

Core Mechanisms of Cognitive Behavioral Therapy for Anxiety and Depression: A Review



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KEYWORDS

- Anxiety • Depression • Mechanisms • Mediators • CBT • Review • Cognitive Behavioral

KEY POINTS

- Fear extinction is the type of learning that takes place during cognitive behavioral therapy (CBT) for anxiety.
- Inhibitory learning is a process by which fear extinction takes place.
- Cognitive change largely mediates CBT for depression in whatever manner it is achieved (through cognitive restructuring, behavioral activation, and so forth).

In this article, the authors seek to summarize the core mechanisms of cognitive behavioral therapies (CBTs). Core mechanisms of CBT include the specific psychological factors responsible for symptom improvement with therapy. The authors do not discuss nonspecific factors that can also be therapeutic, such as expectancy, credibility, and therapeutic alliance.¹ In addition, they do not cover neural mechanisms of change in this article. It is difficult to separate psychological and neural mechanisms because they may measure the same processes at different levels of analysis. However, work is underway to further delineate the role of the limbic system and the prefrontal cortex as explanatory mechanisms of psychological mediators of CBT.^{2–8} The authors first briefly define CBT and mediators of change. Next, they discuss core

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mechanisms of change in CBT for anxiety and related disorders, including extinction and threat reappraisal. Finally, they cover cognitive change as the most researched mediator of CBT for depression.

CBTs are a family of treatments that share a common focus on affect, behaviors, and cognitions. For the purpose of this article, the authors simply refer to the entire group of interventions as CBT. Meta-analyses of randomized controlled trials show CBT is effective for anxiety^{9–14} and depression.^{15,16} Unfortunately, a substantial minority of patients do not respond to CBT. For example, in several studies nonresponse rates for panic disorder, obsessive-compulsive disorder, and social anxiety disorder were 36%, 38%, and 49%, respectively.^{17–20} Treatment development guidelines state that improving interventions requires a better understanding of the change process.^{21,22} Thus, CBT researchers are seeking to identify core mechanisms of change (treatment mediators) in an effort to develop effective augmentation strategies or new interventions.^{23–25}

Mediators are variables that can explain why or how a treatment works, and they are measured at least at pretreatment and posttreatment. Early analysis strategies (Fig. 1) suggested mediation if (1) the treatment-affected outcome (path *a*), (2) the mediator-affected outcome (path *b*), and (3) while controlling for the mediator (paths *a* and *b*), the effect of treatment on outcome was reduced or eliminated.²⁶

However, with only these limited criteria for mediation, there were many false positives.²⁷ Over time, several more mediation criteria were proposed.^{28,29} A more comprehensive strategy was suggested by Kazdin.³⁰ In addition to showing statistical mediation, the following 7 additional criteria were recommended: (1) mediators should be selected guided by theory, (2) potential mediators must be measured in treatment studies, (3) temporal precedence must be established (change in the proposed mediator must occur before change in outcome), (4) more than one mediator should be measured in each study to establish specificity, (5) the design of the study should be sufficient to evaluate mediators, (6) multiple different studies must show similar evidence, (7) the mediator should be directly manipulated to provide converging evidence. These criteria add confidence in the causal relationship between the independent variable (treatment), the mediator, and the dependent variable (outcome measures). Many more recent studies meet criteria 1 through 6. However, studies meeting criteria 7 remain limited.³¹ These criteria are not without limitations. For example, if mediators need to be theory driven (criteria 1), the strength of the literature depends on the strength of the theory. Thus, if the actual mechanism of change is not theorized or measured, it will remain undetected with this approach. Nevertheless, this approach has been fruitful to date.

Many mediators of CBT have been proposed (eg, self-efficacy,³² emotional processing theory fear network modification³³). However, most can be roughly collapsed into either behavioral³⁴ or cognitive³⁵ processes. The behavioral perspective began primarily as a method (exposure) that evolved into an explanation (extinction learning) beginning with Dr Joseph Wolpe's work with cats.^{34,36–39} The cognitive perspective of Dr Aaron T. Beck and colleagues³⁵ focused on changes in thinking as an explanation

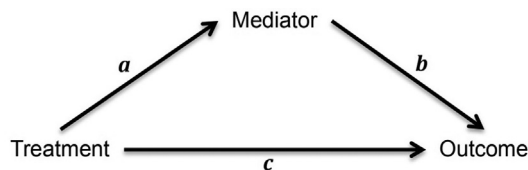


Fig. 1. Baron and Kenny suggested mediation when (1) the treatment affected outcome (path *a*), (2) the mediator affected outcome (path *b*), and (3) while controlling for the mediator (paths *a* and *b*), the effect of treatment on outcome was reduced or eliminated.

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