

# The Relationship Between Use of CBT Skills and Depression Treatment Outcome: A Theoretical and Methodological Review of the Literature

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**Cognitive and behavioral therapies emphasize the importance of skill acquisition and use, and these skills are proposed to mediate treatment outcomes. Despite its theoretical impor-**

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tance, research on skill use as a mechanism of change in CBT and its measurement is still in its infancy. A search of online databases was conducted to identify and review the literature testing the mediational effect of CBT skills on treating depression in adults. Additionally, we reviewed the various methods to assess a patient's use of CBT skills. We identified 13 studies examining the frequency of CBT skill use and 11 studies examining the quality of CBT skill use. While the literature provides preliminary evidence for the mediational role of CBT skill use frequency and quality on depression treatment outcomes, methodological limitations in much of the existing literature prevent firm conclusions about the role of skills use on treatment outcomes.

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COGNITIVE BEHAVIORAL THERAPY (CBT) is a well-validated treatment for depression ([American Psychiatric Association, 2010](#); [National Institute for](#)

Health and Clinical Excellence, 2009). CBT has demonstrated effectiveness in reducing depression symptoms (e.g., reviewed in Butler, Chapman, Forman, & Beck, 2006; and Hollon & Ponniah, 2010) and preventing relapse (reviewed in Hollon, Stewart, & Strunk, 2006). Despite robust evidence for CBT's efficacy and widespread adoption, the mechanisms by which it is effective in treating depression remain unclear (Hollon et al., 2006; Longmore & Worrell, 2007).

Cognitive-behavioral models explore the role of thoughts and behaviors in the development, maintenance, and treatment of depression. Beck, Rush, Shaw, and Emery's cognitive model (1979) proposes that dysfunctional thoughts, core beliefs, and information processing biases are antecedent to and increase risk for depression, and that CBT treats depression by changing these. Behavioral components of CBT (Beck et al., 1979) and behavioral activation (Hopko, Lejuez, Le Page, Hopko, & McNeil, 2003; Martell, Addis, & Jacobson, 2001) ameliorate depression by improving the likelihood that patients encounter natural reinforcers in their environment.

However, questions remain about the mechanisms of action in CBT. According to Beck et al.'s (1979) model, changes in cognitions, including automatic thoughts, dysfunctional attributions, and core beliefs, lead directly to symptom reduction. Some research supports this idea (e.g., DeRubeis et al., 1990; Quilty, McBride, & Bagby, 2008). However, it is unclear how exactly patients make shifts in their negative-depression-relevant cognitions. One possibility is that practice of skills learned in therapy directly, although gradually, changes a patient's cognitions. For example, repeatedly examining the evidence for a negative automatic thought can eventually reduce both the frequency of having that thought and the patient's "buy-in" to that thought when they have it. Patients may also learn behavioral activation skills for engaging in more pleasant activities and encountering more sources of reward in life. Additionally, patients may engage in both formal skill use and more informal or casual use of the principles learned in treatment. For example, formal skill use would be completing a written thought record in response to a negative thought. An example of informal skill use could be thinking back to a therapy session during which they completed a thought record with their therapist, briefly reviewing one or two pieces of evidence against that automatic thought, and recalling and substituting the alternative thought that their therapist helped them come up with in session.

Overall, at the heart of what clinicians do when providing CBT is coach patients to develop a new or modified repertoire of behaviors and/or thoughts

that patients can use to reduce depression and prevent relapse. Consequently, it is of vital importance to the work of CBT therapists to have an empirical understanding of whether CBT skills mediate the effectiveness of treatment. For example, in cognitive therapy, one would expect to see changes in patients' skills in identifying their automatic thoughts and the emotions associated with them, examining evidence to support their thoughts, and replacing them with new, alternative thoughts. In behavioral activation, whether as a stand-alone treatment or a component of a larger CBT package, one would expect to see changes in patients' abilities to set and act upon goals for increasing engagement in rewarding and mastery activities. Although some patients may already have the skills to do these things upon entering therapy, patients may not be using these skills effectively or frequently, and the role of therapy may be encouraging them to improve effectiveness or increase frequency of use of these skills.

Research into mechanisms of action for CBT has largely neglected the role of skill use. A meta-analysis of CBT for depression in children examined potential mediators, namely, cognitive, behavioral, and coping variables. While there were small yet statistically significant effects of children's cognitive processes, significant effects were not observed for behavioral and coping processes. Notably, only a few studies were included for each theorized process variable in this meta-analysis, reflecting the paucity of research in this area (Chu & Harrison, 2007).

The current paper examines skill use as a potential treatment mediator of CBT outcomes. As a precursor to this discussion, the paper first reviews the measurement of skill use as defined by the literature. While a variety of assessments exist, there is not yet a gold-standard method for measuring CBT skill use. Notably, only a few measures have been subjected to extensive validation procedures and no measure has yet gained widespread use. Comparison across measures is often difficult as existing measures often examine slightly different constructs. Further complicating the measurement of CBT skill use is that it is evaluated on two independent dimensions, specifically, frequency of skill use and quality of skill use. For example, some patients may be frequently but ineffectively using skills, whereas other patients may skillfully but rarely use skills. The relative importance of skills use frequency and quality are currently unclear, as few studies examine both. Therefore, we consider the evidence for each of these domains of skill use while reviewing the literature on the various methods used to measure CBT skills.

As the primary aim of the paper, we will review the available treatment outcome studies that tested whether CBT skill use mediates treatment outcomes.

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