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The state of personalized treatment for anxiety disorders: A systematic review of treatment moderators

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HIGHLIGHTS

- We synthesize findings examining moderators of treatment outcome in anxiety.
- Limited consistent moderators were identified.
- Statistical and sample size quality ratings were assigned to each study.
- Steps for improving future moderation analyses are proposed.

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ABSTRACT

Introduction: The aim of this review was to synthesize findings for moderators of treatment outcome across adult anxiety disorders, obsessive–compulsive disorder, and posttraumatic stress disorder.
Methods: Twenty-four papers that compared two or more active treatments (at least one of which was a form of cognitive behavioral therapy [CBT]) were identified and organized into five treatment comparison categories (distinct psychotherapy combinations, CBT full package vs. single components, CBT vs. augmented CBT, CBT delivery methods, and CBT vs. pharmacotherapy). Sixty-three distinct baseline moderators were tested across seven categories (symptom severity, comorbid emotional disorders or emotional reactivity, cognitive maintenance factors, behavioral maintenance factors, personality traits and disorders, sociodemographic factors, and biological factors).
Results: Few consistent treatment moderators were identified. All studies testing quadratic effects found at least one significant non-linear moderator or predictor effect. In addition, the majority of studies had methodological problems and limitations, demonstrating the need for future methodological improvements.
Conclusion: Limited conclusions can be drawn about how to match anxiety disorder patients to treatment. A strong need to improve the methodological consistency and rigor of treatment moderator studies was identified. A series of recommendations for moderation analyses are proposed in order to strengthen future studies and facilitate replication efforts.

Contents

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1. Introduction

Over the past three decades, clinical psychology and psychiatry have made impressive gains in developing effective treatments for anxiety disorders. The number of empirically supported treatments (ESTs) for anxiety disorders continues to grow (Chambless & Ollendick, 2001; Chambless et al., 1996, 1998), with cognitive-behavioral therapies (CBT) amassing the broadest research support (Hofmann & Smits, 2008; Norton & Price, 2007; Olatunji, Cisler, & Deacon, 2010). Meta-analyses have demonstrated the superiority of CBT relative to no treatment, placebo, and waitlist controls (Butler, Chapman, Forman, & Beck, 2006; Hofmann & Smits, 2008), as well as to other psychotherapies (Butler et al., 2006; Tolin, 2010). Thus, CBT has been proposed to represent the first line of anxiety disorder treatment (e.g., Arch & Craske, 2009). Despite this advantage, a review of meta-analyses identified CBT response rates of 50% or less for two of the three DSM-IV anxiety disorders for which meta-analyses have been conducted (Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012). Thus, even within this gold standard, first-line treatment, there is substantial room for improvement.

Personalized medicine – using a person's unique characteristics to tailor treatment – represents one potential solution. With the completion of the Human Genome Project in 2003, medical researchers have been able to examine how an individual's genetic makeup influences disease expression at a molecular level, with the goal of guiding and improving diagnosis and treatment (Ginsburg & Willard, 2009). Treatments for cancer, cardiovascular disease, infectious disease, as well as transplantation medicine have all begun to use personalized medicine (Ginsburg & Willard, 2009). More recently, the call for personalized medicine has been directed towards the mental health field (Insel, 2009; Simon & Perlis, 2010), with the stated goal of improving the efficacy of already established efficacious treatments. Matching people to the best treatment for their particular characteristics, if possible, could increase the effectiveness of that treatment for them, resulting in greater efficacy overall.

Personalized medicine embodies the broader idea that personal characteristics can guide clinicians' treatment decisions to maximize efficacy. In the context of treating anxiety disorders, personalized medicine is helpful to the extent that treatment response is dependent upon measurable patient characteristics. Markers of treatment selection thus need not be limited to markers of molecular-level disease expression. Genetic and neural markers as well as self- and clinician-assessed personality, clinical severity, or sociodemographic indices may each have the potential, theoretically, to guide personalized treatment of anxiety disorders. The latter are not necessarily as precise as the former, but if they can be reliably measured, they are easier and faster to assess, cost-effective, and readily available to mental health practitioners