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Lessons from a systematic review of effects of multisystemic therapy

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Abstract

In this article, I consider methods used to review and synthesize results of multiple studies of the effects of social interventions. Traditional narrative reviews are subject to many sources of bias; thus, there is a burgeoning body of literature on the science of research synthesis. I describe current efforts to bridge the gap between the science and practice of research synthesis and one systematic review that aims to do this. A fully systematic review of results of controlled studies of the effects of multisystemic therapy (MST) points to inconsistent and incomplete reports on primary outcome studies, important variations in the implementation and integrity of randomized experiments, errors of omission and interpretation in previous reviews, and findings that differ from those of prior, published reviews. Implications for primary outcome research, publication standards, and research synthesis are considered.

Keywords: Systematic review; Research synthesis; Meta-analysis; Multisystemic therapy

1. Introduction

To inform decisions about which practices and policies to support and employ, the evidence-based practice movement urges practitioners and policymakers to seek and carefully consider certain types of information, including (but not limited to) credible

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empirical evidence of intervention effects (Davis, 2004; Gibbs, 2003; Gibbs & Gambrill, 2002). Gibbs (2003) and others show practitioners why and how to find, evaluate, and use empirical evidence. "Ideally", Gibbs observes, "practitioners should be able to rely on reviewers to isolate the best evidence for them and to distill it for its essence to guide practice decision-making. Unfortunately, conventional reviews have fallen far short of such expectations" (Gibbs, 2003, p. 153). This article is concerned with attempts to identify, critically assess, and synthesize valid information on intervention effects and make results accessible to practitioners and policymakers.

Aside from its political currency, the push toward research synthesis is important for several reasons. First, single studies, no matter how rigorous, have limited generalizability. Replications enhance confidence in results and independent replications are necessary to counter "allegiance effects" that may appear when interventions are studied by their developers. Second, variations in study design and implementation affect the validity of results and the confidence we can place in research findings. A systematic review and synthesis of results of multiple studies should account for variations among studies in design, implementation, interventions, sample characteristics, and settings. This can produce better information about program impacts—and conditions under which impacts vary—than any single study. Finally, there is a need to interpret results to make knowledge of intervention effects available to a wide audience, including readers who are unfamiliar with the methodological and technical aspects of both primary research and research synthesis.

During the past decade, there have been important advances in the science and practice of research synthesis. Advances in the science of research synthesis have been built on an extensive treatment of this subject by Cooper and Hedges (1994) and on practical knowledge of methods of research synthesis (Cooper, 1998) and meta-analysis (Lipsey & Wilson, 2001). These advances include improved methods of information retrieval (Rothstein, Turner, & Lavenberg, 2004), better understanding of relationships between research design and outcomes (e.g., Glazerman, Levy, & Myers, 2002; Shadish & Myers, 2003; Shadish & Ragsdale, 1996), and development of statistical techniques (Becker, Hedges, & Pigott, 2003) and software for meta-analysis.

At the same time, many organizations and individuals made extensive efforts to compile and synthesize empirical evidence on intervention effects for specific conditions and problems. Practitioners and policymakers who want to know "what works" and "what works best for whom" can find lists of "empirically supported" programs on websites sponsored by government agencies, foundations, and professional organizations. More thorough treatments of these topics are available in government reports and peer-reviewed publications (e.g., Aos, Phipps, Barnoski, & Lieb, 2001; Brestan & Eyberg, 1998; Burns, Hoagwood, & Mrazek, 1999; Burns, Schoenwald, Burchard, Faw, & Santos, 2000; Chorpita et al., 2002; Kazdin & Weisz, 1998; Mihalic, Fagan, Irwin, Ballard, & Elliot, 2004; Saunders, Berliner, & Hanson, 2003; U.S. Public Health Service, 2000).

With a few exceptions, advances in the science and practice of research synthesis have not been connected. As a result, authoritative reviews and lists of "effective" practices have proliferated with little attention to the science of research synthesis. Ironically, while these lists and reviews are aimed at providing evidence for practice and