Long-term stability of cognitive behavioral therapy effects for panic disorder with agoraphobia: A two-year follow-up study

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**A B S T R A C T**

**Objective:** Cognitive-behavioral therapy (CBT) aims to help patients establish new behaviors that will be maintained and adapted to the demands of new situations. The long-term outcomes are therefore crucial in testing the durability of CBT.

**Method:** A two-year follow-up assessment was undertaken on a subsample of \(n = 146\) PD/AG patients from a multicenter randomized controlled trial. Treatment consisted of two variations of CBT: exposure in situ in the presence of the therapist (T\(+\)) or on their own following therapist preparation (T\(-\)).

**Results:** Both variations of CBT had high response rates and, overall, maintained the level of symptomatology observed at post-treatment with high levels of clinical significance. Effect sizes 24 months following treatment were somewhat lower than at the 6-month follow up. Once patients reached responder status, they generally tended to remain responders at subsequent assessments. Differences were observed for patients that obtained additional treatment during the follow-up period. Expert opinion and subjective appraisal of treatment outcome differed. No robust baseline predictors of 2-year outcome were observed.

**Conclusion:** Most patients maintain clinically meaningful changes two years following treatment across multiple outcome measures. Approximately 1/3 of patients continued to experience meaningful residual problems.

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Cognitive Behavioral Treatment (CBT) operates under the premise that patients learn new ways of responding to the internal and situational stimuli that combine to create impairment. Implicit is the assumption that the newly acquired skills and behaviors are maintained over time and are readily adaptable to the demands of new situations. That which patients learn, if properly applied, is maintainable after the treatment has ceased and — at least theoretically — for the rest of their life. The permanency of what is learned in therapy (i.e., skills, behaviors, etc.) is believed to be one of the reasons that the effects of CBT tend to be superior to pharmacological approaches at follow-up assessments (Barlow, Gorman, Shear, & Woods, 2000; de Beurs, van Dyke, Lange, & van Balkom, 1999; Cottraux et al., 1995).

Critical examination of the degree to which patients maintain their gains requires long-term follow-up assessments. Regrettably empirical data on the long lasting (i.e., at least two years) effects of treatment are hard to obtain. As a result, knowledge about the longer term effects of treatment lag behind our understanding of the immediate efficacy of interventions. The studies that do exist provide some support for the long-term efficacy of CBT across numerous disorders (Butler, Chapman, Forman, & Beck, 2006), yet some evidence derived across three anxiety disorders suggests that effects can begin to recede as soon as one year after treatment (Durham, Higgins, Chambers, Swan, & Dow, 2012).

CBT for Panic Disorder with Agoraphobia (PD/AG) represents an especially important test for the long-term effects of CBT given that studies using CBT for this disorder have documented some of the highest efficacy rates in the literature and is considered the gold
standard for this disorder. As such, it may be expected that the stability of gains in the treatment of this disorder should be particularly high. Indeed, evidence from multiple studies suggests that treatment gains are maintained through at least 6 months on average (Craske, Brown, & Barlow, 1991). Fava, Zielezny, Savron, and Grandi (1995) and Fava et al. (2001) observed high long-term (2–14 years) rates, but this group referenced only those who successfully responded to the original treatment. A recent meta-analysis found that the controlled effect size (i.e., in comparison to a wait list) at follow up assessments is meaningfully lower than average controlled effect sizes at post-treatment (Sánchez-Meca, Rosa-Alcázar, Marin-Martínez, & Gómez-Conesa, 2010). Similarly, one of the longest follow-up studies followed 189 patients with panic disorder for up to 14 years following several different randomized trials and concluded that the short term effects are unrelated to long term outcomes (Durham et al., 2005). Similar conclusions were reached in a 15 year follow-up assessment following pharmacological treatment of panic disorder (Andersch & Hetta, 2003).

To the degree these observations are generalizable, the long-term treatment effect of CBT for PD/AG are called into question. Even less is known about the characteristics of patients’ change beyond effect sizes and response rates. That is, the percentage of patients who maintain their gains, improve or worsen has not been clearly established. Do these groups differ 6 months and 24 months following treatment and is there a subgroup of patients who need more time to respond (during the time between 6 and 24 months following treatment)? Likewise, little is known about the percentage of patients that report residual symptoms and how these residual symptoms influence global functioning. Relatedly, studies show that patients seek additional treatment even after successful treatment (Durham et al., 2012). If replicated, this finding raises two additional issues. First, it is unclear if these patients are those who have relapsed, or if they sought treatment for reasons other than panic symptomatology. Second, it is unclear if opinions of successful treatment outcome concur between independent experts and patient’s subjective appraisal. If not, perhaps the disconnect suggested by Durham’s work between successful outcome and additional treatment may be explained by the yet untested possibility that patients differ from experts in what constitutes a successful outcome. The answers to all of these issues offer important clues about the processes that unfold in the time following treatment — the exact period in which our theories assume that patients generalize the newly learned material.

The influence of procedural variations of treatment delivery (e.g., how exposure is administered during treatment) on the long-term response is also unknown. It is unclear if variance due to treatment variations dissipates over time. It is feasible or even probable that the influence of what is learned overshadows any differences in how it was learned. To our knowledge, however, no information exists regarding differences in long-term effects that result from systematic procedural variations in the delivery of CBT. Instead, previous studies have concentrated on how CBT compares to a different treatment package or to an augmented CBT with one or more different components added.

This study is an extension of a previous study (Gloster, Wittchen, et al., 2011) and aimed to examine these issues by looking at the durability, pattern, and characteristics of treatment effects from a standardized CBT for PD/AG two years following the end of treatment. All patients examined were treated with a highly efficacious standardized CBT, as measured at post-treatment and the 6-month follow up (Gloster, Wittchen, et al., 2011). We are therefore able to investigate the long-term outcomes using a large sample of patients, all of whom received a standardized efficacious treatment. Additionally, all patients in this study were diagnosed with panic disorder and agoraphobia. This is important because the presence of agoraphobia has been found to influence the outcome of panic disorder (Williams & Falbo, 1996) and most previous studies included patients diagnosed with panic disorder with or without agoraphobia. In one exception, patients were treated with either a 14-session, 7-session, or group CBT and followed for two years (Marchand, Roberge, Primiano, & Germain, 2009). Significant improvements across all treatment modalities and dependent measures were found at post-treatment, one-year and two-year follow-up, with high end-state functioning achieved by 57% of the patients.

Given the assumed importance of agoraphobic avoidance, the treatment in the present study targeted this factor and concentrated heavily on exposure (both interoceptive and in situ in multiple situations), did not include explicit components of breathing retraining or logical disputation, and increased anxiety in the in situ exposures with interoceptive exercises when patients reported no or insufficient anxiety response (Lang, Helbig-Lang, Westphal, Gloster, & Wittchen, 2012). Conceivably, these characteristics supported inhibitory learning, which may have facilitated adaptive fear responding (Craske et al., 2008) and this study was designed to examine the long-term effects of these factors.

Importantly, this study also examined a procedural variation of CBT that may inform about how long-term treatment gains can be maximized. This approach builds upon other studies that examine the global effects of CBT compared to another treatment modalities or treatment packages. Specifically, the treatment examined in this study utilized two procedural variations of CBT (i.e., exposure in situ in the presence of the therapist vs. planned in the therapy room), but were identical in content (Gloster et al., 2009; Lang et al., 2012).

Additional strengths of this study that built on previous studies were the large sample size that allowed us to examine patterns and issues not amenable to smaller samples and the inclusion of outcome variables above and beyond the frequency of panic attacks. This is important because evidence has cumulated that panic attacks, panic disorder, and agoraphobia are often independent (Craske et al., 2010; Wittchen et al., 2008; Wittchen, Gloster, Beesdo-Baum, Fava, & Craske, 2010), that agoraphobic avoidance is as important if not more so for long-term outcome (Fava et al., 1995), and recent emphasis on how one reacts to the attacks as opposed to the occurrence of the attacks themselves (Eifert & Forsyth, 2005).

Building on an efficacious treatment and using a relatively large sample, the aim of this study was to examine the effects of a standardized CBT for PD/AG two years following the end of treatment. In particular, we examined the durability and pattern of multiple outcomes while examining the differential effect of procedural variations, occurrence of additional treatment, concordance between the patients’ subjective evaluation of outcome and expert raters, and prediction of long-term outcome.

Method

Design

All patients were part of the multicenter Mechanisms of Action in CBT (MAC) RCT for Panic Disorder with Agoraphobia (PD/AG) (Gloster et al., 2009; Gloster, Wittchen, et al., 2011). The 24-month follow-up assessment (FU-24) was conducted on a subset of four of the original eight study centers in the MAC Trial. These centers were the largest study cities, thereby allowing maximal utilization

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