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COMMENTARY

Conceptual and Methodological Issues in Treatment Integrity Measurement

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This special series focused on treatment integrity in the child mental health and education field is timely. The articles do a laudable job of reviewing (a) the current status of treatment integrity research and measurement, (b) existing conceptual models of treatment integrity, and (c) the limitations of prior research. The multidimensional model described by Schulte, Eaton, and Parker (2009) provides an incisive summary of current conceptual work. Thus, important conceptual ground is covered in the series, and the articles are likely to serve as an important starting point for future work in the area.

The empirical studies in the series raise a host of significant issues relevant to the field. First, the work of Sheridan, Swanger-Gagné, Welch, Kwon, and Garbacz (2009) emphasizes the critical importance of establishing psychometric properties for integrity measures. Sheridan and colleagues are to be commended for focusing so clearly on psychometrics and emphasizing the importance of making this a central issue for future research efforts. Their work also highlights two other important issues in measuring treatment integrity: (a) use of multiple methods and (b) the cost of measurement. We return to these issues shortly.

The article by McKenna, Rosenfield, and Gravois (2009), which describes another strong psychometric study, evaluates the psychometric properties of a measure designed to assess adherence to a consultation model; this is a level of abstraction higher than one typically sees in integrity research. Their work is akin to that of Henggeler, Schoenwald, Liao, Letourneau, and Edwards (2002), who have demonstrated the relevance of adherence at the therapist and supervisor levels in their work

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with multisystemic therapy. Assessing adherence to a consultation model is key to research on the dissemination of interventions, because consultation is central to the dissemination process for many interventions.

Finally, the paper by Ransford, Greenberg, Domitrovich, Small, and Jacobson (2009) nicely illustrates an emerging line of work that is expanding the research applications of integrity measurement. Ransford and colleagues demonstrate that characteristics of the provider may moderate the quality and dosage of treatment implementation. Few studies have evaluated how provider, client, or organizational characteristics influence treatment integrity. This state of affairs highlights the value of the Ransford et al. work unearthing factors that influence the dissemination and implementation of interventions.

Overall, this thoughtful special series makes the case that the time is ripe for increased focus on treatment integrity research. In our commentary, we build upon the themes in the special series, including those highlighted in our brief description of the articles. One of our goals is to outline how treatment integrity research can inform dissemination and implementation research. Indeed, treatment integrity research can facilitate efforts to understand how psychological treatments, particularly evidence-based treatments (EBTs), can be skillfully implemented in practice settings. However, as noted in the special series, before the potential of treatment integrity research can be fully realized, a few key conceptual and methodological limitations need to be addressed.

Within the psychotherapy field, there is general consensus that treatment integrity is composed of three components: treatment adherence, treatment differentiation, and therapist competence (Perepletchikova, Treat, & Kazdin, 2007; Waltz, Addis, Koerner, & Jacobson, 1993). *Treatment adherence* refers to the extent to which the therapist delivers the treatment as designed. *Treatment differentiation* refers to the extent to which a treatment under study differs from other treatments along lines defined by the treatment manual. And *competence* refers to the level of skill and degree of responsiveness demonstrated by the therapist when delivering the technical and relational elements of treatment. Each component captures a unique aspect of treatment integrity that together, and/or in isolation, is hypothesized to be responsible for therapeutic change (Perepletchikova et al., 2007). These three components overlap with the four dimensions described by Sanetti and Kratochwill (2009)—content (i.e., adherence, differentiation), quality (competence), quantity (adherence), and process (competence)—and are similar to the dimensions described by Schulte et al. (2009).

Despite the importance of each integrity component, recent reviews have concluded that few clinical trials adequately measure treatment integrity (Perepletchikova et al., 2007; Weisz, Doss, & Hawley, 2005). Weisz and colleagues reviewed 226 child therapy studies published from 1962 to 2002 and found that only 32.2% used any form of integrity check. Perepletchikova and colleagues (2007) reviewed 147 child and adult therapy studies published from 2000 to 2004 and found that only 3.5% *adequately* measured treatment integrity. Most integrity research has focused on adult therapy (e.g., Barber et al., 2006; Barber, Mercer, Krakauer, & Calvo, 1996; Carroll et al., 2000), with only a handful of studies focused on child therapy (e.g., Hogue, Henderson et al., 2008; Schoenwald, Carter, Chapman, & Sheidow, 2008; Weisz et al., 2009).

Although treatment integrity is a multidimensional construct, few efforts have been made to assess each component. Understanding the relation between the treatment integrity components and clinical outcomes will help refine and optimize the effectiveness of treatments. An assumption underlying treatment research is that the components of a well-specified and efficacious treatment relate to therapeutic change (Perepletchikova & Kazdin, 2005). However, this assumption is largely untested in child therapy because most clinical trials do not assess treatment integrity (Perepletchikova et al., 2007). Consequently, we have a poor understanding of what aspects of treatment implementation are important for outcomes. Open questions include the following: (a) What are the active ingredients of

multicomponent treatments? (b) How does "purity" of treatment delivery (i.e., absence of proscribed interventions) affect the potency of treatment? (c) What role does therapist competence play in outcomes? Treatment integrity research can address these important questions and, in so doing, help refine and optimize the effectiveness of EBTs.

To date, most definitions of treatment integrity have focused on the technical aspects of treatment implementation; however, we believe that relationship factors should be considered components of treatment integrity. Developing an alliance with a client (child or parent) and promoting client participation in therapeutic activities are considered key therapeutic ingredients. Moreover, therapeutic alliance and client responsiveness are considered elements of evidence-based practice by some in the field (Ackerman et al., 2001; Karver, Handelsman, Fields, & Bickman, 2005; Norcross, 2002) and are associated with positive clinical outcomes in child psychotherapy (Chiu, McLeod, Har, & Wood, 2009; Chu & Kendall, 2004; McLeod & Weisz, 2005; Shirk & Karver, 2003). Considering technical and relational factors as ingredients of treatment integrity may broaden the effect of integrity research, especially as research focuses increasingly upon implementing EBTs in practice settings.

Incorporating technical and relational factors into the definition of treatment integrity should benefit the field by providing a more complete understanding of how and why psychotherapy works. An age-old debate in the psychotherapy field has been the relative effect of technical and relational factors on clinical outcomes. This debate, in part, has contributed to distinct bodies of literature with few efforts to measure both processes within the same studies. This has limited progress in psychotherapy research. Traditionally, treatment integrity has focused on the technical aspects of treatment implementation; however, perfect adherence to a treatment protocol may not guarantee positive clinical outcomes if the client–therapist relationship is not strong. Some exemplar studies investigating the relation between treatment integrity and outcomes in youth psychotherapy have begun to assess relational elements (see e.g., Hogue, Henderson et al., 2008). For example, Hogue and colleagues found that treatment integrity predicted positive client outcomes over and above the influence of the therapeutic alliance. This represents an important direction for the field.

Before the potential of treatment integrity research can be fully realized, attention must be paid to measure development and validation. Treatment integrity measures with demonstrated psychometric properties are needed to move the field forward. Translating the need for treatment integrity instruments to reality requires an appreciation for the methodological challenges inherent in tapping a complex, multidimensional construct. A concerted effort is needed to address this measurement gap.

As researchers seek to address the measurement limitations, careful attention is needed to measure construction. Observational assessment represents the gold standard in integrity research because it provides objective and highly specific information regarding clinicians' within session behavior (Hill, 1991; Hogue, Liddle, & Rowe, 1996; Mowbray, Holter, Teague, & Bybee, 2003). However, not all observational measures are equally useful. To produce process data with the maximum degree of validity and utility, observational assessments should adhere to proven design features (Carroll et al., 2000; Hogue, 2002; Waltz et al., 1993). First, quantitative observational measures should be designed to assess the intensity or extensiveness of interventions (Hogue et al., 1996). Second, both model-specific interventions (therapeutic interventions essential to the underlying clinical theory) and common elements (therapeutic interventions endorsed by most theoretical models such as client-centered interventions) need to be targeted (Waltz et al., 1993). Third, items should be designed to represent the processes tied to the theory of clinical change of a particular treatment (Hogue, Dauber et al., 2008; Hogue, Henderson et al., 2008). Together, these design elements produce observational integrity measures that are ideally suited to assess process–outcome relations (e.g., Hogue et al., 1996) and aid efforts to refine and optimize EBTs.

Although it has numerous advantages, observational coding is time and resource intensive

(Hill, 1991). Community stakeholders may not be able (or willing) to carry out observational coding (Schoenwald, Henggeler, Brondino, & Rowland, 2000; Weersing, Weisz, & Donenberg, 2002), so the development of therapist-, client-, or caregiver-report integrity measures represents an important goal for dissemination and implementation research (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Mihalic, 2004; National Institute of Mental Health, 1999). The potential of this approach is exemplified by research conducted with multisystemic therapy (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998), as parent reports of adherence to multisystemic therapy have been linked to clinical outcomes (Henggeler, Brondino, Melton, Scherer, & Hanley, 1997; Henggeler, Pickrel, & Brondino, 1999; Huey, Henggeler, Brondino, & Pickrel, 2000). Developing self-report measures represents an important goal for the field; however, given the limitations of self-report measures, it is important that the field develop strong observational integrity measures that can be used to validate self-report measures.

The development of treatment integrity measures will allow researchers to capitalize on new methods for conducting process research within practice settings. New "hybrid" approaches combine methods from applied services research and the psychotherapy process research tradition (Garland, Hurlburt, & Hawley, 2006). The "hybrid" approach offers researchers the means to evaluate how EBTs can be implemented within practice settings with integrity and skill. Specifically, this methodology involves a multifaceted assessment strategy that evaluates contextual factors (e.g., organizational climate) that may influence the relation between treatment integrity (adherence, differentiation, competence, relationship) and clinical outcomes. This method provides a framework for studying the dissemination and implementation process. For example, using this "hybrid" approach researchers found that organizational climate predicted treatment adherence for therapists implementing an EBT for youth disruptive behavior disorders (Schoenwald et al., 2008). This approach provides a roadmap for future efforts to use process research to understand how EBTs can be implemented in practice settings with integrity and skill.

Identifying contextual factors that account for variation in treatment integrity has important implications for clinician training. If client (e.g., comorbidity) or therapist (e.g., attitudes towards EBTs; Aarons & Palinkas, 2007) factors affect treatment integrity, adjustments can be made to clinician training and/or treatment manuals. Moreover, treatment integrity research could help identify "minimal" integrity scores to serve as a benchmark for determining whether a session or course of treatment was delivered consistently with the intended approach (Addis, 1997; Sholomskas, Syracuse-Siewert, Rounsaville, Ball, Nuro, & Carroll, 2005). In benchmarking studies, treatment integrity to a protocol delivered in a practice setting is directly compared to treatment integrity in efficacy trials (Addis & Waltz, 2002; Nathan, Stuart, & Dolan, 2000). The use of a minimal integrity score would be invaluable for training purposes (see e.g., Sholomskas et al., 2005), particularly as the field moves toward an emphasis on effectiveness (vs. efficacy) research (e.g., Fixsen et al., 2005; Southam-Gerow, Marder, & Austin, 2008). Moreover, benchmarking methods can help illuminate whether EBTs implemented in practice settings can approximate the performance standards set in funded efficacy trials (Addis, 1997; Nathan et al., 2000). Thus, integrity measures can be used to inform and evaluate clinician training efforts.

In sum, we applaud the editors of this special series for focusing upon the need for more treatment integrity research in the child mental health and educational field. We agree that greater attention needs to be paid to the science and measurement of treatment integrity in the education field as well as in child psychotherapy research. This commentary serves as a call for researchers to devote more attention to the development of integrity measures that can be used to test key components of our conceptual models and aid efforts to disseminate EBTs in community settings.

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