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Review

Complete recovery from anxiety disorders following Cognitive Behavior Therapy in children and adolescents: A meta-analysis

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HIGHLIGHTS

- CBT is an effective treatment for childhood anxiety disorders.
- Diagnostic outcomes used in trials of CBT for childhood anxiety vary widely.
- A minority of RCTs have reported on full recovery from child anxiety disorders.
- Inconsistent reporting across trials limits meaningful synthesis of data.

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ABSTRACT

Cognitive Behavior Therapy (CBT) is a well-established treatment for childhood anxiety disorders. Meta-analyses have concluded that approximately 60% of children recover following treatment, however these include studies using a broad range of diagnostic indices to assess outcomes including whether children are free of the *one* anxiety disorder that causes most interference (i.e. the primary anxiety disorder) or whether children are free of *all* anxiety disorders. We conducted a meta-analysis to establish the efficacy of CBT in terms of absence of all anxiety disorders. Where available we compared this rate to outcomes based on absence of primary disorder. Of 56 published randomized controlled trials, 19 provided data on recovery from all anxiety disorders (n = 635 CBT, n = 450 control participants). There was significant heterogeneity across those studies with available data and full recovery rates varied from 47.6 to 66.4% among children without autistic spectrum conditions (ASC) and 12.2 to 36.7% for children with ASC following treatment, compared to up to 20.6% and 21.3% recovery in waitlist and active treatment comparisons. The lack of consistency in diagnostic outcomes highlights the urgent need for consensus on reporting in future RCTs of childhood anxiety disorders for the meaningful synthesis of data going forwards.

Contents

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1. Introduction

Anxiety disorders are among the most common mental health disorders experienced by children and young people, with an estimated prevalence of 6.5% (Polanczyk, Salum, Sugaya, Caye, & Rohde, 2015). As well as having an impact on children's social and academic functioning (Woodward & Fergusson, 2001), if left untreated, anxiety disorders often continue into adulthood and also present a risk for other mental health problems (Pine, Cohen, Gurley, Brook, & Ma, 1998). The most frequently evaluated psychological treatment for anxiety disorders in children and young people is Cognitive Behavior Therapy (CBT), and in recent years there have been a number of systematic reviews and meta-analyses examining the efficacy of this approach (e.g. Cartwright-Hatton, Roberts, Chitsabesan, Fothergill, & Harrington, 2004; Compton et al., 2004; Davis, May, & Whiting, 2011; In-Albon & Schneider, 2007; Ishikawa, Okajima, Matsuoka, & Sakano, 2007; James, Soler, & Weatherall, 2005; James, James, Cowdrey, Soler, & Choke, 2013; Silverman, Pina, & Viswesvaran, 2008). These reviews have most commonly evaluated outcomes of CBT for mixed childhood anxiety disorders, typically including children presenting with social anxiety disorder, generalized anxiety disorder, and separation anxiety disorder. It has consistently been concluded that CBT shows clear benefit over a wait-list control, with, for example, an overall response rate of 59.4% for CBT versus 17.5% for controls (James et al., 2013).

While the outcomes from CBT for childhood anxiety disorders appear promising, a major limitation in meta-analyses conducted to date results from the lack of consistency in diagnostic outcomes reported across treatment trials. For example, while many trials report absence of the primary pre-treatment anxiety disorder diagnosis (i.e. the most impairing disorder) as their central outcome (e.g. Silverman et al., 1999; Spence, Donovan, & Brechman-Toussaint, 2000; Melfsen et al., 2011), others take more or less conservative approaches, including whether the initial primary disorder was still primary following treatment (e.g. Kendall et al., 1997), whether all the anxiety disorders that would have made the child eligible for inclusion were absent following treatment (e.g. Ginsburg et al., 2011), or whether the child had recovered from *all* anxiety disorder diagnoses (e.g. Cobham, 2012). The distinction between these indices of outcome is critical as comorbidity is common among children and young people with anxiety disorders (Waite & Creswell, 2014). As such, it remains unclear from previous meta-analytic reviews what proportion of children continue to experience significant impairment due to anxiety following CBT. Indeed, it is perfectly possible that, many children who would be classed as 'recovered' on the basis of being free of their primary anxiety disorder following treatment would still actually meet the study inclusion criteria, highlighting the importance of considering diagnostic outcomes in relation to comorbid anxiety diagnoses as well as primary anxiety diagnoses.

The central aim of this meta-analysis is to establish the efficacy of CBT for childhood anxiety disorders in terms of absence of *all* anxiety disorders. To help determine whether outcomes classified in this way differ from alternative, less conservative outcomes, we also set out to compare 'complete recovery' rates with those based on being 'free of the primary anxiety disorder' where this was also reported. In keeping with the most recent Cochrane review of CBT for childhood anxiety disorders (James et al., 2013), we included randomized controlled trials in which treatment targeted anxiety disorders among children and adolescents, including those with autistic spectrum conditions (ASC) (James et al., 2013). However we conducted separate analyses on the basis of whether participants had an ASC on the basis that treatment protocols used in the context of ASC have typically been modifications of standard protocols (e.g. Wood et al., 2009) and the extent to which treatment effects generalize to comorbid disorders may be affected by the presence of ASC.

2. Method

The current review followed PRISMA guidelines (Moher, Liberati, Tetzlaff, & Altman, 2009) and built on the recent Cochrane review (James et al., 2013) by adhering to the same procedures and by initially identifying studies included on the basis of their inclusion in that recent review. Further studies (post 2012) were located using a replication of the Cochrane search strategy and adapted for use across the individual databases—Psychinfo, Embase and Medline (see Appendix A for search strategy). These database searches were conducted independently by two reviewers (HW and GH) in April 2014. The searches were then rerun in March 2015 by HW and TR, to account for any additional studies published during the main data extraction phase.

2.1. Criteria for study inclusion

To be included in the meta-analysis, each study had to meet the criteria below. The criteria were based on those of the Cochrane review, with additional criteria to meet the aims of the current study (see j below) and for clarity (see k below).

a. Randomized controlled trial including cross-over trials and cluster-randomized trials
b. Used manualized and documented modular CBT
c. Involved direct contact with the child
d. CBT versus waiting list/active control conditions/TAU/medication (not including other CBT groups)
e. Participants must have met the criteria of DSM or ICD for an anxiety diagnosis
f. Participants with diagnosis must be children and/or young people (between 4 and 19 years old)
g. All comorbidities allowable for anxiety disorders under the rules of DSM and ICD, such as ASC, intellectual impairment and physical disorders