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Training Future Mental Health Professionals in an Evidence-Informed System of Care

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TABLE OF CONTENTS

List of Tables

List of Figures

Abstract

High quality mental health services do not reach the youth who need them, leading to efforts to implement effective treatments more broadly. One focus of these efforts concerns training the mental health workforce, of which master's-level social workers represent a large proportion. However, the curricula of master's in social work (MSW) programs do not often emphasize evidence-based approaches. One possible solution is Managing and Adapting Practice (MAP; PracticeWise, LLC), a system that allows clinicians to (1) identify clinically indicated evidence-based programs by searching a growing evidence-base of randomized controlled trials (RCTs) and (2) build individualized evidence-informed treatment plans by focusing on common practice elements. MAP may also address the concerns about manual-based programs (e.g., inflexibility). Although some MSW programs have integrated MAP, the benefits of MAP training within MSW education have not yet been evaluated. This project evaluated multiple mechanisms of training in a semester-long MSW-focused MAP course relative to curriculum-as-usual control at a large public university.

Participants were advanced MSW students (mean age = 27, SD = 5.8; 92.3% women; 59% white) either enrolled in the MAP course (n = 17) or enrolled in curriculum-as-usual (n = 22). The MAP course was co-taught by an expert MAP trainer and a MAP-trained social worker. Pre- and post-semester, participants completed a battery that included: (1) role-plays with standardized patients that were videotaped and coded using the Therapy Observational Coding System of Child Psychotherapy – Revised Strategies scale; (2) a written task that was subsequently coded to assess participants' clinical decision-making skills during different phases of a standardized case; and (3) attitudinal factors that may be predictive of future MAP usage, such as attitudes toward evidence-based practice and the acceptability and feasibility of MAP. Results indicate significant uptake of cognitive and behavioral therapeutic strategies in the MAP condition. Overall, participants endorsed positive attitudes toward evidence-based practice broadly and MAP specifically. Findings may be used to inform the development of more effective evidence-informed curriculum for master's-level clinical programs and future workforce training initiatives. Methodological considerations may inform advances in instrumentation to measure multidimensional training outcomes

Introduction

High quality mental health services are not reaching the many youth who need them (Blau, Huang, & Mallery, 2010; Tang, Hill, Boudreau, Yucel, Perrin, & Kuhlthau, 2008), which has led to a public health crisis, inspiring efforts to disseminate effective treatments more broadly. One important focus of these efforts concerns the education and training of the mental health professional workforce, of which master's-level social workers represent a large proportion (Heisler & Bagalman, 2015). However, the curricula of social work graduate schools are diverse, and training in mental health treatment often does not always emphasize evidence-based approaches (Rubin & Parrish, 2007). Although leaders in social work have called for increased emphasis on evidence and clinical decision-making in social work education (Proctor, 2007; Rubin, 2015) and evidence-based practice appears to be gaining momentum and ground in both mental health policy and social work education (Okpych & Yu, 2014), practical and perceptual barriers to implementing evidence-based approaches persist.

In an effort to maximize the benefits of training future providers of child treatments in evidence-based approaches while minimizing barriers, educators and stakeholders have a few possible paths to consider. For example, one method would involve training students in various disorder-focused treatments with strong evidence bases. However, as Chorpita et al. (2011) reported, even if students were trained in every available treatment program, many youth would remain uncovered due to limitations of the available evidence-base. An alternative model involves training students how to use evidence to inform their clinical decisions.

One such approach is Managing and Adapting Practice (MAP; Chorpita & Daleiden 2014; PracticeWise, LLC). One application of the MAP system is to identify clinically indicated evidence-based programs by leveraging information gleaned from the growing literature of

randomized controlled trials (RCTs). A second application of the MAP system is far more germane to the realities of clinical practice in community settings: MAP facilitates the construction of individualized evidence-informed treatment plans with the use of written guides that provide a detailed description of generic structured practice elements based on the validated strategies tested in those RCTs ("practice guides"; e.g., "relaxation training", "cognitive restructuring") and are designed to inform the structure and course of treatment ("process guides"; e.g., determining the structure and focus of treatment). Such individualization allows clinicians to account for clinical comorbidities and severity in a responsive way. Following training, the MAP system is delivered primarily via tools available on the web. The flexibility inherent in the MAP approach as well as the fact that the system is constantly updated to reflect current evidence makes this system a strong choice for training the next generation of mental health providers.

MAP has already been implemented into several mental health systems largely staffed by professionals that have already completed their formal education. Indeed, a study of the rollout of MAP into the large service system embedded within Los Angeles County, California has demonstrated the success of MAP training models by producing competent MAP therapists and good clinical outcomes for youth (Southam-Gerow et al., 2014). Although the MAP developers have explicitly marketed learning materials for the academic environment (PracticeWise LLC, n.d.) and individual master's in social work (MSW) training programs have incorporated MAP or similar practice element-based approaches into their curricula (e.g., University of Denver, University of Chicago, Temple University; Barth, Kolivoski, Lindsey, Lee, & Collins, 2014), there have been no empirical evaluations of the effect of MAP-focused coursework on students' clinical skills and other indicators of future use.

Another important consideration is how MAP should be trained within the academic environment. Psychotherapy and clinical decision-making skills are complex behavior and, typically, MAP trainings for established clinicians are conducted as multi-day intensive workshops that incorporate didactics, modeling, and rehearsal of behavioral components, along with six months of biweekly case consultation. This raises an important question: Does MAP lend itself to a semester-long format? Further, the field has not yet established a gold-standard strategy for training clinical skills (e.g., Beidas & Kendall, 2010) and there has been a push to increase the cost-efficiency and reach of such trainings (Herschell, Kolko, Baumann, & Davis, 2010) One way to improve our understanding of training strategies, particularly within the academic context, is to test different methods to determine if there is any relative benefit.

To these ends, the present dissertation will accomplish three goals: (1) Review the rationale for evidence-based workforce development efforts focused on master's-level social workers and discuss the barriers to training future mental health providers in evidence-based practice; (2) Discuss the rationale and benefits of MAP as a potential solution to such barriers; (3) Describe a study that assessed the effects of a semester-long MAP training on important indicators of MSW students' clinical skills and attitudes compared to curriculum-as-usual.

Definitions

Preliminarily, it may be helpful to distinguish between three distinct but related terms that describe different levels of mental health treatment specificity.

Evidence-based practice. Evidence-based practice is a term that the American Psychological Association (APA) Presidential Task Force on Evidence-Based Practice defines as "the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences" (APA Presidential Task Force, 2006, p. 273). Evidence-

based practice represents the broadest level of specificity discussed here, as such an approach can apply to all clinical work done by a provider, regardless of client or target problem.

Although clinicians have long been focused on integrating science into their practice (e.g., Thorne, 1947), the formal evidence-based practice movement largely grew out of the evidence-based medicine movement that began building momentum in the mid-1990s (Sox & Woolf, 1993; Woolf & Atkins, 2001). The main goal of evidence-based practice in psychology is to "promote effective psychological practice and enhance public health by applying empirically supported principles of psychological assessment, case formulation, therapeutic relationship, and intervention" (APA Presidential Task Force, 2006, p. 273).

To this end, the APA and other professional organizations have begun to identify and consolidate the best available research evidence (e.g., research agendas to promote empirical study, comprehensive reviews and meta-analyses) and disseminate (e.g., professional journals, guidelines for training) guidelines for such scientifically informed best practice. It should be noted that the APA maintains a broad definition of evidence, such that clinical observation, qualitative research, case studies, and single-case experimental designs are considered alongside research that is traditionally considered to be more scientifically rigorous (e.g., RCTs, meta-analysis). Rather than wholly discounting clinical experience and expertise, the evidence-based practice movement recognizes the fallibility of such idiosyncratic processes and prescribes systematic clinician self-evaluation (e.g., self-reflection, ensuring there is a cogent rationale for employing specific clinical strategies) and treating clinical work as a single case design, such that clinicians formulate clinical hypotheses and regularly monitor client outcomes, as in measurement-based care (e.g., Scott & Lewis, 2015)

Evidence-based programs. Whereas evidence-based practice refers to broad principles that guide practice, evidence-based programs (also often referred to as empirically supported treatments and evidence-based treatments) are discrete interventions, often codified in a manual, that have been developed and have demonstrated efficacy in research trials. Evidence-based programs are the second broadest level of specificity, as they refer to multi-component packages that are typically designed for a specific clinical target. Clinicians may use evidence-based programs within their broader evidence-based practice. It should also be noted that there may be slight variations in specific treatment protocols, defined as the "manualized or structured set of treatment instructions tested in a given study" (Bernstein, Chorpita, Daleiden, Ebesutani, & Rosenblatt, 2015, p. 1087) that comprise the literature-base of a larger program. For example, Coping Cat is an evidence-based program designed for youth anxiety disorders. Several versions and adaptations of Coping Cat have been tested in numerous randomized trials (e.g., Kendall, 1994; Kendall et al., 1997; Kendall, Hudson, Gosch, Flanner-Schroeder, & Suveg, 2008; Walkup et al., 2008). Many programs are actively disseminated by treatment developers (e.g., published manuals, training community providers) as packages designed to be delivered in their entirety. For example, the latest iteration of the Coping Cat program (Kendall & Hedtke, 2006) contains several clinical strategies (e.g., cognitive restructuring, exposure) arranged in a specific order that are designed to be delivered over the course of 16 sessions. The developers have widely disseminated the treatment manual and client workbook that contain specific clinical exercises.

The Society of Clinical Psychology (APA Division 12) developed specific criteria to quantify the rigor with which programs have been tested. The Task Force on Promotion and Dissemination of Psychological Procedures (1993) determined two levels of empirical support: (1) well-established treatments that have demonstrated clinical superiority to placebo or active

control in two group design studies conducted by different investigators, or in a large series of single case studies, or (2) possibly efficacious treatments that have demonstrated superiority to waitlist control in two studies, two or more group design studies conducted by the same researchers, two studies demonstrating efficacy with a flawed client samples, or a small series of single case studies. For studies to qualify as well-established, the investigators must have tested a standardized treatment in a specific clinical sample using psychometrically sound symptom measurement and appropriate analytic techniques. These criteria have been subtly refined over the years (e.g., Tolin, McKay, Foreman, Klonsky, & Thombs, 2015), and there are now several clearinghouses that list and often compare the efficaciousness of different programs (see the Society of Clinical Psychology webpage: https://www.div12.org/psychological-treatments/treatments/; the National Registry of Evidence-based Programs and Practices website: https://www.samhsa.gov/nrepp; and the California Evidence-Based Clearinghouse for Child Welfare: http://www.cebc4cw.org/). These criteria can provide guidance to consumers of mental health services, agency administrators, and other stakeholders about the best option(s) to pursue from an array of available options. Consumers are ostensibly most interested in the clinical efficacy of a program, whereas administrators/individual practitioners are interested in enhancing the breadth and depth of clinical expertise. Government agencies may use cost-effectiveness data to guide decisions about grants and efficacy data to guide reimbursement rates (e.g., enhanced rates for evidence-based programs).

The focus on dissemination at the program level—rather than the practice level—seems to be responsible for one of the most persistent barriers to integrating evidence into community-based practice; there is an inherent mismatch between disorder-specific programs and the population of children and families that access mental health services in community-based

clinics. Children who access community-based services experience clinical comorbidities, impaired social functioning, and family-level stressors (Ehrenreich-May, Southam-Gerow, Hourgian, Wright, Pincus, & Weisz, 2011; Southam-Gerow, Chorpita, Miller, & Gleacher, 2008; Weersing & Weisz, 2002). The families that present to community clinics also differ from those referred to university-based research clinics in meaningful ways; parents are more likely to have less education (Southam-Gerow et al., 2008) and lower incomes (Ehrenreich-May et al., 2011). Single-parent families are also more frequent among this population (Southam-Gerow, Weisz, & Kendall, 2003), and ethnic minority families are overrepresented, even when controlling for geographic differences (Ehrenreich-May et al., 2011). One study of youth receiving school-based mental health services echoed these findings, documenting higher rates of trauma exposure and past suicide attempts compared to efficacy studies (Shirk, Kaplinski, & Gudmundsen, 2009). Taken together, these studies illustrate how community populations present with more clinical complications that may impede successful treatment, particularly with programs designed to address one type or cluster of disorders. Further, community populations are generally more diverse than research populations across multiple potentially relevant variables (e.g., race, ethnicity, family income), raising questions about the generalizability of the evidence base.

This mismatch is also reflected in therapist-level attitudes that may also serve as an implementation barrier. A recent survey of provider attitudes indicated negative attitudes toward specific treatment manuals (Borntrager, Chorpita, Higa-McMillan, Weisz, & the Research Network on Youth Mental Health, 2009). Focus groups with clinicians and supervisors identified two main problems: (1) a widespread belief that research-based interventions are not applicable to client population, and (2) providers lacked skills to understand and judge the quality of research (Manuel, Mullen, Fang, Bellamy, & Bledsoe 2009), possibly reflecting the limited reach

of and/or access to compilations of the research evidence. As a result of these barriers, the number of clinicians using evidence-based programs regularly is a small minority (Bellamy, Bledsoe, & Traube, 2006; Pope, Rollins, Chaumba, & Risler, 2011; Parrish & Rubin, 2012).

Practice elements. Evidence-based programs are typically composed of a number of practice elements, defined as a "discrete clinical technique or strategy (e.g., 'time out,' 'relaxation') used as a part of a larger intervention plan (e.g., a manualized treatment program for youth depression)" (Chorpita, Daleiden, & Weisz, 2005, p. 11). Chorpita and colleagues (2005) developed the distillation and matching model, which applies data mining strategies to the clinical research base, to identify generic practice elements within evidence-based programs the broader child and adolescent treatment literature base. Practice elements are identified in existing evidence-based programs and clearly defined (e.g., problem solving: "techniques, discussions, or activities designed to bring about solutions to targeted problems, usually with the intention of imparting a skill for how to approach and solve future problems in a similar manner" (Chorpita et al., 2005, p. 11). Evidence-based programs typically contain multiple practice elements and practice elements typically appear across multiple programs. The frequency with which specific practice elements appear in evidence-based programs provides guidance about general consensus in the field. For example, the practice element exposure—a respondent strategy typically used in treatments for anxiety disorders, defined as creating a fear hierarchy and systematic desensitization to feared stimuli—appears in the majority of anxiety-focused programs (PracticeWise, n.d.), indicating that exposure is widely viewed as an important ingredient in anxiety-focused treatment, broadly.

As I discuss later, the distillation and subsequent arrangement of practice elements is the subject of increasing research. The field appears to be moving away from disorder-specific

treatments in favor of flexible models that are able to address multiple treatment targets (e.g., Modular Approach to Therapy with Children, MATCH; Chorpita & Weisz, 2009). Such an approach, however, relies heavily on clinicians' ability to access the distilled research evidence, decide how to arrange the elements appropriately, and determine how to adjust the treatment plan as new information and/or new treatment foci emerges.

Evidence-Based Practice in the Mental Health Service System

It is clear that the evidence-based practice movement has transdisciplinary momentum in mental health. One possible consequence of this momentum is professional pressure—as the health fields, including medicine, nursing, and psychology, move toward evidence-based practice, community-based clinicians may feel compelled to follow in an effort to maintain professional credibility. Another source of pressure may be shifting attitudes toward reimbursement for health care services. Pay- for-performance refers to the "use of financial incentives to stimulate improvements in healthcare efficiency and quality" (Kondo et al., 2016, p. 561), and represents a step away from the traditional fee-for-service model in which providers are paid a flat rate for a service, regardless of patient outcome. Pay-for-performance reimbursement models are increasingly common in medical settings (Bremer, Scholle, Keyser, Houtsinger, & Pincus, 2008; Epstein, Lee, & Hammel, 2004), and the mental health service system is poised to follow. Indeed, a recent review of pay-for-performance in behavioral health care (Stewart, Lareef, Hadley, & Mandell, 2017) identified 15 published evaluations, indicating overall (1) improvement of various outcomes (e.g., client retention, service use), and (2) increased interest in such enhanced reimbursement models for mental health care. Should the mental health service system continue to move in that direction—guided in large part by federal

and state policies—community clinicians may be faced with incentives and/or mandates to deliver evidence-based practice at different levels (e.g., agency, county, state, federal program).

When considering the philosophical and methodological debates about what type(s) of practice are best, it behooves us to take a step back and consider what the true goals of the mental health system are. Whereas the goal of the academy's treatment outcome research is to develop etiological models and corresponding interventions to be tested and retested in an effort to explain phenomena with precision and optimize therapeutic value, the explicit goal of the service system is to maximize client outcomes in an effort to increase quality of life (Burns, Hoagwood, & Mrazek, 1999; Regan, Daleiden, & Chorpita, 2013). Despite methodological criticisms, there is a compelling case for evidence-based practice within practice settings.

Regan and colleagues (2013) identify one way in which the mental health service system can achieve clinical outcome goals with efficiency: reducing or managing uncertainty. For example, within the service system, administrators of community clinics attempt to maximize the odds of positive client outcomes by making sure the organization provides the best possible services that are readily accessible and produce positive outcomes. By definition, evidence-based practices have demonstrated clinical success in some capacity, increasing the odds of their success. With the goal of training social workers in mind, it is therefore important to choose a program or practice that maximizes clinical applicability (i.e., applies to many mental health concerns), acceptability (i.e., providers find the theoretically and technically acceptable), and feasibility (i.e., providers are able to deliver the intervention, given restrictions of time and resources). As I have discussed, individual evidence-based programs are problematic in these respects; most individual programs have been developed for and tested with specific disorders or a group of homogenous disorders (Westen, Novotny, & Thompson-Brenner, 2004). In contrast,

the youth that present for community services differ from those recruited for efficacy trials, often exhibiting comorbidities, impaired social and academic functioning, and other life stressors (Ehrenreich-May et al., 2011; Southam-Gerow et al., 2008), factors that are largely unaddressed by individual evidence-based programs. For agencies that choose to implement evidence-based programs, financial realities limit the number of individual evidence-based programs in which they are able to invest. Computer modeled "relevance mapping," in which the parameters of a service population (e.g., demographic and diagnostic characteristics) are matched with individual evidence-based programs, has demonstrated that a significant proportion of youth will be 'uncovered' by evidence-based programs, regardless of how many were implemented (Chorpita, Bernstein, & Daleiden, 2011). It is not practical to train current and future providers in many individual programs nor is it possible to 'cover' all children served at a given agency with evidence-based programs alone.

Possible Solutions

Three possible solutions to the issue of applicability of evidence-based practice for community populations are (1) transdiagnostic approaches, (2) modular approaches, and (3) the distillation of common elements across evidence-based programs. Transdiagnostic approaches focus on underlying processes shared across multiple diagnostic categories within the same protocol (Barlow, Allen, & Choate, 2004; Chu, 2012; Chu, Crocco, Esseling, Areizaga, Lindner, & Skriner, 2015); although this approach significantly increases the applicability of an individual practice, a provider may still be limited, depending on the population he or she serves. Modular treatments for children (e.g., the Modular Approach to Therapy for Children with Anxiety, Depression, Trauma, and Conduct [MATCH-ADTC]; Chorpita & Weisz, 2009) are treatment

programs that eschew the traditional linear progression of standard treatment protocols, thereby allowing for the flexibility to address clinical comorbidity across multiple treatment targets.

MATCH-ADTC covers four of the most common childhood disorders and outperformed usual care and standard evidence-based programs in a recent randomized controlled community-based effectiveness trial (Weisz et al., 2012; Chorpita et al., 2013). Although modularity represents a promising approach to children's mental health, one is still limited to targeting a small number of conditions.

The treatment distillation approach further increases applicability by focusing on how individual evidence-based programs overlap. As I discussed earlier, treatment programs are typically composed of a number of individual treatment strategies, or practice elements (PEs; e.g., gradual exposure is commonly used to treat anxiety). The distillation and matching model (Chorpita et al., 2005) was designed to characterize the evidence base for a given problem area by PE (versus program), as there are often common PEs across multiple treatment programs. Focusing on this smaller unit of analysis has allowed for a more nuanced description of what individual PE(s) may be indicated for a given child with a specific problem. The distillation of PEs represents a method by which clinicians and/or trainees can guide treatment selection. Further, focusing on PE(s) over individual evidence-based program within a service system can address the needs of some youth who would otherwise not be covered by individual programs (Bernstein et al., 2015) by "encourag[ing] clinicians to 'borrow' strategies and techniques from the best known treatments, using their judgment and clinical theory to adapt the strategies to fit new contexts and problems for which there is an insufficient evidence base" (Chorpita, Becker, & Daleiden, 2007, p. 648-649). Compared to the individual programs described above, the PE

approach represents the broadest applicability for the complex clinical needs one may find in a community setting.

Managing and Adapting Practice

Managing and Adapting Practice (MAP; PracticeWise LLC) is an application of the PEs distillation research. MAP has been defined as a "system or infrastructure for supporting [evidence-based practice] and empirically informed health and human services… MAP is a set of decision-guidance frameworks and tools to help therapists and systems manage the implementation and adaptation of evidence-informed care across a diverse service array and multiple treatment targets" (Southam-Gerow et al., 2013; p. 191). Separate and distinct from the "system-of-care" framework developed by the Child and Adolescent Service System Program that helps communities integrate and coordinate multiple services to support children and their families (e.g., Sproul & Friedman, 1996), MAP is a system designed to coordinate "individuals and information around key clinical decisions" ("Managing and Adapting Practice (MAP)," PracticeWise, LLC, n.d.). The MAP framework is described in greater detail in Table 1 on the next page, adapted from Southam-Gerow and colleagues (2013; p. 194).

Table 1. The MAP Framework

Is Outcome Centered	Clinical progress and therapeutic practices are measured and systematically monitored at the client case level.
Is Information Oriented	Emphasizes the common roles that information serves in decision-making, rather than requiring a specific set of instruments.
Supports a Common Language	By identifying common elements of interventions with scientific evidence of effectiveness across the behavioral health service domain, the MAP system provides an integrated lexicon to which the terminology of specific programs and disciplines is readily translated.
Integrates Multiple Evidence Bases	The MAP system highlights four sources of evidence that are referenced and prioritized during healthcare decision-making, including case-specific information, case aggregate information, services research, and causal mechanism research.
Coordinates Observed and Expected Values	By identifying common elements across evidence bases and obtaining indicators of client progress, clinical practice, and research findings, the MAP system integrates both the observed outcomes of clients and practitioners with the expected outcomes from the research and service systems.
Is Self-Correcting	The MAP tools, such as the scientific evidence database (PracticeWise Evidence-Based Services) and Practitioner Guides, are routinely updated based upon ongoing review of the scientific literature. As new evidence and practices appear in the scientific literature, new components are identified for the MAP system and are delivered directly to users of the MAP System through the existing infrastructure.
Promotes Public Visibility	The MAP system provides a central visualization tool with integrated web-based tools, but also promotes transparency and public scrutiny of (a) the underlying evidence used to inform decisions and (b) the underlying logic used to reach a final decision and course of action.
Process Management	The MAP system adopts a continuous quality improvement strategy for managing the process of change. Common steps of this strategy include goal setting, assembling supports and applying procedures, testing results, and review and adaptation.

MAP supports the delivery of mental health services in a number of ways: (1) access to a growing online database of practice elements that have been distilled from the literature (PracticeWise Evidence-Based Services [PWEBS]), (2) access to descriptions of practices designed to guide individual sessions with clients (Practice Guides), and (3) access to clinical decision-making tools, like the Clinical Dashboard. MAP has been implemented in Los Angeles County, one of the largest mental health systems in the US with promising data related to utilization and client outcomes (Southam-Gerow et al., 2013). The training curriculum for MAP is 40 hours of didactic, modeling, and rehearsal training and 12 hours of consultation during six (or more) months of MAP practice. The training covers: an introduction to the MAP system, planning treatment (PWEBS), monitoring treatment progress (i.e., Clinical Dashboard), an overview of the Practice Guides, and a number of specific treatment practices that can be tailored to fit the needs of the individual agency. All materials are accessible through an online subscription service. By focusing on common PEs, the MAP approach has the potential to address a number of the aforementioned barriers to dissemination of evidence-based programs, including acceptability of evidence-based practice as it allows for flexibility and accounts for the importance of local and case-specific evidence (Chorpita et al., 2007). MAP represents a flexible system of care with broad applicability that is well suited for implementation within an MSW program.

Social Work in the Mental Health Workforce

The mental health workforce is composed of professionals from a number of disciplines (e.g., social work, psychology, psychiatry) and training backgrounds (e.g., doctorate, master's). However, according to a survey conducted by the National Association of Social Workers in 2000, approximately 60% of mental health providers in the United States were clinically trained

social workers. Further, more recent data from the Bureau of Labor Statistics (2015) suggest that the demand for mental health and substance abuse social workers will grow by 19% nationally from 2014 to 2024, far faster than the average occupation. Master's-level clinical social workers have emerged as a particularly salient part of the mental health workforce, as 70% of master's-level social workers describe their primary occupation as providing direct service (Goldstein, 2003).

In their recent statement of official educational policy and accreditation standards, the Council on Social Work Education (CSWE) stated that "the purpose of the social work profession is to promote human and community well- being" (CSWE, 2015, p. 5). A main function of the CSWE is to set national standards for social work curriculum organized around generalist practice that is "grounded in the liberal arts and the person-in-environment framework" (CSWE, 2015, p. 11), specialized practice that "builds on generalist practice… adapting and extending the Social Work Competencies for practice with a specific population, problem area, method of intervention, perspective or approach to practice" (CSWE, 2015, p. 12), and field education, "the signature pedagogy of social work[, the intent of which] is to integrate the theoretical and conceptual contribution of the classroom with the practical world of the practice setting" (CSWE, 2015, p. 12). In other words, field education represents an opportunity to practice skills learned in the classroom.

In practice, this means that, over the course of two years, full-time MSW students typically take theory- and practice-based coursework while they are also working in a field placement. For example, the School of Social Work (SSW) at Virginia Commonwealth University (VCU) describes the first year of their two-year full-time MSW program as "foundational study" followed by a year of "specialized courses in the concentrations of clinical

social work practice" (see http://socialwork.vcu.edu for more information). Field education is conducted concurrently, such that students are placed in local agencies and organizations.

The CSWE also delineates nine core social work competencies, three of which are particularly salient to the type of mental health services that are central to this proposal: (1) Engage in practice-informed research and research-informed practice, such that "social workers understand that evidence that informs practice derives from multi-disciplinary sources and multiple ways of knowing" (CSWE, 2015, p. 8); (2) Intervene with individuals, families, groups, organizations, and communities such that "social workers are knowledgeable about evidence-informed interventions to achieve the goals of clients… [and] understand methods of identifying, analyzing, and implementing evidence-informed interventions to achieve client… goals" (p. 9), and (3) Evaluate practice with Individuals, families, groups, organizations and communities, such that "social workers recognize the importance of evaluating processes and outcomes to advance… service delivery effectiveness [and] understand qualitative and quantitative methods for evaluating outcomes and practice effectiveness" (p. 9).

As of spring 2018, there were 255 MSW programs accredited by the CSWE in which there were a total of 22,383 part-time and 41,186 full-time students enrolled (CSWE, 2018). A plurality of MSW students were enrolled in clinical or direct practice specialty programs (*n* = 113 programs). During the 2016-2017 academic year, 27,270 MSW degrees were conferred. Graduates were majority women (80.2%); the plurality of graduates were in the 25-34 age range (44.3%) and non-Hispanic White (49.5%; CSWE, 2018). Given their prominence in the mental health workforce, pre-service clinical social workers represent an excellent target for workforce development projects like MAP.

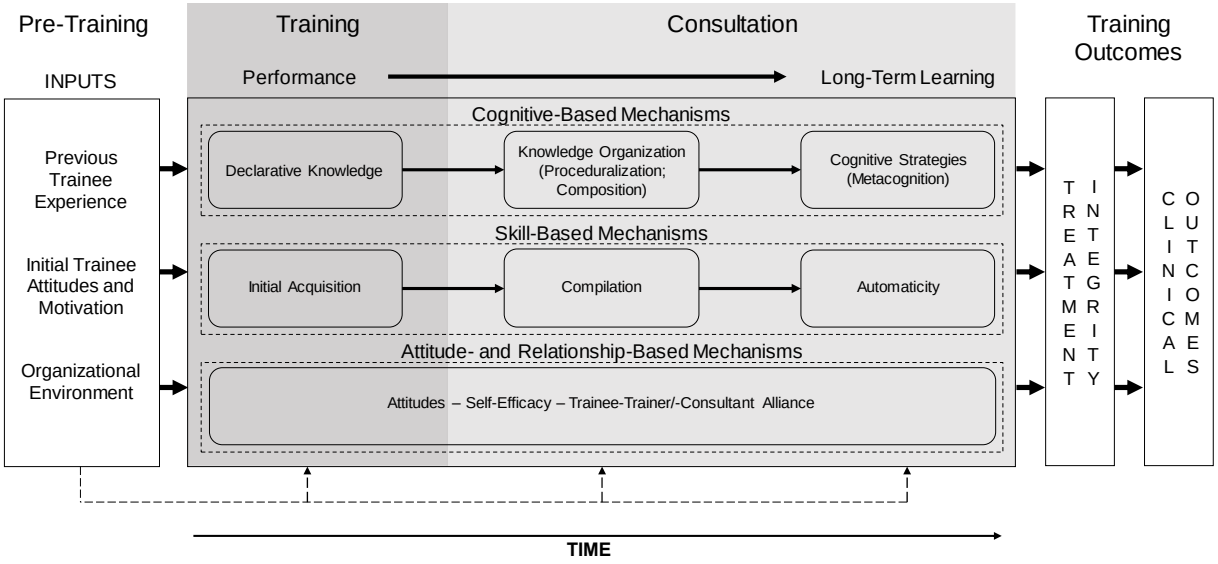
Measuring Training Outcomes

MAP provides therapists with many tools, but therapists must know how to use those tools effectively. These cognitive and behavioral skills are complex processes that are difficult to teach and to learn—such tasks require the capacity to deliver individual therapy techniques while being aware of contextual cues and knowledgeable of when to employ them. The adult learning literature differentiates this complex "open skill" that has no one correct answer (e.g., a teacher conducting a discussion while managing the classroom) from a simple "closed skill" that has only one correct way to complete the task (e.g., a mechanic replacing an alternator in a car; Yelon & Ford, 1999). The goal of training clinicians at any stage is to teach skills and knowledge such that trainees acquire and subsequently transfer new skills and knowledge to the day-to-day work environment and long-term learning is achieved (Soderstrom & Bjork, 2015).

One way to conceptualize this transfer of learning process is with a mechanistic model of therapist training and supervision. Building on the adult learning literature (particularly Yelon & Ford, 1999 and Soderstrom & Bjork, 2015) and the extant training literature, the Longitudinal Education for Advancing Practice (LEAP) model (McLeod, Cox, Jensen-Doss, Herschell, Ehrenreich-May, & Wood, 2018, see Figure 1 on the next page) identifies two longitudinal phases of the transfer of learning, from training to consultation. Inputs into the training and consultation processes include trainee- and organizational-level factors. Training outcomes are defined as treatment integrity—the extent to and skillfulness with which a trainee delivers an intervention in practice settings—and clinical outcomes. Within the training and consultation process, there are cognitive (e.g., knowing about an exposure intervention), skill-based (e.g., ability to demonstrate exposure intervention), and attitude-based (e.g., trainee's beliefs about the effectiveness of the exposure intervention and her ability to complete the intervention) indicators

that can be assessed. The model—and the adult learning literature at large—differentiates between performance, relatively unstable indicators of skills and knowledge that should be measured during or immediately after initial training, and long-term learning, using new skills and knowledge regularly in the work environment.

Figure 1. Longitudinal Education for Advancing Practice model (McLeod et al., 2018).



This model expands upon how the field understands training by introducing specific mediators of long-term learning (i.e., cognitive, skill-based, and attitude-based processes). The existing literature, which has largely been conducted with professionals already in the workforce, has focused on the success or nonsuccess of specific training strategies. Two extensive reviews of studies testing different training methodologies (Beidas & Kendall, 2010; Herschell et al., 2010) found that although therapists that engage in self-study and didactic workshop trainings demonstrated increased knowledge about the target intervention, such methods did not result in adequate uptake of behavioral skills. As one might expect, behavioral outcomes improved with the addition of directive techniques that encouraged rehearsal of skills (e.g., role-play) with

opportunities for feedback (Beidas & Kendall, 2010; Herschell et al., 2010). Among other techniques, the modeling of specific skills was highlighted in a recent qualitative study of training methods (Scudder & Herschell, 2015). Following initial training, consultation and supervision have been identified as important processes that support behavioral change (Beidas & Kendall, 2010; Herschell et al., 2010).

In contrast to contemporary clinician-focused workshops—typically three to five days of active training (e.g., didactics, rehearsal, modeling) followed by several months of semi-regular consultation—social work courses are spread out over a much longer period of time (e.g., semester) and foundational content is largely dictated by the CSWE and school administrators. As described by CSWE standards, MSW programs typically comprise two components that, while largely separate, inform the other: (1) classroom-based courses, and (2) community-based fieldwork. Although not mandated by the CSWE, broad guidelines to support evidence-based practice in schools of social work have been published by leaders in the field (Howard, Allen-Meares, & Ruffolo, 2007; Rubin, 2007). For example, Rubin's (2007) suggestions include clarifying the definition of evidence-based practice, improving the capacity of agencies and field instructors to supervise evidence-based practice, ensuring that field placements are reinforcing evidence-based practice, emphasizing evidence-based practice across multiple places in the curriculum (e.g., learning to appraise evidence in research courses, learning to deliver evidence-based strategies in practice courses), and, rather than focusing on individual evidence-based programs, teaching the process of critically evaluating and applying evidence to clinical work.

MAP, with its broad definition of evidence and applicability across multiple service settings and roles, is congruent with calls for evidence-based practice in social work education, making it an ideal target for workforce development efforts. Given the novel nature of MAP and

limited availability of MAP-trained consultants and field placement supervisors in the target MSW program, the focus of this pilot project was to integrate MAP into a classroom-based course. Rather than delivering a standard five-day MAP workshop for MSW students, adapting MAP into a semester-long course maintains congruence with the social work education model, providing students opportunities to use MAP-specific skills throughout the semester in their fieldwork placements.

As discussed earlier, the field's knowledge of what training strategies are most effective—alone or in combination—is very limited (Beidas & Kendall, 2010; Herschell et al., 2010). This raises two important points for the project at hand. First, it is important to catalogue the teaching strategies MAP trainers employ. Second, it behooves the investigators to test different combinations of training strategies. Trainees enrolled in classroom-based MAP have limited face-to-face time with instructors (40 hours) and, thus, limited opportunity to engage in applied observational learning (e.g., modeling how to apply the activity selection Practice Guide to a hypothetical case; modeling how to complete an effective PWEBS search for a hypothetical case). Providing students with additional opportunities to engage in observational learning has the potential to be a valuable addition to a standard MAP course (e.g., Bandura, 1977; Bandura, 1986; Sheffield, 1961;). PracticeWise, the company that publishes MAP, has produced dozens of videos that may support this very goal.

Goals of Present Study

Given the increasing emphasis on improving the quality and reach of mental health care, this dissertation project represents an opportunity to contribute to the improvement of mental health practices by implementing MAP, a promising system that has the potential to improve future practice and clinical decision-making, increasing the public health impact of mental health

research. To this end, MSW students in their second year and enrolled in the MAP elective course were recruited to participate and randomly assigned to one of two 16-week conditions: (1) standard classroom- based MAP training, and (2) classroom-based MAP training augmented with modeling videos. A non-MAP curriculum-as-usual control group was also recruited during the same semesters as the intervention groups.

Outcomes of interest. The primary outcomes of interest are congruent with McLeod and colleagues' LEAP model (2018) as described earlier and represented in Figure 1. Because this project was designed as an evaluation of two versions of a semester-long classroom-based MAP training and not longitudinal, the main outcomes of interest lie on the left side of the model ("training") on the cognitive-, skill-, and attitude-based dimensions. Before describing the specific aims, I turn to a brief discussion of the main outcomes of interest with the goal of contextualizing what indicators of short-term performance might mean for students' future use of MAP in clinical practice.

The cognitive-based dimension of the LEAP model focuses on trainee knowledge of specific practice. There are three sequential stages: (1) declarative knowledge, (2) knowledge organization, including proceduralization and composition, and (3) cognitive strategies, or metacognition. This project focuses on initial declarative knowledge and burgeoning knowledge organization. Trainees learn factual knowledge and information about MAP processes and individual practices, and then learn decision-making heuristics to apply what they have learned. Because MAP is a framework designed to help clinicians make evidence-based decisions about care rather than an evidence-based program with prescribed practices to be delivered in a prescribed order, I evaluated cognitive skills via a clinical decision-making task. In response to a written case vignette, students were asked to write about their approach to the case. Modeled, in

part, after the Assessment of Clinical Decision-Making in Evidence-Based Treatment for Child Anxiety and Related Disorders (ACE CARD; Carpenter et al., 2016), cognitive skills were assessed pre- and post-semester and have since been coded for MAP-relevant content.

The skill-based dimension focuses on the motor and technical skills associated with specific tasks. The LEAP model (McLeod et al., 2018) delineates three sequential stages: (1) initial skill acquisition, (2) compilation, and (3) automaticity. This project focuses on initial skill acquisition as the first step upon which more advanced skills build. During this stage, trainees are using cognitive resources (e.g., working memory, mental rehearsal) such multi-tasking and self- correction are difficult (Weiss, 1990), but this initial behavioral step is integral to future practice and regular use. Behavioral skills were evaluated pre- and post-semester via behavioral rehearsal task. Behavioral rehearsal tasks included a brief interaction between students and a trained undergraduate that served as a standardized patient (e.g., portraying an anxious child who is also experiencing depressed mood). Interactions were recorded, and then coded to characterize students' behavior.

The attitudes-based dimension of the McLeod et al. model focuses on attitudes and motivational outcomes, such as beliefs about the intervention(s), self-efficacy, and trainee-trainer alliance. As trainees gain more experience and skills become more automatic, one would expect these indicators to shift (e.g., greater self-efficacy, more nuanced attitudes). The focus of the current project is on (1) attitudes, including attitudes toward evidence-based practice and attitudes about the value of different kinds of evidence, and (2) self-efficacy, in the form of feasibility. In the field of dissemination and implementation science, several conceptual models highlight attitudes toward evidence-based practice as a facilitator or as a barrier to implementing evidence-based practice. For example, trainee attitudes toward evidence-based practice (e.g., the

intervention is efficacious) likely affect whether or not they will attempt to deliver that practice with a client (Aarons et al., 2010). Similarly, beliefs about the relative importance of different sources of evidence may affect what evidence trainees seek out and incorporate into treatment. Finally, self- efficacy—a construct that has long been identified as an important part of behavior change (e.g., Bandura, 1977)—has wide-reaching implications for future use. If a trainee believes that she can deliver an intervention and that it will have the intended effect, she is more likely to try to deliver that intervention, building up the practice that is so crucial to the skills-focused dimension. Indicators of these attitudes-based dimensions were collected via trainee-reported surveys pre- and post-semester.

Specific aims. With the above outcomes in mind, this project had four specific aims:

Aim 1. Evaluate MSW students' gains in cognitive and behavioral performance pre- and post-training via clinical decision-making and behavioral rehearsal tasks and establish an effect size for performance improvement beyond that attained through the control condition.

Aim 2. Identify any group-level differences that emerge between the standard and augmented MAP conditions to determine if the inclusion of video learning tools contributes to students' clinical performance.

Aim 3. Evaluate students' attitudes toward/about evidence-based practice and incorporating research evidence into clinical decisions via self-reported survey.

Aim 4. Evaluate students' beliefs about the feasibility of using MAP in current and future clinical experiences.

Method

Design

This was a single-site, three-arm controlled trial of two versions of classroom-based MAP (standard: cMAP; and enhanced: cMAP+) versus a curriculum-as-usual control in a second-year MSW-student sample. This study was conducted within the context of an accredited SSW, thereby necessitating certain design considerations. First, random assignment of students to a control group was not feasible, as the MAP course was delivered as any other elective for which students choose to register. I recruited students who were not enrolled in the MAP course to act as a curriculum-as-usual control. Second, course enrollment was capped at 25 students per course, necessitating that the study team hold two courses over two semesters. Rather than conducting one course during Fall 2016 and the other during Spring 2017, the team held courses during two consecutive fall semesters (2016, 2017). Not only would it be challenging for the SSW to staff and fill back-to-back electives, the spring cohort would have a full semester more of coursework and practicum experiences, making the two cohorts unequal at baseline. The control group was second-year MSW students who were not enrolled in the course and were also recruited for the fall semester 2016 and 2017. The VCU Institutional Review Board approved all procedures.

Study Site

The SSW at Virginia Commonwealth University (VCU) provides bachelor's, master's, and doctorate degrees in social work. It is the largest SSW in the Commonwealth of Virginia, with approximately 450 students enrolled in its degree programs. Baseline and post-course assessments were conducted in VCU campus offices.

Participants

Participants were second-year students enrolled in the VCU MSW program. Inclusion criteria were: (1) at least 18 years of age, (2) full-time enrollment in the program, (3) second year status or advanced standing (equivalent to second year status), and (4) able to provide informed consent for participation. Exclusion criteria were presenting with: (1) cognitive impairment, (2) psychiatric instability, or (3) language barriers that limit one's ability to provide informed consent and participate. In 2016, the VCU SSW reported that their MSW student body is: 25% Black, 5% Hispanic, 66% non-Hispanic White, 4% other, and 89% female (Farmer, 2016).

Recruitment

There are approximately 200 students admitted into the on-site VCU MSW program each year. The MAP course was advertised as an elective course during the spring and summer semesters of 2016 and 2017. Announcements about the course and, separately, the study, were made via flyer, in-class announcements, and email. The author and collaborators met with members of the SSW faculty that serve as MSW student advisors to describe MAP and promote the elective. Participants were recruited from the students who register for the course (cMAP and cMAP+ conditions) while additional second-year students were recruited for the control group.

The author approached students that registered for the course first by email to invite them to participate in the study. Students who were not enrolled in the course and indicated interest in the study were subsequently contacted via email. During an in-person meeting, students completed a brief verbal survey to determine whether or not they meet inclusion/exclusion criteria. Study staff then obtained informed consent before participants complete the baseline assessment.

After providing informed consent, participants enrolled in the course were randomly assigned to the cMAP or the cMAP+ conditions using a random number generator. Those in the cMAP+ condition were notified via email approximately three weeks into the course with an email explaining the videos and providing directions for accessing them.

Thirty-nine participants were enrolled in the study; 17 in the MAP conditions (10 cMAP; 7 cMAP+) and 22 in the CAU condition. Participant demographics, clinical experience, and career goals are reported in Table 2.

Table 2. Demographics, Clinical Experience, and Career Goals

Variable	MAP	CAU	Total	Comparison
Women	88.2	95.5	92.3	-
Age	27.47(5.10)	26.64(6.46)	27.00(5.84)	*ns*
Race/Ethnicity				
Asian	5.9	0	2.6	-
Black/African American	11.8	27.3	20.5	-
White	82.4	68.2	74.4	-
Other	0.0	4.5	2.6	-
Hispanic/Latino	5.9	4.5	5.1	-
Clinical Experience				
Pre-Program, years	1.57(1.34)	0.83(0.96)	1.15(1.19)	*ns*
In Program, years	0.84(0.36)	0.92(0.56)	0.89(0.49)	*ns*
Training in EBP(s), Any	68.8	86.4	78.9	*ns*
Pre-Program	42.9	45.5	44.4	*ns*
Core MSW Coursework	50.0	68.2	61.1	*ns*
Elective MSW Coursework	7.1	13.6	11.1	*ns*
Field Placement	50.0	45.5	47.2	*ns*
Experience with C/A	94.1	81.8	87.2	*ns*
Career Goals				
Obtain Clinical Licensure	100.0	100.0	100.0	*ns*
Obtain Doctorate	12.5	28.6	21.6	*ns*
Work in C/A Mental Health	68.8	45.5	55.3	*ns*

Notes. *ns* = no significant group difference; chi-square analyses were not conducted for the Race/Ethnicity variable, as the expected count in several cells was too small.

Intervention and Control Conditions

Standard classroom-based MAP (cMAP). MAP training typically occurs in community settings over the course of five days (Southam-Gerow et al., 2013). In the present study, the 40

hours of didactic, modeling, and rehearsal training were delivered over the course of a standard semester term (fifteen class periods lasting 160 minutes each, total of 40 hours). An experienced MAP trainer, Dr. Southam-Gerow co-led the course with Ms. Abigail Kinnebrew, VCU SSW faculty member who attended an intensive MAP training in May 2016. The course was approved as a formal master's-level elective for which students earned three semester credit hours. Classes covered MAP processes and practice elements focused on the most common child mental health problems: anxiety, depression, trauma, and disruptive behavior disorders. Please see Appendix A for a summary of the content and teaching strategies included in the MAP course. This information was gleaned from the course syllabus and the presentation materials used in class (e.g., PowerPoint presentations, classroom activities).

Classroom-based MAP plus video modeling (cMAP+). Students in the cMAP+ condition received all content in cMAP but were also encouraged via multiple emails from the author to access a series of online videos that provide additional opportunities for observational learning. Videos cover applications of MAP Process Guides and specific Practice Guides. These videos were available to all students enrolled in the course but were not readily visible on the PracticeWise website nor are they explicitly a part of the cMAP condition.

Curriculum-as-usual control (CAU). Students in the CAU control condition continued with their coursework as usual. This condition acts as a measure of VCU's MSW curriculum-as-usual. All students—including those enrolled in the course—take prescribed practice and research courses; students in the control condition chose to enroll in a non- MAP elective course. Possible elective choices include courses focused on child and adolescent trauma, interpersonal violence, and spirituality. By choosing to recruit rising second-year MSW students and

completing assessments during the same periods of time, this control group is a good comparison for what the MAP trainings may add to the broader MSW curriculum.

Baseline Battery

Baseline assessments for all participants (cMAP, cMAP+, and CAU) were completed during a six-week window around the start of the fall semester in 2016 and 2017. Participants completed the battery after the study team confirmed students' eligibility via a brief verbal survey and obtained informed consent. Participants took approximately 35-45 minutes to complete the battery in hardcopy and were compensated with a $15 gift card for their time.

Demographic information. Participants reported their age, gender, race/ethnicity, plans for education (i.e., intention to earn a Ph.D.), and professional plans (e.g., "In what sector(s) do you want to work?").

Clinical Experiences (CE) survey. Participants were asked to report on the duration and type(s) of clinical experiences they have had as a part of their MSW program and beyond. Practice-focused coursework, fieldwork experiences, and intensive clinical trainings were queried.

Clinical Decision-Making Task (CDMT). Based largely on the format of the ACE CARD (i.e., written case vignette followed by questions; Carpenter et al., 2016), the CDMT yields written indicators of cognitive skills, rather than relying on self-reported gains. The ACE CARD is, to the author's knowledge, the only example of such an instrument developed to evaluate trainees in the mental health field and differs from the CDMT in three meaningful ways. First, whereas the ACE CARD was designed to evaluate training in a specific evidence-based program (i.e., cognitive behavioral therapy for pediatric anxiety disorders), the CDMT was designed to evaluate the open architecture of MAP. In contrast with specific programs, MAP

does not rely upon prescribed practices arranged in a specific sequence. Second, in an effort to capture differences between the MAP conditions and the CAU condition, the CDMT was designed to gauge clinical decision-making skills in a generic way, rather than prompting participants to describe their use of MAP-specific tools, processes, or practices. Finally, because one core MAP feature is developing individualized treatment plans to target multiple mental health problems. Thus, the CDMT vignettes were designed to include two mental health problems instead of one like the ACE CARD.

The author developed two vignettes describing one of two youth experiencing common mental health problems: "Sophia" is displaying disruptive behaviors and experiencing social anxiety; "Daniel" is experiencing depressed mood and symptoms of posttraumatic stress. Participants were then asked to respond to three primary questions: (1) "Please describe any additional assessment information you would collect"; (2) "Please describe your initial treatment target(s) and your plan to address it/them"; and (3) "Please describe how you would monitor [Sophia or Daniel]'s progress in treatment." Vignettes and prompts were developed in collaboration with an expert in MAP and children's mental health (Dr. Michael A. Southam-Gerow) and are included in Appendix B.

Because the development of the CDMT was designed to be neutral and open-ended, the development of the coding system was devised to be descriptive rather than evaluative. To identify the items for the assessment- and treatment monitoring-focused items, the author identified discrete categories or qualities that were present across both versions of the vignette. Twenty-two items characterized answers to the assessment question; eight items characterized answers to the treatment monitoring question. Nine items for the treatment planning question were identified in two ways: (1) five *a priori* items that represent practices from five broad

theoretical categories (i.e., cognitive strategies, behavioral strategies, psychodynamic strategies, family-focused strategies, and client-centered strategies); and (2) four items identified to characterize other aspects of participants' response. Please see items in Appendix C.

Behavioral rehearsal task. Behavioral rehearsal methodology (e.g., Beidas, Cross, & Dorsey, 2013) is an approach that yields observational indicators of behavioral skills, rather than relying on self-reported gains. Behavioral rehearsal tasks have been used in evaluating trainings in multiple settings (Beidas et al., 2013), including a similar practice element-based training (Dorsey, Berliner, Lyon, Pullmann, & Murray, 2014; Dorsey, Lyon, Pullmann, Jungbluth, Berliner, & Beidas, 2017). Observational data allows the author to determine if students have gained the behavioral skills the MAP training targets (i.e., delivery of evidence-based practices, use of clinical decision-making tools) in a novel and efficient way. Participants had brief interactions (approximately nine minutes) with a standardized patient portraying one of two youth experiencing common mental health problems: "Kylie" is experiencing social anxiety and depression; "Robert" is experiencing posttraumatic stress and displaying disruptive behavior. Participants were randomly assigned to the order in which they completed the behavioral rehearsal tasks (i.e., Kylie first, Robert second or Robert first, Kylie second). Participants were provided with written vignettes that included several relevant clinical details and were prompted to focus on addressing one problem (i.e., Kylie's depressed mood, Robert's fears about his safety). Prompts were designed to be neutral with respect to clinical strategies or orientation. Vignettes and prompts were developed in collaboration with an expert in children's mental health (Dr. Michael A. Southam-Gerow) and are included in Appendix D.

Four people (75% post-baccalaureate research assistants; 25% graduate students; 100% women) were trained to portray the standardized patient and, in consultation with Dr. Southam-

Gerow, demonstrated competence in portraying the case accurately. The role-plays were videotaped and subsequently coded using The Therapy Process Observational Coding System for Child Psychotherapy – Revised Strategies scale (TPOCS-RS; McLeod, Smith, Southam-Gerow, Weisz, & Kendall, 2015), described in greater detail later.

Value of Evidence (VoE) survey. Participants completed a 51-item survey in which they rate the relative importance of specific pieces of evidence (e.g., research trials, treatment manuals, supervisor's clinical experience) across different phases of treatment: initial evaluation, treatment planning, and treatment monitoring. The VoE survey was designed for this project as a way to measure participants' attitudes toward different sources of evidence.

Evidence-Based Practice Attitude Scale (EBPAS). The EBPAS (Aarons, 2004) is a 15-item survey of provider attitudes toward EBPs that yields four subscales: Requirements (e.g., "If you received training in a therapy or intervention that was new to you, how likely would you be to adopt it if… it was required by your supervisor?"), Appeal (e.g., "If you received training in a therapy or intervention that was new to you, how likely would you be to adopt it if… it was intuitively appealing to you?"), Openness (e.g., "I am willing to try new types of therapy/interventions even if I have to follow a treatment manual"), and Divergence (e.g., I know better than academic researchers how to care for my clients"). Alpha reliability estimates for EBPAS subscales ranged from .67 to .91 and the overall scale was .76 (Aarons, Glisson, Hoagwood, Kelleher, Landsverk, & Cafri, 2010). Validity analyses have demonstrated that EBPAS scores are related to provider and organizational characteristics, including level of training and amount of clinical experience (Aarons, 2004; Aarons, 2006; Aarons & Sawitzky, 2006). Further, published norms (Aarons et al., 2010) from community providers can be used as valuable comparators.

Therapy Process Observational Coding System for Child Psychotherapy-Revised Strategies scale (TPOCS-RS). The TPOCS-RS (McLeod, Smith, Southam-Gerow, Weisz, & Kendall, 2015) is a 47-item observational coding instrument designed to measure the extensiveness with which therapists deliver specific therapeutic interventions from five theory-driven domains: cognitive, behavioral, psychodynamic, client-centered, and family. Items are rated using a 1-7 scale and extensiveness is defined as frequency of delivery plus thoroughness. Intraclass correlation coefficients (ICC[2,2]) for TPOCS-RS subscale scores ranged from .72 to .94 (McLeod et al., 2015), demonstrating "good" to "excellent" agreement (Cicchetti, 1994), and the internal consistency of subscale scores ranged from .59 to .89. Discriminant validity analyses have demonstrated that the TPOCS-RS subscale scores are relatively distinct from one another and can discriminate between treatment type (cognitive-behavioral therapy [CBT] vs. usual care) and, among CBT sessions, treatment setting (university- vs. community-based; McLeod et al., 2015). Coding procedures for the current project are described later.

Post-Semester Battery

Participants completed the post-semester assessment battery in the six weeks between the end of the fall semester and the start of the spring semester. The post-course assessment took approximately 30 minutes for participants in the CAU condition to complete and approximately 45 minutes for participants in the cMAP and cMAP+ conditions to complete. Participants received $25 in gift cards for completing the assessment. The battery includes many of the instruments first completed during the baseline assessment: (1) CE survey, (2) CDMT with the equitable alternate case, (3) behavioral rehearsal task with the equitable alternate case, (4) VoE survey, and (5) EBPAS. The post-course behavioral rehearsal role-play were recorded and coded

with the TPOCS-RS. Participants in the MAP course (cMAP and cMAP+ conditions) also completed:

Post-course survey. The post-course survey is a 7-item questionnaire developed for this study that queried students' satisfaction with and perceived utility of the MAP course (e.g., "What did you find most helpful?") as well as access to and perceived helpfulness of the MAP videos that were highlighted in the cMAP+ condition (e.g., "Did you watch any of the instructional videos available on PracticeWise.com?"). Items were presented in multiple choice and written format. Video-specific items were designed to confirm the distinctness of the cMAP and cMAP+ conditions.

Usage Rating Profile-Intervention, Revised (URP-IR). The URP-IR (Chafouleas, Briesch, Neugebauer, & Riley-Tillman, 2011; Chafouleas, Briesch, Riley-Tillman, & McCoach, 2009) is a 29-item self-report measure of attitudinal implementation outcomes of interest. Originally developed for disruptive behavior interventions implemented in school-based settings, the URP-IR yields scores on six factors: (1) Acceptability (e.g., "This intervention is an effective choice for addressing a variety of problems."), (2) Understanding (e.g., "I understand how to use this intervention."), (3) Home School Collaboration (e.g., "A positive home-school relationship is needed to implement this intervention."), (4) Feasibility (e.g., "I would be able to allocate my time to implement this intervention."), (5) System Climate (e.g., "Implementation of this intervention is well matched to what is expected in my job."), and (6) System Support (e.g., "I would require additional professional development in order to implement this intervention."). Slight modifications were made to questions that (1) refer to schools, as many participants were not placed in school settings, or (2) refer to behavior problems, as internalizing problems were also a major focus of the MAP practice elements covered in the course. For example, the

question “This intervention is a good way to handle the child’s behavior problem.” was reworded to “This intervention is a good way to handle the child’s problem.” All six subscales of the published version of the URP-IR demonstrated acceptable to high internal consistency reliability ($\alpha \geq .70$), such that α ranged from .72 to .95 in a confirmatory factor analysis sample (Briesch, Chafouleas, Neugebauer, & Riley-Tillman, 2013). Validity analyses demonstrated that the subscales are distinct from one another, as the magnitude of correlation coefficients were small to medium ($\leq .60$), with the exception of Acceptability and System Climate ($r = .82$). Although this instrument has been used with school-based interventions, item content has great applicability in traditional mental health settings.

Data Preparation

MAP condition. As described earlier, participants in the MAP course were randomly assigned to the cMAP condition or the cMAP+ condition. Of the seven participants randomly assigned to the cMAP+ condition, only five (71.43% of the cMAP+ condition, 12.82% of the total sample) returned to complete the post-semester assessment. The consensus of these five participants is that they accessed the MAP videos as initially instructed, but that they did not find the videos helpful and thus did not augment their classroom-based experience in a robust way. On average, cMAP+ participants estimated that they had watched 1.08 videos (SD = 1.02; range 0 to 2), far afield of the dozens of videos available to them. Given the small number of cMAP+ participants who completed the study and the lack of distinction between the cMAP+ and cMAP groups, the decision was made to combine the cMAP and cMAP+ conditions for the main analyses. This combined group is henceforth referred to as the “MAP” condition.

Behavioral rehearsal data. A total of 72 behavioral rehearsal role-plays were recorded, pre- and post-semester. The author and an advanced graduate student trained to code the

TPOCS-RS (50% female; 100% Latinx; average age = 30.0 [SD = 1.41]). The author is an experienced TPOCS-RS coder who had been initially trained to code the TPOCS-RS for a measurement development study. The advanced graduate student is an experienced coder of other observational measurement systems and trained to code the TPOCS-RS for this project. Training procedures mirrored the procedures described by McLeod et al. (2015): (1) initial training included didactic instruction, review and discussion of the coding manual, and coding exercises targeting specific item, (2) trainees then coded with a trainer or co-coder and independently, meeting with trainers for regular discussion, and (3) finally, coders independently coded a set of recordings (author coded 32 sessions, advanced graduate student coded 25 sessions) selected for representativeness of TPOCS-RS items. Coders demonstrated "good" average reliability (ICC(2,2) >.59; Cicchetti, 1994) when coding their respective certification samples.

A member of the research team masked behavioral rehearsal role-play recordings using an arbitrary numbering system such that condition and time point are not apparent. The author served as primary coder and the advanced graduate student served as a reliability coder. The reliability sample included 16 role-play recordings (22.22% of the total sample) randomly selected to represent the MAP and CAU conditions across both time points equally. Role-plays were assigned to the coder in random order. The goal of these coding procedures was to minimize the potential effects of bias while efficiently leveraging the existing skills and expertise of the research team.

Data entry. Data, including TPOCS-RS scores, were collected in hard copy then double entered into statistical databases by undergraduate and post-baccalaureate research assistants. Once entered, the author compared databases. Discrepancies were identified and resolved.

Missing data. Of the 39 participants enrolled in the study, 33 participants completed the post-semester assessments (84.62%). Participants lost to follow-up were equally distributed across MAP and CAU conditions (n = 3 in each condition; 17.65% of MAP condition lost to follow-up, 13.64% of CAU condition lost to follow-up). Chi-square analyses confirmed that there is no significant difference in the proportion of participants lost to follow-up between conditions.

In addition to those participants lost to follow-up, a small number of participants did not complete all of the items in the battery. The highest proportion of missing data were found on the CDMT at the post-semester time point, such that 11 MAP participants completed all items (64.71% of all 17 MAP participants) and 17 CAU participants completed all items (77.27% of all 22 CAU participants). In contrast, all participants who presented for post-semester follow-up completed the role-play (yielding complete TPOCS-RS coding scores), EBPAS, and URP-IR in their entirety.

Given the heterogeneous goals of assessment instruments included in the battery, missing data are treated differently by assessment type. Descriptive data (e.g., Value of Evidence Survey) and categorical data (e.g., CDMT) are presented here primarily as proportions; rather than impute these missing values, tables highlight item-level n-values. Given the low incidence of missing data on instruments that yield scores based on multiple items (15.38%; i.e., TPOCS-RS, EBPAS), group-level mean imputation was used for pre-post statistical analyses.

Results

Cognitive Indicators: Clinical Decision-Making Task

CDMT codes are reported as percentages in Tables 3, 4, and 5 below and on the following page. The prevalence of individual codes varies widely. Next, I highlight some of the baseline data and describe pre-post analyses**.**

Table 3. Clinical Decision-Making Task, Initial Assessment: Baseline and Post-Semester

	Baseline (%)		Post-Semester (%)	
Components	MAP (n = 17)	CAU (n = 22)	MAP (n = 14)	CAU (n =19)
Nomothetic scale*	5.9	13.6	21.4	15.8
Specific scale	0	4.5	0	0
Scale from multiple informants	5.9	0	7.1	0
Formal diagnostic interview	0	4.5	0	0
Interview	47.1	63.6	78.6	57.9
Interview multiple informants*	17.6	9.1	28.6	10.5
Identification of antecedents	70.6	72.7	78.6	84.2
Identification of consequences	11.8	4.5	21.4	10.5
Presence/acuity of symptoms	29.4	31.8	50	31.6
Specific rule-outs	11.8	18.2	28.6	26.3
Course of symptoms	17.6	18.2	14.3	5.3
Medical information	29.4	9.1	14.3	31.6
Medications	11.8	4.5	14.3	0
Previous mental health treatment	5.9	9.1	14.3	15.8
Individual strengths	5.9	27.3	21.4	5.3
Family-level strengths	0	9.1	14.3	5.3
Developmental history	17.6	4.5	21.4	21.1
Attachment history/quality of family relationships	17.6	4.5	7.1	15.8
Family history of MH problems	29.4	36.4	28.6	31.6
Social history/quality of friendships	52.9	13.6	7.1	15.8
Functioning (academics, home)	41.2	9.1	7.1	15.8
Previous evaluation conducted	5.9	9.1	0	5.3

Note. * Items selected for pre-post analysis in Table 5.

Table 4. Clinical Decision-Making Task, Initial Treatment Plan: Baseline and Post-Semester

	Baseline (%)		Post-Semester (%)	
Components	MAP (n = 16)	CAU (n = 21)	MAP (n = 12)	CAU = 17)
Psychoeducation	6.3	4.8	41.7	5.6
Specific practices	62.5	42.9	83.3	66.7
Multiple recipients	25	9.5	33.3	38.9
Cognitive practice(s)*	12.5	28.6	50	33.3
Behavioral practice(s)*	37.5	23.8	75	38.9
Family practice(s)*	18.8	19	41.7	44.4
Psychodynamic practice(s)*	0	4.8	0	11.1
Client-centered practice(s)*	37.5	19	8.3	50

Note. * Items selected for pre-post analysis in Table 5.

Table 5. Clinical Decision-Making Task, Treatment Monitoring: Baseline and Post-Semester

	Baseline (%)		Post-Semester (%)	
Components	MAP (n = 15)	CAU (n = 21)	MAP (n = 11)	CAU = 17)
Nomothetic scale(s)*	33.3	33.3	58.3	22.2
Specific scale	6.7	4.8	16.7	0
Idiographic: behaviors*	26.7	23.8	50	27.8
Idiographic: internal symptoms or experience*	13.3	19	75	22.2
Scales from multiple informants*	26.7	9.5	50	11.1
Anecdotal information	93.3	71.4	16.7	66.7
Anecdotal information from multiple informants	53.3	52.4	16.7	44.4
Observation	20	19	8.3	11.1

Note. * Items selected for pre-post analysis in Table 5.

Baseline descriptive data. For the Initial Assessment item, a preponderance of participants indicated that they would use interview strategies (56.4% of total at baseline) and identify antecedents to target symptomology (71.8% of total at baseline). For the Initial Treatment Plan item, approximately half (51.4%) of participants named a specific practice at baseline; behavioral practices (29.7% of total sample) and client-centered practices (27.0% of total sample) emerged as the most prevalent strategies named. Finally, on the Treatment Monitoring item, the majority of participants indicated they would use anecdotal information to monitor treatment progress (80.6%), with a slim majority indicating that they would rely on anecdotal information from multiple informants (52.8%).

Pre-post analyses. Eleven CDMT items that correspond with the aims of the study were selected for pre-post analysis (see Table 6 on the next page). Pre-post CDMT data were analyzed using McNemar's test, a non-parametric test for categorical data that functions similarly to a paired t-test (McNemar, 1947). The McNemar's test accounts for paired pre-post variables and tests for the significance of proportional change (Yarnold, 2015). In this application, statistical significance indicates a difference between proportion of pre- and post-semester codes on the CDMT within each condition.

Table 6. Characterizing Pre-Post CDMT Scores by Condition: Percentages of the Sample and McNemar's Test

	MAP					CAU				
Variable	Abstain	Maintain	Decline	Gain	*p*	Abstain	Maintain	Decline	Gain	*p*
Initial Assessment										
Nomothetic scale(s)	78.6 [a]	7.1 [a]	0.0 [a]	14.3 [a]	.500	79.0 [d]	10.5 [d]	5.3 [d]	5.3 [d]	1.00
Interview multiple informants	85.7 [a]	0.0 [a]	7.1 [a]	7.1 [a]	1.00	94.7 [d]	0.0 [d]	0.0 [d]	5.3 [d]	1.00
Treatment Plan										
Cognitive practice(s)	41.7 [b]	0.0 [b]	8.3 [b]	50.0 [b]	.125	47.0 [e]	11.8 [e]	17.7 [e]	23.5 [e]	1.00
Behavioral practice(s)	16.7 [b]	25.0 [b]	8.3 [b]	50.0 [b]	.125	58.8 [e]	17.7 [e]	5.9 [e]	17.7 [e]	.625
Family practice(s)	41.7 [b]	0.0 [b]	16.7 [b]	41.7 [b]	.453	35.3 [e]	0.0 [e]	23.5 [e]	41.2 [e]	.549
Psychodynamic practice(s)	100.0 [b]	0.0 [b]	0.0 [b]	0.0 [b]	NV	82.4 [e]	0.0 [e]	5.9 [e]	11.8 [e]	1.00
Client-centered practice(s)	50.0 [b]	0.0 [b]	41.7 [b]	8.3 [b]	.219	41.2 [e]	11.8 [e]	11.8 [e]	35.3 [e]	.289
Treatment Monitoring										
Nomothetic scale(s)	27.3 [c]	27.3 [c]	9.1 [c]	36.4 [c]	.375	52.9 [e]	11.8 [e]	23.5 [e]	11.8 [e]	.688
Idiographic behaviors	36.4 [c]	18.2 [c]	18.2 [c]	27.3 [c]	1.00	58.8 [e]	11.8 [e]	11.8 [e]	17.7 [e]	1.00
Idiographic: internal symptoms or experience	27.3 [c]	18.2 [c]	0.0 [c]	54.5 [c]	.031*	70.6 [e]	5.9 [e]	5.9 [e]	17.7 [e]	.625
Scales from multiple informants	18.2 [c]	9.1 [c]	27.3 [c]	45.5 [c]	.727	82.4 [e]	5.9 [e]	5.9 [e]	5.9 [e]	1.00

Notes. "Abstain" = not present at either time point; "Maintain" = present at both time points; "Decline" present at baseline time point, not present at post-semester time point; "Gain" = not present at baseline time point, present at post-semester time point; [a] $n = 14$; [b] $n = 12$; [c] $n = 11$; [d] $n = 19$; [e] $n = 17$; * $p < 0.05$

In an effort to support interpretation of these categorical data, Table 6 displays four categories that capture the proportions of pre-post concordance or discordance: (1) *abstain* reflects the percentage of participants for whom the code was not present at either time point; (2) *maintain* reflects the percentage of participants for whom the code was present at both time points; (3) *decline* reflects the percentage of participants for whom the code was present at the baseline time point, but not present at the post-semester time point; and (4) *gain* reflects the percentage of participants for whom the code was not present at the baseline time point, but is present at the post-semester time point. McNemar's test indicated that only the "idiographic: internal symptoms or experience" code differed significantly from pre- to post-semester for the MAP condition, such that over half of MAP participants fell into the "gain" category (54.5%).

Behavioral Indicators: Behavioral Rehearsal Coding

Reliability sample and mean TPOCS-RS scores. Intraclass correlation coefficients (ICCs [2,2]) from the 16 role-play reliability sample, displayed on the next page in Table 7, ranged from -.11 (Encourages Affect) to .90 (Cognitive Focus, Respondent), with a mean of .43 (SD = .32). Twenty-two item-level ICCs were incalculable due to lack of variance. Low ICC values and lack of variance are present largely within three item categories: (1) psychodynamic items, (2) family items, and (3) general items. Given the nature of the role-plays (i.e., including only one standardized patient and a specific prompt), this is unsurprising. ICC values from the therapeutic strategy summary items (i.e., Cognitive Focus, Behavioral Focus, Family Focus, and Client-Centered Focus), with the exception of Psychodynamic Focus, all displayed "fair" to "excellent" agreement (Cicchetti, 1994). Congruent with the inconsistent ICC values, scores overall were low, indicating that many items occurred relatively infrequently and were not thorough.

Table 7. TPOCS-RS: Item-level Intraclass Correlation Coefficients and Means by Time Point and Condition

	ICC(2,1)	Baseline, M (SD)		Post-Semester, M (SD)	
Item	*n* = 16	MAP (*n* = 17)	CAU (*n* = 22)	MAP (*n* = 14)	CAU (*n* = 19)
Cognitive Focus	.904	1.88 (1.22)	1.50 (0.51)	5.50 (1.65)	1.68 (0.95)
Cognitive Education	.770	1.24 (0.56)	1.14 (0.35)	4.50 (2.31)	1.32 (1.16)
Cognitive Distortion	.584	1.47 (1.07)	1.23 (0.53)	3.50 (2.44)	1.21 (0.42)
Coping Skills	.800	1.47 (0.80)	1.32 (0.57)	2.14 (1.29)	1.37 (0.60)
Behavioral Focus	.755	1.41 (0.62)	1.77 (0.87)	3.14 (1.56)	1.79 (0.85)
Functional Analysis	-.053	1.00 (0.00)	1.00 (0.00)	1.21 (0.58)	1.00 (0.00)
Relaxation	.365	1.35 (0.86)	1.73 (0.98)	1.64 (0.93)	1.63 (0.90)
Respondent	.907	1.06 (0.24)	1.00 (0.00)	2.21 (1.89)	1.05 (0.23)
Operant-Child	NV	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Skill Building	NV	1.06 (0.24)	1.45 (2.13)	1.00 (0.00)	1.00 (0.00)
Behavioral Activation	.800	1.12 (0.33)	1.14 (0.47)	1.07 (0.27)	1.21 (0.54)
Monitoring	.772	1.00 (0.00)	1.00 (0.00)	1.71 (0.99)	1.16 (0.50)
Modeling	.441	1.00 (0.00)	1.05 (0.21)	1.00 (0.00)	1.21 (0.54)
Psychodynamic Focus	NV	1.06 (0.24)	1.05 (0.21)	1.00 (0.00)	1.00 (0.00)
Addresses Transference	NV	1.00 (0.00)	1.05 (0.21)	1.00 (0.00)	1.00 (0.00)
Explores Past	NV	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Address Resistance	NV	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Interpretation	NV	1.06 (0.24)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Family Focus	.481	1.06 (0.24)	1.14 (0.35)	1.00 (0.00)	1.21 (0.42)
Targets Others	NV	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Recruits Others	.481	1.06 (0.24)	1.09 (0.29)	1.00 (0.00)	1.16 (0.37)
Parenting Style	NV	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Operant-Parent	NV	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Parenting Skills	NV	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Multiparticipant	NV	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Interactions					
Family Members' Roles	NV	1.00 (0.00)	1.05 (0.21)	1.00 (0.00)	1.06 (0.24)
Client-Centered	.490	3.64 (0.84)	4.05 (1.29)	3.64 (0.84)	4.11 (0.88)
Validates Client	.442	2.00 (1.00)	2.23 (1.27)	2.21 (1.12)	2.05 (1.13)
Positive Regard	.263	1.35 (0.79)	1.55 (0.80)	1.64 (0.74)	1.47 (0.84)
Client Perspective	.158	3.88 (0.78)	4.05 (1.21)	3.57 (0.85)	3.89 (0.99)
General Items					
Rehearsal	.239	1.12 (0.49)	1.18 (0.50)	1.00 (0.00)	1.16 (0.37)
Homework	.093	1.06 (0.24)	1.00 (0.00)	1.00 (0.00)	1.21 (0.71)
Play/Art Therapy	NV	1.00 (0.00)	1.14 (0.64)	1.00 (0.00)	1.16 (0.69)
Encourages Affect	-.114	1.18 (0.53)	1.09 (0.29)	1.00 (0.00)	1.10 (0.46)
Session Goals	NV	1.00 (0.00)	1.18 (0.59)	1.00 (0.00)	1.00 (0.00)
Treatment Goals	-.087	1.35 (0.70)	1.14 (0.47)	1.43 (0.85)	1.47 (0.84)
Previous Themes	NV	1.00 (0.00)	1.00 (0.00)	1.14 (0.53)	1.11 (0.46)
Psychoeducation	.603	1.35 (0.79)	1.45 (0.91)	1.86 (1.03)	1.79 (1.13)
Questioning	NV	1.06 (0.24)	1.09 (0.43)	1.00 (0.00)	1.05 (0.23)
Self-Disclosure	-.067	1.00 (0.00)	1.27 (0.55)	1.00 (0.00)	1.11 (0.32)
Advice	.528	1.29 (0.69)	1.91 (1.41)	1.00 (0.00)	1.74 (1.24)
Coaching	NV	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Assessment	.287	1.94 (0.97)	1.91 (0.75)	1.36 (0.50)	1.79 (0.85)
Crisis Management	NV	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Case Management	NV	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Therapy Engagement	NV	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Educational Support	NV	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)

Note. NV = no variance.

Pre-post analyses. After mean scores were imputed for missing data values as described earlier, I generated TPOCS-RS subscale scores by averaging the items in each theoretical domain. Marginal subscale means are displayed in Table 8 below.

Table 8. TPOCS-RS Subscales: Marginal Means by Time Point and Condition

	Baseline, M (SE)		Post-Semester, M (SE)	
TPOCS-RS Subscale	MAP	CAU	MAP	CAU
Cognitive Subscale	1.52 (.14)	1.30 (.12)	3.91 (.22)	1.40 (.19)
Behavioral Subscale	1.11 (.06)	1.24 (.05)	1.56 (.08)	1.23 (.07)
Family Subscale	1.02 (.02)	1.03 (.02)	1.00 (.02)	1.05 (.02)
Psychodynamic Subscale	1.02 (.02)	1.00 (.00)	1.02 (.02)	1.00 (.02)
Client-Centered Subscale	2.79 (.17)	2.97 (.15)	2.78 (.13)	2.88 (.11)

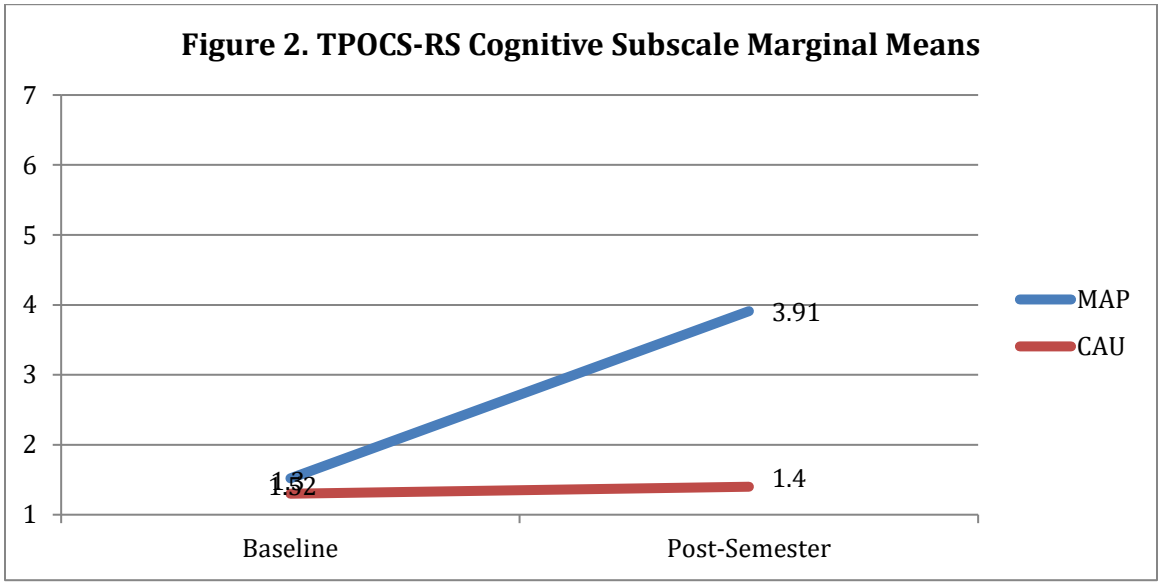
Given the aims of this project and inconsistent score reliability gleaned from the reliability sample, the decision was made to limit pre-post analyses to subscales with "fair" (ICC > .40) or better average score reliability: (1) Cognitive Subscale (mean ICC = .86 [SD = .09]), (2) Behavioral Subscale (mean ICC = .69 [SD = .37]), (3) Family Subscale (mean ICC = .65 [SD = .00]), and (4) Client-Centered Subscale (mean ICC =.49 [SD = .18]). As shown in Table 9 on the following page, each subscale was entered into a repeated measures general linear model that included time as a within-subjects variable and study condition as a between-subjects variable.

Table 9. Repeated Measures General Linear Model of TPOCS-RS Subscales

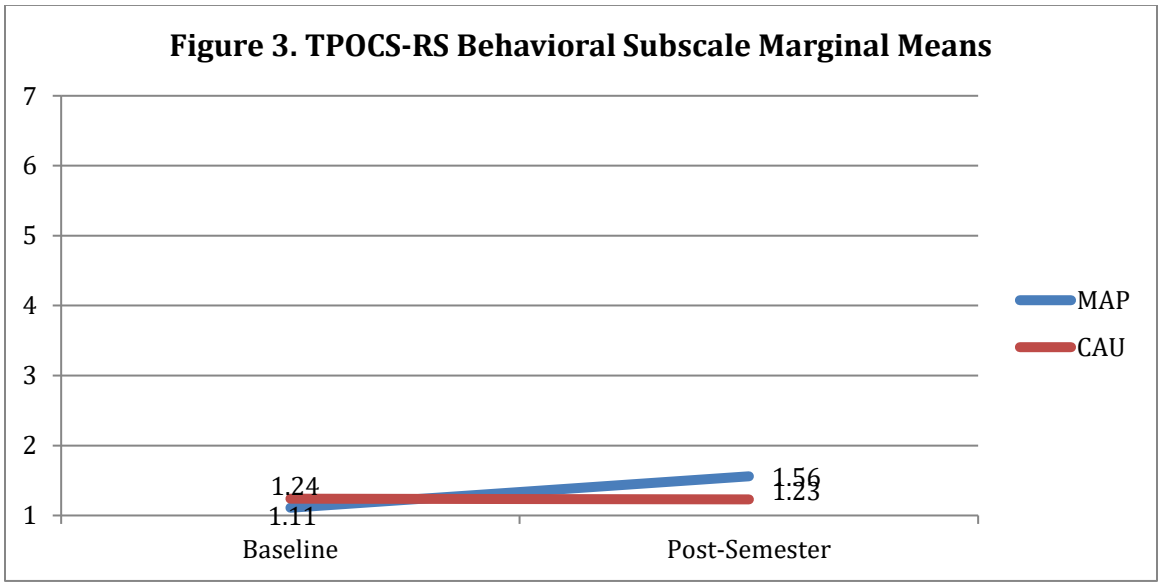
	$F(1, 37)$	p	partial eta^2
Cognitive Subscale			
Between-Subjects Effects			
Intercept	494.99	.000***	.93
Study Condition	35.87	.000***	.60
Within-Subjects Contrasts			
Time	64.89	.000***	.64
Time*Study Condition	54.97	.000***	.60
Behavioral Subscale			
Between-Subjects Effects			
Intercept	1587.54	.000***	.98
Study Condition	2.43	.127	.06
Within-Subjects Contrasts			
Time	11.65	.002**	.24
Time*Study Condition	12.67	.001**	.26
Family Subscale			
Between-Subjects Effects			
Intercept	17678.71	.000***	.99
Study Condition	5.52	.024*	.13
Within-Subjects Contrasts			
Time	.01	.909	.00
Time*Study Condition	.81	.373	.13
Error(time)			
Client-Centered Subscale			
Between-Subjects Effects			
Intercept	1623.51	.000*	.98
Study Condition	1.02	.319	.03
Within-Subjects Contrasts			
Time	.15	.699	.00
Time*Study Condition	.04	.841	.00

Notes. * $p < .05$; ** $p < .01$; *** $p < .001$; partial eta^2 values ≥ .01 indicate a small effect, ≥ .06 indicate a medium effect, and ≥ .14 indicate a large effect (Cohen, 1988)

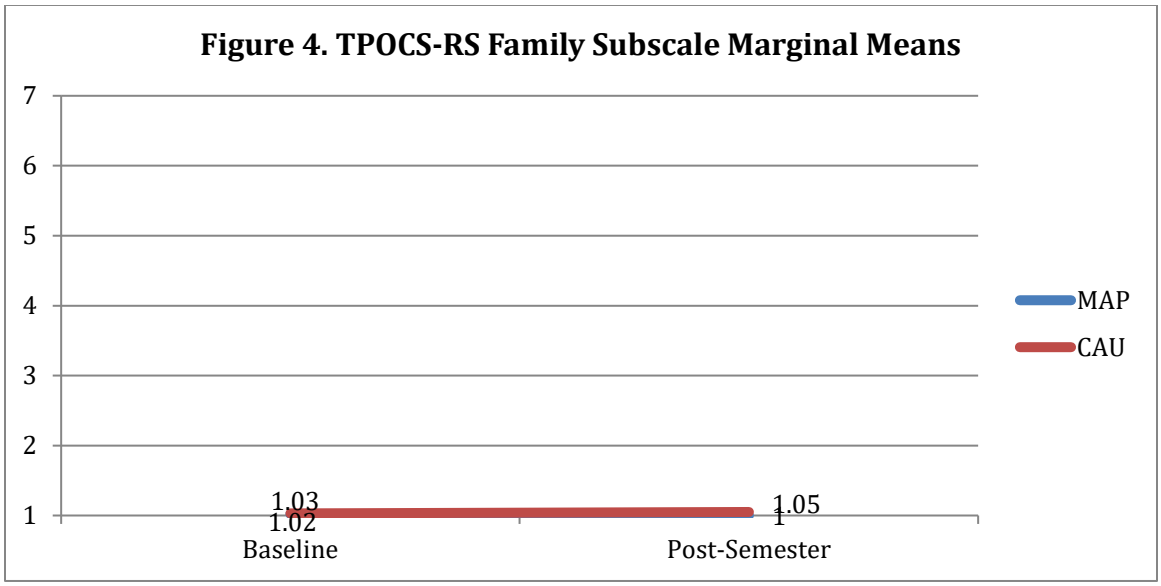
The Cognitive Subscale model demonstrated a significant time by study condition interaction effect, F(1, 37) = 54.97, p = .000, partial eta^2 = .60. Thus, the interaction between study condition and time plus its error variance accounts for 60% of the variance in the model. Commonly used guidelines suggest this is a "large" effect (i.e., partial eta-squared ≥ .13; Cohen, 1988). Marginal mean values are plotted in Figure 2 on the next page.



The Behavioral Subscale model also demonstrated a significant time by study condition interaction effect, $F(1, 37) = 12.67$, $p = .001$, partial-eta squared = .26. Thus, the interaction between study condition and time plus its error variance accounts for 26% of the variance in the model. Commonly used guidelines suggest this is a "large" effect (i.e., partial eta-squared $\geq .13$; Cohen, 1988). Marginal mean values are plotted in Figure 3 below.



The Family Focus model showed a significant main effect of study condition, $F(1, 37) = 5.52$, $p = .024$, partial-eta squared = .13. Thus, study condition plus its error variance accounts for 13% of the variance in the model. Commonly used guidelines suggest this is a "large" effect (i.e., partial eta-squared ≥ .13; Cohen, 1988). Marginal mean values are plotted in Figure 4, showing that Family Subscale scores are greater in the CAU condition at both time points.



Finally, the Client-Centered Focus model showed that neither time nor study condition emerged as significant predictors. Marginal mean values are plotted in Figure 5.

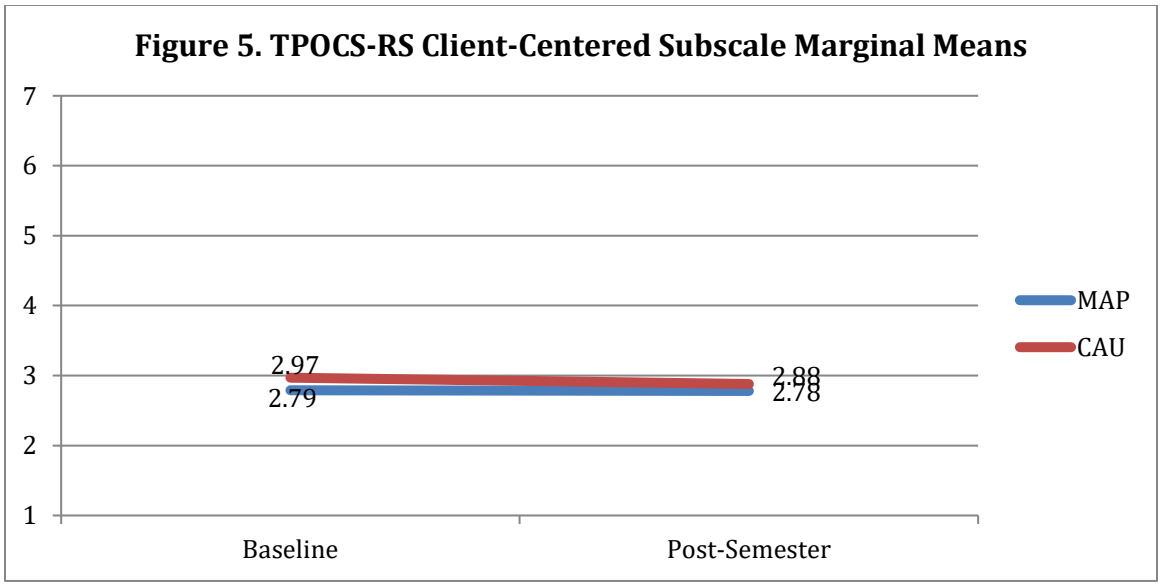


Table 10. Value of Evidence Survey: Initial Evaluation at Baseline and Post-Semester

	Baseline (%)						Post-Semester (%)					
	MAP (*n* =17)			CAU (*n* = 22)			MAP (*n* = 14)			CAU (*n* = 19)		
Source	N	S	V	N	S	V	N	S	V	N	S	V
Clinical judgment/experience	0.0	25.0	75.0	9.1	22.7	68.2	0.0	30.8	69.2	5.3	21.1	73.7
Client's preference(s)	6.3	6.3	87.5	9.1	22.7	68.2	7.7	15.4	76.9	5.3	15.8	78.9
Caregiver(s)'s preference(s)	6.3	62.5	31.3	18.2	54.5	27.3	0.0	53.8	46.2	5.3	57.9	36.8
Supervisor's preference(s)	6.3	62.5	31.3	18.2	50.0	31.8	0.0	84.6	15.4	10.5	78.9	10.5
Treatment team's preference(s)	6.3	68.8	25.0	9.1	68.2	22.7	0.0	92.3	7.7	15.8	73.7	10.5
Administrative data from clinic	12.5	81.3	6.3	13.6	59.1	27.3	0.0	84.6	15.4	21.1	63.2	15.8
Symptom rating scales	0.0	62.5	37.5	4.5	40.9	54.5	0.0	46.2	53.8	0.0	52.6	47.4
Idiographic rating scales	0.0	43.8	56.3	0.0	22.7	77.3	0.0	35.7	64.3	0.0	36.8	63.2
Structured diagnostic interview	0.0	50.0	50.0	4.5	50.0	45.5	0.0	35.7	64.3	0.0	36.8	63.2
Unstructured clinical interview	0.0	82.4	17.6	5.1	59.0	35.9	0.0	15.4	84.6	5.3	10.5	84.2
Observation of behavior	0.0	11.8	88.2	0.0	4.5	95.5	0.0	15.4	84.6	0.0	10.5	89.5
Functional analysis	0.0	56.3	43.8	0.0	27.3	72.7	14.3	35.7	50.0	5.3	10.5	84.2
Treatment manual(s)	18.8	68.8	12.5	18.2	63.6	18.2	23.1	76.9	0.0	15.8	52.6	31.6
Research on etiological model(s)	12.5	75.0	12.5	13.6	72.7	13.6	23.1	69.2	7.7	15.8	57.9	26.3
Research on treatment model(s)	6.3	56.3	37.5	15.8	50.0	34.2	23.1	61.5	15.4	21.1	36.8	42.1
Theories	7.7	61.5	30.8	4.8	66.7	28.6	10.0	60.0	30.0	5.6	44.4	50.0

Note. N = not important; S = somewhat important; V = very important

Table 11. Value of Evidence Survey: Treatment Plan at Baseline and Post-Semester

	Baseline (%)						Post-Semester (%)					
	MAP (*n* =17)			CAU (*n* = 22)			MAP (*n* = 14)			CAU (*n* = 19)		
Source	N	S	V	N	S	V	N	S	V	N	S	V
Clinical judgment/experience	5.9	23.5	70.6	0.0	18.2	81.8	0.0	21.4	78.6	0.0	15.8	84.2
Client's preference(s)	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	5.6	94.4
Caregiver(s)'s preference(s)	6.3	56.3	37.5	9.1	40.9	50.0	0.0	46.2	53.8	0.0	57.9	42.1
Supervisor's preference(s)	12.5	56.3	31.3	9.1	63.6	27.3	14.3	57.1	28.6	10.5	63.2	26.3
Treatment team's preference(s)	12.5	62.5	25.0	0.0	54.5	45.5	0.0	61.5	38.5	5.3	63.2	31.6
Administrative data from clinic	31.3	56.3	12.5	18.2	45.5	36.4	23.1	61.5	15.4	21.1	52.6	26.3
Symptom rating scales	12.5	50.0	37.5	4.5	45.5	50.0	0.0	38.5	61.5	5.3	52.6	42.1
Idiographic rating scales	12.5	43.8	43.8	0.0	27.3	72.7	0.0	30.8	69.2	0.0	36.8	63.2
Structured diagnostic interview	12.5	56.3	31.3	4.5	54.5	40.9	0.0	42.9	57.1	0.0	36.8	63.2
Unstructured clinical interview	18.8	56.3	25.0	9.1	40.9	50.0	0.0	38.5	61.5	10.5	21.1	68.4
Observation of behavior	0.0	31.3	68.8	0.0	22.7	77.3	0.0	30.8	69.2	0.0	5.3	94.7
Functional analysis	0.0	68.8	31.3	0.0	45.5	54.5	7.7	38.5	53.8	0.0	10.5	89.5
Treatment manual(s)	0.0	56.3	43.8	9.1	54.5	36.4	15.4	38.5	46.2	0.0	36.8	63.2
Research on etiological model(s)	6.3	75.0	18.8	9.1	68.2	22.7	0.0	69.2	30.8	5.3	52.6	42.1
Research on treatment model(s)	0.0	47.1	52.9	4.5	36.4	59.1	0.0	46.2	53.8	0.0	42.1	57.9
Theories	10.0	80.0	10.0	5.0	65.0	30.0	0.0	75.0	25.0	0.0	37.5	62.5

Note. N = not important; S = somewhat important; V = very important

Table 12. Value of Evidence Survey: Treatment Monitoring at Baseline and Post-Semester

	Baseline (%)						Post-Semester (%)					
	MAP (*n* =17)			CAU (*n* = 22)			MAP (*n* = 14)			CAU (*n* = 19)		
Source	N	S	V	N	S	V	N	S	V	N	S	V
Clinical judgment/experience	0.0	37.5	62.5	9.5	28.6	61.9	7.1	42.9	50.0	5.3	15.8	78.9
Client's preference(s)	6.3	12.5	81.3	0.0	14.3	85.7	7.7	30.8	61.5	0.0	15.8	84.2
Caregiver(s)'s preference(s)	0.0	62.5	37.5	9.5	42.9	47.6	0.0	53.8	46.2	5.3	42.1	52.6
Supervisor's preference(s)	6.7	60.0	33.3	19.0	42.9	38.1	15.4	61.5	23.1	10.5	63.2	26.3
Treatment team's preference(s)	13.3	53.3	33.3	19.0	42.9	38.1	7.7	61.5	30.8	5.3	52.6	42.1
Administrative data from clinic	26.7	53.3	20.0	33.3	23.8	42.9	23.1	53.8	23.1	36.8	36.8	26.3
Symptom rating scales	6.7	20.0	73.3	9.5	28.6	61.9	0.0	23.1	76.9	0.0	31.6	68.4
Idiographic rating scales	6.7	20.0	73.3	14.3	14.3	71.4	0.0	14.3	85.7	0.0	21.1	78.9
Structured diagnostic interview	20.0	26.7	53.3	14.3	38.1	47.6	7.7	69.2	23.1	5.3	47.4	47.4
Unstructured clinical interview	6.7	66.7	26.7	14.3	33.3	52.4	15.4	46.2	38.5	10.5	26.3	63.2
Observation of behavior	0.0	6.7	93.3	0.0	4.8	95.2	0.0	30.8	69.2	0.0	0.0	100.0
Functional analysis	6.7	66.7	26.7	4.8	28.6	66.7	21.4	50.0	28.6	5.3	10.5	84.2
Treatment manual(s)	26.7	60.0	13.3	28.6	33.3	38.1	23.1	76.9	0.0	21.1	47.4	31.6
Research on etiological model(s)	33.3	66.7	0.0	23.8	47.6	28.6	23.1	69.2	7.7	15.8	63.2	21.1
Research on treatment model(s)	13.3	53.3	33.3	19.0	47.6	33.3	7.7	69.2	23.1	15.8	47.4	36.8
Theories	25.0	75.0	0.0	26.3	57.9	15.8	22.2	66.7	11.1	28.6	42.9	28.6

Note. N = not important; S = somewhat important; V = very important

Attitudinal Indicators

Values of Evidence survey. Scores are displayed as percentages in Tables 10, 11, and 12 on the previous pages. Proportions vary widely by item; overall, participants infrequently indicated any one source of evidence to be "not important" (range 0.0% - 33.3%). For the Initial Evaluation item (Table 9), behavioral observation was the source of evidence deemed to be "very important" most frequently at both baseline (92.3% of total sample) and post-semester (84.4% of total sample). For the Treatment Plan item, client's preference(s) was the source of evidenced deemed to be "very important most frequently at both baseline (100.0% of total sample) and post-semester (96.9% of total sample). Observation also emerged as the source of evidenced deemed to be "very important most frequently for the Treatment Monitoring item at baseline (94.6% of total sample) and post-semester (87.1%).

Evidence Based Practice Attitudes Scale. Mean subscale scores are presented in Table 13 below. Each subscale was entered into a repeated measures general linear model that included time as a within-subjects predictor and study condition as a between-subjects predictor. No significant predictors were identified.

Table 13. Evidence Based Practice Attitudes Scale, Baseline and Post-Semester Mean Scores

	Baseline		Post-Semester	
EBPAS Scale	MAP (n =17)	CAU (n = 22)	MAP (n = 14)	CAU (n = 19)
Requirement	3.24 (0.81)	3.09 (0.85)	3.26 (0.66)	3.44 (0.72)
Appeal	3.19 (0.49)	3.19 (0.49)	3.09 (0.51)	3.17 (0.52)
Openness	2.90 (0.39)	3.06 (0.71)	2.84 (0.58)	2.99 (0.63)
Divergence	0.81 (0.27)	0.81 (0.59)	0.71 (0.43)	0.87 (0.62)
Total	3.12 (0.29)	3.44 (0.72)	3.11 (0.35)	3.13 (0.45)

Usage Rating Profile—Intervention, Revised and Post-Course Survey. Mean URP-IR subscale scores are presented in Table 14 on the next page. Means uniformly fell between 4 ("slightly agree") and 5 ("agree"), indicating general agreement that MAP is acceptable,

understandable, feasible, that a home-school connection is needed, that the system climate is conducive to MAP, and that the system supports the use of MAP.

Table 14. Usage Rating Profile-Intervention Revised Subscale Scores (n = 14)

Subscale	Minimum	Maximum	Mean (SD)
Acceptability	3.00	5.63	4.75 (0.66)
Understandability	4.33	6.00	4.98 (0.46)
Home-School Connection	2.67	5.67	4.33 (0.73)
Feasibility	3.00	5.40	4.46 (0.82)
System Climate	2.20	5.20	4.04 (1.09)
System Support	3.00	5.67	4.07 (0.90)

Congruently, on the Post-Course Survey, participants in the MAP condition indicated that they were likely to recommend the course to another MSW student (mean = 4.36, SD = 0.63). On a 1 to 5 scale, participants rated the course a 4 (50.0%, "likely" to recommend the course) and 5 (42.9%, "very likely" to recommend the course), with one exception (7.1% rated 3 = "neither likely or unlikely").

Discussion

The main goal of this project was to evaluate a course-based training of an evidence-informed system of care, MAP, with a sample of pre-service mental health professionals enrolled in a MSW program relative to curriculum-as-usual control. Although I intended to test differences between two different versions of the MAP training, there was little differentiation between conditions and ultimately, I collapsed these study arms into one MAP condition. I used the mechanistic LEAP model of training and consultation (McLeod et al., 2018) to guide the evaluation of training outcomes across different domains, including cognitive indicators, behavioral indicators, and attitudinal indicators. I reported descriptive data and completed pre-post analyses within each domain. Within the cognitive domain, a main finding was that participants in the MAP condition incorporated significantly more idiographic measurement into

their treatment monitoring plans post-semester. Within the behavioral domain, participants in the MAP condition used cognitive and behavioral strategies more extensively than participants in the CAU condition post-semester; these significant time by condition interactions yielded large effect sizes. Finally, within the attitudinal domain, attitudes toward evidence-based practice broadly were positive overall, irrespective of time point or condition; participants in the MAP condition indicated positive attitudes toward the MAP framework itself.

To my knowledge, this is the first description of a formal evaluation of MAP training outcomes for pre-service master's-level mental health professionals. Perhaps most concretely, this pilot study demonstrates initial proof of concept: MAP training in a course-based format can be delivered to and was well received by pre-service professionals enrolled in a MSW program. With the goal of infusing evidence-informed and –based practice into the education and training of pre-service professionals, the MAP system has the potential to be integrated in master's-level social work programs. Favorable acceptability, understandability, and feasibility scores on the URP-IR may speak to congruence between the MAP system (i.e., the strategic use of evidence to generate individualized treatment plans) and social work education and practice. Although the local context had some unique strengths—namely, the availability, proximity, and tenacity of a national MAP trainer and champions within the VCU SSW itself—that may make adoption more challenging in different contexts, there is an existing professional development program and a national training workforce (PracticeWise, LLC, 2015) that can support educator training.

The study also demonstrates that course-based MAP training can yield significant increase in performance of cognitive and behavioral strategies in a behavioral rehearsal role-play. Given the increasing reliance on behavioral rehearsal as an analogue treatment integrity measurement tool (Beidas, Edmunds, Marcus, & Kendall, 2012; Cross et al., 2011; Nakamura et

al., 2014), these data suggest significant trainee uptake of behavioral and cognitive strategies in the MAP condition. Cognitive and behavioral strategies represent an evidence-based approach for child and adolescent anxiety (Higa-McMillan, Francis, Rith-Najarian, & Chorpita, 2016), depression (Weersing, Jeffreys, Do, Schwartz, & Bolano, 2017), and posttraumatic stress (Dorsey et al., 2017), all of which were identified clinical targets in the standardized patient presentations (see Appendix D).

Although participants demonstrated statistically significant change in the TPOCS-RS Cognitive and Behavioral Subscale scores by condition, it is important to consider how meaningful such changes are. McLeod and colleagues (2015) published estimated marginal means of TPOCS-RS subscale scores from two randomized controlled trials of individual cognitive-behavioral therapy for child/adolescent anxiety. These data are (1) reflective of real clinical data rather than behavioral rehearsal data with standardized patients, (2) limited to a trial of anxiety-focused cognitive-behavioral therapy rather than the MAP system, and (3) summarize hundreds of full therapy sessions rather than two brief mock sessions per participant. Despite these caveats, the subscale scores may provide a general yardstick against which we can understand the TPOCS-RS extensiveness scores from the current study. Table 15 on the next page displays the TPOCS-RS subscale scores alongside the means from (1) one treatment arm from a university-based trial of individual cognitive-behavioral therapy (referred to as ICBT here; Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008), and (2) two treatment arms from the Youth Anxiety Study, a community-based trial of individual cognitive-behavioral therapy (referred to as YAS-ICBT here) relative to usual care (referred to as YAS-UC here; Southam-Gerow et al., 2010).

Table 15. TPOCS-RS Subscales with Anxiety-Focused Comparisons

	Baseline		Post-Semester		ICBT	YAS-ICBT	YAS-UC
TPOCS-RS Subscale	MAP	CAU	MAP	CAU			
Cognitive Subscale	1.52	1.30	3.91	1.40	3.79	3.08	1.43
Behavioral Subscale	1.11	1.24	1.56	1.23	2.66	1.80	1.20
Family Subscale	1.02	1.03	1.00	1.05	1.08	1.24	1.42
Psychodynamic Subscale	1.02	1.00	1.02	1.00	1.34	1.51	2.22
Client-Centered Subscale	2.79	2.97	2.78	2.88	2.88	2.55	2.67

For the Cognitive Subscale, baseline scores from this study are on par with the YAS-UC scores. The MAP condition post-semester average (3.91) is similar to the average from the ICBT condition (3.79). For the Behavioral Subscale, mean scores from this study are commensurate with the YAS-UC scores. For the Family and Psychodynamic subscales, scores from this study are close to null. Given the focus on one standardized patient, rather than a family of standardized patients, the low Family scores are unsurprising. Finally, the Client-Centered subscale scores are within a relatively narrow band (average scores between 2.55 and 2.97). Taken together, these data suggest a particularly meaningful performance gain in cognitive strategies, such that post-semester Cognitive subscale scores are commensurate with scores from a successful university-based clinical trial (Kendall et al., 2008)

Next, I go on to describe and contextualize findings within the other assessment domains of the LEAP model (McLeod et al., 2018).

Cognitive Domain

Findings from the cognitive domain—including coded responses on the CDMT—provide novel descriptive data that characterizes trainees' key clinical decisions. Although vignette-based evaluation is common practice in the medical education literature (Hudelson, Perron, & Perneger, 2011; Humbert, Besinger, & Miech, 2011) and has been used to evaluate training in anxiety-focused cognitive-behavioral therapy (Carpenter et al., 2016), the CDMT was designed

to capture decision-making without specific prompts, MAP-specific or otherwise. Items were written as open-ended rather than multiple-choice questions; once coded, these data provide a snapshot of specific clinical decisions, but they are otherwise difficult to place within a larger context. For example, it is not yet clear how participant scores may resemble or differ from social workers currently in full-time clinical practice. In the MAP condition, the "idiographic: internal symptoms or experience" code was the only code to demonstrate significant change from baseline to post-semester, such that the majority of participants (54.5%) "gained" the code. These data suggest that the MAP training had particular bearing on participants' choice to include idiographic instruments in their treatment monitoring plan. One might expect this finding, given MAP's focus on treatment monitoring, case-specific evidence, and the clinical dashboard. Although not statistically significant, the patterns of change (Table 5) largely fit MAP-specific targets. For example, 50% of MAP participants "gained" the "cognitive practice(s)" codes, compared to 23.5% of the CAU condition. Fifty percent of the MAP condition also "gained" the "behavioral practice(s)" codes compared to 17.7% of the CAU condition.

One area of concern within the cognitive domain is the dearth of nomothetic assessment. Evidence-based assessment is an important component of broad evidence-based practice; assessment data that are reliable and valid help clinicians tailor an individualized treatment plan accurately (McLeod, Cox, Martinez, & Christon, 2019). Very few participants in either condition indicated that they would use a standardized scale ("nomothetic scale" code) during the initial assessment. Such diagnostic tools serve a number of important functions, including helping clinicians determine the acuity of symptoms relative to the larger population, identify and prioritize treatment targets, and guide the selection of treatment programs or practices (McLeod

et al., 2019). Diagnostic assessment is not a main focus of MAP—particularly compared with its focus on using assessment tools for treatment monitoring. However, given such low rates of standardized assessment tools in an initial diagnostic assessment, these data may indicate an area for improvement for any applications of MAP for pre-service professionals.

Attitudinal Domain

From baseline to post-semester, the MAP course had little bearing on participants' attitudes toward evidence-based practice on the EBPAS. Closer examination of subscale scores showed that they were largely greater (and the Divergence subscale lower) than published norms (see Table 16). Evidence suggests that participants enrolled in the current study, regardless of condition or time point, indicated that their attitudes toward evidence-based practice are on par with, if not more positive, than a large group of practicing providers in the United States (Aarons et al., 2010). One possibility to explain the limited change in EBPAS scores observed over time and across condition is the presence of a ceiling effect, given the relatively high absolute starting values on the 0 ("*Not at all*") to 4 ("*To a very great extent"*) scale.

Table 16. Evidence Based Practice Attitudes Scale Comparisons

	Baseline		Post-Semester		Aarons et al.
EBPAS Scale	MAP (*n* =17)	CAU (*n* = 22)	MAP (*n* = 14)	CAU (*n* = 19)	(2010)
Requirement	3.24 (0.81)	3.09 (0.85)	3.26 (0.66)	3.44 (0.72)	2.41 (0.99)
Appeal	3.19 (0.49)	3.19 (0.49)	3.09 (0.51)	3.17 (0.52)	2.91 (0.68)
Openness	2.90 (0.39)	3.06 (0.71)	2.84 (0.58)	2.99 (0.63)	2.76 (0.75)
Divergence	0.81 (0.27)	0.81 (0.59)	0.71 (0.43)	0.87 (0.62)	1.25 (0.70)
Total	3.12 (0.29)	3.44 (0.72)	3.11 (0.35)	3.13 (0.45)	2.73 (0.49)

Note. Aarons et al. (2010) sample: Participants were "1,089 clinicians from 100 clinics in 75 cities in 26 states" (Aarons et al., 2010, p. 358).

Congruently, the Values of Evidence survey (Tables 10, 11, and 12) characterize the present sample as open to many sources of evidence, including research evidence, across different clinical decisions. Although specific to participants in the MAP condition, scores on the

Usage Rating Profile, Intervention Revised (Table X) underscores the evidence of largely positive attitudes toward evidence-based and –informed practice

Implications for Social Work Education

Within schools of social work specifically, data from this project indicate that MAP may be poised to contribute to the ongoing efforts to integrate evidence-based practice into MSW curricula more broadly (e.g., Bellamy et al., 2013; Rubin, 2007). Perhaps most promising is agreement among students that MAP is both feasible and acceptable for use—the next generation of MSWs appears well positioned to take on the challenge. What remains to be seen, however, is the feasibility and acceptability of MAP within social work *faculty*. In a survey of MSW curricula in North America, faculty-related barriers to evidence-based practice emerged as a frequent concern (63.8% of programs surveyed; Bertram, Charnin, Kerns, & Long, 2014). Specific barriers included: faculty without sufficient training in evidence-based practices, confusion or disagreement about the definition of evidence-based practice, resistance to change, and adjunct faculty limitations (Bertram et al., 2014). Any efforts to roll-out MAP within schools of social work may be limited by faculty-specific barriers.

The methodological approaches described in this study may also contribute to the evaluation of social work students behavioral and cognitive skillset. Marion Bogo and her colleagues have adapted a broad competency-focused assessment, the Objective Structured Clinical Examination (OSCE) for social work practicum education (Bogo et al., 2011; Bogo et al., 2012). Whereas the focus of this project has been on measuring students' use of evidence-informed decisions and evidence-based therapeutic strategies in practice, the goal of the OSCE is to capture broader social work competencies, including the ability to develop a collaborative relationship, goal-setting, and cultural competence. Of note, the OSCE uses standardized clients,

observational rating scales, and a written critical reflective analysis. One could imagine the tools and procedures described in this project (i.e., CDMT, behavioral rehearsal task) complementing the broader social work competencies of the OSCE, particularly for MSW programs that are rolling out curriculum and/or training in evidence-based practice or evidence-based programs.

Implications for Future Practice

As with any form of education or training for future and current mental health professionals, the ultimate goal is to improve the quality of clinical care by influencing clinician behavior in clinical situations (Lewis et al., 2014). As I have described with the LEAP model (McLeod et al., 2018; Figure 1), there is empirical evidence and an ample theoretical base to highlight the importance of cognitive-based mechanisms of learning, skill-based mechanisms of learning, and attitudinal mechanisms. In the present study, presumably it is important that participants acquire factual knowledge and information about MAP and learn how to apply that knowledge to specific cases; in moving from declarative knowledge towards knowledge organization, trainees have the initial cognitive skillset to use the MAP system in their clinical practice. Similarly, trainees that pull from their knowledge base and can demonstrate their skillset behaviorally in a goal-directed behavioral rehearsal task, have a basic behavioral skillset upon which they can build to deliver the practice elements that comprised such a large part of the training. Finally, that trainees feel positively about the MAP system—and that they understand how to deliver system—may make it more likely that they use the system in the future (Rogers, 2003). Taken together, these data generate optimism that MAP trainees will be able and willing to use at least some part of the MAP system in their future practice, wherever that may be.

Limitations

Zooming out and looking toward trainees' future practice, however, also highlights the many limitations of this project. Here, I discuss the study's limitations in three main domains: (1) methodology, (2) instrumentation, and (3) generalizability.

Methodological limitations. This was a small-scale pilot study with a small number of participants from one MSW program. Given the constraints of the naturalistic educational setting, the study team was unable to engage in randomization, yielding a quasi-experimental design. Demographic variables and previous clinical experience did not differ between groups, but I also recorded a condition-level difference in the level of family strategies used in the behavioral rehearsal role-play. Thus, findings may be affected by condition-level differences in clinical approach.

Although attempts were made to incorporate an experimental arm to this study (i.e., cMAP vs. cMAP+), the two conditions failed to differentiate in a meaningful way. I am thus unable to speak to the relative effectiveness of differential training strategies. Similarly, I am unable to comment on the relative effectiveness of course-based MAP versus a typical MAP training that is delivered over the course of 40 hours in one week.

Losing the experimental arm of the study also introduced some irregularities in the MAP training program. In an attempt to approximate the integrity of the MAP training, I recorded the foci and teaching methods of the MAP course (see Appendix A). However, these training integrity data reflect merely that the content was covered and how, rather than providing a meaningful metric of depth (i.e., time spent on the topic) or instructor competence (i.e., the effectiveness of teaching strategies in the moment). Relatedly, the study did not attempt to record participant absences from MAP or curriculum-as-usual coursework. I cannot be sure how

condition-level differences—between the CAU and MAP condition and within the MAP condition—may have influenced training outcomes.

Instrumentation limitations. The primary study aim was to compare MAP to the CAU control. To do so in a way that captured the many clinical strengths that CAU participants brought to bear necessitated broad measurement tools and clinical tasks (i.e., refraining from naming MAP-specific tools or processes), many of which did not yet exist. Although this study was not intended to be an instrument development project, the study team developed and adapted several instruments and tasks for this study. These include: (1) the Clinical Decision-Making Task, (2) the behavioral rehearsal role-play task, (3) the Value of Evidence survey, and (4) the minimally adapted Usage Rating Profile-Intervention, Revised (original URP-IR: Chafouleas et al., 2011). In some instances, there was clear methodological guidance (i.e., behavioral rehearsal as analogue fidelity; Beidas et al., 2013) and instruments with strong psychometric evidence (i.e., the EBPAS and TPOCS-RS; Aarons, 2004; McLeod et al., 2015). The CDMT and VoE survey in particular, however, function as largely new instruments with little psychometric evidence. Although these instruments were developed in collaboration with an expert in clinical child psychology (Dr. Southam-Gerow) and went through pilot testing with graduate-level psychology trainees, these instruments did not go through a rigorous psychometric evaluation before being used in the present study. As a result, there is little evidence to determine the extent to which the instruments developed are reliable and valid.

In an effort to limit the time burden of the battery, I also had to prioritize some facets of learning over others. In the cognitive-based domain, I focused on application of clinical knowledge in the CDMT rather than assess declarative MAP knowledge directly (i.e., through a multiple choice knowledge test of MAP content). In the skill-based domain, I chose to use the

TPOCS-RS, a measure of how *extensively* trainees used specific therapeutic strategies, rather than focus on how *well* trainees delivered specific therapeutic strategies (i.e., therapist competence). Finally, in the attitudinal domain, I did not include an assessment of classroom climate or instructor likability to assess instructor-student alliance, another indicator that may have affected participants' attitudes toward MAP and willingness to engage with the course content.

Contextual strengths/limitations. As mentioned earlier, if other MSW programs become interested in integrating MAP into their curriculum, there is a well-defined professional development program available (see PracticeWise, 2015). The program, however, comes at a cost. This study was financially and logistically possible because of unique local resources that may not exist everywhere. First, the study team included a national MAP trainer who volunteered to co-teach the MAP course. Second, there were several key individuals within the VCU SSW that were eager and, ultimately, empowered to formally embed the MAP course within the MSW program. Implementation science has long recognized the importance of leveraging existing organizational supports (e.g., Aarons et al., 2011; Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Meyers, Durlak, & Wandersman, 2012), but I recognize that the exceptional local expertise and tenacity may limit the replicability and generalizability of these findings.

Despite our success starting the MAP course, the study team was unable to change other important aspects of the trainees' experience. Ideally, MAP trainees would have the opportunity to practice MAP within their fieldwork placements. However, fieldwork placements varied widely, and field instructors were unlikely to be familiar with and reinforce the MAP system. Although I measured several indicators of training outcomes, this study did not capture

participants' clinical behavior during or after the course. Thus, participants' use of MAP skills in real clinical work remains unknown. Given the lack of reinforcement of the MAP system within trainees' fieldwork placements over time, the durability of behavioral skill gains also remains unknown.

Future Directions and Conclusions

The scope of this pilot study was modest, but it speaks to two main avenues of future research: (1) developing and standardizing instruments and tasks to accurately and reliably capture training outcomes, and (2) expanding applied training and supervision research focused on pre-service clinicians.

Instrumentation. Despite the fact that training and supervision are important implementation processes, there is little consensus about best training and supervision practices that balance effectiveness and efficiency beyond basic guidelines (e.g., it is important that trainees have ample opportunities to practice clinical skills with feedback; Beidas & Kendall, 2010; Herschell et al., 2010). The LEAP model (McLeod et al., 2018) was established with the express purpose of moving the training and supervision literature forward. However, one barrier toward this goal is the lack of well-designed and -tested instruments/tasks that measure training and supervision outcomes across different domains and phases of training. As I discussed earlier, a major limitation of this study was the ad hoc creation of study-specific instruments and tasks. Future research should thus focus on developing and refining a suite of instruments able to capture training and supervision outcomes, with emphasis on cognitive- and skill-based mechanisms of learning.

One open question is the appropriate level of focus for such instruments. For example, how do the psychometric properties of a generic instrument designed to measure cognitive-based

mechanisms of learning—like the CDMT used in this project—differ from the psychometric properties of a cognitive-behavioral therapy-specific instrument? Similarly, there are open questions about the format itself; how do open-ended questions—like the CDMT—compare with questions constructed around multiple-choice answers? Standardization of such instruments may also promote their use in research and clinical settings alike. One can imagine using such an instrument to establish performance benchmarks that can be used to inform training and supervision efforts (e.g., identifying those in need of remedial training).

Applied research. Given the promise of MAP for master's level trainees, it represents a broad, evidence-informed system that can be used as a platform to test several models of training and supervision. One question that I am not able to answer here is the relative success of an intensive five-day workshop versus a semester-long course. I also encourage future research attempt to focus on specific training strategies, including the use of online training strategies, albeit in a more engaging format. Similarly, MAP is well suited for research into the frequency and intensity of supervision, given the formal professional development pathways already established (PracticeWise, 2015). Similar supervision-focused research is already being conducted with other common elements models (see Dorsey et al., 2015).

One emerging focus is the relative importance of training pre-service professionals. As I have discussed, the majority of the training literature has focused on training (or retraining) in-service clinical professionals (see Beidas & Kendall, 2010; Herschell et al., 2010). Workforce development initiatives are then contending with different training backgrounds, existing productivity demands, and, in some cases, firmly entrenched practice habits and beliefs about their clinical work (e.g., Garland, Kruse, & Aarons, 2003; Weisz, Chu, & Polo, 2004). Once clinicians enter practice, the opportunities for specialized trainings often come at a high cost.

As educational credentialing organizations such as the Council on Social Work Education come to recognize the value of evidence-based practice, there may be increasing pressure for MSW and other professional programs to integrate specialized education and training into their curricula. This raises an interesting series of empirical questions: how does training pre-service professionals differ from training established clinicians? Are different training and supervision strategies necessary? Might specialized training in evidence-based practice early in a trainees' career establish a training trajectory that facilitates future training in evidence-based practice? How does pre-service trainee uptake compare with in-service professional uptake? To my knowledge, very little empirical work has been done on this subject. Looking beyond the mental health field, a nursing study (Sankar, Vijayakanthi, Sankar, & Dubey, 2013) compared the knowledge and skills demonstrated by in-service nurses to pre-service nurses following a specialized training. Although both groups of nurses demonstrated a similar level of knowledge and skills immediately post-training, the pre-service nurses retained higher skills scores six weeks after training. Sankar and colleagues (2013) hypothesize that pre-service nurses retained skills better than their in-service counterparts "by their sheer self-motivation and willingness to learn" (p. 6), and that in-service nurses may "have [previously learned] incorrect skills… and it much more difficult to change learned behavior than to learn completely new behavior or skills" (p. 6). It remains to be seen if this is the case within the field of mental health.

Ultimately, this project has shown that MAP is a promising system to incorporate into workforce development efforts for pre-service mental health professionals. These findings point to a number of novel areas for continuing research. The hope is that this project contributes to the improvement of workforce development initiatives and pushes the field forward in understanding how to evaluate training.

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Appendix A

Summary of MAP Course Content and Teaching Strategies

MAP Tools and Processes			
Element	Description	Clinical Skill(s)	Teaching Strategy/ies
PracticeWise Subscription	Provides students with access to process and practice guides, PracticeWise Evidence Based Services database, clinical dashboard		Didactic overview, self-directed learning, used during in-class practice
Introduction to MAP	Provide history and background; frame MAP as drawing from evidence-based treatment model (prioritizing generalized knowledge) and individualized care models (prioritizing local knowledge)		Didactic, discussion
Evidence Based Services System Model	Model describing how a system is structured to provide a service, outlining (1) what decisions are being made, (2) who makes these decisions, and (3) what drives the decisions; introduces different evidence bases (Causal Mechanism Research, General Services Research, Local Aggregate Evidence, Case-Specific Historical Information)	Evidence-based decision-making	Didactic, discussion, modeling with case examples, rehearsal with case examples
PracticeWise Evidence Based Services Database	Searchable database of child and adolescent treatment literature reflecting hundreds of studies, updated regularly; identify treatment programs and practice elements; identify level of evidence; searchable by problem type and demographic variables	Accessing and using research evidence	Didactic, modeling with case examples, rehearsal with case examples
Treatment Planner: Focus Interference Framework	Treatment planning model; users identify main treatment focus, other foci, and possible	Treatment planning	Didactic, modeling with case examples, rehearsal with case examples

	interferences (factors that may interfere with treatment)		
Treatment Planner: Connect-Cultivate-Consolidate	Treatment planning model; three phases of treatment: (1) Connect (assess, engage, educate, orient), (2) Cultivate (build new skills, teach, rehearse), (3) Consolidate (review, generalize skills, build independence, prepare for termination)	Treatment planning	Didactic, modeling with case examples, rehearsal with case examples
Session Planner	Treatment planning model; three phases in each session: (1) Opening (check-in, review, homework, set agenda), (2) Working (advise/instruct/guide, rehearse), (3) Closing (review, assign homework, reward)	Treatment planning	Didactic, modeling with case examples, rehearsal with case examples, rehearsal with role-play
Clinical Dashboard	Treatment monitoring tool; visually maps practices and outcomes across time; provides systematic Case-Specific Historical Information; developing idiographic measurement strategies	Treatment monitoring	Didactic, modeling with case examples, rehearsal with case examples, rehearsal with role-play
CARE Process	Broad clinical decision-making model; four repeating stages: (1) Evaluate evidence and goal(s) of treatment, (2) Consider if clinical progress is being made, (3) Answer (e.g., improving or worsening), and (4) Respond appropriately (e.g., if improving, praise, stay focused, continue plan; if worsening, troubleshoot, identify new plan)	Evidence-based decision-making; Treatment monitoring; Treatment planning	Didactic, modeling with case examples
The MAP	Integrated clinical decision-making model; identifies key clinical questions and decisions (e.g., Plan unfocused? Treatment integrity?),	Evidence-based decision-making;	Didactic, modeling with case examples, rehearsal with case

	actions that follow those decisions, and sources of information that should be used to guide decisions	Accessing and using research evidence; Treatment monitoring; Treatment planning	examples (individually and in small groups)
Embracing Diversity	Treatment adaptation model; for specific cases, adapt process by adjusting (1) style (i.e., how clinician behaves), (2) communication (i.e., how clinician delivers content), and (3) change agent(s) (i.e., who is involved in treatment); adapt content by adjusting (1) conceptualization (i.e., how information is framed), message (i.e., how information is delivered), and procedures (i.e., what clinician delivers)	Treatment planning	Didactic, modeling with case examples, rehearsal with case examples
Assessment and Monitoring Guidelines	Principles to guide assessment and monitoring; clarifying goal of assessment (i.e., should we treat case? And how?) vs. monitoring (how is treatment working?); both should assess multiple informants, assess multiple domains, focus on observable constructs; review of assessment tools (i.e., diagnostic interviews, symptom checklists); review of monitoring tools (i.e., checklists, idiographic); review of free and common clinical measures	Assessment; Treatment monitoring	Didactic, modeling with case examples, rehearsal with case examples
Treatment Pathways	Preset treatment plans based on the order of common treatment programs; organized by problem area	Treatment planning	Didactic, modeling with case examples

Practice Elements			
Element	Description	Clinical Skills	Teaching Strategy/ies
Engagement	Engaging child and caregiver in treatment	Rapport building	Didactic, modeling with case examples, rehearsal with case examples, rehearsal with role-play
Psychoeducation: Disruptive Behavior Disorders (DBDs)	Teaching caregivers about factors that explain children's behavior; emphasize family strengths; emphasize parental efforts; provide rationale for focus on parenting skills and style	Rapport building; assessment; psychoeducation	Didactic, modeling with role-play, rehearsal with case examples, rehearsal with role-play
Praise	Rationale for praise; how to teach caregivers to provide specific praise; how to address common concerns about praise	Parent training	Didactic, modeling with role-play, rehearsal with case examples
Attending	Rationale for attending; how to teach caregivers to attend; how to adapt for common family-level barriers and child age	Parent training	Didactic, modeling with case examples
Rewards/Response Cost	Rationale for rewards and response cost; how to teach caregivers to reward and use response cost; common problems with rewards and response cost	Parent training	Didactic, modeling with case examples, rehearsal with case examples
Commands	Rationale for effective commands; how to teach caregivers to use effective commands; common ineffective command strategies	Parent training	Didactic, modeling with case examples, rehearsal with case examples
Active Ignoring	Rationale for active ignoring; how to teach caregivers to use active ignoring; preparing for extinction burst	Parent training	Didactic, modeling with case examples, rehearsal with case examples

Time Out	Rationale for time out; how to teach caregivers to use time out; compliance training routine	Parent training	Didactic, modeling with case examples, rehearsal with case examples
Communication skills	Rationale for communication skills; how to teach child and caregivers communication skills (i.e., communication hierarchy, intent impact model, skills for speaker and listener, practicing skills)	Skill-building	Didactic, modeling with case examples, rehearsal with case examples, rehearsal with role-play
Psychoeducation: Anxiety	Teaching child and caregivers about anxiety; providing rationale for treatment	Anxiety practice	Didactic, modeling with case examples, modeling with role-play, rehearsal with case examples, rehearsal with role-play
Self-Monitoring/ Monitoring	Rationale for self-monitoring/monitoring; how to teach child and caregiver to engage in self-monitoring/monitoring; design features of self-monitoring/monitoring strategies; using self-monitoring/monitoring strategies for different problem areas	Anxiety practice; Trauma practice; Depression practice; DBD practice	Didactic, modeling with case examples, rehearsal with case examples
Exposure	Rationale for exposure; how to teach child and caregiver to engage in exposure tasks; building fear ladders; common challenges	Anxiety practice	Didactic, modeling with case examples, modeling with role-play, rehearsal with case examples, rehearsal with role-play

Cognitive-Anxiety	Rationale for cognitive restructuring for anxiety; how to teach child to engage in cognitive restructuring for anxious thoughts	Anxiety practice	Didactic, modeling with case examples, modeling with role-play, rehearsal with case examples, rehearsal with role-play
Psychoeducation: Trauma	Teaching child and caregivers about trauma; providing rationale for treatment	Trauma practice	Didactic, modeling with case examples
Personal Safety Skills	Rationale for personal safety skills; how to teach child and caregiver about personal safety skills	Trauma practice	Didactic, modeling with case examples
Trauma Narrative	Rationale for trauma narrative; how to explain trauma narrative to child and caregivers; how to engage in cognitive processing during trauma narrative; addressing common concerns and challenges	Trauma practice	Didactic, modeling with case examples, modeling with role-play, rehearsal with case examples, rehearsal with role-play
Psychoeducation: Depression	Teaching child and caregivers about depression; providing rationale for treatment	Depression practice	Didactic, modeling with case examples
Problem-Solving	Rationale for problem-solving; how to engage in problem-solving with a child	Depression practice	Didactic, modeling with case examples, rehearsal with role-play
Activity Selection	Rationale for activity selection; how to explain activity selection to child and caregivers and engage them in practice	Depression practice	Didactic, modeling with case examples, modeling with role-play, rehearsal with case examples, rehearsal with role-play

Cognitive-Depression	Rationale for cognitive restructuring for depression; how to teach child to engage in cognitive restructuring for depressed thoughts	Depression practice	Didactic, modeling with case examples, modeling with role-play
Relaxation	Rationale for relaxation; how to teach child and caregivers to engage in relaxation exercises	Depression practice	Didactic, modeling with case examples, rehearsal with case examples
Maintenance	Rationale for maintenance-focused session; how to structure a maintenance-focused session	Anxiety practice; Trauma practice; Depression practice; DBD practice	Didactic, modeling with case examples

Appendix B
Clinical Decision-Making Task Vignettes and Prompts

Date: _____
Research ID: _____

Clinical Decision Making Task

Vignette: Sophia is an eight-year-old White girl who lives with her biological parents. Sophia's parents are currently seeking treatment for her aggressive and oppositional behaviors. Sophia frequently yells, whines, and is physically violent with her parents and teachers. Her parents reported that these tantrums often occur when they attempt to direct or place limits on her behavior (e.g., requesting that she brush her teeth). They often give in to her demands (e.g., to continue to watch television, to eat sweets) just to "keep the peace." Sophia's teachers reported that her behavior is getting in the way of her learning and making friends; they describe her as "bossy" and "quick to anger with her peers." Sophia's oppositional behavior has been increasing in intensity and frequency since the age of five. In the past six months, she has also been displaying some anxiety about social situations. She reported that she does not have any friends and she worries that her peers think of her as a "bully" because she is often angry and frustrated with them. Sophia's parents reported that she is the only child in her class who was not invited to one peer's recent birthday party. She is now throwing tantrums in the morning, demanding that she stay home from school.

The goal of this exercise is to learn how you would plan to work with Sophia in outpatient therapy, given the above information. Do not worry about writing complete sentences and please let the Facilitator know if you have any questions.

1. **Please describe any additional assessment information you would collect.**

2. **Please describe your initial treatment target(s) and your plan to address it/them.**

3. **Please describe how you would monitor Sophia's progress in treatment.**

Date: _____
Research ID: _____

Clinical Decision Making Task

Vignette: Daniel is a fifteen-year-old Asian boy who lives with his biological parents. He and his family are currently seeking treatment for significantly depressed mood and occasional, passive thoughts of suicide. Daniel is currently reporting the following symptoms: not wanting to participate in activities he used to enjoy (e.g., hockey team, robotics club), withdrawing from social contact with friends and family, negative self-esteem, having difficulty getting out of bed, and feeling "really hopeless about [his] future." Daniel reported that he has been experiencing low mood for approximately two years and suicidal ideation for approximately six months, but that he now feels "worse than ever." Daniel's parents also reported that he was in a significant car accident approximately three months ago. Daniel was sitting in the front passenger seat of his father's car as a motorcyclist collided with the vehicle on the highway. Although Daniel and his father sustained only superficial injuries, the motorcyclist was severely injured. Since the accident, he has been experiencing recurrent nightmares, periods of physiological discomfort (i.e., racing heart, muscle tension) particularly when around heavy traffic. Additionally, he now refuses to get in to his father's car and insists that the family avoid the highway.

The goal of this exercise is to learn how you would plan to work with Daniel in outpatient therapy, given the above information. Do not worry about writing complete sentences and please let the Facilitator know if you have any questions.

1. **Please describe any additional assessment information you would collect.**

2. **Please describe your initial treatment target(s) and your plan to address it/them.**

3. **Please describe how you would monitor Daniel's progress in treatment.**

Appendix C

Clinical Decision-Making Task Codes

Code	**Description**	**Example(s)**
Nomothetic scale*	Referenced a standardized and/or norm-referenced instrument that measures symptoms and/or behaviors; includes references to broad-band, narrow-band, and/or screening instruments	"anxiety measure"; "parenting stress survey"; "Patient Health Questionnaire-9"; depression symptom checklist
Specific scale	Referenced a specific standardized and/or norm-referenced instrument by name	"Child Behavior Checklist"; "Revised Child Anxiety and Depression Scale"
Scale from multiple informants	Referenced obtaining standardized and/or norm-referenced instrument from more than one informant (e.g., youth, parent[s], teacher[s])	"teacher-completed measure of behavior" AND "anxiety symptom scale"
Formal diagnostic interview	Referenced using a formal diagnostic interview in form or by name	"K-SADS"; "formal diagnostic interview";
Interview	Referenced interviewing at least one informant	"child's perspective on symptoms"; "parent's perceptions of behavior"
Interview multiple informants*	Referenced interviewing two or more informants	"talk to teacher about classroom behavior"; "ask child about severity of anxiety"
Identification of antecedents	Described gathering information about events, situations, and/or internal states that may provoke/evoke symptoms and/or behaviors	"triggers"; "what situations bring about symptoms"; "what makes the behavior better or worse"
Identification of consequences	Described gathering information about events, situations, and/or internal states that follow symptoms and /or behaviors	"how do parents react to child's behavior"; "what does child do after"; "how does child feel after"
Presence/acuity of symptoms	Described gathering information about the presence and/or intensity of specific symptoms	"assess for posttraumatic stress"; "assess for intensity of anxiety symptoms; "ask about anhedonia"
Specific rule-outs	Described gathering information about symptoms as they relate to specific diagnoses outside of what was described in the vignette	"assess for PTSD"; "assess for mood"

Course of symptoms	Described gathering information about the course of symptoms (i.e., intensity, duration) over time	"was there a time when the symptoms were better or worse?"; "determine timeline of symptoms"
Medical information	Described gathering information about the child's medical history	"what were the results of the last physical?";
Medications	Described gathering information about the child's active prescriptions	"medications"; "prescriptions"
Previous mental health treatment	Described gathering information about the child's engagement in previous mental health treatment	"previous therapy"; "in treatment before?"; "what did they like about previous therapist?"
Individual strengths	Described gathering information about individual strengths	"child's strengths"; "parent's strengths"
Family-level strengths	Described gathering information about family-level strengths	"family strengths"; "what is family good at"
Developmental history	Described gathering information about child's developmental history	"developmental history"; "developmental milestones"
Attachment history/quality of family relationships	Described gathering information about the history and/or quality of family relationships	"attachment style in early childhood"; "how does child get along with parent"
Family history of MH problems	Described gathering information about family history of mental health problems	"assess for family history of anxiety"; "does family have history of mental health problems?"
Social history/quality of friendships	Described gathering information about child's social history and/or quality of friendships	"how does child get along with peers?"; "assess for social functioning in early childhood"
Functioning (academics, home)	Described gathering information about child's functioning at school (academics, classroom behavior) or at home (activities of daily living, chores)	"current grades in school"; "is child taking care of hygiene and other essential tasks?"
Previous evaluation conducted	Described gathering information about any previous evaluation(s) that have been conducted	"has child been evaluated previously?"; "was there an IEP evaluation?"

Initial Assessment Item

Code	Description	Example
Psychoeducation	Described providing the child and/or family with information about the nature of their problem or about general psychological principles (e.g., child development, parent-child relations)	"provide psychoeducation"; "teach about anxiety"; "teach about what is or is not developmentally appropriate"
Specific practices	Described using specific therapeutic strategies/practices or a specific package of strategies/practices	"relaxation"; "teach about problem-solving"; "CBT"
Multiple recipients	Described targeting multiple members of the family or collaterals with therapeutic strategies/practices	"positive parenting skills" AND "relaxation training with the child"
Cognitive practice(s)*	Described using cognitive interventions (i.e., teaching about the cognitive model, identification and restructuring cognitive distortions, coping skills)	"cognitive restructuring"; "address cognitive distortions"; "teach problem-solving"; "CBT"
Behavioral practice(s)*	Described using behavioral interventions (i.e., functional analysis, relaxation strategies, respondent strategies, operant strategies, skill building, behavioral activation, monitoring, modeling)	"teach relaxation"; "exposure"; "social skills training"; "CBT"
Family practice(s)*	Described using family interventions (i.e., targeting a family member, parenting style, parenting skills, multi-participant interactions, family roles)	"intervene with parents"; "teach positive parenting skills"; "discuss parentification"
Psychodynamic practice(s)*	Described using psychodynamic interventions (i.e., transference, exploring past experiences, addressing resistance, interpreting behavior)	"explore child's early childhood experiences and connect it to current behavior"
Client-centered practice(s)*	Described using client-centered interventions (i.e., validation, positive regard, learning about client's perspective)	"validate"; "ask child about her take on her experiences"

Code	Description	Example
Nomothetic scale(s)*	Referenced a standardized and/or norm-referenced instrument that measures symptoms and/or behaviors; includes references to broad-band, narrow-band, and/or screening instruments	"anxiety measure"; "parenting stress survey"; "Patient Health Questionnaire-9"; depression symptom checklist
Specific scale	Referenced a specific standardized and/or norm-referenced instrument by name	"Child Behavior Checklist"; "Revised Child Anxiety and Depression Scale"
Idiographic: behaviors*	Referenced an idiographic instrument that measures specific behaviors	"parents rate number of child's behavioral outbursts"; "child records number of times he engaged in a pleasant activity"
Idiographic: internal symptoms or experience*	Referenced an idiographic instrument that measures internal symptoms or experiences	"child provides a daily mood rating"; "parents provide a daily stress rating"
Scales from multiple informants*	Referenced obtaining standardized/norm-referenced and/or idiographic instrument from more than one informant (e.g., youth, parent[s], teacher[s])	"teacher-completed measure of behavior" AND "anxiety symptom scale"

Appendix D
Behavioral Rehearsal Vignettes and Prompts

Role-Play Instructions: Kylie

Below is a brief description of Kylie, the youth you will be meeting with today. Please let the Facilitator know if you have any questions and when you are ready to begin. The Facilitator will videotape approximately 8-10 minutes of your role-play with Kylie. The goals for your role-play are described below.

Background:
Kylie is an eleven-year-old Black girl living with her biological parents. She started the sixth grade three months ago. She has a small, close-knit group of friends that she met in elementary school, but most of this group attends a different middle school and has started hanging out with other kids. Although her parents reported that she has "always been shy," she began experiencing significant anxiety in social situations approximately four months ago. Kylie reported frequent stomachaches, particularly when she is getting ready for school or if she has a basketball game. She has been excused from several of her classes for nausea and reported feeling "panicked" (i.e., difficulty breathing, pounding heart, and sweating) for much of the day when she is in school. She worries that others think she is an "ugly, loner freak," in part because she believes they will perceive her to be anxious. She has started begging her parents to stay home from school and to quit the basketball team. Recently, she refused to complete an important assignment that required an in-class presentation.

You have met with Kylie for eight sessions and you have diagnosed her with Social Anxiety Disorder. You have developed good rapport. Recently, she has disclosed several symptoms that indicate depressed mood: sleeping much of the day, diminished appetite, lack of interest in things that she used to enjoy (e.g., drawing in her notebook), and irritability. Recently, she said: "I'm so tired of feeling on edge all the time. The only thing that I want to do is sleep."

Role-Play:
Your plan for this session is to address Kylie's depressed mood and lack of activity. You are approximately five minutes into the session and have checked in about her week. You have learned that she has spent the past three days sleeping most of the day and not leaving her room.

Form A

Role-Play Instructions: Robert

Below is a brief description of Robert, the youth you will be meeting with today. Please let the Facilitator know if you have any questions and when you are ready to begin. The Facilitator will videotape approximately 8-10 minutes of your role-play with Robert. The goals for your role-play are described below.

Background:
Robert is a twelve-year-old Latino boy living with his biological parents. He is currently enrolled in the sixth grade, but is in danger of being held back due to poor grades. Approximately eight months ago, Robert witnessed a shooting in his neighborhood in which one teenager and one young adult were killed. He reported feeling terrified during this experience. Since this incident of community violence, Robert has experienced several symptoms that indicate significant posttraumatic stress, including: intrusive and upsetting thoughts about the shooting, nightmares, hypervigilance (e.g., becoming alarmed by unfamiliar cars driving down the street, jumping when he hears sirens), persistent physiological discomfort while outside (e.g., stomachache, pounding heart), and avoidance of his neighborhood friends, as he no longer wants to play with them outside. Since the event, Robert has had difficulty completing his schoolwork. His parents reported that he has become increasingly argumentative and angry with them and his teachers.

You have met with Robert and his family for eight sessions and you have diagnosed him with Posttraumatic Stress Disorder. You have developed good rapport. Recently, you have discovered that Robert is intensely worried that there will be another act of violence in the community and that he or someone he loves will be hurt. Robert's parents have assured you that the neighborhood they live in is typically very safe and the shooting was "a freak occurrence."

Role-Play:
Your plan for this session is to address Robert's worry that he is unsafe. You are approximately five minutes into the session and have checked in about his week. You have learned that he became extremely worried and distressed after hearing a firecracker going off last weekend.

Form B