Mediators in psychological treatment of social anxiety disorder: Individual cognitive therapy compared to cognitive behavioral group therapy

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ABSTRACT

According to cognitive-behavioral models of social anxiety disorder (SAD), four of the important maintaining mechanisms are avoidance, self-focused attention, anticipatory processing and post-event cognitive processing. Individual cognitive therapy (ICT) and cognitive behavioral group therapy (CBGT) both have substantial empirical support. However, it is unclear whether they achieve their effects by similar or different mechanisms. The aim of this study was to investigate whether changes in the four maintenance processes mediate clinical improvement in ICT and CBGT for SAD. We analyzed data from participants ($N = 94$) who received either ICT or CBGT in two separate RCTs. The results showed that ICT had larger effects than CBGT on social anxiety and each of the four potential mediators. More pertinently, moderated mediation analyses revealed significant between-treatment differences. Whereas improvement in ICT was mainly mediated by reductions in avoidance and self-focused attention, improvement in CBGT was mediated by changes in self-focused attention and in anticipatory and post-event processing. These results support the importance of the putative mediators, but suggest that their relative weights are moderated by treatment type.

Introduction

Social anxiety disorder is characterized by a persistent fear of being scrutinized by others (American Psychiatric Association, 1994). The disorder is common, associated with functional impairment and reduced quality of life, and rarely remits if untreated (Kessler et al., 2005; Wittchen & Fehm, 2003; Yonkers, Dyck, & Keller, 2001). Cognitive behavioral group therapy (CBGT) developed by Heimberg and coworkers (Heimberg & Becker, 2002; Heimberg et al., 1990) and individual cognitive therapy (ICT) developed by Clark et al. (2003) are two of the leading psychological treatments for SAD, each with substantial empirical support (e.g. Acarturk, Cuijpers, van Straten, & de Graaf, 2009). The treatments are based on similar cognitive models that stress the importance of attentional, behavioral, and cognitive processes as maintaining factors of SAD (Clark & Wells, 1995; Rapee & Heimberg, 1997). However, the procedures that the treatments use to modify the maintaining factors are substantially different. It is therefore possible that the mediators of change may also differ. The present paper investigates this possibility by assessing the role of four maintenance factors as potential mediators in each treatment. The potential mediators are: a) avoidance behaviors, b) self-focused attention, c) anticipatory processing, and d) post-event processing. Social anxiety related cognitions and safety behaviors are also maintaining processes in the two cognitive behavioral models, but they were not investigated as potential mediators in the present study.

According to the cognitive-behavioral models, avoidance behaviors are essential therapy targets as they prevent disconfirmation of negative beliefs and may make some feared outcomes more likely

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to occur (Clark & Wells, 1995; Rapee & Heimberg, 1997). For example, avoiding eye contact or refraining from talking to others at a social gathering, or not attending at all, could lead to being viewed as a cold or boring by others. Self-focused attention plays a central role in both models and refers to the tendency of monitoring internal processes and to employ self-focused observation. Cues from these internal processes, such as elevated bodily signs of anxiety, are used to create an impression of how one appears to others. Based on empirical evidence, suggesting that internal and external foci of attention are interdependent and competing domains (Bögels & Mansell, 2004; Carver, 1979; Schultz & Heimberg, 2008), the models predict that more self-focused attention leads to impaired processing of what is really happening in the social situation (Clark & Wells, 1995; Rapee & Heimberg, 1997). This failure to access information from the environment prevents disconfirmation of negative cognitions. Some support for the self-focused attention as a mediator of improvement in ICT comes from a recent study (Mörtberg, Hoffart, Boecking, & Clark, 2013) that analyzed mediators and outcome on a session by session basis. Change in self-focused attention a given session mediated change in social anxiety at the next session.

Anticipatory processing, i.e. anxiety provoking thought processes focusing on the prediction of negative outcomes in social situations, is suggested to play an important role as it puts the individual in a state of self-focused attention prior to entering the situation or may lead to enhanced use of safety behaviors or avoidance of the situation altogether (Clark & Wells, 1995). An example of anticipatory processing is the individual who ruminates about looking anxious and sounding incoherent before an informal oral presentation at work and enters the presentation room in a highly self-focused state haunted by mental images of the worse thing happening. Part of the anticipatory processing will also consist of mental strategies (such as trying to memorize the presentation word for word) that are intended to reduce the risk of sounding incoherent, but actually undermine fluency and make the task more difficult. After social encounters, the socially anxious individuals often review the encounter in great detail. This so-called post-event processing is has also been suggested as a maintenance factor in SAD as the memories of the encounter that are reviewed often focus on negative feelings and images as well as behaviors that could be interpreted negatively (Clark & Wells, 1995; Rapee & Heimberg, 1997). Using the example of the individual who fears looking anxious and sounding incoherent during a presentation at work, post-event processing refers to when he or she subsequently dwells on a biased assessment of how it went based on information that is made more accessible by self-focus (feelings and images) and negative interpretations of ambiguous social cues. For the latter, for example, normal speech dysfluencies and an audience member looking pre-occupied may be taken as signs that one has failed.

In spite of the similarities between the two dominant cognitive behavioral models of SAD, the treatments linked to them, i.e. CBGT and ICT, differ in several potentially important aspects. The main focus of Heimberg's group therapy is in-session exposure to feared social situations (Heimberg & Becker, 2002). Exposure is conducted in combination with verbal cognitive restructuring before, during and after exposure exercises. One part of the cognitive restructuring process is to develop rational responses to automatic thoughts elicited by the social situation. In CBGT the group format itself is used as an important way to achieve therapeutic change as the group makes it possible to create anxiety-evoking situations relevant to each individual. The more recently developed individual treatment by Clark and colleagues primarily aims to promote cognitive change by getting patients to make predictions and test the predictions in action during behavioral experiments in which safety behaviors are dropped and/or feared catastrophes are intentionally enacted (sweating, pausing in one's speech, talking about something that seems boring). Other key procedures include: 1) an experiential exercise to demonstrate the adverse effects of self-focused attention and safety behaviors, 2) training in externally focused attention, 3) video-feedback to correct negative self-imagery, 4) surveys to determine what other people think about the outcomes that patients fear (e.g. blushing, etc), and 5) challenging of problematic social anxiety related assumptions. Problematic anticipatory and post-event processing is rarely addressed directly. Instead patients are encouraged to see it as a source of misleading information and to focus more on the potentially more accurate information that can be obtained from behavioral experiments, video feedback and externally focused observation (Clark et al., 2003).

Thus, while the models (Clark & Wells, 1995; Rapee and Heimberg, 1997) are similar in explaining the maintenance of social anxiety, it is possible that the treatments that were derived from the models work through different mechanisms, i.e. mediational processes. A mediator is an event that occurs after treatment onset but precedes outcome, is associated with the independent variable, and has a main or interactive effect on treatment outcome (Baron & Kenny, 1986; Kraemer, Wilson, Fairburn, & Agras, 2002). As pointed out by Collins, Graham, and Flaherty (1998) mediation is an intra-individual stage sequential process that unfolds over time. Investigating mediators of treatment effect is important to understand both psychopathological and therapeutic mechanisms and could ultimately lead to development of more effective treatments (Kraemer et al., 2002). If different mechanisms are at play in different treatments, this is referred to as moderated mediation.

We have found 12 randomized controlled trials (RCTs) investigating the effect of CBGT making it the clearly most well-researched psychological treatment for SAD (Blanco et al., 2010; Davidson et al., 2004; Furmark et al., 2002; Gelernter et al., 1991; Gruber, Moran, Roth, & Taylor, 2001; Hedman et al., 2011; Heimberg et al., 1990, 1998; Herbert et al., 2005; Herbert, Rheingold, Gaudiano, & Myers, 2004; Hofmann, 2004; Hope, Heimberg, & Bruch, 1995; Otto et al., 2000). Taken together these trials establish that CBGT is an effective treatment for SAD that is superior to placebo interventions (psychological or pill) and as effective as a leading medication (phenalzine) in the short-term. To date, six RCTs have tested the clinical efficacy of ICT (Clark et al., 2003, 2006; Leichsenring, 2012; Mörtberg, Clark, Sundin, & Aberg Wistedt, 2007; Stangier, Heidenreich, Peitz, Lauterbach, & Clark, 2003; Stangier, Schramm, Heidenreich, Berger, & Clark, 2011). Taken together these trials have established that ICT is also effective. An usually robust picture of differential effectiveness compared to other interventions also emerges from the RCTs. In particular, ICT has been shown to be superior to exposure therapy (Clark et al., 2006), two versions of group CBT (Mörtberg et al., 2007; Stangier et al., 2003), interpersonal psychotherapy (Stangier et al., 2011), psychodynamic psychotherapy (Leichsenring, 2012), selective serotonin re-uptake inhibitors (Clark et al., 2003) medication based treatment as usual (Mörtberg et al., 2007) and placebo medication (Clark et al., 2003).

Considering that the structure and content of the treatments differ substantially, it is plausible that the extent to which the proposed mediators are affected differ across treatments and that mediation is moderated by treatment type. Due to the strong body of research indicating the pivotal role of avoidance (Clark, 1999; Gangemi, Mancini, & van den Hout, 2012; Sloan & Telch, 2002), it would be of specific interest to investigate whether the treatments have different impact on this behavior. The potential moderating role of treatment modality could be related to several different processes. For example, the importance of reducing avoidance behaviors between sessions could be greater in ICT than in CBGT as