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# Characterizing Community-Based Usual Mental Health Care for Infants

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FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

CHARACTERIZING COMMUNITY-BASED USUAL MENTAL HEALTH CARE  
FOR INFANTS

A dissertation submitted in partial fulfillment of

the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

PSYCHOLOGY

by

Gabriela Marie Hungerford

2016

To: Dean Michael R. Heithaus  
College of Arts, Sciences and Education

This dissertation, written by Gabriela Marie Hungerford, and entitled Characterizing Community-Based Usual Mental Health Care for Infants, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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ABSTRACT OF THE DISSERTATION  
CHARACTERIZING COMMUNITY-BASED USUAL MENTAL HEALTH CARE  
FOR INFANTS

by

Gabriela Marie Hungerford

Florida International University, 2016

Miami, Florida

Professor Daniel M. Bagner, Major Professor

Infants who experience multiple risk factors, such as preterm birth, developmental delay, and low socioeconomic status, are at greater risk for mental health problems. Mental health interventions for infants typically target infants from high-risk groups, and there is strong evidence that some intervention programs for infants can prevent long-term negative outcomes and promote long-term positive outcomes. Despite emerging research and federal initiatives promoting early intervention, minimal research has examined community-based mental health services during infancy. Improving the effectiveness and efficiency of routine care requires close examination of current practices. The current study characterized current usual care practices in infant mental health through a survey of mental health providers. Provider, practice, and client characteristics, provider use of intervention strategies and intervention programs, and provider attitudes toward and knowledge of evidence-based practices are described. Study findings are discussed in the context of previous usual care research. Implications and directions for future research are discussed.

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## INTRODUCTION

Infancy, defined herein as ages 0 to 3 years, is characterized by rapid growth within multiple environmental contexts, in which a variety of risk factors can lead to long-term negative outcomes (Sameroff, 1998; Zeanah, Boris, & Scheeringa, 1997). Therefore, infancy presents an ideal opportunity for interventions to maximize young children's potential for healthy social and emotional development (Blackman, 2002). Early intervention programs have targeted infants from high-risk families and demonstrated positive outcomes. However, minimal research has examined the extent to which empirically-supported early intervention programs are implemented in community-based services for infants, so it is unclear the extent to which the research-to-practice gap documented in mental health services for older children and adults (Kazdin, 2008) extends to this age group. Information about usual care, including the range of intervention approaches and factors related to positive outcomes, is essential to maximize its impact and identify targets for improvement. Thus, characterizing usual care is an important first step towards enhancing community-based mental health care for infants and toddlers.

### **Risk Factors in Infancy Predict Long-Term Negative Outcomes**

An accumulation of early multiple risk factors places infants at risk for subsequent mental health problems. For example, high maternal anxiety during infancy predicts problems at 4 years, including difficult temperament, poor cognitive and social-emotional development, impaired adaptive behavior, and reduced responsiveness to parents (Sameroff, 1998). Poor parenting practices during infancy, including low parental warmth and involvement, low parental monitoring, and harsh and inconsistent discipline,



are associated with subsequent child disruptive behavior (Burke, Loeber, & Birmaher, 2002). Infant difficult temperament, attention problems, and oppositional, aggressive, and destructive behavior during the first three years of life are associated with higher severity of conduct problems during the school-age years (Shaw, Owens, Giovannelli, & Winslow, 2001). In addition, early temperament, specifically negative emotionality, predicts behavior problems in late childhood (Sanson & Prior, 1999). Early disturbances in the parent-infant relationship are associated with lower child involvement in the parent-child relationship at age 7 years (Easterbrooks, Biesecker, & Lyons-Ruth, 2000) and externalizing behavior problems in middle childhood (Fearon, Bakermans-Kranenburg, van Ijzendoorn, Lapsley, & Roisman, 2010). Furthermore, attachment problems in the parent-infant relationship are stable through early adulthood (Waters, Hamilton, & Weinfield, 2000) and are associated with adult psychopathology (Sroufe, Carlson, Levy, & Egeland, 1999).

In addition to their individual effects, risk factors often co-occur and are interrelated. For example, when elevated maternal depressive symptomatology and high child fearlessness at age 2 years co-occur, they are associated with a trajectory of early-starter high conduct problems (Shaw, Gilliom, Ingoldsby, & Nagin, 2003). Similarly, when maternal rejecting parenting and high child fearlessness at age 2 years co-occur, they are associated with a trajectory of chronic conduct problems continuing through school-age (Shaw et al., 2003). Additionally, low socioeconomic status (SES) and parental substance abuse during infancy predict the onset of conduct disorder in adolescence (Loeber, Green, Keenan, & Lahey, 1995). Furthermore, the effects of individual risk factors are small in comparison to the long-term negative effects of the

accumulation of multiple risk factors, which characterizes high-risk groups, such as infants of teenage mothers (Dubow & Luster, 1990), infants born preterm (Aarnoudse-Moens, Weisglas-Kuperus, van Goudoever, & Oosterlaan, 2009), infants with developmental delay (Baker, Blacher, Crnic, & Edelbrock, 2002), and infants from low SES families (Sameroff, 1998). Infants from these groups are at significantly higher risk for mental health problems compared to infants with fewer risk-factors (Sameroff, 1998).

### **Empirically-Supported Early Intervention Programs**

Researchers have sought to prevent or mitigate the effects of these early risk factors through targeted early intervention programs, such as the Nurse-Family Partnership and the Family Check-Up. These programs typically target infants and their families with identified risk-factors, such as low SES, low birth weight, or preterm birth (Olds, Sadler, & Kitzman, 2007). For example, the Nurse-Family Partnership (NFP) is a nurse home visiting program for low-income, first-time mothers during pregnancy and through the first 2 years of the child's life. The NFP targets first-time mothers because it was hypothesized that these women would be more receptive to services and the program would benefit any additional children mothers may have subsequently. Thus, the NFP includes three major goals. The first goal is to improve pregnancy outcomes through improved prenatal health in the mother (e.g., reduced prenatal substance use, improvement in diet, early identification of obstetric complications). The second goal is to improve child health and development through the promotion of sensitive and competent care (e.g., helping parents understand their infants' communicative signals). The third goal is to improve maternal life course and economic self-sufficiency by providing help with family planning, education, and employment (Olds, 2006).

In three large, randomized-controlled trials, the NFP has been demonstrated to improve parent and child outcomes, including improved prenatal health, fewer childhood injuries, increased maternal employment, and fewer child arrests and convictions during adolescence (Olds, 2006). The first trial, conducted in Elmira, New York, examined the effects of the NFP with 400 primarily Caucasian first-time mothers (Olds, Henderson, Tatelbaum, & Chamberlin, 1986). Compared to mothers receiving comparison services (i.e., free transportation for prenatal and well-child care and/or sensory and developmental screening for the child), mothers in the NFP had improved diets, fewer kidney infections, and reduced cigarette use during pregnancy. During their first 2 years, infants of low-income, unmarried teens, a subset of the intervention group receiving the NFP, were found to have 80% fewer verified cases of child abuse and neglect (Olds et al., 1986). The NFP participants who were unmarried and from a low-income family at the start of the intervention were found to have fewer subsequent pregnancies, longer intervals between pregnancies, and greater participation in the work force than their counterparts in the comparison group (Olds, Henderson, Tatelbaum, & Chamberlin, 1988).

The second trial, conducted in Memphis, Tennessee, examined the effects of the NFP with a primarily African-American sample ( $n = 1,138$  for pregnancy and  $n = 743$  for the infancy phase). Effects of the NFP included fewer instances of pregnancy-induced hypertension, fewer maternal beliefs about child rearing associated with child abuse and neglect, homes more conducive to child development (e.g., provision of appropriate play materials), and fewer subsequent pregnancies (Olds, 2006). The third randomized-controlled trial, conducted in Denver, Colorado, examined the relative impact of the NFP

when delivered by nurses compared to paraprofessionals. However, no paraprofessional effects were observed on prenatal health behavior, maternal life-course or child development. Effects for families visited by nurses were consistent with the previous trials (Olds, 2006). The limited effectiveness of the NFP when implemented by paraprofessionals may limit its generalizability to implementation in community mental health clinics, as trained nurses may not be readily available and can be costly in such settings.

Another empirically-supported early intervention program is the Family Check-Up (FCU), a brief intervention for high-risk families designed to prevent conduct problems by promoting consistent parent management practices and increasing caregiver involvement (Shaw, Dishion, Supplee, Gardner, & Arnds, 2006). The FCU was initially examined in a randomized-controlled trial with 120 mother and son dyads recruited from a Women, Infant, and Children (WIC) Nutritional Supplement Program. Infants were between 17 and 24 months-old and families were eligible if they met at least two of three identified risk factors (i.e., low SES, family risk, such as maternal depression, and/or child risk, such as elevated levels of child problem behavior).

Families participated in an initial home-based assessment, including videotaped parent-child interaction tasks and questionnaires. The next session consisted of a “get to know you” meeting with the parent consultant, including discussion of parent concerns and family issues. The third session consisted of a feedback session, during which the parent consultant used motivational interviewing strategies to discuss the results of the assessment. During this feedback session, parents were offered a maximum of six additional follow-up sessions, which would include consultation on parenting practices,

family management, and contextual issues. Parent consultants were masters-level clinicians (Shaw et al., 2006). Findings included increased maternal involvement in parenting (e.g., keeping child in visual range) from child ages 2 to 4 years and decreased child destructive behavior at age 3.

A second randomized-controlled trial with 731 mother-child dyads also demonstrated favorable intervention effects. The trial included female children (49%), additional geographical locations, and Hispanic families (13%; Dishion et al., 2008). Findings included an effect of the FCU on increases in caregiver positive behavior support and decreases in early child problem behaviors (Dishion et al., 2008). Overall, the FCU has been demonstrated to increase mother involvement in child behavior (e.g., mother keeps child in visual range), reduce child conduct problems (Dishion et al., 2008; Shaw et al., 2006), and improve inhibitory control and language development at age 4, two key aspects of school readiness (Lunkenheimer et al., 2008). The FCU also has been demonstrated to have long-term effects on teacher-reports of child conduct problems at age 9.5 years (Shaw, 2015). The use of masters-level clinicians, who may be more readily available in community mental health centers, may increase the generalizability of the FCU. However, to our knowledge, the FCU has yet to be examined in an effectiveness trial.

### **Early Intervention Programs with Limited Evidence**

Taken together, previous research demonstrates that early intervention programs targeting at-risk infants and their families can prevent long-term negative outcomes and promote long-term positive outcomes in children. However, many widely implemented programs, such as Parents as Teachers and Healthy Families America, have a limited

evidence base and high variability of implementation between sites (Olds et al., 2007). Healthy Families America (HFA) was developed as a national initiative to prevent child maltreatment with a set of guiding principles covering key areas of program development, including participant identification and engagement, program content and structure, and program staffing and supervision (Daro & Harding, 1999). Commonalities among HFA programs include identifying pregnant women who are at-risk for child abuse and neglect (based on responses to the Kempe Family Stress Checklist, which measures domains such as parents' psychiatric history and criminal and substance abuse history) and offering home visiting services for 3 to 5 years focused on promoting parenting competency. However, other than these commonalities (i.e., providing home visits for at-risk, pregnant women), research has demonstrated substantial variability in the design and implementation of the program across sites, which may limit generalizability, and limited program effects (Olds et al., 2007).

Other intervention approaches targeting infants also have a limited evidence-base. For example, Barlow et al. (2015) conducted a systematic review of the available research examining the effects of parent-infant psychotherapy (PIP), a dyadic intervention which aims to improve the parent-infant relationship and promote infant attachment. The PIP program uses a psychodynamic approach to target parental internal working models, including the way in which the parent's view of their infant is affected by interfering representations from their own history (Fraiberg, Adelson, & Shapiro, 1975). Eight randomized trials (comprising 846 participants) of PIP were included in the Barlow et al. (2015) systematic review. Results indicated that while PIP was effective in improving attachment security in the short term, it did not improve any other parent-

based (e.g., depression) or relationship-based (e.g., maternal sensitivity) outcomes compared with no treatment or treatment as usual groups (Barlow et al., 2015).

### **Infant Mental Health: History and Theoretical Foundations**

As a result of the success of the aforementioned research on early risk factors and promising infant intervention programs, there is a burgeoning field called “Infant Mental Health,” defined as a multidisciplinary field consisting of research, practice, and policy focused on the social and emotional competency of infants (Zeanah & Zeanah, 2009).

Fitzgerald and Barton (2000) described infant mental health as “rooted in the understanding that developmental outcomes emerge from infant characteristics, caregiver-infant relationships, and the environmental contexts within which infant-parent relationships take place” (p. 2). This characterization of the infant mental health field highlights the importance of the contextual caregiving relationship in infant well-being.

Fitzgerald, Weatherston, and Mann (2011) suggested four theoretical perspectives set the stage for the emergence of the field of infant mental health in the latter half of the 20<sup>th</sup> century. First, evolutionary theory linked developmental changes to environmental events, which led to increased research on infant sensory, perceptual, and motor capabilities and challenged the common view that infants were passive recipients of environmental stimuli (Fitzgerald & Barton, 2000). Second, general systems theory posited that early infant development was rooted within a relational context and led to the consideration of the larger social and cultural influences (Fitzgerald et al., 2011). Third, psychoanalytic theory recognized the importance of early childhood processes, including attachment, in long-term developmental and behavioral outcomes. Fourth, cognitive

development theories (e.g., Piaget) suggested the infant is an interactive being and develops cognitive process through experiences with the environment.

According to Fitzgerald and Barton (2000), the first professional organization devoted exclusively to infant mental health was the Michigan Association for Infant Mental Health (MiAIMH), incorporated in 1977. The MiAIMH later sponsored the first publication of the *Infant Mental Health Journal* in 1980 and the creation of the International Association for Infant Mental Health (IAIMH). In 1992, the IAIMH merged with the World Association for Infant Psychiatry and Allied Disciplines (WAIPAD) to create the World Association for Infant Mental Health (WAIMH). Affiliate organizations to WAIMH exist in 24 countries (Fitzgerald & Barton, 2000). The activities of these professional organizations have been integral to scientific, educational, and policy efforts supporting infant mental health.

### **Early Intervention as a National Priority**

The development and growth of professional organizations devoted to the field of infant mental health has contributed to policymakers prioritizing early intervention. For example, the Patient Protection and Affordable Care Act of 2010 authorized the Maternal, Infant, and Early Childhood Home Visiting Program, a policy initiative facilitating collaboration at multiple levels (i.e., federal, state, and local) to improve health and developmental outcomes for at-risk infants through home-visiting programs. The program requires that grantees demonstrate improvement in various benchmark areas, including improved maternal and newborn health; prevention of child injuries, abuse, neglect, or maltreatment; and improvement in child school readiness and achievement.



In addition to specifying targets of maternal and infant health and development, the authorizing legislation requires that at least 75% of grant funds be spent on one of the thirteen home visiting models that currently meet the evidence criteria set by the Department of Health and Human Services using the Home Visiting Evidence of Effectiveness (HomVEE) review of home visiting models (Avellar et al., 2016). Programs meet evidence criteria if they “have at least one high- or moderate-quality study with at least two favorable, statistically significant impacts in two different domains or two or more high- or moderate-quality studies using non-overlapping analytic study samples with one or more statistically significant, favorable impacts in the same domain” (Avellar et al., 2016, p. 9). However, the quality of the evidence supporting these programs varies, as studies of programs were not required to have undergone independent replication or to include fidelity standards for local implementing agencies (Avellar et al., 2016).

In addition to the lack of replication and fidelity standards for some programs meeting government-based evidence criteria, considerations related to number of sessions, duration of program, staff credentials, time and resources for training and supervision, and reliance on external funding sources may limit the generalizability and sustainability in community-based care of programs with a strong evidence base. Some programs are expensive and time intensive (Olds, 2006) and effective only when delivered by highly trained nurses, such as the NFP (Olds et al., 2002), while others have primarily been examined in university research settings, such as the FCU (Shaw et al., 2006). Hence, despite the strong empirical support for some intervention programs for

infants, the extent to which they are implemented in community-based settings remains unknown.

### **Usual Care Research**

Despite research and federal initiatives promoting early intervention and the emergence of the infant mental health field, minimal research has examined community-based mental health services in infancy. In order to maximize community-based care during the critical period of infancy, we must first learn more about current practices (Kolko, 2006). Research on usual care (i.e., routine practice in community-based settings) provides reliable data on the range of treatment approaches, factors related to positive outcomes, and variations among locations, providers, and patients (Garland, Bickman, & Chorpita, 2010). Although research on usual care in youth mental health has increased in recent years, studies have primarily included children older than 4 years.

In one study of usual youth mental health care, Garland and colleagues (2010) obtained descriptive data and coded therapists' use of intervention strategies during psychotherapy sessions for 191 children aged 4 to 13 years ( $M = 8.9$  years,  $SD = 2.6$  years) presenting with disruptive behavior disorders in six community clinics. Therapists were primarily female (84%), with a mean age of 32.4 years ( $SD = 9.1$  years) and a mean of 2.9 years of practice ( $SD = 3.6$ ). Therapists were primarily marriage and family counselors (58%), followed by psychologists (24%), and social workers (18%). The most common theoretical orientations were family systems (34%), cognitive-behavioral (26%), and eclectic or integrated (25%). Also, 42% of therapists were staff (as compared to trainees), and 14% of therapists were licensed. Results indicated that while most children received a large number of sessions ( $M = 22.4$  sessions), there was considerable

variability in the specific treatment strategies used. Additionally, strategies were typically delivered at low intensity, indicating a likely incomplete application of strategies with limited follow-through. Finally, some strategies consistent with empirically-supported treatments were observed frequently (e.g., problem-solving skills, use of positive reinforcement) but others were rare (e.g., assigning or reviewing homework, role-play, modeling), highlighting the discrepancy between empirically-supported treatments and usual care of youth mental health.

To our knowledge, only one study to date has examined usual care practices with infants. Macdonald and colleagues (2005) conducted semi-structured interviews with staff from 18 programs focused on children under 2 years in South Brisbane, Australia. Services addressed a variety of concerns, including infant developmental problems, neonatal health, infant protection and safety, maternal health, parent support, substance using parenting issues, and parent-infant mental health. Infants were targeted for intervention on the basis of at-risk status because of poor health, developmental disability, infant abuse and neglect, family violence, maternal substance abuse, maternal mental health problems, poverty, or cultural/linguistic background associated with elevated risk for adverse outcomes. Only four of the 18 programs focused on the needs of both parents and infants. Providers reported increased emphasis on parenting knowledge and skills and infant physical development and safety relative to the provision of infant mental health services. Additionally, services focused on physical well-being rarely interfaced with services focused on psychosocial issues. Service delivery occurred primarily in hospital settings ( $n = 8$ ), community-based settings ( $n = 6$ ), and the family's home ( $n = 3$ ). Results indicated that services were fragmented, lacked continuity and

communication between other services, and rarely included the parents and infant together. However, current practices in community-based usual care for infants in the United States remain unexamined.

Contextual information about usual care practices is essential to identifying existing strengths as well as discrepancies between empirically-supported treatments and usual care that can be targeted in quality improvement efforts (Garland, Bickman, et al., 2010; Garland et al., 2013). For example, Farmer and colleagues (2010) conducted a randomized trial to enhance Treatment Foster Care (TFC) in usual care agencies by designing a quality improvement intervention that included a combination of practice-based elements from a previous state-wide descriptive study of usual care TFC (Farmer, Burns, Dubs, & Thompson, 2002) and elements from the evidence-based model, Multidimensional Treatment Foster Care (MTFC; Chamberlain, 2003). During the initial, descriptive study, researchers conducted interviews with agency representatives for TFC programs. Interviews assessed the agency's conformity to previously developed standards of care for TFC programs as well as descriptive information about the agency. Results indicated substantial variation across treatment programs in their conformity to standards of care. In addition, some programs demonstrated nonconformity with key elements of TFC, such as adequate training and supervision (Farmer et al., 2002).

Researchers used the descriptive usual care data from the Farmer et al. (2002) study to identify evidence-based practices already evident in usual care TFC and areas in which usual care did not match the evidence-based model. For example, critical components in the evidence-based MTFC model, including care coordination/case management, a view of treatment parents as key change agents, and a team approach to

treatment, respite, and work with youths' families were evident in usual care practice. Conversely, the areas of intensity of supervision/support by TFC staff and the use of proactive teaching-oriented approaches to problem behaviors were identified as lacking in usual care practice. These areas of discrepancy were then selected as the primary targets of the subsequent quality improvement intervention, which led to more improvements in youth symptoms, problem behaviors, and strengths compared to youth in the usual care TFC (Farmer et al., 2010), highlighting how descriptive usual care data can be used to improve community-based mental health care for children. Thus, characterizing usual care is an important first step towards providing the highest-quality mental health care for infants and their families.

### **Current Study**

The current study aims to address the knowledge gap that exists as a result of the dearth of research on usual care practice in children's mental health (Bickman, 2000; Hoagwood & Kolko, 2009), which is especially striking for infants. Practice-based research yielding descriptive information about the range of usual practices outside of research contexts is essential to bridging the research-to-practice gap. To our knowledge, the current study is the first examination of community-based usual mental health care services for infants in the United States. Through a two-phase survey of community mental health clinicians, the primary purpose of this research was to characterize usual care for infants and toddlers via descriptive data on the modes of delivery, provider characteristics, and practice elements most commonly utilized. Additionally, we conducted an exploratory analysis of provider characteristics (e.g., age, education level) as predictors of attitudes and knowledge of evidence-based practices (EBPs).

During Phase I, a small number of community mental health clinicians ( $n = 5$ ) contributed to the adaptation of a measure of intervention strategies and the development of an online survey describing current practices in infant mental health. During Phase II, a separate and large sample of community mental health clinicians ( $n = 153$ ) completed the online survey and provided information about the range of practices and their own professional characteristics. This descriptive information about usual mental health care for infants and their families will allow us to identify effective existing services and quality improvement targets (i.e., areas where usual care diverges from empirically-supported treatments) to design and implement quality improvement efforts with a focus on fit and sustainability in future research on usual care in infant mental health.

## **METHOD**

### **Phase I**

**Participants.** Five mental health professionals who were current providers within an Infant Mental Health program at a local community mental health agency participated in Phase I of the study. Participants were all female (100.0%) with a mean age of 41.4 years ( $SD = 10.3$  years, Range = 27 to 51 years). Three participants were masters-level clinicians (60.0%) and two were doctoral-level clinicians (40.0%). Three participants were licensed in a mental health field (one licensed marriage and family therapist, one licensed mental health counselor, and one licensed psychologist). All participants provided mental health services to at least one child aged 0 to 3 years and his or her family at the time of the discussion group and reported to have provided services to this population for an average of 10.8 years ( $SD = 7.4$  years, Range = 6 to 24 years).

**Measure adaptation.** Prior to launching recruitment efforts, the author and dissertation committee members participated in iterative discussions reviewing the Hawaii Child and Adolescent Mental Health Division (CAMHD) Service Provider Monthly Treatment and Progress Summary (Hawaii, 2008), an existing measure of 63 treatment strategies used in child and adolescent mental health. The purpose of this iterative expert review was to remove any treatment strategies considered to be irrelevant to mental health care for infants and their families, as well as to maximize provider time during the subsequent facilitated discussion groups described below.

The CAMHD measure was selected as a starting point for the current study for several reasons. First, intervention strategies are considered the unit of interest. The intermediate level of analysis is ideal for practice-based research because it is more specific than examining theoretical orientations but broader and more practical than classifying individual therapist utterances (Garland, Hurlburt, Brookman-Frazer, Taylor, & Accurso, 2010). Second, the CAMHD measure was designed for children and adolescents, so it provided the best starting point for adaptation to infants. Third, it contains clear operationalized definitions of each intervention strategy, includes a large variety of intervention strategies, and has been used as a starting point in previous research to examine usual care practices with adolescents (Bearsley-Smith, Sellick, Chesters, & Francis, 2008). As developing a measure was not the primary aim of the current study, the existing measure was adapted through the aforementioned iterative expert review process followed by two facilitated discussion groups with a small number of providers from a local community mental health agency.

During the initial expert review, intervention strategies that were thought to be irrelevant to infants were removed and included the following: behavioral contracting, educational support, eye movement/tapping, hypnosis, line of sight supervision, marital therapy, mentoring, peer pairing, psychoeducation with child, self-monitoring, self-reward/self-praise, twelve-step program, cultural training, thought field therapy, personal safety skills, free association, functional analysis, guided imagery, insight building, assertiveness training, biofeedback/neurofeedback, interpretation, milieu therapy, modeling, physical exercise, and social skills training. Additionally, intervention strategies, organized in the original measure in alphabetical order, were organized into strategies that are typically used directly with the parent (e.g., psychoeducation, see Table 1), with the child and parent together (e.g., play therapy, ignoring/differential reinforcement, see Table 2), or directly with the child (e.g., therapist praise/rewards, see Table 3).

Table 1

<i>Intervention strategies used with parent in reference to child</i>	
<u>Intervention strategy</u>	<u>Operational Definition</u>
Activity Scheduling	The assignment or request that a child participate in specific activities outside of therapy time, with the goal of promoting or maintaining involvement in satisfying and enriching experiences.
Catharsis	Strategies designed to bring about the release of intense emotions, with the intent to develop mastery of affect and conflict.
Cognitive	Any techniques designed to alter interpretation of events through examination of the <i>parent's</i> reported thoughts, typically through the generation and rehearsal of alternative counter-statements. This can sometimes be accompanied by exercises designed to comparatively test the validity of the original thoughts and the alternative



	thoughts through the gathering or review of relevant information.
Commands	Training for caregivers in how to give directions and commands in such a manner as to increase the likelihood of child compliance.
Communication Skills	Training for caregivers in how to communicate more effectively with others to increase consistency and minimize stress. Can include a variety of specific communication strategies (e.g., active listening, “I” statements).
Crisis Management	Immediate problem solving approaches to handle urgent or dangerous events. This might involve defusing an escalating pattern of behavior and emotions either in person or by telephone, and is typically accompanied by debriefing and follow-up planning.
Emotional Processing	A program based on an information processing model of emotion that requires activation of emotional memories in conjunction with new and incompatible information about those memories.
Goal Setting	Setting specific goals and developing commitment from caregivers to attempt to achieve those goals (e.g., academic, career, etc.).
Ignoring/Differential Reinforcement of Other Behavior	The training of parents or others involved in the social ecology of the child to selectively ignore mild target behaviors and selectively attend to alternative behaviors.
Individual Therapy for Caregiver	Any therapy designed directly to target individual (non-dyadic) psychopathology in one or more of the youth’s caregivers.
Mindfulness	Exercises designed to facilitate present-focused, non-evaluative observation of experiences as they occur, with a strong emphasis of being “in the moment.” This can involve the caregiver’s conscious observation of feelings, thoughts, or situations.
Motivational Interviewing	Exercises designed to increase readiness to participate in additional therapeutic activity or programs. These can involve cost-benefit analysis, persuasion, or a variety of other approaches.

Natural and Logical Consequences	Training for parents or teachers in (a) allowing youth to experience the negative consequences of poor decisions or unwanted behaviors, or (b) delivering consequences in a manner that is appropriate for the behavior performed by the youth.
Parent Coping	Exercises or strategies designed to enhance caregivers' ability to deal with stressful situations, inclusive of formal interventions targeting one or more caregiver.
Parent/Teacher Monitoring	The repeated measurement of some target index by the parent, teacher, or other adult involved in the child's social ecology.
Parent/Teacher Praise	The training of parents, teachers, or other adults involved in the social ecology of the child in the administration of social rewards to promote desired behaviors. This can involve praise, encouragement, affection, or physical proximity.
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.
Psychoeducational-Parent	The formal review of information with the caregiver(s) about the development of the child's problem and its relation to a proposed intervention. This often involves an emphasis on the caregiver's role in either or both.
Response Cost	Training parents or teachers how to use a point or token system in which negative behaviors result in the loss of points or tokens for the youth.
Response Prevention	Explicit prevention of a maladaptive behavior that typically occurs habitually or in response to emotional or physical discomfort.
Skill Building	The practice or assignment to practice or participate in activities with the intention of building and promoting talents and competencies.
Stimulus/Antecedent Control	Strategies to identify specific triggers for problem behaviors and to alter or eliminate those triggers in order to reduce or eliminate the behavior.

Tangible Rewards	The training of parents or others involved in the social ecology of the child in the administration of tangible rewards to promote desired behaviors. This can involve tokens, charts, or record keeping, in addition to first-order reinforcers.
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Table 2

*Intervention strategies used with parent and child*

<u>Intervention strategy</u>	<u>Operational Definition</u>
Attending	Exercises involving the youth and caregiver playing together in a specific manner to facilitate their improved verbal communication and nonverbal interaction. Can involve the caregiver's imitation and participation in the youth's activity, as well as parent-directed play.
Family Engagement	The use of skills and strategies to facilitate family or child's positive interest in participation in an intervention.
Family Therapy	A set of approaches designed to shift patterns of relationships and interactions within a family, typically involving interaction and exercises with the youth, the caregivers, and sometimes siblings.
Maintenance	Exercises and training designed to consolidate skills already developed and to anticipate future challenges, with the overall goal to minimize the chance that gains will be lost in the future.
Play Therapy	The use of play as a primary strategy in therapeutic activities. This may include the use of play as a strategy for clinical interpretation. Different from Attending, which involves a specific focus on modifying parent-child communication. This is also different from play designed specifically to build relationship quality.
Relaxation	Techniques or exercises designed to induce physiological calming, including muscle relaxation, breathing exercises, meditation, and similar activities.
Therapist Praise/Rewards	The administration of tangible (i.e., rewards) or social (e.g., praise) reinforcers by the therapist.
Time Out	The training of or the direct use of a technique involving removing the youth from all reinforcement for a specified

period of time following the performance of an identified, unwanted behavior.

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Table 3

*Intervention strategies used with child or general*

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<u>Intervention strategy</u>	<u>Operational Definition</u>
Care Coordination	Coordinating among the youth's service providers to ensure effective communication, receipt of appropriate services, adequate housing, etc.
Discrete Trial Training	A method of teaching involving breaking a task into many small steps and rehearsing these steps repeatedly with prompts and a high rate of reinforcement.
Exposure	Techniques or exercises that involve direct or imagined experience with a target stimulus, whether performed gradually or suddenly, and with or without the therapist's elaboration or intensification of the meaning of the stimulus.
Medication/ Pharmacotherapy	Any use of psychotropic medication to manage emotional, behavioral, or psychiatric symptoms.
Relationship/Rapport Building	Strategies in which the immediate aim is to increase the quality of the relationship between the youth and the therapist. Can include play, talking, games, or other activities.
Supportive Listening	Reflective discussion with the child designed to demonstrate warmth, empathy, and positive regard, without suggesting solutions or alternative interpretations.

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**Recruitment.** Phase I participants were current providers in a local community mental health agency. The agency director and the director of Infant Mental Health services at the agency approved study recruitment procedures prior to the start of recruitment. The author described research objectives, procedures, and data collection needs to potential participants during three regularly scheduled agency staff meetings at three different locations. A different group of providers was present at each of the three

meetings. Providers were considered eligible for Phase I of the study if they currently provided mental health services to at least one child 3-years-old or younger, where mental health services were defined as services focusing on infants' social, behavioral, and/or emotional health. In order to ensure the recruitment process was not coercive, supervisors were not present. Providers were told participation was not mandatory and would not affect their employment.

A total of 20 providers were present, eligible, and approached during these three meetings. Fourteen providers completed informed consent procedures, and 6 providers declined to consent because they indicated they did not provide services to children 3-years-old or younger. Providers who declined to consent did not submit data or participate in facilitated discussion groups. One provider who had not been present at any of the recruitment meetings but heard about the study through a co-worker attended the first discussion group and provided informed consent at that time. Immediately after informed consent procedures, participants provided information regarding their demographic, professional, and practice characteristics. In total, 15 providers were enrolled, with the expectation that scheduling conflicts would limit full attendance at the discussion groups. Target size for the discussion groups was between 4 and 8 providers (Kitzinger, 1995).

**Facilitated discussion group 1.** The first facilitated discussion group was conducted one month following the last recruitment meeting and at one of the agency's locations in order to minimize participant burden. Five providers attended the discussion group. Providers who attended the discussion group did not differ on any of the demographic characteristics listed above from the 10 participants who consented but did

not attend the discussion group. The primary aim of the first facilitated discussion group was to bring providers together to focus on intervention strategies they used on a regular basis with their clients aged 0 to 3 years and their families. Providers reviewed the adapted version of the CAMHD Service Provider Monthly Treatment and Progress Summary (Hawaii, 2008) and participated in a facilitated discussion, led by the author, regarding their use of these intervention strategies in their current treatment of infants. Providers were encouraged to comment on the applicability of the intervention strategies to their practice and to suggest further revisions to the existing measure to enhance its comprehensiveness for infants. Following procedures used by Bearsley-Smith and colleagues (2008), provisional changes to the measure in terms of relevance to infant mental health practice were made during the discussion group using the consensus built among providers using the five-finger method. Specifically, participants rated their agreement with a proposed change on a 5-point scale. If agreement was low, discussion continued until agreement was reached.

Participants were also presented a list of names of 36 early childhood intervention programs that were obtained from the Substance Abuse and Mental Health Services Administration (SAMHSA) National Registry of Evidence-based Programs and Practices (NREPP), a searchable online database of mental health and substance abuse interventions. Interventions included in this registry underwent independent assessment by certified NREPP reviewers and were rated according to NREPP guidelines. All interventions listed as applicable in early childhood, defined by NREPP as ages 0 to 5 years, were included. Participants were encouraged to suggest additional early childhood intervention programs. Ten additional programs that were not included in the original list

of 36 programs (e.g., Greenspan’s Floor Time approach) were identified by participants and added to the list. The evidence base for the ten added programs varies. For example, one of the ten programs added by participants (i.e., Conscious Discipline) was subsequently reviewed and added to NREPP, while another added program (i.e., Prolonged Parent Child Embrace (PPCE) Therapy or “Holding Therapy”) has been identified as a potentially harmful treatment (Mercer, 2013). Table 4 includes the complete list of all 46 intervention programs.

Table 4

*Early childhood intervention programs*

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Active Parenting	Nurse-Family Partnership (NFP)
Al’s Pals: Kids Making Healthy Choices	Parent-Child Interaction Therapy (PCIT)
Chicago Parent Program	ParentCorps
Child-Parent Psychotherapy (CPP)	Parenting Fundamentals
Children in Between	Parenting Wisely
Circle of Security <sup>a</sup>	Parents as Teachers (PAT)
Conscious Discipline <sup>a</sup>	Partners with Families and Children: Spokane
DARE to be You	Positive Action Pre-K Program
Early HeartSmarts Program for Preschool Children	Positive Parenting Program (Triple P)
Families and Schools Together (FAST) <sup>a</sup>	Preschool PTSD Treatment (PPT)
Family Check-Up	Primary Project
FRIENDS Program	Prolonged Parent Child Embrace (PPCE) Therapy (“Holding Therapy”) <sup>a</sup>

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Greenspan Floortime Approach <sup>a</sup>	Promoting Alternative THinking Strategies (PATHS)
Head Start <sup>a</sup>	Six Core Strategies To Prevent Conflict and Violence: Reducing the Use of Seclusion and Restraint
Healthy Alternatives for Little Ones (HALO)	Speaking for Baby <sup>a</sup>
Healthy Families America <sup>a</sup>	Systematic Training for Effective Parenting (STEP)
Healthy Start <sup>a</sup>	Teaching Students To Be Peacemakers (TSP)
HighScope Curriculum	Trauma-Focused Cognitive Behavioral Therapy (TF-CBT)
HOMEBUILDERS	Two Families Now: Effective Parenting Through Separation and Divorce
I Can Problem Solve (ICPS)	Wait, Watch, and Wonder <sup>a</sup>
Incredible Years	Zippy's Friends
Legacy for Children	
Lesson One	

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<sup>a</sup>Program was added to those from National Registry of Evidence-based Programs and Practices (NREPP) online database based on discussion of group participants.

**Survey development.** The revisions recommended by providers were used to further adapt the Hawaii CAMHD measure to capture intervention strategies used in usual mental health care for infants. The tailored design method (Dillman, Smyth, & Christian, 2014) was used to develop a survey to examine practice elements (using the adapted CAMHD measure), as well as provider characteristics, modes of intervention delivery, attitudes toward and knowledge of evidence-based practices, and general client characteristics, to be used in the second phase of the study. The tailored design method encourages participation through building trust with the research team and increasing the benefits and decreasing the costs of participation (Dillman et al., 2014). The survey was prepared for administration using the online Qualtrics electronic survey platform. The cover letter e-mail sent to potential participants contained an anonymous survey link. Upon clicking the link, potential participants were directed to a page with informed consent information, including the purpose and voluntary nature of the study, as well as the estimated time required to complete the survey. Inclusion criteria included participants affirming they provide mental health services and agreeing to participate in the study. As the survey was only provided in English, potential participants were also required to read English to complete the survey.

**Facilitated discussion group 2.** A second facilitated discussion group was conducted in order to pilot the survey and finalize content. Three of the providers who participated in the first discussion group participated in the second discussion group. Procedures recommended by Bowden and colleagues (2002) were used to assess the validity of survey items through a discussion group. Specifically, participants were shown each item along with a description of the intended meaning for each item.

Feedback was elicited regarding each item, such as whether each item conveyed the intended meaning and whether response options made sense. Feedback was utilized to make minor revisions and finalize the survey.

## **Phase II**

**Participants.** One hundred fifty-three mental health professionals participated in the current study. One additional participant consented, completed the first survey item (i.e., “How did you learn about this survey?”) and did not complete any further items, so this participant was removed from the study. The sample was primarily female (94.8%) with a mean age of 42.7 years ( $SD = 11.9$ , Range = 24 to 70 years). Most participants were masters-level clinicians (67.3%), followed by doctoral-level clinicians (24.8%) and bachelor-level clinicians (7.8%). Additional demographic data are included below in the Results section.

**Recruitment.** To our knowledge, no state or national infant mental health clinician lists or databases exist, so the infant mental health clinician population is a hidden population and a random sample cannot be drawn. Therefore, participants for Phase II of the current study were recruited through several methods, including direct e-mail contact, direct phone contact, study flyers distributed at professional conferences, presentations at local mental health professional groups, infant mental health distribution lists, and use of chain-referral sampling (described in detail below). In order to ensure there were enough participants who provided services to infants, we focused our recruitment efforts toward early childhood groups, when possible. Direct email addresses were obtained through publicly available online listings (e.g., using Psychology Today “Find a therapist” tool). Participants who stated in their online listing they provided

services to children and had a listed e-mail address were contacted. An email cover letter with a link to the online survey was sent to 346 potential participants. Direct e-mail and phone contact methods focused on potential participants locally within the state of Florida. With permission from conference hosts, flyers including a link to the online survey were distributed at the Niagara in Miami Conference, a local interdisciplinary professional conference. The author also presented the proposed study and distributed survey flyers during regularly scheduled meetings to local mental health professional groups (e.g., the Young Children with Special Needs and Disabilities Council, the Miami chapter of the Florida Association for Infant Mental Health).

In addition to recruitment efforts in Florida, other state infant mental health associations were contacted via e-mail and asked to distribute a cover letter with a link to the online survey via e-mail to their distribution lists. Finally, chain-referral sampling was used to expand the initial sample. Clinicians who participated in the online survey were asked if they would be willing to pass along information about the study they just completed to other potential participants. In order to protect privacy, participants who were interested in passing information were asked to forward information about the survey and a survey link via direct e-mail to people they thought might be interested in participating in the study. Participants did not receive incentives or compensation for referrals.

In the final survey, participants were asked to report how they learned about the study. Most participants indicated they learned about the study via direct e-mail contact ( $n = 52$ , 34.0%), followed by a distribution list ( $n = 48$ , 31.4%), a colleague ( $n = 35$ , 22.9%), a supervisor ( $n = 9$ , 5.9%), a direct phone call ( $n = 3$ , 2.0%), or a professional

conference or presentation flyer ( $n = 3$ , 2.0%). Three participants did not identify how they learned about the study. As a result of the recruitment efforts used, it is unknown how many potential participants were contacted; thus, a response rate cannot be determined. Comparison of the number of participants who indicated they were recruited through email ( $n = 52$ ) to the number of potential participants who were sent survey e-mails ( $n = 346$ ) yields a response rate of 15%. Though this may be the best estimate of response rate in the current study, it does not account for inactive e-mail addresses or undeliverable e-mails.

### **Measures.**

*Provider and practice characteristics.* Participants were asked to provide information regarding their demographic (i.e., age and gender), professional (e.g., education level, mental health discipline, licensure status, and theoretical orientation), and practice (e.g., location and setting) characteristics, as well as information about the clients served (e.g., socioeconomic status, ethnicity, gender). Participants were asked to indicate whether infants and their families receive services at their organization and, if so, the extent to which they serve those families directly (i.e., “Do you provide services to children aged 0-3 years old and their families?”). Participants who indicated that they or their organization did not provide services to this population were asked to select from a list of potential reasons or provide their own response detailing why services were only provided to children 4 years or older (e.g., clinician’s training was not applicable to younger children).

***Intervention strategies.*** Participants completed the adapted Hawaii CAMHD measure, which contains a list of intervention strategies (e.g., activity scheduling, care coordination, see Tables 1-3), and selected the age groups (none, 0-3 years, 4-5 years, and/or 6+ years) with which they use each strategy. Participants could select multiple age groups for each strategy. A brief description for each strategy (obtained from the original measure) was provided to participants. For strategies that participants indicated they used with infants, participants were also asked to rate the percentage of families with which they use each strategy and the amount of time (within a typical 1-hour session) they typically spend on each strategy. Providers were also asked to select factors which influence their choice of intervention strategy and to rank order the selected factors in terms of amount of influence. Participants who indicated they provided services to infants and their families were also presented the list of intervention programs (Table 4) and asked to rate how often they use each program with this population.

***Evidence-Based Practice Attitude Scale (EBPAS; Aarons, 2004).*** The EBPAS is a 15-item self-report measure designed to assess mental health and social service provider attitudes toward adopting evidence-based practices. Items are rated on a 5-point Likert scale ranging from 0 (not at all) to 4 (to a very great extent). The EBPAS consists of a total scale and four subscales: (1) Appeal, which refers to the extent to which the provider would adopt a new practice if it is intuitively appealing, makes sense, could be used correctly, or is being used by colleagues who are happy with it; (2) Requirements, which refers to the extent to which the provider would adopt a new practice if it is required by an agency, supervisor, or state; (3) Openness, which refers to the extent to which the provider is generally open to trying new interventions and would be willing to try or use

new types of therapy; and (4) Divergence, which refers to the extent to which the provider perceives research-based interventions as not clinically useful and less important than clinical experience (Aarons, 2004). The EBPAS has demonstrated good internal consistency for the total score (Cronbach's  $\alpha = .79$ ) and acceptable internal consistency ( $\alpha = .66$  to  $.93$ ) for the four subscales (Aarons, McDonald, Sheehan, & Walrath-Greene, 2007). The EBPAS was used in the current study to examine clinicians' attitudes toward the adoption of evidence-based practices. In the current sample, internal consistency was excellent for the Requirements scale (Cronbach's  $\alpha = .93$ ), good for the Appeal (Cronbach's  $\alpha = .77$ ) and Openness (Cronbach's  $\alpha = .79$ ) scales, and poor for the Divergence scale (Cronbach's  $\alpha = .51$ ). Internal consistency was also good for the total score (Cronbach's  $\alpha = .79$ ).

*Knowledge of Evidence Based Services Questionnaire (KEBSQ; Stumpf, Higa-McMillan, & Chorpita, 2009).* The KEBSQ is a 40-item self-report measure designed to assess clinician knowledge of evidence-based practices in the treatment of youth psychopathology. Items included in the KEBSQ incorporate practice elements from both empirically-supported and unsupported treatments for the following child problem areas: anxious/avoidant, depressed/withdrawn, disruptive behavior, and attention/hyperactivity. Internal consistency has not been examined, as each item represents an independent technique and items would not necessarily correlate with each other. The KEBSQ has demonstrated adequate test-retest reliability over two weeks ( $r = .56$ ), discriminative validity between graduate students and practitioners, and sensitivity to change following education efforts (Stumpf et al., 2009). The KEBSQ was used in the current study to estimate clinician knowledge of evidence-based practices in youth psychopathology.

**Planned analyses.** Prior to analysis, continuous variables were examined for normality and outliers. Several continuous variables (e.g., participant [clinician] age, EBPAS Appeal, Requirement, and Divergence subscales, KEBSQ total score) were non-normal. All analyses including non-normal variables were run with and without using bootstrapping with 2,000 bootstrap replicates. Prior to analysis, the data were evaluated for multivariate outliers by examining leverage indices for each individual and defining an outlier as a leverage score four times greater than the mean leverage. When outliers were identified, analyses were conducted with and without outliers. Of the 153 participants who completed some items on the survey, 94 (61.4%) reached the end of the survey. Descriptive analyses were used to characterize provider and client attributes and intervention strategies and programs. Chi-square tests examined differences in categorical participant (e.g., theoretical orientation) or organization (e.g., funding structure) characteristics between participants/organizations that provided services to infants and participants/organizations that did not provide these services. Fisher's exact tests were used in place of chi-square tests when cell expected counts were less than 5.

Independent samples *t*-tests were used to examine differences in continuous participant and client characteristics between participants who provided services to infants and participants who did not provide these services. Linear regressions examined participant age as a predictor of attitudes toward EBPs and knowledge of EBPs. One-way independent ANOVAs were used to examine differences in attitudes toward EBPs based on participant characteristics (e.g. education level). Welch tests and Games Howell post-hoc tests were used in place of one-way ANOVAs when the assumption of homogeneity of variances was violated according to Levene's test.



## RESULTS

### Provider characteristics

Participants were mostly counselors (27.5%), social workers (24.8%) and psychologists (19.6%). Most participants reported they were currently licensed in a mental health field (69.3%). A majority of participants reported they had 10 or fewer years of professional experience (53.4%). The most commonly endorsed theoretical orientations were cognitive-behavioral (36.4%) and family systems (29.1%). Most participants (86.9%) indicated they provided services to infants and their families. Participants who indicated they did not provide services to this population reported they did not do so because their training was only applicable to children 4 years and older (50.0%), their organization did not provide these services (33.3%), or for other reasons (33.3%; e.g., “did not specialize in infancy/pre-school issues”). Participants who did not provide services to children under age 4 indicated they provided services to children ages 4 to 5 years (64.7%), 6 to 12 years (82.4%), and 13 to 17 years (88.2%), as well as adults (88.2%). Table 5 details participant characteristics.

Table 5

#### *Phase II provider characteristics*

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Demographic characteristics	
% (N) Female <sup>a</sup>	94.8% (145)
M (SD) Age <sup>b</sup>	42.7 (11.9)
Professional characteristics	% (N)
Highest degree completed <sup>a</sup>	
Bachelor’s	7.8% (12)

Masters	67.3% (103)
Doctoral	24.8% (38)
Professional discipline <sup>a</sup>	
Counseling	27.5% (42)
Social work	24.8% (38)
Psychology	19.6% (30)
Marriage and family therapist (MFT)	5.9% (9)
Other (e.g., Behavior analysis, Psychiatry)	22% (34)
Licensed in a mental health field <sup>a</sup>	69.3% (106)
Years of professional experience <sup>c</sup>	
0-5 years	26.0% (38)
6-10 years	27.4% (40)
11-15 years	17.1% (25)
16-20 years	11.0% (16)
21+ years	18.5% (27)
Provide services to children ages 0-3 years <sup>d</sup>	86.9% (126)
Theoretical orientation <sup>b, e</sup>	
Cognitive behavioral	36.4% (55)
Family systems	29.1% (44)
Eclectic or integrated	21.2% (32)
Humanistic or client-centered	21.2% (32)
Behavioral	13.2% (20)

Psychodynamic or psychoanalytic	10.6% (16)
Cognitive	3.3% (5)
Other (e.g., developmental, relationship-based)	15.2% (23)

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*Notes.* <sup>a</sup>  $n = 153$ . <sup>b</sup>  $n = 151$ . <sup>c</sup>  $n = 146$ . <sup>d</sup>  $n = 145$ . <sup>e</sup> Percentages do not sum to 100 because providers could choose more than one response.

An independent samples  $t$ -test revealed a significant difference in participant age when comparing participants who provided services to infants to participants who did not,  $t(142) = 2.25, p = .026$ . Participants who indicated they provided services to children below age 4 years were significantly younger ( $M = 41.6$  years,  $SD = 11.9$  years) compared to participants who did not provide services to this age group ( $M = 48.2$  years,  $SD = 11.6$  years). As participant age was positively-skewed and leptokurtic, this analysis was also run using bootstrapping and revealed comparable results,  $t(142) = 2.25, p = .029, 95\% \text{ CI } [0.28, 12.26]$ . Four outliers for participant age were identified by examining leverage indices (4 participants aged 68- to 70-years-old). This analysis was also run without including these 4 outliers and revealed comparable results without bootstrapping,  $t(138) = 2.73, p = .007$ , and with bootstrapping,  $t(138) = 2.73, p = .011, 95\% \text{ CI } [1.54, 12.89]$ .

A Fisher's exact test revealed participants who did not provide services to infants were significantly more likely to have learned about the survey via direct phone contact ( $p = .013$ ) compared to all other methods. Only three participants reported they were recruited through direct phone contact, and all of these participants reported they did not provide services to children under age 4. A chi-square test revealed participants who did not provide services to infants were more likely to select "cognitive-behavioral" as a

theoretical orientation compared to participants who provided services to infants,  $X^2(1) = 4.19, p = .041$ . Chi-square tests revealed no other significant differences between these groups regarding theoretical orientation. Chi-square tests also revealed no significant differences between participants who provided services to infants and participants who provided services only to individuals older than 4 years on gender, highest degree completed, professional discipline, current licensure in a mental health field, or years of professional experience.

### **Practice characteristics**

Most participants described the organizations they worked for as private practices (32.4%), community mental health centers (26.2%), outpatient clinics (22.1%), and higher education settings (6.9%). Most organizations were private (not-for-profit = 46.2%; for-profit = 32.9%). Most public organizations were state funded (18.9%). Given recruitment efforts described above, a majority of participants were located in the state of Florida (73.1%). Participants reported they spent the largest percentage of their time providing services within an outpatient clinic setting ( $M = 51.1\%$ ,  $SD = 43.0$ ), followed by in-home services ( $M = 26.2\%$ ,  $SD = 35.6$ ), school/day care centers ( $M = 19.2\%$ ,  $SD = 30.1$ ), and community centers ( $M = 3.5\%$ ,  $SD = 11.2$ ). Table 6 details practice characteristics.

Table 6

#### *Phase II practice characteristics*

Practice setting <sup>a, b</sup>	% (N)
Private practice	32.4% (47)

Community mental health center	26.2% (38)
Outpatient clinic	22.1% (32)
Higher education setting	6.9% (10)
Residential facility or group home	2.8% (4)
Inpatient hospital or medical clinic	2.1% (3)
Elementary, middle or high school	1.4% (2)
Day treatment facility	1.4% (2)
Managed care organization	0.7% (1)
Other (e.g., social services agency)	20.0% (29)
Funding structure <sup>a, c</sup>	
Private, not-for-profit	46.2% (66)
Private, for-profit	32.9% (47)
Public, state-funded	18.9% (27)
Public, county-funded	2.8% (4)
Other (e.g., independent contractor)	3.5% (5)
Organization provides services to infants <sup>d</sup>	89.7% (131)
Location <sup>b</sup>	
Florida	73.1% (106)
Colorado	8.3% (12)
Illinois	6.2% (9)
Massachusetts	2.8% (4)
Maine	1.4% (2)

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New Mexico	1.4% (2)
Oregon	1.4% (2)
Arizona	0.7% (1)
Connecticut	0.7% (1)
Iowa	0.7% (1)
Louisiana	0.7% (1)
New Hampshire	0.7% (1)
Virginia	0.7% (1)
Wisconsin	0.7% (1)
Wyoming	0.7% (1)

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*Notes.* <sup>a</sup> Percentages do not sum to 100 because providers could choose more than one. <sup>b</sup>  $n = 145$ . <sup>c</sup>  $n = 143$ . <sup>d</sup>  $n = 146$ .

An independent samples *t*-test revealed a significant difference in the setting within which clinicians spent the most time providing services,  $t(105) = -5.80, p < .001$ , such that participants who indicated they provided services to children below age 4 years were significantly more likely to spend a larger percentage of their time providing in-home services ( $M = 29.9\%$ ,  $SD = 37.0$ ) compared to participants who did not provide services to this age group ( $M = 4.1\%$ ,  $SD = 8.6$ ). As the percentage of time participants spent providing in-home services was positively-skewed and platykurtic, this analysis was also run using bootstrapping and revealed comparable results,  $t(105) = -5.80, p < .001$ , 95% CI [-34.51, -17.11]. Eight outliers for percentage of time providing in-home services were identified by examining leverage indices (participants spent 98-100% of their time providing in-home services). This analysis was also run without including

these outliers and revealed comparable results without bootstrapping,  $t(97) = -4.70, p < .001$ , and with bootstrapping,  $t(97) = -4.70, p < .001$ , 95% CI [-27.30, -10.69].

The majority of organizations (89.7%) provided services to infants and their families. Participants who worked for an organization that did not provide services to children under age 4 reported their organization did not provide these services because available training focused on services for children 4 years and older (57.1%), because only children 4 years and older were referred to their organization (35.7%), or for other reasons (35.7%; e.g., participant was the only trained clinician within the organization). No participants cited lack of funding for services for infants as a reason for not providing services. Most organizations that did not provide services to infants reportedly provided services to children ages 4 to 5 years (71.4%), 6 to 12 years (78.6%), and 13 to 17 years (85.7%), as well as adults (85.7%). Chi-square tests revealed no significant differences between organizations which provided services to infants and organizations which did not provide these services on organization type, funding structure, or location (state).

### **Client characteristics**

Participants were asked to rate the percentage of their typical caseload that was composed of specific client characteristics included in Table 7. Participants reported their clients were mostly English-speaking (85.4%) and from low-income families (62.7%). Participants reported 55.5% of their caseload is typically composed of ethnic or racial minority clients and 52.5% of their caseload is typically composed of male clients. Clients were reported to be mostly aged 6 or older (49.7%), 0- to 3-years-old (42.4%), or 4- to 5-years-old (35.2%). An independent samples  $t$ -test revealed a significant difference on the percentage of their caseload typically composed of clients aged 6 years and older

between participants who provided services to infants and participants who did not,  $t(78) = 3.17, p = .002$ . Participants who provided services to infants reported a smaller percentage of their typical caseload was composed of clients aged 6 years and older ( $M = 44.90, SD = 31.48$ ) compared to participants who did not provide services to infants ( $M = 74.69, SD = 28.24$ ). No other significant differences on client characteristics were found between participants who provided services to infants and participants who did not.

Table 7

*Client characteristics*

Percentage of caseload composed of...	<i>N</i>	<i>M (SD)</i>
clients from low-income families	96	62.7 (33.6)
ethnic/racial minority clients	98	55.5 (27.8)
Hispanic clients	97	34.0 (26.0)
Black or African-American clients	98	32.0 (24.5)
client aged 0-3 years	91	42.4 (36.0)
clients aged 4-5 years	86	35.2 (28.5)
clients aged 6 years or older	80	49.7 (32.7)
male clients	96	52.5 (19.4)
English-speaking clients	101	85.4 (24.3)
Spanish-speaking only clients	57	22.4 (26.8)

**Intervention strategies**

**Strategies used with parent in reference to child.** Participants were presented with intervention strategies used with the parent(s) in reference to the child and asked to



select child age groups with which they used each strategy. Participants most frequently endorsed parent coping (85.5%), parent psychoeducation (80.5%), communication skills (79.0%), and ignoring/differential reinforcement of other behavior (73.7%) as strategies they used with parents of infants. Participants least frequently endorsed catharsis (14.0%), response cost (20.4%), response prevention (28.0%), and motivational interviewing (32.5%) as strategies they used with parents of infants. Table 8 details participants' endorsement of their use of intervention strategies used with parents in reference to their child with infants.

Table 8

*Percentage of providers endorsing use of strategy with children ages 0-3 years*

Strategies used with parent in reference to child	% (N)
Parent Coping <sup>a</sup>	85.5% (100)
Psychoeducational-Parent <sup>b</sup>	80.5% (95)
Communication Skills <sup>c</sup>	79.0% (94)
Ignoring/Differential Reinforcement of Other Behavior <sup>b</sup>	73.7% (87)
Parent/Teacher Praise <sup>f</sup>	69.8% (81)
Natural and Logical Consequences <sup>b</sup>	69.5% (82)
Skill Building <sup>b</sup>	68.6% (81)
Problem Solving <sup>b</sup>	66.1% (78)
Individual Therapy for Caregiver <sup>b</sup>	61.0% (72)
Tangible Rewards <sup>b</sup>	61.0% (72)
Crisis Management <sup>b</sup>	60.2% (71)

Parent/Teacher Monitoring <sup>a</sup>	58.1% (68)
Activity Scheduling <sup>c</sup>	56.3% (67)
Goal Setting <sup>c</sup>	55.5% (66)
Commands <sup>d</sup>	54.0% (61)
Stimulus/Antecedent Control <sup>a</sup>	50.4% (59)
Emotional Processing <sup>f</sup>	50.0% (58)
Cognitive <sup>c</sup>	46.2% (55)
Mindfulness <sup>b</sup>	44.1% (52)
Motivational Interviewing <sup>a</sup>	32.5% (38)
Response Prevention <sup>b</sup>	28.0% (33)
Response Cost <sup>d</sup>	20.4% (23)
Catharsis <sup>e</sup>	14.0% (16)

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Notes. <sup>a</sup>  $n = 117$ . <sup>b</sup>  $n = 118$ . <sup>c</sup>  $n = 119$ . <sup>d</sup>  $n = 113$ . <sup>e</sup>  $n = 114$ . <sup>f</sup>  $n = 116$ .

For each strategy participants indicated they used with parents in reference to their child aged 0 to 3 years, participants were asked to rate the percentage of families with which they typically use the strategy as well as the amount of time (within a typical 60-minute session) they typically spend on the strategy (Table 9). Parent psychoeducation ( $M = 90.0\%$ ,  $SD = 17.7$ ), skill building ( $M = 83.3\%$ ,  $SD = 22.3$ ), parent coping ( $M = 82.5\%$ ,  $SD = 22.0$ ), and problem solving ( $M = 82.4\%$ ,  $SD = 22.9$ ) were used with the largest percentage of families by providers who indicated they used these strategies with infants. Crisis management ( $M = 47.9\%$ ,  $SD = 32.6$ ), activity scheduling ( $M = 59.3\%$ ,  $SD = 29.2$ ), individual therapy for caregiver ( $M = 61.2\%$ ,  $SD = 29.1$ ), and response prevention ( $M = 62.1\%$ ,  $SD = 30.7$ ) were used with the smallest percentage of families

by providers who indicated they used these strategies with parents in reference to their child aged 0 to 3 years.

Participants indicated they spent the most amount of time within a typical 60-minute session using skill building ( $M = 28.9$  minutes,  $SD = 16.1$ ), parent psychoeducation ( $M = 28.2$  minutes,  $SD = 16.8$ ), and problem solving ( $M = 26.3$  minutes,  $SD = 16.1$ ). Participants indicated they spent the least amount of time within a typical 60-minute session using activity scheduling ( $M = 12.8$  minutes,  $SD = 13.2$ ), commands ( $M = 14.6$  minutes,  $SD = 11.1$ ), and catharsis ( $M = 15.6$  minutes,  $SD = 11.7$ ). Pearson’s correlation coefficients between the percentage of families with which providers use each strategy and the amount of time each strategy is used within a typical 60-minute session were obtained (see Table 9). The strategies of problem solving, emotional processing, cognitive, mindfulness, natural and logical consequences, motivational interviewing, stimulus/antecedent control, catharsis, individual therapy for caregiver, and activity scheduling demonstrated significant correlations between the percentage of families with which clinicians use the strategy and the amount of session time used for the strategy (range of .27 to .62).

Table 9

*Percentage of families and amount of session time intervention strategy used*

Strategies used with parent in reference to child	Percentage of families		Minutes within 60 minute session		<i>r</i>
	<i>N</i>	<i>M (SD)</i>	<i>N</i>	<i>M (SD)</i>	
Psychoeducational-Parent	86	90.0 (17.7)	76	28.2 (16.8)	.16

Skill Building	72	83.3 (22.3)	63	28.9 (16.1)	.18
Parent Coping	90	82.5 (22.0)	81	25.2 (15.5)	.18
Problem Solving	71	82.4 (22.9)	61	26.3 (16.1)	.27*
Communication Skills	85	81.7 (21.7)	76	24.7 (14.7)	.21
Goal Setting	62	81.2 (27.3)	54	18.3 (12.6)	.17
Emotional Processing	52	78.9 (25.9)	46	24.7 (16.5)	.32*
Parent/Teacher Praise	73	74.5 (29.5)	62	17.2 (14.5)	.13
Ignoring/Differential					
Reinforcement of Other	79	72.2 (28.0)	69	19.3 (15.7)	.20
Behavior					
Cognitive	48	70.5 (26.4)	40	22.1 (13.8)	.38*
Mindfulness	49	70.0 (29.7)	40	21.1 (16.7)	.37*
Natural and Logical					
Consequences	72	69.5 (28.2)	62	18.8 (14.4)	.32*
Tangible Rewards	65	68.2 (26.6)	58	16.8 (12.9)	.14
Motivational Interviewing	35	67.3 (30.8)	30	21.6 (15.2)	.46*
Stimulus/Antecedent Control	55	66.9 (26.9)	49	19.3 (14.1)	.35*
Parent/Teacher Monitoring	62	65.6 (30.0)	53	15.7 (12.7)	.14
Response Cost	20	64.5 (27.6)	19	17.8 (16.5)	.22
Catharsis	13	63.6 (27.7)	11	15.6 (11.7)	.62*
Commands	55	63.0 (28.1)	50	14.6 (11.1)	.03
Response Prevention	27	62.1 (30.7)	24	19.9 (13.0)	.31

Individual Therapy for Caregiver	64	61.2 (29.1)	55	25.3 (18.4)	.43**
Activity scheduling	60	59.3 (29.2)	55	12.8 (13.2)	.40**
Crisis Management	64	47.9 (32.6)	54	17.4 (16.9)	.24

Note. \* $p < .05$ . \*\* $p < .01$ .

**Strategies used with parent and child.** Participants were presented with intervention strategies used with the parent and child and asked to select age groups with which they use each strategy. The intervention strategies used with parents and children which participants most frequently endorsed as strategies they used with infants were attending (68.8%) and family engagement (76.6%). The intervention strategies used with parents and children which participants least frequently endorsed as strategies they used with infants were relaxation (35.5%) and time out (38.7%). Table 10 details participants' endorsement of their use of intervention strategies used with parents and children with infants.

Table 10

*Percentage of providers endorsing use of strategy with children ages 0-3 years*

Strategies used with parent and child	% (N)
Family Engagement <sup>a</sup>	76.6 (82)
Attending <sup>b</sup>	68.8 (75)
Play Therapy <sup>c</sup>	65.7 (71)
Therapist Praise/Rewards <sup>b</sup>	65.1 (71)
Maintenance <sup>d</sup>	56.3 (58)

Family Therapy <sup>a</sup>	55.1 (59)
Time Out <sup>e</sup>	38.7 (41)
Relaxation <sup>a</sup>	35.5 (38)

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Notes. <sup>a</sup>  $n = 107$ . <sup>b</sup>  $n = 109$ . <sup>c</sup>  $n = 108$ . <sup>d</sup>  $n = 103$ . <sup>e</sup>  $n = 106$ .

For each strategy participants indicated they used with infants, participants were asked to rate the percentage of families with which they typically use the strategy as well as the amount of time (within a typical 60-minute session) they typically spend on the strategy (Table 11). Family engagement ( $M = 79.6\%$ ,  $SD = 26.3$ ) and family therapy ( $M = 70.3\%$ ,  $SD = 31.9$ ) were used with the largest percentage of families by providers who indicated they used these strategies with infants. Time out ( $M = 44.0\%$ ,  $SD = 32.8$ ) and relaxation ( $M = 59.6\%$ ,  $SD = 33.0$ ) were used with the smallest percentage of families by providers who indicated they used these strategies with infants.

Participants indicated they spent the most amount of time within a typical 60-minute session using play therapy ( $M = 35.7$  minutes,  $SD = 16.7$ ), family therapy ( $M = 33.2$  minutes,  $SD = 18.4$ ), and family engagement ( $M = 32.4$  minutes,  $SD = 17.0$ ). Participants indicated they spent the least amount of time within a typical 60-minute session using time out ( $M = 13.0$  minutes,  $SD = 14.0$ ) and relaxation ( $M = 17.2$  minutes,  $SD = 11.6$ ). Pearson's correlation coefficients between the percentage of families with which providers use each strategy and the amount of time each strategy is used within a typical 60-minute session were obtained (see Table 11). All strategies used with the parent and child, with the exception of relaxation, demonstrated significant correlations between the percentage of families with which clinicians use the strategy and the amount of session time used for the strategy (range of .23 to .69).

Table 11

*Percentage of families and amount of session time intervention strategy used*

Strategies used with parent and child	Percentage of families		Minutes within 60 minute session		
	<i>N</i>	<i>M (SD)</i>	<i>N</i>	<i>M (SD)</i>	<i>r</i>
Family Engagement	79	79.6 (26.3)	74	32.4 (17.0)	.23*
Family Therapy	55	70.3 (31.9)	52	33.2 (18.4)	.34*
Therapist Praise/Rewards	66	68.2 (32.9)	64	20.8 (16.7)	.26*
Play Therapy	67	67.0 (33.4)	63	35.7 (16.7)	.69**
Attending	70	66.7 (30.7)	63	27.9 (17.6)	.49**
Relaxation	36	59.6 (33.0)	31	17.2 (11.6)	.34
Maintenance	55	58.6 (32.0)	52	20.3 (12.7)	.40**
Time Out	40	44.0 (32.8)	37	13.0 (14.0)	.36*

*Note.* \* $p < .05$ . \*\* $p < .01$ .

**Strategies used directly with child or general.** Participants were presented with intervention strategies used directly with the child or in general and asked to select age groups with which they use each strategy. The intervention strategies used directly with children or general strategies which participants most frequently endorsed as strategies they used with infants were relationship/rapport building (84.6%), supportive listening (69.2%), and care coordination (69.2%). The intervention strategies used directly with children or general strategies which participants least frequently endorsed as strategies they used with infants were medication/pharmacotherapy (5.8%), exposure (12.6%), and

discrete trial training (14.4%). Table 12 details participants' endorsement of their use of intervention strategies used directly with children or general strategies with infants.

Table 12

*Percentage of providers endorsing use of strategy with children ages 0-3 years*

Strategies used directly with child or general	% (N)
Relationship/Rapport Building <sup>a</sup>	84.6 (88)
Care Coordination <sup>a</sup>	69.2 (72)
Supportive Listening <sup>a</sup>	69.2 (72)
Discrete Trial Training <sup>a</sup>	14.4 (15)
Exposure <sup>b</sup>	12.6 (13)
Medication/Pharmacotherapy <sup>a</sup>	5.8 (6)

*Notes.* <sup>a</sup>  $n = 104$ . <sup>b</sup>  $n = 103$ .

For each strategy participants indicated they used with infants, participants were asked to rate the percentage of families with which they typically use the strategy, as well as the amount of time (within a typical 60 minute session) they typically spend on the strategy (Table 13). Supportive listening ( $M = 89.1\%$ ,  $SD = 22.9$ ) and relationship/rapport building ( $M = 88.2\%$ ,  $SD = 24.2$ ) were used with the largest percentage of families by providers who indicated they used these strategies with infants. Discrete trial training ( $M = 32.3\%$ ,  $SD = 26.7$ ) and exposure ( $M = 59.6\%$ ,  $SD = 33.0$ ) were used with the smallest percentage of families by providers who indicated they used these strategies with infants.

Participants indicated they spent the most amount of time within a typical 60-minute session using supportive listening ( $M = 40.7$  minutes,  $SD = 16.7$ ) and



relationship/rapport building ( $M = 38.8$  minutes,  $SD = 17.1$ ). Participants indicated they spent the least amount of time within a typical 60-minute session using care coordination ( $M = 17.1$  minutes,  $SD = 14.1$ ) and exposure ( $M = 18.5$  minutes,  $SD = 12.1$ ). Pearson's correlation coefficients between the percentage of families with which providers use each strategy and the amount of time each strategy is used within a typical 60-minute session were obtained (see Table 13). The strategies of supportive listening, relationship/rapport building, and care coordination demonstrated significant correlations between the percentage of families with which clinicians use the strategy and the amount of session time used for the strategy (range of .26 to .48).

Table 13

*Percentage of families and amount of session time intervention strategy used*

Strategies used directly with child or general	Percentage of families		Minutes within 60 minute session		
	<i>N</i>	<i>M (SD)</i>	<i>N</i>	<i>M (SD)</i>	<i>R</i>
Supportive Listening	72	89.1 (22.9)	65	40.7 (16.7)	.43**
Relationship/Rapport Building	87	88.2 (24.2)	80	38.8 (17.1)	.48**
Care Coordination	70	64.5 (32.6)	65	17.1 (14.1)	.26*
Medication/ Pharmacotherapy	6	47.7 (34.3)	5	20.6 (18.4)	.75
Exposure	13	43.2 (25.5)	11	18.5 (12.1)	.52
Discrete Trial Training	15	32.3 (26.7)	12	28.4 (13.6)	.10

*Note.* \* $p < .05$ . \*\* $p < .01$ .

**Factors which influence choice of intervention strategy.** Participants were asked to select factors which typically influence their choice of intervention strategy. The factors which most participants endorsed as influential in their choice of intervention strategy were family culture (90.7%), participant knowledge of intervention strategy (88.8%), and caregiver/child cognitive ability (85.0%). Court-ordered use of intervention strategy (11.2%) and use of intervention strategy by respected colleagues (40.2%) were least frequently endorsed as influential in participants' choice of intervention strategy.

Participants were given the opportunity to write-in one other factor which typically influences their choice of intervention strategies. Eight participants (7.5%) chose to add a factor. Examples of added factors were level of family stress, data collected, and needs of the child and family. Participants were asked to rank order the factors they selected as influential in their choice of intervention strategy (1 = most influential). For participants who chose to write in an additional factor, this factor was included in the list to be rank-ordered. For these eight participants, the written-in factor was most influential ( $M = 1.8, SD = 1.0$ ). Overall, participants ranked results of assessment ( $M = 2.1, SD = 1.4$ ) and family culture ( $M = 2.5, SD = 1.2$ ) as the most influential factors. Use of intervention strategy by respected colleagues ( $M = 5.3, SD = 1.3$ ) and court-ordered use of strategy ( $M = 4.8, SD = 2.3$ ) were ranked as the least influential factors. Table 14 details participants' endorsement of influential factors.

Table 14

*Factors which typically influence participants' choice of intervention strategy*

	Frequency <sup>a</sup>	Mean rank <sup>b</sup>
	% (N)	M (SD)
Family culture	90.7% (97)	2.5 (1.2)
Participant knowledge of intervention strategy	88.8% (95)	3.1 (1.4)
Caregiver/child cognitive ability	85.0% (91)	3.4 (1.3)
Results of assessment	79.4% (85)	2.1 (1.4)
Empirical support for intervention strategy	69.2% (74)	3.1 (1.5)
Use of intervention strategy by respected colleagues	40.2% (43)	5.3 (1.3)
Use of intervention strategy court-ordered	11.2% (12)	4.8 (2.3)
Other (e.g., level of family stress) <sup>c</sup>	7.5% (8)	1.8 (1.0)

*Note.* <sup>a</sup>  $n = 107$ . <sup>b</sup> When rank ordering, a lower number is more influential. <sup>c</sup> Participants were given the option to write in an influential factor and it was included in the items to be rank ordered.

**Early childhood intervention programs.** Participants who indicated they provided services to infants and their families were also presented the list of intervention programs (Table 7) and asked to rate how often they use each program with this population on a 4-point scale (never, occasionally, very often, always). Six programs were endorsed as used “very often” or “always” with this population by more than 20% of participants: Active Parenting, Child-Parent Psychotherapy (CPP), Speaking for Baby, Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), Parent-Child Interaction Therapy (PCIT), and Circle of Security. Eight programs were endorsed as “never” used

with infants by 100% of participants: Chicago Parent Program, Children in Between, Family Spirit, Lesson One, ParentCorps, Partners with Families and Children: Spokane, Two Families Now: Effective Parenting Through Separation and Divorce (TFN), and Zippy’s Friends. Table 15 details participants’ endorsement of their use of intervention programs with children ages 0-3 years.

Table 15

*Percentage of providers endorsing use of program with children ages 0-3 years*

	<i>N</i>	Never	Occasionally	Very Often	Always
Active Parenting	86	39.5	19.8	29.1	11.6
Al’s Pals: Kids Making Healthy Choices	83	94.0	6.0	0.0	0.0
Chicago Parent Program	83	100.0	0.0	0.0	0.0
Child-Parent Psychotherapy (CPP)	85	44.7	16.5	28.2	10.6
Children in Between	82	100.0	0.0	0.0	0.0
Circle of Security <sup>a</sup>	85	62.4	15.3	16.5	5.9
Conscious Discipline <sup>a</sup>	83	60.2	22.9	13.3	3.6
DARE to be You	81	96.3	3.7	0.0	0.0
Early HeartSmarts Program for Preschool Children	82	91.5	3.7	4.9	0.0
Families and Schools Together (FAST) <sup>a</sup>	82	90.2	6.1	2.4	1.2
Family Check-Up	82	95.1	3.7	1.2	0.0
Family Foundations	82	96.3	3.7	0.0	0.0
Family Spirit	82	100.0	0.0	0.0	0.0
FRIENDS Program	81	98.8	1.2	0.0	0.0
Greenspan Floortime Approach <sup>a</sup>	82	64.6	17.1	17.1	1.2

Head Start <sup>a</sup>	83	63.9	22.9	10.8	2.4
Healthy Alternatives for Little Ones (HALO)	82	96.3	0.0	3.7	0.0
Healthy Families America <sup>a</sup>	82	89.0	6.1	3.7	1.2
Healthy Start <sup>a</sup>	82	72.0	15.9	9.8	2.4
HighScope Curriculum	82	90.2	8.5	1.2	0.0
HOMEBUILDERS	82	96.3	2.4	0.0	1.2
I Can Problem Solve (ICPS)	82	92.7	3.7	3.7	0.0
Incredible Years	82	73.2	20.7	6.1	0.0
Legacy for Children	82	98.8	1.2	0.0	0.0
Lesson One	82	100.0	0.0	0.0	0.0
Nurse-Family Partnership (NFP)	81	91.4	7.4	1.2	0.0
Parent-Child Interaction Therapy (PCIT)	83	44.6	32.5	21.7	1.2
ParentCorps	82	100.0	0.0	0.0	0.0
Parenting Fundamentals	82	91.5	6.1	1.2	1.2
Parenting Wisely	82	92.7	6.1	1.2	0.0
Parents as Teachers (PAT)	82	79.3	15.9	4.9	0.0
Partners with Families and Children: Spokane	82	100.0	0.0	0.0	0.0
Positive Action Pre-K Program	82	97.6	0.0	1.2	1.2
Positive Parenting Program (Triple P)	82	90.2	7.3	2.4	0.0
Preschool PTSD Treatment (PPT)	83	89.2	8.4	2.4	0.0
Primary Project	82	98.8	1.2	0.0	0.0

Prolonged Parent Child Embrace (PPCE) Therapy (“Holding Therapy”) <sup>a</sup>	81	98.8	1.2	0.0	0.0
Promoting Alternative THinking Strategies (PATHS)	81	95.1	4.9	0.0	0.0
Six Core Strategies To Prevent Conflict and Violence: Reducing the Use of Seclusion and Restraint	82	97.6	1.2	1.2	0.0
Speaking for Baby <sup>a</sup>	84	58.3	13.1	21.4	7.1
Systematic Training for Effective Parenting (STEP)	82	78.0	20.7	1.2	0.0
Teaching Students To Be Peacemakers (TSP)	82	97.6	2.4	0.0	0.0
Trauma-Focused Cognitive Behavioral Therapy (TF-CBT)	84	52.4	22.6	22.6	2.4
Two Families Now: Effective Parenting Through Separation and Divorce (TFN)	82	100.0	0.0	0.0	0.0
Wait, Watch, and Wonder <sup>a</sup>	82	70.7	11.0	15.9	2.4
Zippy’s Friends	82	100.0	0.0	0.0	0.0

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*Notes.* Programs obtained from the National Registry of Evidence-based Programs and Practices (NREPP) online database unless otherwise stated. <sup>a</sup> Program suggested by discussion group participants.

## Participant attitudes toward and knowledge of evidence-based practices

**Participant attitudes toward evidence-based practices.** Participants provided a mean rating of 2.71 ( $SD = .49$ ; possible range 0 = “not at all” to 4 = “to a very great extent”) on the EBPAS total score. Descriptive statistics for each of the EBPAS subscales and the total score are presented in Table 16. An independent samples  $t$ -test revealed a significant difference between male and female participants on the EBPAS Requirements subscale,  $t(91) = -2.40, p = .018$ . Female participants endorsed more positive attitudes toward adoption of EBPs if required to do so ( $M = 2.60, SD = 1.10$ ) compared to male participants ( $M = 1.50, SD = .81$ ). As the EBPAS Requirements subscale was platykurtic, this analysis was also conducted using bootstrapping and yielded similar results,  $t(71) = -6.61, p = .001, 95\% CI [-1.58, -0.85]$ .

Table 16

*EBPAS subscale means, standard deviations, and Cronbach's alphas*

	<i>N</i>	<i>M (SD)</i>	$\alpha$
Requirements	93	2.52 (1.11)	.925
Appeal	97	2.87 (0.64)	.767
Openness	98	2.36 (0.76)	.786
Divergence	98	1.01 (0.57)	.509
EBPAS total	91	2.71 (0.49)	.793

Simple linear regression analyses were used to determine whether age significantly predicted participants' attitudes toward EBPs. Participant age significantly predicted scores on the EBPAS Requirements,  $R^2 = .05, F(1, 90) = 4.81, p = .031, B = -0.02 (SE = .01)$ , Appeal,  $R^2 = .07, F(1, 94) = 6.88, p = .010, B = -0.01 (SE = .01)$ ,

Openness,  $R^2 = .06$ ,  $F(1, 95) = 5.95$ ,  $p = .017$ ,  $B = -0.02$  ( $SE = .01$ ), and Divergence subscales,  $R^2 = .06$ ,  $F(1, 95) = 6.23$ ,  $p = .014$ ,  $B = 0.01$  ( $SE = .01$ ). Participant age also significantly predicted EBPAS total scores,  $R^2 = .14$ ,  $F(1, 88) = 14.47$ ,  $p < .001$ ,  $B = -0.02$  ( $SE = .01$ ). The coefficient value of  $-0.02$  indicates that a one-year increase in participant age leads to a  $-0.02$  decrease in EBPAS total scores, suggesting that as participants get older clinician participants endorse less global positive attitudes toward the adoption of EBPs.

As discussed previously, four outliers for participant age were identified by examining leverage indices. These analyses were also run without including these 4 outliers and revealed comparable results for the EBPAS Requirements,  $R^2 = .08$ ,  $F(1, 89) = 7.16$ ,  $p = .009$ ,  $B = -0.03$  ( $SE = .01$ ), Appeal,  $R^2 = .08$ ,  $F(1, 92) = 7.68$ ,  $p = .007$ ,  $B = -0.02$  ( $SE = .01$ ), Openness,  $R^2 = .05$ ,  $F(1, 93) = 5.00$ ,  $p = .028$ ,  $B = -0.02$  ( $SE = .01$ ), and Divergence subscales,  $R^2 = .06$ ,  $F(1, 93) = 5.81$ ,  $p = .018$ ,  $B = 0.01$  ( $SE = .01$ ) as well as EBPAS total scores  $R^2 = .16$ ,  $F(1, 87) = 16.05$ ,  $p < .001$ ,  $B = -0.02$  ( $SE = .01$ ).

One-way independent ANOVAs revealed significant effects of participant education level on participants' scores on the EBPAS Appeal subscale,  $F(2,94) = 5.18$ ,  $p = .007$  and the EBPAS total score,  $F(2,88) = 4.98$ ,  $p = .009$ . Tukey LSD post-hoc tests indicated that bachelors-level clinicians endorsed more positive attitudes toward adoption of EBPs given their intuitive appeal ( $M = 3.39$ ,  $SD = .54$ ) compared to doctoral-level clinicians ( $M = 2.60$ ,  $SD = 0.57$ ) and more global positive attitudes toward the adoption of EBPs ( $M = 3.20$ ,  $SD = .45$ ) compared to masters-level clinicians ( $M = 2.70$ ,  $SD = .49$ ) and doctoral-level clinicians ( $M = 2.56$ ,  $SD = .38$ ). As the one-way ANOVA is robust to non-normality, bootstrapping was not conducted for these analyses.



The analysis examining the effects of participant education on the EBPAS Requirements subscale violated the assumption of homogeneity according to Levene's test. Therefore, a Welch's test and a Games Howell post-hoc test were used to conduct this analysis. A Welch's test revealed significant effects of participant education level on participants' scores on the EBPAS Requirements subscale, Welch's  $F(2,22) = 14.71, p < .001$ . A Games Howell post-hoc test indicated that bachelors-level clinicians endorsed more positive attitudes toward adoption of EBPs if required to do so ( $M = 3.61, SD = .49$ ) compared to masters-level clinicians ( $M = 2.34, SD = 1.14$ ) and doctoral-level clinicians ( $M = 2.73, SD = .95$ ). No other significant differences in participant attitudes toward EBPs based on participant education level were found. Figure 1 illustrates these results.

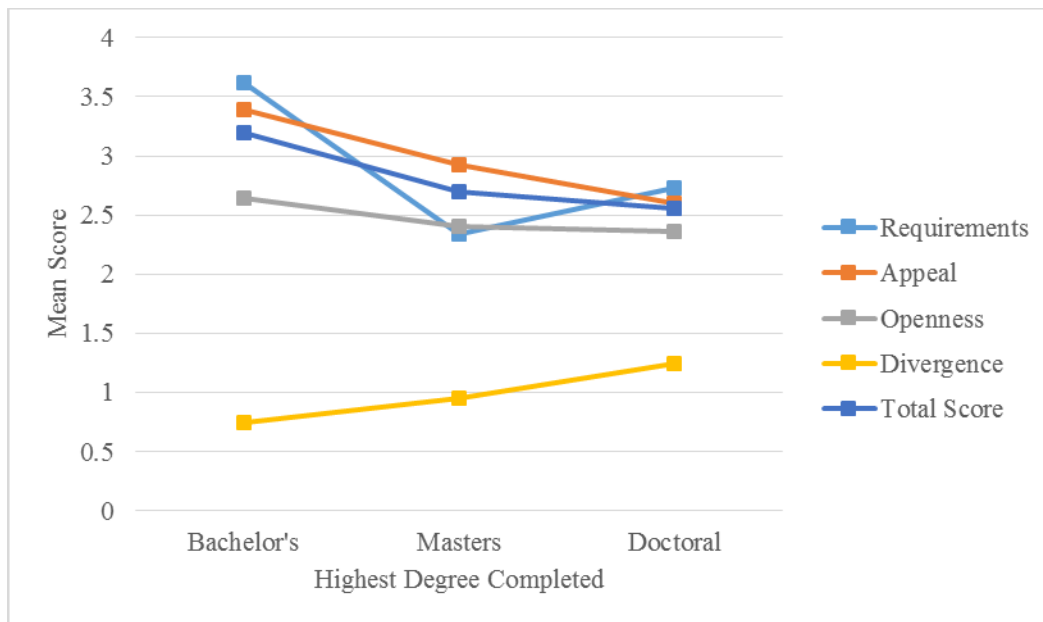


Figure 1. Mean scores for EBPAS total and subscale scores by participant education.

An independent samples  $t$ -test revealed a significant difference between participants who selected “psychology” as a primary professional discipline and participants who did not on the EBPAS Divergence subscale,  $t(96) = -2.37, p = .020$ .

Participants who selected “psychology” as a primary professional discipline endorsed higher perceived divergence of EBPs with usual practice ( $M = 1.25, SD = .50$ ) compared to participants who did not ( $M = 0.94, SD = .58$ ). As the EBPAS Divergence subscale was skewed, this analysis was also conducted using bootstrapping. When bootstrapping was used, the results of this analysis were no longer significant.

Independent samples  $t$ -tests revealed significant differences between participants who indicated they were licensed in a mental health field and participants who did not on the EBPAS Requirements subscale,  $t(91) = -3.18, p = .002$ , and the EBPAS total score,  $t(89) = -2.74, p = .007$ . Providers who were not licensed endorsed more positive attitudes toward adoption of EBPs if required to do so ( $M = 3.05, SD = .94$ ) compared to licensed providers ( $M = 2.30, SD = 1.10$ ). In addition, providers who were not licensed endorsed more global positive attitudes toward the adoption of EBPs ( $M = 2.91, SD = .50$ ) compared to licensed providers ( $M = 2.61, SD = .45$ ). Due to non-normality in the outcome variables, analyses were also conducted using bootstrapping and yielded similar results for the Requirements subscale,  $t(71) = -2.38, p = .011, 95\% CI [-1.09, -0.15]$  and the total score,  $t(71) = -2.51, p = .021, 95\% CI [-0.54, -0.06]$ .

A one-way independent ANOVA revealed significant effects of participant years of professional experience on EBPAS total scores,  $F(4, 84) = 3.00, p = .023$ . Participants who indicated they had 0 to 5 years of professional experience endorsed more global positive attitudes toward the adoption of EBPs ( $M = 2.95, SD = .47$ ) compared to participants who indicated they had 21 or more years of professional experience ( $M = 2.44, SD = .42$ ). No other significant differences in participant attitudes toward EBPs based on participant years of professional experience were found. As the one-way

ANOVA is robust to non-normality, bootstrapping was not conducted. Independent samples *t*-tests revealed no significant differences on any EBPAS subscales or the EBPAS total score when comparing participants who provided services to infants to participants who did not.

An independent samples *t*-test revealed a significant difference between participants who selected “family systems” as a primary theoretical orientation and participants who did not on the EBPAS Appeal subscale,  $t(94) = -2.51, p = .014$ . Participants who selected “family systems” as a primary theoretical orientation endorsed more positive attitudes toward the adoption of EBPs given their intuitive appeal ( $M = 3.10, SD = .58$ ) compared to participants who did not select this orientation ( $M = 2.76, SD = .64$ ). Due to non-normality in the outcome variable, this analysis was also conducted using bootstrapping and yielded similar results,  $t(71) = -2.77, p = .004$ , 95% CI [-0.80, -0.14]. No other significant differences in participant attitudes toward EBPs based on participant theoretical orientation were found.

Independent samples *t*-tests revealed significant differences between participants who endorsed “use of intervention strategy by respected colleague” as an influential factor in their choice of intervention strategy and participants who did not in mean scores on the EBPAS Appeal subscale,  $t(95) = -3.58, p = .001$ , and EBPAS total scores,  $t(89) = -2.72, p = .008$ . Participants who endorsed “use of intervention strategy by respected colleague” as an influential factor in their choice of intervention strategy endorsed more positive attitudes toward the adoption of EBPs given their intuitive appeal ( $M = 3.1, SD = 0.5$ ) compared to participants who did not endorse this item ( $M = 2.7, SD = 0.7$ ). Participants who endorsed this item also endorsed more global positive attitudes toward

the adoption of EBPs ( $M = 2.9, SD = .50$ ) compared to participants who did not endorse this item ( $M = 2.6, SD = .50$ ). Independent samples  $t$ -tests revealed no other significant differences on EBPAS scores based on participants' endorsement of influential factors in their choice of intervention strategy. As the EBPAS Appeal scale was negatively-skewed, this analysis was also run with bootstrapping and revealed similar results,  $t(71) = -2.81, p = .006, 95\% CI [-0.70, -0.14]$ .

**Participant knowledge of evidence-based practices.** The KEBSQ total scores were available for 77 participants. Providers scored on average 92.0 ( $SD = 13.5$ ) out of a total possible score of 160 (57.5% accuracy). Scores ranged from 69 to 151 points. KEBSQ scores were not significantly correlated with EBPAS total scores or any of the EBPAS subscales. A simple linear regression was used to determine whether age significantly predicted participant knowledge of EBPs. Participant age significantly predicted scores on the KEBSQ,  $R^2 = .07, F(1, 74) = 5.59, p = .021, B = -0.27 (SE = .13)$ . The coefficient value of -0.27 indicates that a one-year increase in participant age leads to a -0.27 decrease in KEBSQ score, suggesting that as participants get older knowledge of EBPs decreases. Two outliers for KEBSQ scores were identified by examining leverage indices (2 participants with scores greater than 120). As discussed previously, 4 outliers for participant age were also identified with this method. When this analysis was conducted without the outliers, results were no longer significant with or without bootstrapping.

An independent samples  $t$ -test revealed a significant difference between participants who selected "humanistic or client-centered" as a primary theoretical orientation and participants who did not on KEBSQ scores,  $t(75) = 2.12, p = .037$ .

Participants who selected “humanistic or client-centered” as a primary theoretical orientation demonstrated less knowledge of EBPs ( $M = 86.22$ ,  $SD = 10.89$ ) compared to participants who did not select this orientation ( $M = 93.78$ ,  $SD = 13.83$ ). Due to non-normality in the outcome variable, this analysis was also conducted using bootstrapping and yielded similar results,  $t(71) = 2.21$ ,  $p = .013$ , 95% CI [1.66, 14.37]. No other significant differences in participant knowledge of EBPs based on participant theoretical orientation were found.

Independent samples  $t$ -tests using bootstrapping revealed no significant differences on the KEBSQ total score based on participant gender, professional discipline, licensure status, or provision of services to infants. One-way independent ANOVAs revealed no significant effect of participant education level or years of professional experience on participants’ KEBSQ scores. Independent samples  $t$ -tests revealed no significant differences on KEBSQ scores based on participants’ endorsement of influential factors in their choice of intervention strategy.

## **DISCUSSION**

The present study characterized current practices in usual mental health care for infants. Research on usual care practices is necessary to bridging the research-to-practice gap in children’s mental health care (Garland, Bickman, et al., 2010). Improving the effectiveness and efficiency of routine care requires close examination of current practices (Kolko, 2006). The current study contributes to this literature by providing descriptive data on provider, practice, and client characteristics, as well as provider use of intervention strategies and intervention programs and provider attitudes toward and knowledge of evidence-based practices. This is the first study to describe these

characteristics in usual mental health care for children younger than 4 years-old in the U.S.

### **Provider characteristics**

Providers were mostly female, licensed, and masters-level clinicians. Most providers identified themselves as mental health counselors, social workers, or psychologists. The most commonly endorsed theoretical orientations were cognitive-behavioral and family systems. Provider gender in the current sample was consistent with previous observational and survey studies with child clinicians (Garland, Brookman-Fraze, et al., 2010; Jensen-Doss & Hawley, 2011). Participant professional disciplines and theoretical orientations were consistent with Garland and colleagues' (2010) study examining child therapist practices. Providers in the current sample were, on average, older than providers in an observational study of therapy practices (Garland, Brookman-Fraze, et al., 2010) and younger than providers in a national survey of child clinicians (Jensen-Doss & Hawley, 2011). Participant education also differed from previous studies. The current sample had a lower proportion of bachelors-level providers and a higher proportion of doctoral-level providers compared to Garland and colleagues' (2010) study, and a higher proportion of masters-level providers compared to Jensen-Doss and Hawley's (2011) study. The current sample also had a higher proportion of licensed providers and participants with more years of professional experience compared to Garland and colleagues' (2010) study. However, it should be noted that direct comparisons were not made between findings in the current study and previous research, and future research should directly compare characteristics of clinicians who provide

services to infants and clinicians who do not provide these services using random sampling.

Most participants in the current study provided services to infants. Though participants who did not provide services to infants were included, recruitment efforts focused on early childhood providers. Therefore, it is likely that the proportion of clinicians who provide services for infants in the current sample overestimates this proportion in the general population of child mental health care providers. Participants who provided services to infants were significantly younger and less likely to identify a cognitive-behavioral orientation than participants who did not serve this population. It is possible that younger providers were more likely to provide services to infants due to the relatively recent emergence of the infant mental health field (Fitzgerald & Barton, 2000). Also, it is possible that infant mental health providers were less likely to endorse a cognitive-behavioral orientation because some of the cognitive processes integral to cognitive-behavior therapy (e.g., emotion awareness) are not developmentally appropriate in infancy (Freeman et al., 2008). The consistencies and inconsistencies between findings in the current study and previous research should be interpreted with caution, as it is not known how many participants in the previous studies provided services to infants.

### **Practice characteristics**

Organizations were mostly private practices, which is consistent with previous research examining usual child mental health care (Jensen-Doss & Hawley, 2011; Schoenwald et al., 2008), followed by community mental health centers and outpatient clinics. Most of the public organizations were state-funded. Most organizations provided

services to infants; however, as mentioned above, this finding could have been a result of targeted recruitment efforts. Similarly, due to recruitment efforts, most participants were located in the state of Florida. Services were provided primarily in outpatient clinics, in clients' homes, or in schools or day care centers. Participants who provided services to infants were significantly more likely to provide in-home services, which is consistent with the emphasis on home-visiting interventions for this population in the literature (e.g., Olds, 2006) and in federal policy (e.g., Maternal, Infant, and Early Childhood Home Visiting program). When organizations did not provide services to infants, lack of funding was not cited as a reason by any participants. Thus, it is possible that federal policy initiatives increasing funding for early childhood services have not affected organizational efforts to provide early childhood services. For example, Congress approved an initial \$1.5 billion investment when the Maternal, Infant, and Early Childhood Home Visiting program was established in 2010, and in April 2015, a two year extension of the program was approved (Health Resources and Services Administration, 2016).

### **Client characteristics**

Providers in the current study reported that their typical caseload is composed of clients who are mostly from low-income (63%) and ethnic/racial minority families (56%). Providers also reported that most of their clients were from English-speaking families. The proportion of racial/ethnic minority clients in previous usual care research is variable and likely based on geographic location. For example, in a study of children seen within a public community mental health system in the intermountain western U. S. region, 28% of children were ethnic/racial minorities (Warren, Nelson, Mondragon,



Baldwin, & Burlingame, 2010). In contrast, a study of children seen in the San Diego County mental health system, 74% of children were racial/ethnic minorities. Thus, the moderate rates of ethnic/racial minority families estimated by providers in the current study may reflect the diverse geographic locations of participants.

Providers reported their typical caseload is composed of slightly more male (53%) than female clients. Previous studies examining community mental health care have found larger proportions (60% to 68%) of male clients within these settings (e.g., Garland, Brookman-Frazee, et al., 2010; Trask & Garland, 2012; Warren et al., 2010). However, these studies did not include children under age 4. Though some sex differences in social and emotional development are present in infancy, sex differences in the prevalence of mental health disorders increase throughout childhood (Zahn-Waxler, Shirtcliff, & Marceau, 2008), and research has found higher referral rates for problem behaviors in preschool boys than girls (Keenan & Wakschlag, 2000). Therefore, it is possible that there are fewer sex differences in referrals for services in younger children, and future research should further examine the client population and referral rates by sex in infant mental health.

### **Intervention strategies**

The five intervention strategies most commonly endorsed by providers as used with children ages 0-3 years were: parent coping, relationship/rapport building, parent psychoeducation, family engagement, and communication skills. These five strategies were endorsed by more than 75% of participants. Three of these strategies were typically used directly with the parent in reference to the child (i.e., parent coping, parent psychoeducation, and communication skills), one was used with the child and parent

together (i.e., family engagement), and one was a general strategy (i.e., relationship/rapport building). The intervention strategies included in in the current study (from the adapted Hawaii CAMHD measure) were also used in a study which applied the distillation and matching model to 322 randomized clinical trials for child mental health treatments (Chorpita & Daleiden, 2009). The authors rated practice elements according to their frequency of use in evidence-based treatment protocols for specific problem areas.<sup>1</sup> The two most commonly endorsed intervention strategies in the current study (i.e., parent coping and relationship/rapport building) were among the least common practice elements in evidence-based treatment protocols across problem areas in Chorpita and Daleiden's (2009) study. In fact, relationship/rapport building was removed from further analyses due to a low base rate, and family engagement was among the least used strategies in evidence-based protocols. Parent psychoeducation and communication skills, however, were commonly used strategies across many of the problem areas. Based on these findings from Chorpita and Daleiden (2009), our findings suggest providers in the current sample frequently reported using strategies common in evidence-based treatments but also frequently using strategies not common in evidence-based treatments.

The five intervention strategies least commonly endorsed by providers as used with infants were: response cost, discrete trial training, catharsis, exposure, and medication/pharmacotherapy. These five strategies were selected by fewer than 25% of participants. Three of these strategies were strategies used directly with the child (i.e., discrete trial training, exposure, and medication/pharmacotherapy), and two were

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<sup>1</sup> For the purpose of this discussion, problem areas which were ostensibly not applicable to infants (i.e., delinquency, school refusal, and substance abuse) were not included.

strategies used with the parent in reference to the child (i.e., response cost and catharsis). Three of the treatment strategies least commonly endorsed by providers in the current study were commonly used for the appropriate problem areas in evidence-based treatment protocols according to Chorpita and Daleiden's (2009) study. In the 2009 study, response cost was somewhat commonly used for oppositional/aggressive behavior and to a lesser extent for attention deficit/hyperactivity. Discrete trial training was commonly used to treat Autism Spectrum Disorders (ASD), and exposure was commonly used to treat anxiety and traumatic stress. Catharsis was not included in analyses in Chorpita and Daleiden's (2009) study due to low reliability, and medication was not included, as the study focused on psychosocial treatments.

These discrepancies between the current findings and the findings in Chorpita and Daleiden's (2009) study suggest that some practice elements commonly used in evidence-based treatment programs were not frequently used with children ages 0-3 years by providers in the current study. It is possible that the low number of participants endorsing use of medication/pharmacotherapy in the current study may reflect the professional characteristics of the current sample (i.e., few physicians). Alternatively, a national study examining prescription rates in children aged 2- to 5-years-old estimated a psychotropic prescription rate of 1.0% for this age group between 2006 and 2009 (Chirdkiatgumchai et al., 2013). Therefore, the low endorsement of medication treatment in the current sample reflects national trends. Exposure was also endorsed by few providers in the current study despite its common use in evidence-based protocols. It is possible that few providers endorsed the use of exposure with children ages 0 to 3 years due to the child cognitive capabilities required for successful implementation of this

strategy. Additionally, exposure is an evidence-based treatment strategy for Obsessive-Compulsive Disorder, which is rarely diagnosed before age 4 (Garcia et al., 2009). To our knowledge, no studies have specifically identified practice elements in evidence-based interventions for children ages 0 to 3 years. Therefore, the extent to which strategies endorsed for use with this population in the current study can be compared to evidence-based practice elements is limited, and future research should identify practice elements in evidence-based interventions for infants.

### **Factors influencing choice of intervention strategy**

The factors endorsed by most clinicians as influential in their choice of intervention strategy were family culture, caregiver/child cognitive ability, and participant knowledge of intervention strategy. Most providers in the current study indicated that family culture plays a role in their selection of intervention strategy. Evidence-based treatments have been shown to be *probably efficacious* or *possibly efficacious* treatments with ethnic minority youth aged 5 years and older (Huey & Polo, 2008), and emerging research has extended these findings to Mexican American children as young as 3-years-old (McCabe, Yeh, Lau, & Argote, 2012; McCabe & Yeh, 2009). Therefore, it is possible that evidence-based interventions for infants will be effective with ethnic minority infants. Nevertheless, research examining the efficacy of interventions for infants should include racially- and ethnically-representative samples of infants. If such research suggests that evidence-based interventions are effective for infants from racial/ethnic minority families, this client characteristic may not be useful in guiding providers' choice of intervention strategy. Additionally, because family culture was not defined in the current study, it is possible that providers interpreted the term in

various ways, including family routines, family constellation, family openness to change, etc. Future research should clearly define family culture in order to disentangle these effects.

Caregiver cognitive ability may be an important factor to consider when selecting intervention strategies, as caregivers with lower cognitive functioning may experience difficulty with parenting skill-acquisition (Bagner & Graziano, 2013; Tymchuk & Andron, 1992). However, a randomized trial examining the efficacy of a home-visiting parenting skills intervention with parents with intellectual disability demonstrated improvements in parent health and safety behaviors (Llewellyn, McConnell, Honey, Mayes, & Russo, 2003). Some adaptations were made to the intervention to improve accessibility for parents with intellectual disability (e.g., additional graphics, simplified language), suggesting skill-acquisition difficulties in caregivers with intellectual disability can be ameliorated. Child cognitive ability may also play a role in the effectiveness of intervention strategies, though previous research has demonstrated that parent training interventions without adaptation can improve child problem behaviors (e.g., Bagner & Eyberg, 2007). Therefore, while some minor adaptations to interventions may be warranted, it is unclear whether caregiver/child cognitive ability should guide providers' choice of intervention strategy.

In addition to client characteristics, providers in the current study indicated that their own knowledge of intervention strategies affected their decision to use these strategies. Research has demonstrated that insufficient provider knowledge of evidence-based practices is a barrier to implementation of these practices and is associated with lower use (Sanders, Prinz, & Shapiro, 2009). Knowledge, defined as the exposure of an

individual to the existence of an innovation and the acquisition of an understanding of how it functions, is the first stage described in Rogers' (2010) model of the innovation-decision process by which change is implemented. This finding highlights the importance of training and education efforts, as such efforts have been demonstrated to increase provider knowledge of evidence-based practices (Lim, Nakamura, Higa-McMillan, Shimabukuro, & Slavin, 2012).

The factors selected as influential by fewest providers and ranked as least influential by providers who selected them were court-ordered use of strategy and use of strategy by respected colleagues. The finding that court-ordered use of strategy was among the least influential for providers in the current study was surprising, given that maltreatment victimization rates are highest for infants (U.S. Department of Health and Human Services, 2015). Though younger children are more likely to be victims of maltreatment, they are less likely to receive services compared to older children (Garland, Landsverk, Hough, & Ellis-MacLeod, 1996). Thus, it may be that while infants are overrepresented in the child welfare system (Malik, Crowson, Lederman, & Osofsky, 2002), they may not be represented in the community mental health system at similar rates.

Few providers in the current study indicated that the use of an intervention strategy by a respected colleague was influential in their choice of strategy. This finding is inconsistent with previous research suggesting that peer usage and satisfaction facilitates adoption of innovations (Frambach & Schillewaert, 2002) and social diffusion theory, which suggests that persuading key opinion leaders facilitates the dissemination of innovations within their social networks (Rogers, 2010). It is possible that variations in

participants' social networks account for the current finding. Providers who are embedded in organizations with large social networks, perhaps with opportunities for peer or group supervision, may be more likely to be influenced by their colleagues' use of intervention strategies compared to providers with smaller social networks (e.g., solo private practice). In an organization with few opportunities for peer or group supervision, providers may not be aware of the intervention strategies used by their colleagues or their colleagues' satisfaction with intervention strategies. Future research should examine the extent to which peer use of intervention strategies is influential in clinicians' choice of intervention strategy among a range of organizational structures and supervision practices. Information about the extent to which peer usage of interventions is influential in clinician adoption of EBPs depending on organizational structure and/or supervision practices would be critical to the design of future dissemination efforts. Overall, future research should continue to examine the factors which influence clinical decision-making with infants, as knowledge about these factors could be used to inform training efforts (Jensen-Doss & Hawley, 2010).

### **Early childhood intervention programs**

Six intervention programs were used "very often" or "always" by more than 20% of participants: Active Parenting, Child-Parent Psychotherapy (CPP), Speaking for Baby, Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), Parent-Child Interaction Therapy (PCIT), and Circle of Security. Active Parenting, the program used by most providers in the current study, is a video-based education program which emphasizes encouragement, building self-esteem, active listening, effective communication, and problem solving (Fashimpar, 2001). Three studies of Active Parenting were included in

NREPP's 2008 review of Active Parenting. However, only one of these studies, an unpublished manuscript, included children ages 0 to 5 years. The quality of research rating given by NREPP reviewers for positive and negative child behaviors, the primary outcomes in this unpublished manuscript, was 2.2 (on a 0.0 to 4.0 scale; NREPP, 2008).

Quality of research ratings<sup>2</sup> for the other three frequently used programs included in the NREPP database were 3.7 (average) for Child-Parent Psychotherapy (CPP), 3.8 Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), and 3.3 for Parent-Child Interaction Therapy (PCIT). The other two frequently used programs (i.e., Speaking for Baby and Circle of Security) were included based on suggestion from participants in Phase I of the current study, but these intervention programs have not been evaluated by NREPP. Additionally, two programs discussed previously with a strong evidence base (i.e., NFP, FCU) were selected as used "very often" or "always" by only 1.2% of providers in the current study. Taken together, these findings suggest infant mental health clinicians do not necessarily choose intervention programs with the strongest quality of evidence. Of note, even for the six most commonly used programs mentioned above, between 40 and 62% of providers indicated they "never" use the program. It is possible that other intervention programs not identified by NREPP and possibly with limited evidence for efficacy are frequently used by infant mental health providers. Conversely, it is possible that providers do not adhere to specific programs and use a more tailored approach to intervention.

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<sup>2</sup> Quality of research ratings included in the current discussion were based on child outcomes in studies including children aged 0 to 5 years and averaged, when more than 1 study was included.



### **Participant attitudes toward evidence-based practices**

Providers in the current study obtained a mean rating of 2.71 on the EBPAS total score, compared to a mean rating of 2.30 ( $SD = 0.45$ ) in the original sample (Aarons, 2004). Scores for this scale in the current sample were about 1 standard deviation above the mean of the original sample, suggesting more global positive attitudes toward the adoption of EBPs in the current sample. Mean ratings for the EBPAS Requirements, Appeal, and Openness subscales were similar in the current study (2.51, 2.87, and 2.36, respectively) and the original sample (2.47, 2.90, and 2.49, respectively). Providers in the current study obtained a mean rating of 1.01 on the EBPAS Divergence scale, compared to a mean rating of 1.34 ( $SD = 0.67$ ) in the original sample, suggesting less perceived divergence between EBP and current practice in the current sample. In a more recent large, national sample of mental health care providers, mean ratings were found to be 2.73 ( $SD = .49$ ) for the total score, 2.41 ( $SD = .99$ ) for the Requirements subscale, 2.91 ( $SD = .68$ ) for the Appeal subscale, 2.76 ( $SD = .75$ ) for the Openness subscale, and 1.25 ( $SD = .70$ ) for the Divergence subscale (Aarons et al., 2010). Scores in this recent national sample were similar to scores in the current study for the total scale and Appeal subscale and higher than scores in the current study for the Requirements, Openness, and Divergence subscales. These findings suggest that, compared to the recent national sample, providers in the current study endorsed lower likelihood of adopting EBPs given requirements to do so, less openness to new practices, and higher perceived divergence of usual practice with research-based/academically developed interventions.

There were no differences on EBPAS scores between providers who served infants and providers who did not serve infants. It is possible this finding reflects the low

proportion of providers who did not provide services to infants in the current study. Future research should compare attitudes toward EBPs between clinicians who provide services to infants and a matched sample of clinicians who do not provide services to infants. In the current study, bachelors-level providers endorsed more positive attitudes toward adoption of EBPs if required to do so compared to masters-level providers. This finding is consistent with Aarons and colleagues' (2010) study, which found that willingness to adopt EBP given the requirements to do so decreased with higher levels of education attainment. Bachelors-level providers also endorsed more positive attitudes toward adoption of EBPs given their intuitive appeal compared to doctoral-level clinicians in the current study. In contrast, Aarons and colleagues (2010) found that higher education level was associated with greater perceived intuitive appeal of EBPs. The greater positive attitudes toward EBPs found among bachelors-level providers suggest this group may be most receptive to EBP training efforts. Similarly, providers who were not licensed endorsed more global positive attitudes toward the adoption of EBPs compared to licensed providers. It is possible that the smaller proportion of bachelors-level providers in the current sample compared to masters- or doctoral-level providers influenced these findings. Previous research examining provider attitudes towards standardized diagnostic tools has excluded bachelors-level providers from analyses in order to minimize variability (Jensen-Doss & Hawley, 2011). In the current study, however, all providers were included, as the primary aim was to characterize the full range of infant mental health services.

Participants who indicated "use of intervention strategy by respected colleague" was an influential factor in their choice of intervention strategy endorsed more positive

attitudes toward the adoption of EBPs given their intuitive appeal and more global positive attitudes toward the adoption of EBPs compared to participants who did not select this as an influential factor. This finding is consistent with previous research, discussed above, which suggests that use by peers positively impacts adoption of innovations (Frambach & Schillewaert, 2002). However, as discussed previously, “use of intervention strategy by respected colleague” was selected by few providers in the current study. Furthermore, providers who did select this item as influential ranked it as less influential compared to other factors. Therefore, the extent to which peer use of an intervention strategy affects providers’ own use of strategies requires further examination within the infant mental health provider population.

### **Participant knowledge of evidence-based practices**

Providers in the current study scored an average of 92 out of a possible 160 points on the KEBSQ, about 5 points lower than participants in the original sample (Stumpf et al., 2009). However, the mean KEBSQ score in the current sample is consistent with other studies of youth mental care providers (e.g., Higa-McMillan, Nakamura, Morris, Jackson, & Slavin, 2014; Leathers & Strand, 2013). Younger participants in the current study demonstrated more knowledge of EBPs compared to older participants. In addition, providers who selected “humanistic or client-centered” as a theoretical orientation, demonstrated less knowledge of EBPs compared to providers who did not select this orientation. In contrast, previous research has found that provider age and theoretical orientation do not significantly impact knowledge of EBPs (Nakamura, Higa-McMillan, Okamura, & Shimabukuro, 2011).

The analysis examining age as a predictor of KEBSQ scores in the current study was no longer significant when 6 outliers were removed. Therefore, it is possible that these outliers influenced this finding. In addition, the current findings that KEBSQ scores did not significantly differ based on provider professional discipline, licensure status, or years of experience are consistent with previous research (Nakamura et al., 2011). Additionally, provider knowledge of EBPs was not associated with provider attitudes toward EBPs in the current study. Taken together, these results suggest that few provider characteristics predict knowledge of EBPs. In turn, this suggests that future training efforts for infant mental health may not need to target providers with certain demographic characteristics.

### **Limitations**

The current findings should be interpreted within the context of study limitations. The reliance on clinician self-report to estimate clinician use of intervention strategy is one potential limitation, as previous research has found limited concordance between therapist self-rated use of strategies and observer ratings (Borntrager, Chorpita, Orimoto, Love, & Mueller, 2013; Hurlburt, Garland, & Brookman-Frazee, 2010). As discussed by Garland and colleagues (2010), although direct assessment of psychotherapy practice (e.g., live observation, audio- or video- recording and coding) is potentially more objective compared to indirect assessment (e.g., therapist and/or client self-report, chart/record review), it is also more costly. Therapist self-report has been the most common method to examine psychotherapy practice (Garland et al., 2010), likely due to its practical nature. Nevertheless, future research should attempt to utilize multiple

assessment methods (e.g., Hurlburt et al., 2010) to examine infant mental health practices in order to continue to examine concordance among methods.

Some sample characteristics are also potential limitations in the current study. Due to the recruitment methods used, a large proportion of participants in the current sample reported practicing in the state of Florida. Additionally, no information regarding participant race and/or ethnicity were collected in the survey. Therefore, it is not possible to estimate whether the current sample is representative of the general population of providers. Future research should characterize provider and practice characteristics in infant mental health in a nationally representative sample of providers. The sampling and survey methodology used in the current study are also potential limitations. As mentioned previously, a random sample of the population of infant mental health clinicians cannot be drawn, as no state or national databases of these clinicians exist. The current study relied on several recruitment methods and nonprobability sampling even though probability sampling is the preferred method (Dillman et al., 2014). Therefore, it was not possible to obtain a response rate or estimate sampling error, limiting the generalizability of the current findings.

The best estimate of response rate in the current study (15%) was based on the number of participants who were sent survey emails and the number of participants who indicated they learned about the survey via e-mail. A previous online survey of mental health care providers estimated a slightly higher response rate (21.9%; Nelson & Steele, 2007). However, both in this previous study and the current study, an actual response rate could not be determined, as the number of potentially eligible participants was unknown. Future research should examine clinician self-report of usual care practices in infant

mental health using mailing or mixed-mode survey methodologies. In the current study, participants were able to choose multiple theoretical orientations and 45 participants (29.8%) selected more than one. However, participants did not rank the selected orientations. Thus, for these participants it was not possible to determine which orientation (if any) was their *primary* theoretical orientation. The descriptive nature of the study presents another limitation, as direct comparisons could not be made. However, as discussed previously, descriptive data about usual care practices are a necessary first step to improving the quality of these practices.

### **Future Directions**

Despite these limitations, the current study provided descriptive data about the range of intervention strategies, settings, and providers which characterize usual mental health care for infants. Future research should use a systematic approach, such as the distillation and matching model used by Chorpita and Daleiden (2009), to identify practice elements in evidence-based intervention protocols for infants. Next, the use of intervention strategies in usual care should be compared to these evidence-based practice elements. These comparisons will lead to the identification of effective existing services as well as quality improvement targets (i.e., areas where usual care diverges from empirically-supported treatments). In turn, this information can be used to design and implement quality improvement efforts with a focus on fit and sustainability. Future research should also assess the impact of these quality improvement interventions by comparing practices to the baseline benchmarks identified in the proposed research. Ultimately, this iterative intervention process will result in improved community-based mental health care for one of our most vulnerable populations.

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### PUBLICATIONS AND PRESENTATIONS

Barroso, N. E., Hungerford, G.M., Garcia, D., Graziano, P.A., & Bagner, D. M. (2015). Psychometric Properties of the Parenting Stress Index-Short Form (PSI-SF) in a High-Risk Sample of Mothers and their Infants. *Psychological Assessment*. doi: 10.1037/pas0000257

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