Clinical Psychology Review 61 (2018) 1–8

Contents lists available at ScienceDirect

Clinical Psychology Review

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

Review

Remission in CBT for adult anxiety disorders: A meta-analysis

Kristen S. Springer[a], Hannah C. Levy[a], David F. Tolin[a,b,*]

[a] Anxiety Disorders Center, Institute of Living, Hartford Hospital, 200 Retreat Avenue, Hartford, CT 06106, United States
[b] Department of Psychiatry, Yale University School of Medicine, 300 George St. New Haven, CT 06511, United States

HIGHLIGHTS

- There is no universally accepted definition of remission in anxiety disorders.
- We conducted a meta-analysis of remission in cognitive-behavior therapy (CBT).
- The overall remission rate for the intent-to-treat samples was 48% at post-treatment and 54% at follow up while the remission rate for completer samples was 53% at post-treatment and 56% at follow up.
- Remission rates differed by definition, diagnosis, and various patient factors.
- Although CBT is effective for anxiety, there is significant room for improvement.

ARTICLE INFO

Keywords:
Anxiety
CBT
Remission
Meta-analysis
PTSD
OCD

ABSTRACT

Currently there is no universally accepted definition of remission in anxiety disorders. This may be causing significantly different estimates of treatment efficacy across anxiety disorders. The aim of this paper was to determine not only the overall remission rate in cognitive-behavioral therapy (CBT) for anxiety disorders, but also to examine whether the different definitions of remission lead to significantly different remission rates. From the initial 228 abstracts reviewed by the authors, 100 articles were retained. The overall mean remission rate was 51.0%. Remission rates were highest when remission was defined as good end state functioning or no longer meeting criteria for the primary diagnosis. Studies of posttraumatic stress disorder had the highest remission rates, while those of obsessive-compulsive disorder and social anxiety disorder had the lowest remission rates. Rates of remission differed by certain demographic (e.g., older age) and clinical (e.g., medication use) characteristics. Although CBT is an empirically supported treatment for anxiety disorders, it is clear that there is room for improvement, as many patients do not achieve remission status.

1. Introduction

The efficacy of cognitive behavioral therapy (CBT) for anxiety disorders is well established with multiple controlled trials demonstrating that CBT outperforms not only waitlist and placebo controls but also other psychological treatments (Butler, Chapman, Forman, & Beck, 2006; Tolin, 2010). Meta-analytic reviews of CBT for anxiety disorders have commonly found medium to large effect sizes from pre- to post-treatment, depending on the anxiety disorder (Butler et al., 2006; Olatunji, Cisler, & Deacon, 2010). A recent meta-analysis of response rates in CBT for anxiety suggest a less optimistic view of CBT efficacy; there was a 49.5% response rate at post-treatment and a 53.6% response rate at follow-up (Loerinc et al., 2015).

One complication with interpreting the Loerinc et al. (2015) meta-analysis is that the constructs of response and remission were combined. Therefore, we examined how different definitions of remission lead to different remission rates among the anxiety disorders. Response refers to overall change over the course of treatment (e.g., a patient exhibited a 25% or greater reduction in symptoms). However, a patient could exhibit clinical response but still be quite impaired. For example, a patient with obsessive-compulsive disorder (OCD) might show a decrease in Yale-Brown Obsessive-Compulsive Scale (Y-BOCS; Goodman et al., 1989) scores from 32 to 20; although that is more than a 25% decrease (and thus the patient may be considered a responder), the post-treatment score is still in the moderate range, suggesting clinically elevated symptoms. Remission, on the other hand, refers to end status after treatment; in other words, a patient in remission is considered "well." This is a critical distinction: in order to determine how well CBT impacts the substantial public health burden of anxiety disorders (Kessler, Alonso, Chatterji, & He, 2014), it is important to

* Corresponding author at: Anxiety Disorders Center, Institute of Living, Hartford Hospital, 200 Retreat Avenue, Hartford, CT 06106, United States.
E-mail address: David.Tolin@hhchealth.org (D.F. Tolin).

https://doi.org/10.1016/j.cpr.2018.03.002
Received 30 June 2017; Received in revised form 14 March 2018; Accepted 14 March 2018
Available online 16 March 2018
0272-7358/

know not only how many patients show a change in symptoms, but also how many can be considered "well" after treatment.

Remission has been defined in several different ways. One common definition is that the patient no longer meets diagnostic criteria for the disorder being treated. An important limitation of this definition is that a patient may no longer meet criteria for a diagnosis simply because he/she is one symptom short of the criteria, yet continue to have severe and impairing symptoms. Another definition of remission is scoring below a clinical cutoff on a continuous measure. However, some researchers have used cutoff scores that could still reflect the presence of mild to moderate symptoms (e.g., a Y-BOCS score of 15 or less). A third and related definition is clinically significant change (CSC; Jacobson & Truax, 1991), which can reflect post-treatment scores that are outside the pathological range, within the normative range, or past the midpoint between the pathological and normative ranges (McGlinchey, Atkins, & Jacobson, 2002). It is noted that some authors have confused CSC with reliable change (i.e., a degree of change that is unlikely to be due to measurement error); however, these constructs should be considered separately, as reliable change refers to movement over time (analogous to the construct of response) whereas CSC refers to end status (analogous to the construct of remission; Jacobson, Roberts, Berns, & McGlinchey, 1999). A fourth definition of remission is good (or high) end state functioning, a less well-defined construct that refers to overall psychological health across multiple domains of functioning, such as anxiety, depression, and general stress. Practically speaking, good end state functioning is often defined in treatment studies as scoring below cutoffs on measures not only of the disorder being treated, but also on measures of commonly co-occurring problems such as depression.

As can be seen from the wide range of remission definitions, as well as the fact that some authors have defined remission as a combination of two or more of these factors, it is clear that there is no universally accepted definition of remission in anxiety disorders, which may lead to significantly different estimates of treatment efficacy. It is important, therefore, to determine not only the overall remission rate in CBT for anxiety, but also to understand whether different definitions of remission lead to significantly different estimates. Of course, universally accepted and applied definitions are needed in order to clarify true remission rates in CBT.

To this end, the present meta-analysis examined rates of remission (defined as end state after treatment) in CBT for DSM-IV (American Psychiatric Association, 1994) anxiety disorders. Our primary aim was to compare remission rates across various definitions, including no longer meeting criteria for the primary diagnosis, CSC, scoring below a clinical cutoff, good end state functioning, and commonly used combinations of these definitions. A secondary aim was to compare remission rates across anxiety disorders. We also examined whether certain demographic variables (e.g., age, gender) and psychological factors (e.g., medication status, comorbidity) impacted remission rates.

In addition to establishing standardized definitions for remission, it is important to consider the methodological quality of the research. One might expect that key indices of methodological rigor (e.g., Foa & Meadows, 1997; Jadad et al., 1996), would affect remission estimates, with more rigorous trials yielding more conservative estimates. Accordingly, randomized controlled trials (RCTs) would be expected to yield lower remission rates than would open trials. Intent-to-treat (ITT) analyses would be expected to yield lower rates than would completer analyses. Studies that used independent evaluators, blind to treatment condition, would be expected to yield lower rates than would studies that used unblinded evaluators or self-report measures. Studies that used manualized treatments and assessed treatment fidelity would be expected to yield lower remission rates than would those that did not. Finally, studies that employed reliable and valid measures for the disorder being treated would be expected to yield lower remission rates than would those that used non-validated measures (e.g., daily diaries). In the present meta-analysis, we investigated whether these methodological quality factors impacted reported remission rates.

2. Method

2.1. Data sources

Journal articles were identified using searches of the PsycINFO and Medline electronic databases from January 2000 through February 2018 in order to keep the literature current. Other meta-analyses have used similar time frames (e.g., Loerinc et al., 2015).

The following search terms were used: (Cognitive Behavior Therapy or CBT or Cognitive Therapy or Behavior Therapy or Exposure Therapy) and (Remission or Recovery or Clinically Significant Change or Good End State or High End State) and (Anxiety or Anxiety Disorders or Obsessive-Compulsive Disorder or OCD or Posttraumatic Stress Disorder or PTSD or Phobia or Phobic Disorders). Searches were limited to English-language articles and adult populations. Studies were also identified through the reference lists of originally obtained articles, review papers, and meta-analyses.

2.2. Study selection and data extraction

We included studies that met the following inclusion criteria: participants were adults (age 18 years and older) who met DSM-IV criteria for an anxiety disorder; that it was a treatment study (randomized controlled trial or open trial) for a specific DSM-IV anxiety disorder, in which at least one treatment condition was CBT monotherapy; and a number or percentage of participants remitted was reported. We excluded samples that combined CBT with other treatments (e.g., medications), web-based and self-help interventions, concurrent treatment (e.g., concurrent CBT for co-occurring anxiety and substance use), previously failed treatment (e.g., participants received CBT after failing to respond to pharmacotherapy), and studies that did not require medication stabilization prior to treatment. For articles that did not specify medication stabilization, we attempted to contact the authors for clarification; if they did not respond, we retained the study for analyses. Articles reporting secondary analyses of a data set already included in the meta-analysis were excluded.

The first and second author independently reviewed all abstracts from the initial search and coded whether or not they met initial inclusion criteria. Any disagreements were resolved by mutual discussion until 100% agreement was reached. This process resulted in 228 abstracts that met initial inclusion criteria (see Fig. 1). Full-text articles were obtained for these abstracts and divided between the first and second author, who independently coded their assigned articles. From the initial 228 abstracts, 100 full-text articles (see Appendix for full list) were retained for analyses and consisted of more completer samples than ITT samples, representing a total of 3278 ITT patients and 4129 completer patients.

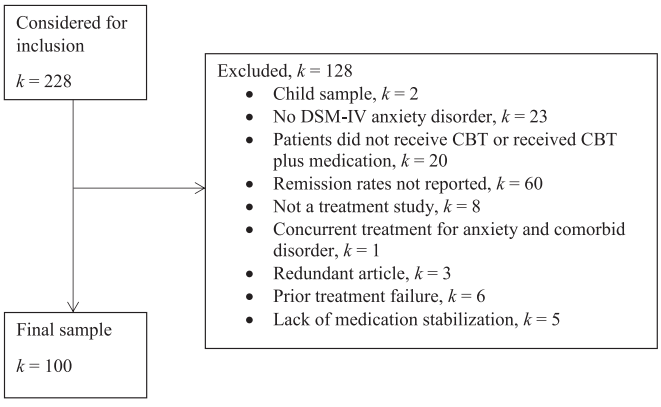

Fig. 1. Selection of articles for meta-analysis. *k* = number of studies.