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Predictors of treatment outcome in an effectiveness trial of cognitive behavioral therapy for children with anxiety disorders

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ABSTRACT

A substantial number of children with anxiety disorders do not improve following cognitive behavioral therapy (CBT). Recent effectiveness studies have found poorer outcome for CBT programs than what is typically found in efficacy studies. The present study examined predictors of treatment outcome among 181 children (aged 8–15 years), with separation anxiety, social phobia, or generalized anxiety disorder, who participated in a randomized, controlled effectiveness trial of a 10-session CBT program in community clinics. Potential predictors included baseline demographic, child, and parent factors. Outcomes were as follows: a) remission from all inclusion anxiety disorders; b) remission from the primary anxiety disorder; and c) child- and parent-rated reduction of anxiety symptoms at post-treatment and at 1-year follow-up. The most consistent findings across outcome measures and informants were that child-rated anxiety symptoms, functional impairment, a primary diagnosis of social phobia or separation anxiety disorder, and parent internalizing symptoms predicted poorer outcome at post-treatment. Child-rated anxiety symptoms, lower family social class, lower pretreatment child motivation, and parent internalizing symptoms predicted poorer outcome at 1-year follow-up. These results suggest that anxious children with more severe problems, and children of parents with elevated internalizing symptom levels, may be in need of modified, additional, or alternative interventions to achieve a positive treatment outcome.

Up to 40% of children with anxiety disorders do not show significant symptom reduction or diagnostic recovery following cognitive behavioral therapy (CBT) (James, James, Cowdrey, Soler, & Choke, 2013; Silverman, Pina, & Viswesvaran, 2008). Recent community clinic studies have found even poorer outcome for standard CBT programs than what is typically found in university clinic research studies (Bodden et al., 2008; Southam-Gerow et al., 2010; Wergeland et al., 2014). With the dissemination of CBT to community clinics, identifying predictors of treatment outcome is important, as this knowledge may be critical to adapt CBT to enhance treatment effectiveness (March & Curry, 1998; Weisz,

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Ugueto, Cheron, & Herren, 2013).

Current knowledge about outcome predictors for CBT for children with anxiety disorders is derived mainly from studies in university-based child anxiety research clinics. Reviews have found some support for type and severity of child psychopathology at baseline (e.g., symptom severity, impairment, comorbidity, principal disorder of social phobia) and parent internalizing psychopathology (e.g., anxiety and depressive symptoms) being related to poorer treatment outcome (Compton et al., 2014; Knight, McLellan, Jones, & Hudson, 2014; Lundkvist-Houndoumadi, Hougaard, & Thastum, 2014; Nilsen, Eisemann, & Kvernmo, 2013). Only two studies have examined predictors of treatment outcome of CBT for children with anxiety disorders in community clinics (Bodden et al., 2008; Nauta, Scholing, Emmelkamp, & Minderaa, 2003). Bodden et al. (2008) reported that higher child age and the presence of parental anxiety disorder negatively influenced treatment outcome, whereas duration of anxiety complaints, but not age or gender, was associated negatively with treatment outcome in a study by Nauta et al. (2003). These two studies examined only a restricted numbers of predictors (i.e., age, gender, duration of anxiety and parent anxiety disorders) and applied different definitions of treatment outcome (e.g., diagnostic remission *vs*. symptom change). Thus, there is limited knowledge about predictors for CBT outcome in children with anxiety disorders when delivered in community clinics, and more research is needed in this area.

Generalizability of findings from university research clinics to community clinics is uncertain, given differences that may exist between samples of children with anxiety disorders in these two settings. For example, higher levels of anxiety symptoms and externalizing problems, higher impairment, and more frequent comorbid conduct disorders have been found among children with anxiety in community clinics. Furthermore, these patients report higher levels of life stressors and more frequently come from low-income, ethnically diverse, and single-parent families (Ehrenreich-May et al., 2010; Southam-Gerow, Chorpita, Miller, & Gleacher, 2008; Southam-Gerow, Weisz, & Kendall, 2003; Villabø, Cummings, Gere, Torgersen, & Kendall, 2013). Such differences in child and family characteristics may influence the generalizability of effects and the aptness of CBT programs developed in university-based child anxiety clinics when transported to community clinics (Weisz, Ng, Rutt, Lau, & Masland, 2013). Some of the clinical child factors (e.g. symptom severity, impairment, comorbidity) that distinguish the patients in the two settings have also been related to poorer treatment outcome in university research trials (Compton et al., 2014; Knight et al., 2014) and thus may contribute to poorer treatment response in community clinics (Weisz, Donenberg, Han, & Weiss, 1995; Weisz, Ugueto, et al., 2013). Certain family characteristics, such as lower family social class, single-parent family status, higher levels of family stresses, and parent mental health challenges have been associated with lower caregiver involvement and support in treatment and poorer treatment adherence in youth psychotherapy (Weisz, Ugueto, et al., 2013). It is important to examine whether these clinical child factors and family characteristics adversely influence treatment outcome of CBT for anxiety disorders when delivered in community clinics, as this would have implications for treatment delivery.

The inclusion of factors beyond demographic, child and parent symptom and diagnosis variables could improve our understanding of factors associated with treatment outcome for children with anxiety disorders. It is functional impairment that usually brings clients to treatment (Angold, Costello, Farmer, Burns, & Erkanli, 1999), and current level of distress has been found to be one of the strongest motivators for treatment engagement (Lyneham, Rapee, & Hudson, 2014). However, children are most often referred for treatment at the initiative of adults (DiGiuseppe, Linscott, & Jilton, 1996). Child treatment motivation, defined as acknowledgment of problems, perceived distress, and willingness to change (Keijsers, Schaap, Hoogduin, Hoogsteyns, & de Kemp, 1999), may therefore be relevant for treatment outcome. It may be difficult to engage children in treatment who do not acknowledge personal distress, and motivation may be particularly relevant for treatment of anxious children expected to face demanding tasks such as exposure aspects of CBT protocols (Kendall et al., 2009). Examining whether motivation influences treatment outcome is important, because motivation may be amenable to change before and during the early phase of treatment (Greenberg, Constantino, & Bruce, 2006). Therefore, a measure of motivation was included as a predictor in the present study.

The aim of the present study was to examine predictors of treatment outcome in children with anxiety disorders treated with manualized CBT in community clinics. Predictors were selected on the basis that they should be representative of anxious children in community clinics. Beyond the variables already identified in the reviews, we included variables found to differ between samples of children with anxiety disorders in university research clinics and community clinics, as well as treatment motivation as mentioned above. The resulting set of predictors was organized into the following categories: demographic factors (i.e. age, gender, single-parent family status, family social class), child factors (i.e. internalizing and externalizing symptoms, impairment from these symptoms on daily functioning, nonanxiety comorbid disorders, principal anxiety disorder, and child motivation), and parent factors (i.e. parent self-rated internalizing symptoms and family stresses). Because our sample comprised at least 90.7% Caucasian, we were unable to include ethnicity as a predictor. Outcome was defined as complete remission (i.e. the remission of all three principal anxiety disorders; separation anxiety disorder, SAD; social phobia, SOP; generalized anxiety disorder, GAD); remission of the principal anxiety disorder; and anxiety symptom improvement (i.e. decrease in the child and parent ratings of child anxiety symptoms), allowing a broad evaluation of treatment outcome.

We predicted that high baseline levels of child symptoms (both internalizing and externalizing), higher impairment from symptoms, nonanxiety comorbidity, a principal disorder of SOP, and parent internalizing symptoms would be associated with poorer treatment outcome, whereas higher child motivation would be associated with better outcome. Furthermore, we expected single-parent family status, low family social class, and elevated levels of family stresses to be associated with poorer treatment outcomes. The predictors were examined at post-treatment and at 1-year follow-up to test for stability of the observed relationships with outcome.

1. Methods

This study was part of a randomized waitlist-controlled effectiveness trial of CBT for children with anxiety disorders. The main aims of the trial were to investigate the effectiveness of CBT in community clinics and to compare the relative effectiveness of individual CBT (ICBT) and group CBT (GCBT) for children with anxiety disorders. The procedures for recruitment of participants, training of therapists and assessors, and randomization have been reported elsewhere (Wergeland et al., 2014) and, therefore, are not presented in detail here. The study was approved by the Regional Committee for Medical and Health Research Ethics of Western Norway. The trial is registered at www.clinicaltrials.gov