., criticism, over-control/over protection, inconsistency, and modeling of avoidance). Skills are presented in a developmentally sensitive framework and within a group format. Parent group content may be particularly helpful in addressing parent psychopathology, although this is not an explicit treatment target. Table 1 contains a session-by-session description of primary content delivered in child and parent sessions, and further details about the intervention are described in the *Method* section.

Several research trials have provided initial support for the efficacy and feasibility of the UP-C. In an initial open trial of the UP-C in 22 children, a large effect was observed for reduction in principal anxiety disorder severity from pre- to post-treatment (Cohen's $d = 1.38$), and 78% of participants no longer met criteria for any anxiety disorder at post-treatment (Bilek & Ehrenreich-May, 2012). In a more recent randomized controlled pilot trial evaluating the efficacy of the UP-C, children treated with the UP-C exhibited similar remission rates and similarly significant reductions in anxiety symptoms at post-treatment compared to those displayed by children administered an established group anxiety-focused CBT treatment (Kennedy et al., 2018). Results of this randomized-controlled pilot trial provide preliminary evidence that UP-C may function as well as an established anxiety-focused CBT treatment for improving anxiety in youth. Results also revealed that treatment with UP-C leads to greater improvements in other problematic features of emotional disorders, such as cognitive inflexibility and dysregulated expression of sadness, which may be construed as additional benefits of utilizing a transdiagnostic approach (Kennedy et al., 2018).

While UP-C clearly shows promise as an efficacious treatment for children with emotional disorders, a significant proportion of children continued to exhibit clinically significant symptoms of their principal anxiety and/or depressive disorder across conditions at post-treatment in the abovementioned RCT. Response and remission rates observed within this study are similar to those reported in previous work investigating the efficacy of CBT in anxious youth (Cartwright-Hatton, Roberts, Chitsabesan, Fothergill, & Harrington, 2004). Given that a sizeable proportion of children treated with CBT for anxiety or a with a transdiagnostic approach continue to exhibit residual symptoms, identifying predictors of response and remission will enable clinicians to tailor these interventions to better address individual differences that