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IMPROVING SATISFACTION, ENGAGEMENT AND CLINICAL OUTCOMES AMONG TRADITIONALLY UNDERSERVED CHILDREN THROUGH CULTURAL FORMULATION

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To: Dean Michael R. Heithaus
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This dissertation, written by Amanda Sanchez, and entitled Improving Satisfaction, Engagement and Clinical Outcomes Among Traditionally Underserved Children Through Cultural Formulation, having been approved in respect to style and intellectual content, is referred to you for judgment.

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ABSTRACT OF THE DISSERTATION

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Economically disadvantaged and ethnic/racial minority children are more likely to suffer from disruptive behavior problems than their middle-to-upper-income Caucasian counterparts, yet they are less likely to receive quality mental health care and are more likely to drop out of treatment. These disparities suggest that standard practices may not properly consider the unique cultural context of child mental health problems in traditionally underserved families. Initial research focused on adult populations has indicated that incorporating the brief Cultural Formulation Interview (CFI) into assessment practices can promote improved medical communication, stronger therapeutic rapport, and greater overall patient satisfaction. To date, research on the benefits of augmenting usual assessment with the CFI has mainly been conducted with adult patients and has only examined its impact on initial engagement and satisfaction with assessment services. Research has yet to consider the effects of the CFI on prolonged engagement or ultimate clinical response. Families (N=89) receiving behavior parent training for child externalizing problems, within clinics serving underserved communities, were randomized at baseline to receive either Assessment as Usual (AAU) or CFI+AAU. Results found that caregivers participating in CFI+AAU reported greater satisfaction with their assessment (*d*=.49, *p*=.03) and higher levels of trust in their therapists (*d*=.48, *p*=.03), than did caregivers receiving AAU. Additionally, therapists reported greater overall assessment satisfaction (*d*=.37, *p*=.04) and better understanding of the families' values in the CFI+AAU compared to the AAU group (*d*=.53, *p*=.02). There was marginal significance suggesting CFI+AAU families may have been more likely than AAU families to attend their first treatment session (*OR*=3.99, *p*=.09). CFI+AAU families were significantly more likely to complete treatment than AAU families (OR=3.46, *p*=.046). Moreover, caregiver rated stigma significantly moderated treatment response (*b*=-1.10, *p*=.001); families in the CFI+AAU group responded better to treatment when they reported high stigma-related concerns and families who received AAU responded better to treatment when they reported low stigma-related concerns. These promising results underscore how a brief cultural assessment can meaningfully improve engagement in, and clinical response to, mental health services. Further research is needed to determine how and when to best leverage the CFI to improve mental health practices for underserved populations.

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CHAPTER 1. INTRODUCTION

1.1 Behavioral Difficulties Disproportionately Affect Economically Disadvantaged and Minority Children

Externalizing behavior problems are the leading cause of childhood referral to mental health services in the US, with 40% of referred children presenting with symptoms of serious oppositionality or conduct problems (Rushton, Bruckman, & Kelleher, 2002). When left untreated, behavior problems place children at risk for poor outcomes, such as drug use, impaired social functioning, lower job success, and additional mental health problems (Burke, Waldman & Lahey, 2010; Hoza, 2007; Kim-Cohen et al., 2003; Nock, Kazdin, Hiripi & Kessler, 2007; Owens, 2016; Rowe, Costello, Angold, Copeland & Maughan, 2010).

Children from minority and economically disadvantaged backgrounds are particularly more likely to experience adverse events, such as community and family violence and under-resourced childcare, that in turn are linked with later childhood externalizing problems (Hunt, Slack, & Berger, 2017). Notably, ethnic/racial minority and economically disadvantaged children are three times more likely to display behavior problems and to be affected by their outcomes (Briggs-Gowan, Carter, Skuban, & Horwitz, 2001) than their non-Hispanic White, middle-to-upper class counterparts. Accordingly, focused efforts are needed to ensure proper service utilization and engagement for behavior problems among children from ethnic/racial minority and economically disadvantaged backgrounds.

1.2 Disparities in Quality Mental Health Care

The field has made great strides in developing and evaluating effective treatments for children with externalizing problems, including parent training, school-based, and home-based services (Chronis, Jones & Raggi, 2006; Comer et al., 2013; Eyberg et al., 2008; Kaminski & Claussen, 2017). However, many of the positive outcomes associated with quality care have not been representative of racial/ethnic minority families (Eyberg et al., 2008; Miranda, Bernal, Lau, Kohn, Hwang & LaFromboise, 2005). Minority youth have historically been disproportionately underrepresented in controlled evaluations (McMahon & Frick, 2005: Miranda et al., 2005), even though they may show higher rates of behavioral problems than their non-Hispanic White counterparts (e.g., Fabrega, Ulrich & Mezzich, 1993; Fantuzzo et al., 1999; Qi, & Kaiser, 2003). More recent studies have demonstrated relatively positive response to parent training among minority families when they complete treatment, yet poor treatment engagement among minority families remains problematic (Mersky, Topitzes, Grant-Savela, Brondino, & McNeil, 2016; Borrego et al., 2006; Fernandez et al., 2009; Huey & Polo, 2018; McCabe et al., 2012; McCabe & Yeh, 2009).

1.3 Engagement in Mental Health Services

The majority of children in need of mental health care do not enroll in services (Merikangas et al., 2010; Olfson et al, 2015;), and when they do, more than 50% drop out of treatment prematurely (Nock & Ferriter, 2005; Pellerin, Costa, Weems, & Dalton, 2010). The situation is particularly concerning for racial and ethnic minority and economically disadvantaged children who receive fewer and poorer quality of mental health services relative to their non-Hispanic White counterparts (Alegría, Green, McLaughlin, & Loder, 2015; Alegria, Vallas & Pumariega, 2010; Kataoka, Zang & Wells, 2002; NIMH, 2001). Specifically, minority families are less likely to initiate and engage in treatment for externalizing problems (Bussing Zima, Perwien, Belin & Widawski, 1998; Garland, Lau, Yeh, McCabe, Hough, & Landsverk, 2005; Padgett, Patrick, Burns, Schlesinger, & Cohen, 1994). When families do seek services for externalizing problems, families of racial or ethnic minority and economically disadvantaged backgrounds are more likely to have poor participation and retention (Chacko, et al., 2016; Fernandez, 2011; Gross et al., 2014; Kazdin, 1993; Lavigne, et al., 2010; Leijten, Raaijmakers, de Castro, & Matthys, 2013). Given that poor engagement is associated with worse treatment outcomes (Danko, Garbacz, & Budd, 2016; Haine-Schlagel & Walsh, 2015; Lyon, & Budd 2010), it is imperative that engagement strategies are utilized to improve this issue.

Engagement in mental health services has most often been defined in terms of Attendance, Adherence, Relationship and Cognitions (Becker et al., 2015; Becker et al., 2018; Chacko et al., 2916; Gopalan, Goldstein, Klingenstein, Sicher, Blake, & McKay, 2010). Attendance refers to initial service initiation, attendance to therapy sessions, and treatment completion. Adherence describes appropriate participation in treatment sessions such as homework completion. The relationship domain of engagement refers to the therapeutic alliance formed, characterized by the quality of the affective bond between the therapist and patient/family and the extent of therapist-patient/family agreement on treatment goals and tasks.

Cognitions include concepts such as understanding of treatment and willingness to change.

1.4 Predictors of Engagement

Minority and economically disadvantaged families are faced with a multitude of barriers to mental health care. Logistical and practical barriers to care—such as transportation, geographic workforce shortages in mental health care, competing childcare needs, and costs—have been well-researched (Boyd-Franklin, 1993; Bussing, 2003; McKay, McCadam, & Gonzalez 1996; Spoth, Redmond, Hockaday, & Shin, 1996; Sue et al., 1991). At the same time, cultural, attitudinal, and stress-related predictors of engagement—such as stigma, ethnic identity, and daily stress (Eiraldi et al., 2006, McKay & Bannon 2004)—have been less frequently studied.

In recent years researchers have begun to move beyond logistical and practical barriers to also assess cultural, attitudinal and stress-related factors in more diverse populations. For example, even when logistical barriers are not a problem, many racial and ethnic minority parents, relative to non-minority parents, have been found to hold more *stigma-related beliefs* about mental health problems and treatment (e.g., shame about child mental health problems, worry about what family members would think if they engaged in mental health treatment for their children; Mukolo & Heflinger, 2011; Richardson, 2001; Young & Rabiner, 2015). Moreover, *ethnic identity*—referring to a subjective experience and self-identification as a member of a particular group, their sense of belonging, and attitudes toward their ethnic group membership (Phinney, 2003)—can influence treatment engagement. For example, higher levels of ethnic identity among African American and Latino/a families has been found to predict lower levels of treatment engagement (Burnett-Zeigler, Lee, Bohnert, 2017; Yasui, Hipwell, Stepp, & Keenan, 2015; Richman, Kohn-Wood & Williams, 2007). In addition, daily stressors—including parenting stress, concerns about finances and employment, role overload, and interpersonal conflict—can undermine caregiver engagement in services for their children (Ingoldsby, 2010; McKay et al., 2001; Stein, Kulish, Williams, Mejia, Prandoni, & Thomas, 2017). It is imperative to consider predictors of engagement when attempting to address disparities in service reception and engagement.

1.5 Cultural Formulation to Improve Engagement

Disparities in quality of care may be due to limitations in the provision of culturally responsive care, prompting increased calls for the integration of culture context in the provision of mental health services (Gopalan et al., 2010; La Roche, 2005; La Roche & Christopher 2009; Sue et al., 1991; Sue & Zane, 2009). Culture includes ones ethnic/racial identity as well “systems of knowledge, concepts, rules, and practices that are learned and transmitted across generations. Culture includes language, religion and spirituality, family structures, life-cycle stages, ceremonial rituals, and customs, as well as moral and legal systems” (American Psychiatric Association, 2013). One’s cultural context can deeply affect the way in which one views mental health and interacts with mental health services (Kirmayer, 2006; Lewis-Fernández et al. 2013). Culture plays a critical role in parenting and can be a key factor in how families approach mental health and its treatment (Forehand & Kotchick 1996).

Across the past two decades, the field has witnessed a proliferation of treatment adaptations tailored for specific underserved cultural populations (Martinez & Eddy, 2005; Matos, Bauermeister, & Bernal, 2009; McCabe & Yeh 2009; McCabe, Yeh, Garland, Lau, & Chavez, 2005; Parra-Cardona et al., 2017). These adapted treatments have typically been associated with positive response when delivered to patients from those cultural groups for which the treatments were adapted and have overall shown advantage to their non-adapted intervention counterparts (Griner & Smith 2006; Hall, Ibaraki, Huang, Marti, & Stice 2016), yet little work has been done to assess improvements in treatment engagement for culturally adapted parent training (Butler & Titus, 2015). Treatment adaptations for different cultural groups can be time- and resource-intensive, and when delivered indiscriminately to all patients from a particular background, these treatment adaptations can over apply cultural values to patients based simply on their demographic characteristics, regardless of their relative appropriateness for particular individuals (Kleinman and Benson; 2006; Lau, 2006; Sue & Zane, 1987 Sue & Zane, 2009). It may be that a broader patient-centered infusion of relevant cultural factors into standard evidence-based practices can yield improved care and maximize treatment engagement among traditionally underserved families without the need to wholesale adapt treatment protocols to each population (Lewis-Fernández et al., 2014).

To improve assessment practices and engagement in mental health care, cultural psychiatrists developed the Outline for Cultural Formulation (OCF) as a conceptual model to systematize cultural assessment and to identify patients' cultural explanations of mental illness and interaction with mental health care (American Psychiatric Association 1994). Despite its promise, providers reported its lack of standardization or explicit outline to be a barrier to implementation and systematic evaluation (Kirmayer et al., 2001; Lewis-Fernández, Aggarwal, Hinton, Hinton, & Kirmayer, 2015; Mezzich et al., 2009). To address these concerns, the Cultural Formulation Interview (CFI) was recently developed to offer a brief, standardized, semi-structured cultural assessment based off of the OCF (Lewis-Fernández et al. 2014). The CFI assesses the patient's individual symptom experience, views of mental health and views and experiences of treatment via four domains: (1) cultural definition of the problem, (2) cultural perceptions of cause, context, and support, (3) cultural factors affecting self-coping and past help seeking, and (4) cultural factors affecting current help-seeking (American Psychiatric Association, 2013). Expanding on the clinical information usually obtained in quality assessment, the CFI elicits structured information about the cultural context of presenting problems as they relate to the patient's explanatory, coping, and help-seeking perceptions. Incorporating the CFI in pretreatment assessment may improve therapeutic alliance, patient satisfaction, and treatment engagement by helping therapists to understand the broader context of presenting problems through the patients' perspective, to appreciate and potentially address cultural barriers that can arise, and to learn about cultural strengths that can be drawn upon in treatment (Aggarwal et al., 2016; Díaz, Añez, Silva, Paris & Davidson, 2017). A small, but growing, body of research focused on adult populations provides initial indication that incorporating the CFI as part of pretreatment assessment can indeed lead to improved health care communication, stronger rapport with the therapist, and overall patient satisfaction (Aggarwal, Desilva, Nicasio, Boiler & Lewis-Fernández, 2015; La Roche & Bloom, 2018).

Although the CFI has only been formally evaluated in adult patient samples, given the extent to which culture can profoundly influence parenting and mental health (Sue & Zane 2009), and given the very central role that parents often play in service utilization and engagement for youth (Barkley et al., 2000; Cunningham et al., 2000), the CFI may offer a promising tool for optimizing satisfaction, engagement, and outcomes in the context of parents engaging in their child's mental health care. Indeed, using critical culture-related information (such as that assessed in the CFI) to define presenting problems and to influence treatment planning may yield improved outcomes (Aggarwal et al., 2016; Hall et al., 2016) without the need to adapt and apply a treatment for an entire population of individuals. By gathering critical (and often unassessed) culture-related data in routine practice, therapists may develop a more culturally responsive treatment plan and allow families to feel more comfortable discussing culture-related information and disagreements.

The small body of research utilizing the CFI in adults has focused on patient perceptions of the assessment and initial engagement, and have found that the

CFI may be a useful tool for improving initial rapport, communication, and patient satisfaction (e.g., Aggarwal et al., 2015; Lewis-Fernández et al., 2017). To date, studies using the CFI have not focused on subsequent patient engagement in treatment, nor have they evaluated more distal treatment outcomes associated with initial use of the CFI. Moreover, despite increased qualitative and cross-sectional research focused on the CFI (e.g., Aggarwal et al, 2013; 2015; Diaz et al., 2017; La Roche & Bloom, 2018; Parakikar, Sarmukaddam, Patil, Nulkar & Weiss, 2015), its effects have yet to be evaluated in a controlled fashion.

1.6 Summary and Present Study

Research evaluating the benefits of augmenting mental health assessment with assessment of the cultural context of mental health problems has been lacking on many fronts. First, only recently has a broad structured patient-centered assessment been developed—i.e., the CFI—to systematically probe cultural factors as they may relate to patient definitions and perceptions of presenting problems, coping, and help-seeking. Second, while case studies have been conducted with children, the effects of the CFI have been examined primarily in the context of adult patients (La Roche & Bloom, 2018; Aggarwal et al., 2015; Parakikar et al., 2015). Third, extant research using the CFI has only examined its impact on satisfaction with assessment services and initial engagement, and has yet to consider potential CFI effects on subsequent treatment engagement or more distal clinical outcomes (Aggarwal et al., 2015). Fourth, despite extensive field trials, cross-sectional, and qualitative research with the CFI, the effects of the CFI have yet to be evaluated in a controlled trial. Finally, although there is reason to believe that the structured incorporation of cultural formulation into mental health assessment may be particularly useful for traditionally underserved persons who are impacted by cultural, attitudinal, and stress-related factors, research has yet to examine whether there may be particular CFI benefits for racial/ethnic minority patients reporting higher stigma, ethnic identity, and daily stress.

The current dissertation study utilized a pilot randomized design to evaluate whether augmenting pretreatment assessment procedures for child behavior problems with the CFI improved caregiver satisfaction with pretreatment assessment, caregiver satisfaction with treatment, parent engagement in subsequent behavior parent training, and ultimately treatment outcomes. Analyses further considered whether cultural, attitudinal, and stress-related factors predictors of engagement (i.e. stigma, ethnic identity, and daily stress) moderated the effects of the CFI on satisfaction, treatment engagement, and treatment outcomes. The study was conducted within a large South Florida academic medical center/community mental health network that provides parent-training services for child behavior problems to a predominately low-income minority patient population. Participating families (N=89) were randomized at baseline to receive either the Assessment as Usual (AAU) or CFI+AAU, prior to participating in a course of behavioral parent training.

1.7 Hypotheses

1) **CFI feasibility.** As the first study to evaluate the use of the CFI in the context of children's mental health care, the first aim of this work was to consider the feasibility of incorporating the CFI into parent-report assessments prior to

treatment for child behavior problems. Feasibility of recruitment, condition integrity and fidelity were monitored. Additionally, therapist reports of CFI utility and acceptability were examined. *It was hypothesized that therapists could deliver the CFI with adequate fidelity and that therapists would rate the utility and acceptability of the CFI highly.*

2) **CFI effects on satisfaction, engagement and clinical child outcomes.** Parents and therapists reported on their satisfaction with the intake interview and treatment. Engagement outcomes were measured via: (a) initial treatment attendance, (b) dropout rate (c) session attendance rate, (d) homework completion rate, and (e) therapeutic alliance. Clinical outcomes were measured via time to parent mastery of therapy skills and parent ratings of child behavior problems*. It was hypothesized that CFI+AAU families, relative to AAU families, would report greater satisfaction with services, would exhibit greater engagement in subsequent parent training services, and would achieve greater clinical outcomes following treatment.*

3) **Individual differences.** Exploratory analyses examined the potential moderating roles of attitudinal, cultural, and stress-related engagement predictors on CFI effects. *It was hypothesized that CFI effects* on parent satisfaction, treatment engagement and clinical outcomes *would be particularly strong among families with higher stigma-related concerns, ethnic identify, and daily stress.*

CHAPTER 2. METHOD

2.1 Participants

The participants were 89 children ages 2-7 (M = 5.10, SD =1.65), and their primary caregiver, recruited from the natural flow of families presenting for parent training services at three South Florida community mental health centers associated with University of Miami Mailman Center for Child Development (Miller School of Medicine). Through a locally grant funded program called PCIT-Community Connect (CC), University of Miami Mailman Center for Child Development has partnered with local non-profits (ConnectFamilias and Touching Miami with Love) to provide free parent training services for families within their communities in three traditionally underserved locations in Miami-Dade County, FL: Overtown, Little Havana, and Homestead. Some families are also connected to natural helpers (i.e. community health workers) who provided support throughout the treatment process. University of Miami PCIT-CC is funded to serve children with a history of behavior problems and/or child abuse or neglect, and only excludes youth if their primary caregiver is actively abusing illegal substances. All children 2-7 years-old presenting to University of Miami PCIT-CC (regardless of comorbid concerns) were eligible for this study.

Table 1 presents baseline demographic and clinical characteristics of the sample, as well as significance tests for group differences. Study variable correlations are presented in Table 2. Approximately two-thirds of the children were male and the majority of families were from ethnic and/or racial minority backgrounds, with more than 90% of the children identified as a member of a racial and/or ethnic minority group by the parents. Regarding ethnicity, 63% of the youth were identified by their caregivers as Hispanic, 4.5% were identified as Haitian, and the rest were identified as non-Hispanic. Regarding race, 63% identified as White, 21% as African American or Black, 9% as bi/multiracial, 1.1% as Native American, 1.1% as Asian, and 4.5% selected Other. Additionally, the current sample was representative of families from various economic backgrounds based on their income to needs ratio. Approximately 51% of families fell in the lower range with regard to income-to-needs (see Demographics section, below), with 23% of families falling in the extreme poverty range, 11% in the poor range, and 17% in the low-income range. In contrast, almost half of the participating families were in the adequate income-to-needs range or higher. Due to the low response rate of income and complete missing income data from one of the sites, income to needs ratio was not used in further analyses. Housing and Food Insecurity was also assessed. In regards to housing insecurity, roughly one-third of families lived with more than 2 people per bedroom, and roughly one in five temporarily lived with others due to economic difficulties. In regards to food insecurity, approximately one in ten families cut or skipped meals due to economic difficulty, one in five agreed that the food that they bought did not last them at least sometimes in the past year, and one in five reported at least sometimes that they could not afford to eat balanced meals.

In regards to education, approximately 43.8% of participating caregivers completed a 2-year college degree or higher. Nearly 33% of families received treatment and study activities in Spanish. Roughly one in five families had some

Department of Children and Families (DCF) involvement, although available data did not specify whether parent training services were being mandated in relation to their DCF involvement.

Mean differences of baseline factors were assessed to determine the successful randomization of families (Table 1). Chi-square analyses and t-tests examined baseline differences across groups including clinical severity and sociodemographic variables to demonstrate successful randomization. An alpha threshold of .25 was used to determine inclusion of covariates. No differences were found between groups in regards to baseline behavior problem severity, natural helper involvement, or child and caregiver sociodemographic variables. Notably, DCF involvement was marginally significant and language of service delivery was significantly different between conditions (χ^2 (1,N=89) =3.66, p= .06; χ^2 (1,N=89) =4.74, p= .03). Additionally, caregiver race and caregiver ethnicity, both fell below the alpha cutoff (χ^2 (5,N=89) =10.40 *p*=.07; χ^2 (2,N=89) = 4.14 *p*=.13). Child race and ethnicity also fell below the alpha threshold, however only caregiver race/ethnicity was included as a covariate in further analyses as caregiver and child race ethnicity nearly overlaps completely, and caregivers received the intervention. Additionally, the total length of CFI+AAU assessments was significantly longer than AAU assessments (*b* =.05, p =.03) by approximately 11 minutes. The average assessment length was approximately 2 hours and 19 minutes in the CFI+AAU group, compared to 2 hours and 8 minutes in the AAU group. The assessment length included all clinic procedures as well as the assessment interviews. The site where the services occurred was also controlled for due to group differences (χ^2 (2, N=89) =9.37 *p*=.01). Accordingly, DCF involvement, language of service delivery, caregiver race/ethnicity and length of intake assessment were included as control variables in all analyses examining condition differences.

2.2 Procedures

Providers in the current study who conducted all baseline clinical assessments and subsequent services (N=4) were masters or doctoral level community therapists providing clinical services across the three community clinics in which this study was conducted. All therapists were from ethnic or racial minority backgrounds. Three out of the 4 therapists were new to delivering PCIT and therapists were trained by a certified trainer prior to delivering PCIT. These therapists did not work for the PI or the study. The same therapists conducted both AAU and CFI+AAU assessments and provided treatment to the families following their assessment. Three out of the four therapists were Spanish speaking and conducted the intakes and treatment in Spanish based on patient preference. After confirming inclusion criteria patients were randomized to receive either Assessment as Usual (AAU) alone, or to receive the CFI followed by the AAU (CFI+AAU). The pretreatment assessment consent procedures include an intake interview (AAU or CFI+AAU, depending on randomization assignment), additional assessments unrelated to the present study, and generally occurred over two to three one-hour sessions. Families completed self-report measures directly following their intake interview, at midtreatment/after they completed the first phase of treatment, and at posttreatment/when they completed the second phase of treatment. Forty-eight (54%) families completed the first phase of treatment, and 40 (45%) families completed both phases of treatment. The average length of treatment for completers was approximately 24 weeks. Participants received treatment as described below.

2.2.1 Description of Treatment. After pretreatment assessment, patients then participated in a course of Parent-Child Interaction Therapy (PCIT), a well-established parent-training program which has demonstrated considerable empirical support in the treatment of child behavior problems and maladaptive family patterns (Comer et al., 2017; Chaffin et al., 2004; Herschell et al., 2002; McCabe & Yeh, 2009; Nixon, Sweeney, Erickson, & Touyz, 2004). PCIT consists of two phases, a relationship-building phase (Child Directed Interaction; CDI) and a discipline-focused phase (Parent Directed Interaction; PDI) (Eyberg & Funderburk, 2011). In CDI, parents learn a set of positive attending skills including, behavior descriptions, reflections and labeled praises, and they are taught to avoid negative or directive attention including questions, commands, and criticism. The PDI phase consists of learning effective discipline strategies. A course of PCIT is complete when a family (a) reaches CDI mastery criteria, (b) reaches PDI mastery criteria, and (c) parent-rated behavior problems decrease to below the clinical cutoff on the ECBI (see Eyberg & Funderburk, 2011). Accordingly, the length of PCIT is titrated for each family depending on parent mastery of skills and child behavioral improvements.

2.3 Study Conditions

Assessment as Usual (AAU). *Assessment as Usual (AAU)* entailed the standard assessment procedures used in the PCIT-CC program. This included a parent interview consisting of questions regarding the child's developmental milestones, educational history, medical history, disruptive behavior symptoms, previous treatment experiences, and parenting strategies.

AAU+CFI. In addition to AAU, families in CFI+AAU participated in the Cultural Formulation Interview (CFI; American Psychiatric Association, 2013)—a brief (16-item) semi-structured interview designed for therapists to assess a patient's cultural identity and how it might affect key aspects of their understanding of their clinical presentation and/or care. The CFI assesses the patient's individual symptom experience, their perceptions of mental health, and their perceptions and experiences of treatment via four domains: (1) cultural definition of the problem (e.g., "*People often understand their problems in their own way, which may be similar to or different from how doctors describe the problem. How would you describe your problem?*"), (2) cultural perceptions of cause, context, and support (e.g., "*Are there any kinds of stresses that make your [PROBLEM] worse, such as difficulties with money, or family problems?*"), (3) cultural factors affecting self-coping and past help seeking (e.g., "*Are there any aspects of your background or identity that make a difference to your [PROBLEM]?*"), and (4) cultural factors affecting current help seeking (e.g., "*Has anything prevented you from getting the help you need? For example, money, work or family commitments, stigma or discrimination, or lack of services that understand your language or background?*")

(American Psychiatric Association, 2013). In the current study, therapists conducted the CFI in relation to the problem the parent is having with their child or their relationship with their child. See Appendix A for the full CFI. For CFI+AAU cases, therapists administered the CFI prior to the AAU. The official Spanish translation of the CFI was used with Spanish-speaking families.

2.4 Staff Training

Prior to conducting study assessments, all therapists and their two supervisors participated in a two-hour CFI training led by the study PI and a faculty member with experience training on the CFI (approved by one of the CFI developers). Based on previous recommendations (Aggarwal et al., 2016) training consisted of reviewing the CFI's written guidelines, a video demonstration, role-plays with feedback, and discussion of possible barriers to implementation. Additionally, how to prevent contamination between conditions was discussed. Therapists were masked to study hypotheses, but not to study condition. Throughout the training, therapists and supervisors reviewed how and when to incorporate CFI-related information into their treatment planning and engagement strategies for families who are at risk of dropping out of treatment. A booster training involving role-plays was administered prior to therapist implementation to optimize fidelity. Additionally, therapists received structured feedback through ratings of fidelity for their first case prior to seeing cases on the study. Two additional one-hour booster sessions were conducted to address barriers to CFI implementation, to prevent integrity drift, and to prevent contamination between conditions.

2.5 Measures

Figure 1 presents a grid of all measures and the time points at which they were administered. Patient forms were administered through Qualtrics, a secure online data program, or by paper when families preferred. All measures completed by parents were available in English and in Spanish.

2.5.1 Demographics. Participants' race, ethnicity, income-to-needs ratio (INR), housing insecurity, and food insecurity were collected. INR was calculated for each family by dividing their total household income by the Federal Poverty Threshold (FPT) for that year for a household of that family's size. The INR is a continuous score with an income to needs ration of 1 representing income at the FPT. Values less than 1 denote incomes below subsistence level; values > 1 denote incomes above the FPT. The INR can also be categorized: "extreme poverty" (INR ≤ .5), "poor" (.5< INR ≤1), "low-income" (1<INR≤2), "adequate-income" (2<INR≤4), and "affluent" (INR > 4). Caregiver-report of housing insecurity was measured by three items from the U.S. department of Housing and Urban Development (HUD) including 1) *How many times have you moved in the past year*, 2) *During the past year, have you had more than 2 people per bedroom*, and 3) *In the past year, have you temporarily lived with other people because of economic difficulties*? Items 2 and 3 were summed to form a total score for housing insecurity. The housing insecurity total score was used in further analyses to account for resource security. Food insecurity was assessed by 5 items from the U.S. Department of Agriculture (USDA) including 1) *We worried whether our food would run out before we got money to buy more*, 2) *We couldn't afford to eat* *balanced meals*, 3) *In the last 12 months, did you ever cut the size of your meals or skip meals because there wasn’t enough money for food?*, 4) *In the last 12 months, did you ever not eat for a whole day because there wasn't enough money for food*, and 5) *In the last 12 months, did any of the children ever not eat for a whole day because there wasn't enough money for food*. Any previous history of Department of Children and Families (DCF) involvement and language of service delivery was also collected.

2.5.2 Pretreatment Assessment Length. The pretreatment assessment sessions included the consent procedures, AAU or CFI+AAU (depending on randomization), and additional assessments unrelated to the current study. Time spent across the pretreatment assessment was measured by therapist report of the total length, in minutes, to complete these procedures. The pretreatment assessment typically lasted between 2 and 3 sessions.

2.5.3 Condition Integrity. The CFI Fidelity Instrument (CFI-FI; Aggarwal et al., 2014) assesses adherence to all 16 items of the CFI on a scale from 0 = ‘No’ (therapist did not ask the question) to 1 = ‘Yes’ (therapist did ask the question). Competence in regards to empathy (i.e., *Did the Therapist paraphrase or name the patient’s emotional state?*), clarification (i.e., *Did the Therapist ask follow-up questions to understand unclear patient responses?*), patient centeredness (i.e., *Did the Therapist maintain a non-judgmental attitude (not arguing, confronting, or correcting the patient)?,* illness narration (i.e., *Did the therapist’s interactions help the patient construct and explore a narrative account of illness or did the Therapist seem to rush through the CFI?*) and word matching (i.e., *Did the therapist use the* *patient's preferred illness term whenever the CFI question stem included the term "[PROBLEM]"?*) was rated. The CFI-FI was also conducted to measure potential cross contamination across the two conditions given study therapists delivered both AAU and CFI+AAU. Psychometric properties based on the previous pilot study indicated that interrater reliability was high in regards to measuring adherence and moderate-to-extremely high for the competence items. Similar to the previous study on the CFI-FI (Aggarwal et al., 2014), interrater reliability was calculated by assessing rater concordance by item. Interrater reliability across IEs on a random 20% sample of study cases was high. Rater agreement ranged from 80%-100% on Adherence items (96.25% on average) and 70.00-100% on competence items (82.00% on average).

All baseline evaluations were video recorded and coded with the CFI Fidelity Instrument (CFI-FI) to assess CFI adherence and overall competence in the CFI+AAU group, and to ensure that AAU patients did not receive elements of the CFI. All therapists were in the rotations to see both AAU and CFI+AAU cases. Independent evaluators (IEs) masked to condition, study design and study hypotheses coded the recordings. IEs completed the therapist training, as well as an online CFI training led by one of the CFI authors (Aggarwal et al., 2018), and practiced CFI-FI coding. IEs were trained via practice coding of training videos provided by the developers of the CFI and role plays. IE's were required to meet 80% reliability on a study video prior to coding further study videos. Two study videos were used for coding reliability purposes, and IEs were above 80% reliable on both videos. Coders met biweekly with the study PI to discuss questions and avoid IE drift. IEs and the PI reviewed study tapes to resolve difficult examples and iteratively developed and updated the coding manual.

2.5.4 Therapist Perceptions of the CFI. The *CFI Therapist Questionnaire* is a 7-item measure designed for this study based on a previous study (Aggarwal et al., 2015) to assess the acceptability and clinical utility of the CFI. Therapists rated items based on a 5-point Likert-style scale ranging from 1='not at all' to 5='very much'. This measure was administered directly following the pretreatment assessment. Initial assessment of the internal consistency of the CFI Therapist Questionnaire in the current sample was high (α =.84). The measure also contained open ended questions regarding what was most useful about conducting the CFI, least useful, and what would render it challenging to incorporate into their standard care. These data are provided descriptively.

Additionally, a focus group was conducted with the four therapists to better understand their experiences implementing the CFI and their perspectives on the utility of the CFI in regards to rapport, case conceptualization, treatment planning and progress monitoring. Due to the small sample size of therapists, formal qualitative analyses were not employed, although descriptive summaries of the focus group are provided.

2.5.5 Assessment Interview Satisfaction. The *Satisfaction with Intake Interview* is a 7-item measure developed for use in the current study to assess parent and therapist satisfaction with the intake assessment. This measure assesses how well the patient/therapist felt the therapist understood the (a) families' problems overall, (b) cultural background, (c) how their culture may influence their problem, (d) values or what is important to the family, (e) how much the parent trusts the therapist to deal with their families problems, and (f) overall satisfaction with the intake interview. Items are rated on a 5-point Likert-style scale ranging from 1='not at all' to 5='very much'. This measure was administered post-intake. The internal consistency for this measure was very high for the parent version (α = .94) and for the therapist version (α =.89).

The *Therapy Attitude Inventory* (TAI; Eyberg et al, 1993) is a 10-item parent-report of satisfaction with the process and outcome of parent training including change in child behavior problems and parenting skills learned. The TAI was used to measure caregiver satisfaction with the course of treatment they received following AAU or CFI+AAU. The TAI has demonstrated excellent reliability and acceptable validity and sensitivity to treatment effects in previous studies (e.g., Brestan Jacobs, Rayfield, & Eyberg, 1999; Eisenstadt et al., 1993). Items are rated on a 1 to 5 scale Likert-style scale ranging from 1='dissatisfaction with treatment or worsening problems' to 5='maximum satisfaction with treatment or improvement of problems'. A total score is calculated by summing the item ratings. The TAI was administered at post-treatment. Internal consistency in the present sample was α = .78.

2.5.6 Engagement Outcomes. The behavioral domain of engagement was measured for each family via therapist logs that recorded: (a) initial session attendance (i.e., did family attend the first treatment session after the assessment), (b) dichotomous coding of whether they completed their full course of behavioral parent training (Completer) or whether they dropped out prematurely (Dropout),

(c) session attendance rate (number of sessions attended divided by number of weeks in treatment), and (d) mean weekly homework completion across treatment (number of days of homework completed divided by number of days possible for homework completion, averaged across all sessions).

The relationship domain of engagement was measured by the *Working Alliance Inventory-Short Form Revised* (WAI-SR; Hatcher & Gillaspy, 2006). The WAI-SR is a 12-item therapist- and patient-report measure of therapeutic alliance that assesses (a) agreement on the tasks of therapy, (b) agreement on the goals of therapy, and (c) development of an affective bond between the therapist and patient/family. Items are rated on a 5-point Likert-style scale ranging from 1='never' to 5='always' and are summed to form a total score. The WAI-SR has demonstrated strong reliability and validity in English and in Spanish (Andrade-González & Fernández-Liria 2016; Hanson, Curry, & Bandalos, 2002; Hatcher & Gillaspy, 2006; Munder et al., 2010). The internal consistency in the current study was very high for the parent version (α=.94) and for the therapist version, and (α=.93) for the therapist version. The WAI-SR was administered to therapists and parents at mid-treatment and posttreatment.

2.5.7 Clinical Outcomes. The *Eyberg Child Behavior Inventory* (ECBI; Eyberg & Pincus, 1999) is a 36-item parent-report measure of disruptive behavior problems in children from age 2 to 18. The ECBI contains an Intensity scale that measures the frequency of disruptive behaviors and a Problem scale which measures whether a behavior is problematic for the parent or not. Parents rate the intensity of their child's behavior on a Likert-style scale from 1 = 'not at all frequently' to 7 = 'very frequently'. The ECBI has demonstrated high reliability and validity in both the English and Spanish versions (Eyberg & Pincus, 1999; Garcia-Tornel et al., 1998; McCabe, Lau, Yeh, Argote, & Liang, 2010). The ECBI was administered weekly during treatment.

Parent quickness to mastery criteria was also examined as a clinical outcome. CDI mastery criteria entail parents appropriately using ten of each positive attending skill and less than three negative attending skills in a five-minute observation period. (as defined in Eyberg & Funderburk, 2011). Quickness to reach mastery was measured by the time in weeks it took for the parent to meet mastery of CDI skills as determined by therapist coding of their skills in session.

2.5.8 Service Engagement Predictors.

The stigmatization subscale of the *Parental Attitudes Toward Psychological Services Inventory* (PATPSI; Turner, 2012) was administered. The 8-item PATPSI stigmatization scale assesses caregivers' stigma related attitudes towards child mental health problems and treatment. Items include, "*I would not want others (friends, family, teachers, etc.) to know if my child had a psychological or behavior problem*", and "*I would not want to take my child to a professional because what people might think*". Items are rated on a 5-point Likert-style scale from 0='strongly disagree' to 5='strongly agree'. Item responses are summed to form a stigma total scale. Psychometric properties of the PATPSI including factor structure, internal consistency, and discriminant validity have been supported in diverse ethnic groups (Turner, 2012). The internal consistency in the current sample was α=.80. The PATPSI stigmatization scale was administered post-assessment.

Multigroup Ethnic Identity Measure- Revised (MEIM-R; Phinney & Ong, 2007) is a 6-item measure that assesses exploration of and commitment to one's ethnic group. Items are rated on a 5-point Likert-style scale from 1='strongly disagree' to 6='strongly agree'. The MEIM-R measures an individuals' own perception of their ethnic or cultural identity. Scores for the two subscales and the overall scale are calculated by averaging items. The MEIM-R has demonstrated good reliability and validity in English and Spanish versions (Phinney & Ong, 2007; Torres & Taknint, 2015; Yoon, 2011). Preliminary evidence of measurement invariance suggests this measure can be used to assess ethnic identity across racial and ethnic groups (Brown et al., 2014). The MEIM-R and the original version has been used with varying ethnic and racial groups including, Central America, Puerto Rican, African American and Haitian patients. The internal consistency in the present sample was α=.89. The MEIM-R was administered post-assessment.

The Everyday Stressors Index (ESI Hall, 1983) is a 20-item measure that assesses daily stressors experienced by economically disadvantaged parents with young children. The domains measured by this scale include financial concerns, role overload, employment problems, parenting worries, and interpersonal conflict. Items are rated on a Likert-style scale ranging from 1='not at bothered' to 4='bothered a great deal'. The ESI has demonstrated good reliability and validity (Hall, 1990; Hall et al,1996; Pollock, Amankwaa, & Amankwaa, 2005). Initial results also suggest good reliability and validity for the Spanish version (Gomez, Ashford, Linares, & Hall, 2015). A summary score of 0-60 was computed with higher scores indicating greater daily stress. The internal consistency for the present sample was α =.79. The ESI was administered post-intake.

2.6 Data Analysis Plan

Intent-to-treat analyses were employed. Missing values analyses were tested to determine the handling of missing data. Missing data were addressed through Multiple Imputation in Mplus (Enders, 2010). All regression analyses were then run in mplus. All regression analyses were conducted with the imputed data set. Logistic and linear regressions were employed to examine the effects of condition on satisfaction, engagement, and clinical child outcomes. Separate models were conducted for each outcome. First, linear regressions were conducted with condition (CFI+AAU, AAU) predicting initial caregiver and therapist satisfaction of the intake interview and treatment satisfaction. Next, linear and logistic regressions examined whether condition (CFI+AAU, AAU) predicted engagement—i.e., attendance (initial session attendance, premature drop out, and session attendance) adherence (average CDI homework during the CDI phase, and average CDI homework throughout treatment) and relationship (therapeutic alliance).

In regards to clinical outcomes linear regression analyses were conducted to assess the effects of condition on time to parent CDI skill mastery. Next, hierarchical linear modeling (HLM) was applied to examine weekly change in behavior problem severity as predicted by condition. The Akaike Information Criterion (AIC) value was used to determine which trajectory model (linear, quadratic, or logarithmic) would best fit the data. Lower AIC values indicate better fit. Linear trajectories reflect continuous change in a relatively straight line overtime and would suggest the change in behavior problem severity is relatively stable across time. Quadratic trajectories indicate that the rate of change shifts across (e.g. behavior problems may improve rapidly in the beginning of treatment, then plateau, then decrease again toward the end of treatment). Logarithmic trajectories have a steep slope immediately, with growth continuing but leveling off a bit at a more stable rate. Models included random intercepts and analyses controlled for site, length of assessment, housing insecurity, caregiver race/ethnicity, DCF involvement, language of assessment, number of sessions attended, and premature dropout.

Moderation analyses examined the relationship between three potential predictors of engagement (stigma, ethnic identity, daily stress), and their effect on the relationship between the CFI and 1) satisfaction, 2) engagement, and 3) treatment outcomes.

All analyses controlled for site, length of assessment, caregiver race/ethnicity, DCF involvement, and language of assessment due to significant group differences. Housing insecurity total score was included in the analyses to control for variance related to socio-economic status (SES). Analyses predicting session attendance, homework adherence and therapeutic alliance all additionally controlled for premature dropout. Premature dropout was included as a covariate in order to control for the shared variance with the other outcome variables. Analyses were conducted without including dropout as a covariate and the same pattern of results were determined. Odds ratios and probabilities were calculated for logistic regressions and Cohen's d effect sizes were calculated for linear regressions. Analyses predicting change in behavior problem severity also controlled for number of sessions attended.

3. RESULTS

3.1 Preliminary Findings

3.1.1 Condition Integrity. All baseline evaluations were recorded and coded by IEs to assess CFI+AAU fidelity and to ensure that patients in the AAU condition were not receiving CFI components. Results indicated that the CFI interviews were conducted with approximately 80.4% adherence. In contrast, AAU intakes were, on average, only 2.2% CFI adherent (*b* =.78, *p* = .00). In regards to competence, therapists were on average coded 77.8% competent when delivering the CFI.

3.1.2 Therapist perceptions of CFI acceptability and utility. Therapists rated their perceptions of the CFI after each CFI conducted. Therapists rated the CFI as 1="somewhat" to 5="very much" useful in influencing the quality of information they received from the caregivers in their intake interview (M=4.2 SD=.65) and the relationship they developed with the caregiver (M=4.1, SD=1.01). Therapists rated the extent to which the CFI influenced their treatment planning (M=3.8, SD=1.01) and differential diagnoses (M=3.5, SD=1.01) as "undecided" to "somewhat useful" (see Figure 2 for a graph of the means).

Therapists were also asked open-ended questions regarding what was most useful about conducting the CFI, least useful, and what would render it challenging to incorporate into their standard care. In regards to the usefulness of the CFI, therapists noted topics such as that they were able to learn more about the families' perspectives in general and in regards to their stress (e.g., immigration related stress) and social support. Therapists also reported that they felt the CFI helped families open up. In regards to the least useful aspects, the two main factors therapists reported were the time it took to administer and challenges with getting families to understand the question about background/identity.

3.2 CFI Effects on Assessment Interview Satisfaction

3.2.1 Caregiver Satisfaction with the Assessment Interview. Linear regression analyses were conducted with Condition (AAU vs. CFI+AAU) predicting each domain of caregiver satisfaction separately (see Table 3). All models controlled for site length of assessment, housing insecurity, caregiver race/ethnicity, DCF involvement and language of assessment. CFI+AAU caregivers reported significantly higher overall satisfaction with their pretreatment assessment than AAU caregivers (*b*=.43, *d=.49, p*=.03) and were more likely to report trusting their therapist to help them with their problem (*b*=.45, *d=.48, p*=.03). Full caregiver satisfaction results—including non-significant condition differences—are reported in Table 3.

3.2.2 Therapist Satisfaction with the Assessment Interview. Linear regressions examined each domain of therapist satisfaction separately as dependent variables with condition as the predictor (see Table 3). All models controlled for site, length of assessment, housing insecurity, caregiver race/ethnicity, DCF involvement, and language of assessment. Therapists reported that they understood the families' values more (*b*=.43, *d=.53*, *p*=.02) following CFI+AAU, relative to AAU assessments, and also reported significantly higher total satisfaction following CFI+AAU than AAU assessments (*b*=1.42, *d=.37, p*=.04). Full therapist satisfaction results—including non-significant condition differences—can be found in Table 3.

3.3 CFI Effects on Engagement

The effects of the CFI on several domains of engagement including attendance, adherence and relationship, were assessed. Means based on the intent to treat imputed data set for treatment engagement variables are presented, by condition, in Table 4.

3.3.1 Attendance and Premature Dropout. Initial attendance, premature dropout, and attendance rate across treatment were assessed as components of the attendance domain of engagement. There was marginal significance suggesting CFI+AAU may have been associated with somewhat greater likelihood of attendance in treatment following assessment than AAU (*b* =1.39, *OR*=3.99, *p* =.09). A logistic regression then tested assessment condition effects on premature treatment dropout. Results indicated that assessment condition significantly predicted premature dropout (*b* = 1.24, *OR*= 3.46, *p*=.046), such that AAU families were more likely to drop out of treatment than CFI+AAU families. Specifically, families in the CFI+AAU group were 78.8% likely to complete treatment, compared to 51.5% in the AAU group. Linear regression did not indicate that CFI+AAU and AAU differed with regard to attendance rate across treatment rate (*b* = 9.01, *p*=.12).

3.3.2 Homework Adherence. Linear regressions did not find support for the possibility that assessment condition predicted percentage of CDI homework completed in the CDI phase of treatment (*b*=-7.00, *p*=.31), or percentage of CDI completed across both phases of treatment (*b*= -10.00, *p*=.13).

3.3.3 Therapeutic Alliance. At mid-treatment neither caregivers (*b*=.43, *p*=.82) nor therapists (*b*=1.1, *p*=.42) reported a significant difference in therapeutic alliance between conditions. Similarly, at posttreatment, caregivers (*b*=-1.28, *p*=.30) and therapists (*b*=1.36, *p*=.30) did not report any significant differences in therapeutic alliance between conditions.

3.4 Caregiver Satisfaction with Treatment

Following the assessment, results did not find CFI+AAU families to report any more satisfaction with subsequent treatment compared to AAU families (*b*=-.36, *p*=.63).

3.5 CFI Effects on Treatment Outcomes

Analyses examined the assessment condition on PCIT treatment outcomes including parent mastery of CDI skills and child improvement in behavior problem severity over time. The models all controlled for site, length of assessment, housing insecurity, caregiver race/ethnicity, DCF involvement, language of assessment and premature dropout. The HLM model predicting change in ECBI Intensity score also controlled for number of treatment sessions completed.

3.5.1 Mastery of CDI Skills. Assessment condition was not significantly associated with time to CDI mastery (*b* = -.14, *p* = .93).

3.5.2 Treatment Response. Hierarchical Linear Modeling examined change in behavior problem severity, as measured by the ECBI, across treatment weeks. ECBI ratings were obtained during each treatment session. Linear, quadratic, and logarithmic slopes were examined and compared to model the shape and rate of ECBI changes across treatment. AIC was examined to determine which slope pattern best fit the data, with lower AIC indicating better fit. According to the AIC (AIC=6637) the logarithmic model was the best fit for the data, however, there was no condition difference in change over time (see Figure 3).

3.6 Exploratory Analyses: Moderation of CFI Effects

Table 5 presents a summary of the results of these moderation tests.

3.6.1 Stigma. Linear and logistic regression examined stigma as a potential moderator of the effects of the CFI. Regressions predicted each dependent variable separately, with stigma, assessment condition, and stigma x assessment condition entered as predictors (along with site, length of assessment, housing insecurity, caregiver race/ethnicity, DCF involvement, language of assessment and premature dropout as covariates). Models indicated that stigma did not significantly moderate the effects of assessment condition on caregiver satisfaction with the assessment, treatment satisfaction, attendance, dropout, homework completion, or therapeutic alliance, (see Table 5). In contrast, stigma moderated the effects of CFI on subsequent treatment response. In the prediction of change in child behavior problems severity across treatment, terms for stigma, stigma x condition, and stigma x condition x time were added to the HLM model. Linear, quadratic and logarithmic models were run, however, only results from the logarithmic model were interpreted, as this model best fit the data. Stigma significantly moderated the relationship between condition and change in ECBI scores across time (*b*=-1.104, *p*=.001), such that CFI+AAU families had better treatment response (i.e., greater negative ECBI change) when they presented with high baseline stigma, whereas AAU families had better treatment outcomes when they presented with low baseline stigma (see Figure 5).

3.6.2 Ethnic identity. Linear and logistic regression examined ethnic identity as a potential moderator of the effects of the CFI. Regressions predicted each dependent variable separately, with ethnic identity, assessment condition, and ethnic identity x assessment condition entered as predictors (along with site, length of assessment, housing insecurity, caregiver race/ethnicity, DCF involvement, language of assessment and premature dropout as covariates). Models indicated that ethnic identity did not significantly moderate the effects of assessment condition on satisfaction with the assessment, treatment satisfaction, attendance, dropout, homework completion, or therapeutic alliance, (see Table 5). Similarly, when adding ethnic identity and ethnic identity x assessment condition x time terms to the HLM models predicting child behavior changes across treatment, the logarithmic model again best fit the data (AIC=7065.65), but ethnic identity did not significantly moderate the relationship between condition and change in ECBI scores across time.

3.6.3 Daily stress. Linear and logistic regression examined daily stress as a potential moderator of the effects of the CFI. Regressions predicted each dependent variable separately, with stigma, assessment condition, and stigma x assessment condition entered as predictors (along with site, length of assessment, housing insecurity, caregiver race/ethnicity, DCF involvement, language of assessment and premature dropout as covariates). Models indicated that daily stress did not significantly moderate the effects of assessment condition on caregiver satisfaction with the assessment, treatment satisfaction, attendance, dropout, homework completion, or therapeutic alliance, (see Table 5). In contrast, daily stress moderated the effects of CFI on therapist satisfaction with the assessment (*b*=.18, *p*=.035) and on subsequent treatment outcomes. Specifically, higher caregiver daily stress predicted higher therapist satisfaction of CFI+AAU assessments relative to AAU assessments (see Figure 4). Moreover, when adding daily stress and daily stress x assessment condition x time terms to the HLM models predicting child behavior changes across treatment, the logarithmic model again best fit the data (AIC=7053.89), and daily stress did not significantly moderate the relationship between condition and change in ECBI scores across time (*b*=.27, *p*=.186).

3.7 Therapists' Perspectives

A focus group was conducted with the therapists who participated in this study, to better understand in their own words their experiences implementing the CFI and their perspectives on the CFI training, utility of the CFI in regards to rapport, case conceptualization, and treatment planning. Formal qualitative analyses were not presently employed, although descriptive results of the focus group are summarized.

In regards to the CFI training, therapists discussed feeling overall prepared and particularly liked practicing via role-play and having booster trainings to discuss issues with the implementation of the CFI. However, they noted that the would have liked to include more role-plays focusing on how to modify questions for families to understand them in both English and Spanish. Additionally, they felt that more role-play in Spanish would have been helpful.

In regards to implementation of the CFI, therapists voiced some challenges with getting families to understand their own cultural background or identity. Some therapists noted that they found it helpful to further probe and ask about what was important to the family, or what they valued most about their background or identity.

In regards to rapport, therapists reported that the CFI often helped families to open up and helped the therapist to better understand the families' context. For example, one therapists shared how she felt when one of her clients reported feeling stigmatized because others in her community thought that her daughter was "crazy"; " it gave me more of like how she would be feeling and what she's dealing with at home, [it] gave her a chance to even tell somebody this is like what it's like, you know, like I'm suffering like kind of alone because like nobody believes me." Additionally, therapists also noted that it seemed to be helpful for families who were initially hesitant to participate in treatment. For example, one therapist noted, "it's one of the clear times where I'm like, this was very helpful to use with this particular family in terms of like building rapport …. especially with when we got to one of the later questions about …. Providers and patients … misunderstand(ing) each other… and like the dad who was pretty like kind of guarded, like opened up and was like going on and on and on and I was like, this is great. …that's definitely like a type of question that does not appear like on a standard intake. And so like

I think that with that family… that helped … like his affect completely changed and I was like, wow, that was like a really powerful moment.”

However, therapists reported that for some families who were “closed off” or “not very self-aware” that the CFI did not feel very helpful; “trying to do it with other families where they're just like literally know nothing. Like it's been really pulling teeth." One therapist suggested using the CFI after standard intake once families had become more comfortable.

In regards to treatment planning and case conceptualization, therapists noted that understanding what bothers the family most can be helpful to motivate them later in treatment. They also discussed that they integrated information they had learned into their teach session and check-ins. Specifically, one therapist reported that they checked in regarding immigration stresses in their later sessions. She noted that such information about immigration stress is not information that would have been obtained from AAU.

4. DISCUSSION

For over a decade, evidence-based practice in mental health care has been defined as “the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences” (APA Presidential Task Force on Evidence-Based Practice, 2006)—however, it has only been very recently that brief tools have been developed to feasibly afford the systematic gathering of relevant cultural information from patients in routine assessment (e.g., Aggarwal et al., 2015; Lewis-Fernández et al., 2015, 2017). Prior to the present study, the most prominent and well-researched among these tools—the CFI

(Lewis-Fernández et al., 2015)—had only been evaluated in adult patient samples and in the context of field trials, cross-sectional, qualitative, and mixed-methods designs (Aggarwal et al., 2013, 2015; Lewis-Fernández, 2017). The present study offers the first ever randomized-controlled evaluation of the CFI, the first examination of CFI effects on downstream patient outcomes, and the first evaluation of the CFI in the context of children's mental health care.

The present randomized trial found that conducting the CFI with mostly ethnic/racial minority families presenting for behavior issues increased both therapist and caregiver satisfaction with the assessment interview and the families' likelihood to complete treatment. Adding to prior work documenting how briefly assessing the cultural context of mental health problems and help-seeking can improve medical communication in psychiatric assessment (Aggarwal et al., 2015), the present study also found that following assessments that incorporated the CFI, caregivers felt significantly more trusting of their therapists than caregivers felt following assessments without the CFI, and therapists felt they understood families' values better than did therapists following assessments without the CFI. Importantly, incorporating the brief CFI in pretreatment assessment even had a significant impact on engagement in subsequent treatment. Specifically, treatment following CFI-augmented assessment, versus treatment following usual assessment practices, was significantly less likely to result in patient dropout. Families in the CFI+AAU group had a 78.8% probability of completing treatment compared to AAU families who had a 51.5% probability of completing treatment. Further, there was marginal significance suggesting that the CFI may have been associated with greater likelihood of even attending a first session. Moreover, among caregivers reporting greater baseline stigma-related concerns, treatment following CFI-augmented assessment was associated with significantly better treatment response than for families who were low in stigma-related concerns. In contrast, for children in the AAU group, families responded better to treatment when they had low baseline levels of stigma.

The present findings are highly promising when considering potential for broad dissemination and implementation. Consistent with previous findings (Aggarwal, 2014), with relatively minimal training (3 hours) and two additional booster sessions, therapists were able to deliver the CFI with high fidelity. Moreover, therapists perceived the CFI to be useful in regards to the content and quality of information gathered, the relationship formed with the patient, treatment planning and differential diagnoses consistent with previous findings (Lewis-Fernandez, 2017). Therapists reported lower scores on the utility of the CFI for treatment planning and differential diagnoses, which may represent the more structured nature of PCIT compared to other mental health programs (Eyberg & Funderburk, 2011), and/or the fact that screening for these clinics focused primarily on children with behavior difficulties. While therapists indicated in the focus group that the additional time required to add the CFI could make it somewhat difficult to fit into already busy intake procedures, CFI+AAU families, on average, spent only eleven minutes extra in the assessment (2 hours and 19 minutes for CFI+AAU, compared to 2 hours and 9 minutes for AAU). Given that providers are rarely reimbursed for missed appointments, the additional time burden associated with adding the CFI to assessment procedures may be offset by the improved subsequent treatment engagement associated with the CFI—including significantly less patient dropout, and marginally higher rates of attendance at the initial treatment session.

The finding that therapists reported being more satisfied with CFI-augmented assessments than assessments not including the CFI, particularly when assessing caregivers with greater daily stress, provides further promising indication of the CFI's potential for broad dissemination and implementation. Research finds that providers rarely incorporate practice innovations that they do not find value in themselves (Southam-Gerow, Rodriguez, Chorpita, & Daleiden, 2012), and thus therapist satisfaction with the CFI after just minimal training and experience, as has been found here and in previous CFI evaluations (Aggarwal et al, 2015; Diaz et al., 2017; Lewis-Fernandez, 2017) likely positions the assessment tool well for sustained uptake.

Although the present randomized-controlled evaluation found the CFI to positively impact satisfaction, treatment engagement, and treatment outcomes, the mechanisms underlying these effects remain unclear. Of note, caregivers who participated in CFI-augmented assessments were overall more satisfied and reported higher levels of trust in their therapists than caregivers who participated in usual assessment practices that did not systematically assess cultural factors. These results are consistent with previous studies that found patients are more satisfied and have increased rapport with therapists when they have been asked culturally responsive questions (Aggarwal, 2015; Diaz et al., 2017). Importantly, the CFI encourages discussion of potential sources of distrust and prejudice as well as outside barriers to treatment engagement. It may be that the CFI provides practitioners with critical additional information that can be used to address potential treatment engagement issues early on, which in turn can lead to improved engagement across treatment. It may also be that sharing cultural information in a pretreatment assessment may help patients' focus on potentially relevant cultural strengths that can be drawn upon in treatment, but that they had not previously connected to their current situation. Moreover, it may be that some of the more proximal outcomes observed—such as the CFI's effects on satisfaction with the assessment and trust in the therapist—may mediate the more distal links between the CFI and treatment engagement or patient treatment outcomes. Therapist responses in the focus group further support this notion, as therapists commonly reported that CFI+AAU families felt more comfortable than AAU families opening up and sharing more information with them which the therapist was then able to integrate in further sessions.

Although few studies have actually assessed cultural formulation in child populations, researchers nonetheless encourage the use of cultural formulation to improve engagement in services (Aggarwal, 2010; Ingoldsby, 2010; La Roche & Bloom, 2018; Novins et al., 1997; Takeuchi, 2000; Yasui & Henry, 2014). The results of the current study support this notion, as CFI+AAU families were more likely to complete treatment than AAU families. Treatment completion is critical, as prior research documents how treatment dropout is associated with poorer outcomes in children and families (Yasui & Henry, 2014). Given the disproportionate dropout rates seen among minority and economically disadvantaged families (Chacko, et al., 2016; Fernandez, 2011; Kazdin, 1993; Lavigne, et al., 2010; Leijten et al., 2013), strategically incorporating the CFI into routine assessment may help reduce observed treatment engagement disparities.

The finding that the CFI improved treatment response for families reporting high levels of stigma, suggests that the CFI is particularly beneficial for traditionally difficult-to-engage families (e.g., those with high levels of stigma and stress), but that traditionally less difficult-to-engage families (e.g., those with low levels of stigma) may find a series of questions about cultural factors to be unrelated and potentially distracting. This idea is consistent with therapist perspectives voiced in the focus group; they believed the CFI was particularly helpful for families who experienced high levels of stigma, as it allowed the therapists to address this issue with the family before it interfered with treatment.

On a final note, to overcome disparities in mental health care utilization and engagement, recent years have witnessed the development of a range of adapted treatments tailored for various ethnic groups (McCabe et al., 2005; McCabe et al., 2009; Matos, Torres, Santiago, Jurado, & Rodríguez, 2006; Matos, Bauermeister, & Bernal, 2009). While these studies have shown some positive results, most have not assessed whether adaptation improved treatment engagement (Butler & Titus, 2015). Additionally, developing novel treatment adaptations for a seemingly infinite number of cultural groups—particularly after considering multiculturalism and intersectionality—is not feasible from a dissemination perspective. Further, not all members of a particular cultural group will necessarily benefit from a culturally adapted treatment. In many circumstances, cultural factors that may be relevant to some families in a particular cultural group may be irrelevant to another patient from the same cultural group, and applying an adapted treatment to attend to such cultural factors may be misguided. The present findings add to a growing body of literature (Aggarwal et al., 2013; 2015; Diaz et al., 2017; Parakikar et al., 2015) alternatively considering how a culturally infused assessment can strategically inform more personalized and culturally responsive treatment, which in turn may improve overall treatment engagement and clinical response.

Several limitations warrant comment. First, the current study did not randomly assign therapist to condition, therefore therapists were not masked to randomization. This design feature could have influenced therapist perceptions of the interview or their relationship with the patient, and could have also resulted in cross-condition contamination not captured by the CFI fidelity instrument. Future studies would do well to randomly assign therapists to control or experimental condition to prevent contamination. Second, the sample size for the current study may have made it difficult to detect some CFI effects, as well as higher order interactions and moderating effects. For example, the impact of the CFI on initial session attendance only reached trending significance ($p < .09$). Future work would do well to evaluate the CFI in larger samples of youth in order to assess more complex moderation and mediation effects and to better understand the mechanisms through which the CFI influences downstream patient outcomes. Additionally, the small sample of clinicians precluded thorough examination of how clinician characteristics may influence CFI effects. Future work with a larger sample of therapists would allow for the evaluation of individual therapist factors (e.g. training experience, cultural background, cultural competence) and their interactions with patient factors. Third, systematic tracking was not conducted to examine when and how the therapists included information from the CFI in their initial and ongoing treatment planning. Research incorporating more extensive therapist-reports and session recordings throughout treatment is needed to track therapist use of cultural information in their clinical decision-making and treatment planning. Fourth, given that PCIT is a structured therapy, there may have been relatively less opportunity for therapists to tailor treatment in light of the information received in the CFI. Future work complementing the present study would do well to assess CFI effects on treatment processes and decisions in the context of less structured treatment programs that may allow for more individualized tailoring. Fifth, the current study did not assess how supervision may have been used to discuss information from the CFI or cultural information in general. Supervision could be a useful tool for ensuring that important cultural information is incorporated into treatment planning and clinical decision-making. Sixth, the current study did not utilize focus groups or interviews with the participating families' to better understand their experience with the CFI interview in their own voice. A richer assessment of families' perspectives is needed to determine for whom and under which conditions the CFI may be most useful. Lastly, the significant amount of missing income data, including missingness from one out of the three sites, limited our ability to fully assess the families' socio-economic status. However, based on the current data, it appears that the study may not have captured those families most in need, as approximately half of families in the study reported adequate income.

Despite a number of positive CFI effects, the CFI did not uniformly result in positive outcomes in the present study. For example, the current analysis suggested that the CFI may not have a significant impact on therapeutic alliance. However, it is possible that this was due to ceiling effects, as families typically reported high therapeutic alliance. On the other hand, it may be that additional strategies are needed to complement the CFI in order to improve the patient-therapist affective bond and agreement regarding the goals and tasks of treatment. Future work should consider including observational codes of therapeutic alliance to better detect differences in the patient therapist relationship. In addition, the CFI did not significantly affect attendance rate or homework completion. While this may partly be due to the way attendance was measured (number of sessions divided by number of week, which does not allow for variability in session planning), it would also be important to assess how therapists can use the information they gathered to assess barriers to treatment and whether a combination of other engagement strategies (e.g., text/telephone reminders) may be necessary to increase attendance rate and homework adherence.

Despite several limitations, the current study is the first randomized-controlled trial to examine the effects of the CFI on satisfaction, treatment engagement and treatment outcomes, as well as the first CFI evaluation to examine its utility in children’s mental health care. Preliminary results suggest that a person-centered cultural assessment such as the CFI holds potential to improve satisfaction and engagement among traditionally underserved families, and can lead to improved downstream treatment outcomes among families reporting higher baseline stigma. Although therapists had some concerns regarding extra time needed to conduct the CFI, augmenting AAU with the CFI added only eleven minutes to an approximately two-hour assessment. Additionally, concerns about this added time are somewhat tempered by the potential of the CFI to significantly increase treatment engagement and clinical response among traditionally underserved and difficult-to-engage families.

REFERENCES

Aggarwal, N. K. (2010). Cultural formulations in child and adolescent psychiatry. *Journal of the American Academy of Child and Adolescent Psychiatry, 49*(4), 306-309.

Aggarwal, N. K., Desilva, R., Nicasio, A. V., Boiler, M., & Lewis-Fernández, R. (2015). Does the Cultural Formulation Interview for the fifth revision of the diagnostic and statistical manual of mental disorders (DSM-5) affect medical communication? A qualitative exploratory study from the New York site. *Ethnicity and Health, 20*(1), 1-28.

Aggarwal, N. K., Glass, A., Tirado, A., Boiler, M., Nicasio, A., Alegría, M., ... & Lewis-Fernández, R. (2014). The development of the DSM-5 cultural formulation interview-fidelity instrument (CFI-FI): a pilot study. *Journal of Health Care for the Poor and Underserved, 25*(3), 1397.

Aggarwal, N. K., Lam, P., Castillo, E. G., Weiss, M. G., Diaz, E., Alarcón, R. D., ... & Aguilar-Gaxiola, S. (2016). How do Therapists prefer cultural competence training? Findings from the DSM-5 cultural formulation interview field trial. *Academic Psychiatry, 40*(4), 584-591.

Aggarwal, N. K., Lam, P., Jiménez-Solomon, O., Desilva, R., Margolies, P. J., Cleary, K., ... & Lewis-Fernández, R. (2018). An Online Training Module on the Cultural Formulation Interview: The Case of New York State. *Psychiatric Services, 69*(11), 1135-1137.

Aggarwal, N. K., Nicasio, A. V., DeSilva, R., Boiler, M., & Lewis-Fernández, R. (2013). Barriers to implementing the DSM-5 cultural formulation interview: a qualitative study. *Culture, Medicine, and Psychiatry, 37*(3), 505-533.

Aggarwal, N. K., Pieh, M. C., Dixon, L., Guarnaccia, P., Alegria, M., & Lewis-Fernandez, R. (2016). Clinician descriptions of communication strategies to improve treatment engagement by racial/ethnic minorities in mental health services: a systematic review. *Patient Education and Counseling, 99*(2), 198-209.

Akincigil, A., Olfson, M., Siegel, M., Zurlo, K. A., Walkup, J., & Crystal, S. (2012). Racial and ethnic disparities in depression care in community-dwelling elderly in the United States. *American Journal of Public Health, 102*, 319-328.

Alegría, M., Green, J. G., McLaughlin, K. A., & Loder, S. (2015). Disparities in child and adolescent mental health and mental health services in the US.

Alegría, M., Vallas, M., & Pumariega, A. J. (2010). Racial and ethnic disparities in pediatric mental health. *Child and Adolescent Psychiatric Clinics of North America, 19*(4), 759-774.

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

Andrade-González, N., & Fernández-Liria, A. (2016). Spanish Adaptation of the Working Alliance Inventory-Short (WAI-S). *Current Psychology, 35*(1), 169-177.

APA Presidential Task Force on Evidence-Based Practice (2006). Evidence-based practice in psychology. *American Psychologist, 61*, 271-285.

Barker, C. H., Cook, K. L., & Borrego Jr, J. (2010). Addressing cultural variables in parent training programs with Latino families. *Cognitive and Behavioral Practice, 17*(2), 157-166.

Barkley, R. A., Shelton, T. L., Crosswait, C., Moorehouse, M., Fletcher, K., Barrett, S., ... & Metevia, L. (2000). Multi-method psycho-educational intervention for preschool children with disruptive behavior: Preliminary results at post-treatment. *The Journal of Child Psychology and Psychiatry and Allied Disciplines, 41*(3), 319-332.

Baumann, A. A., Powell, B. J., Kohl, P. L., Tabak, R. G., Penalba, V., Proctor, E. K., ... & Cabassa, L. J. (2015). Cultural adaptation and implementation of evidence-based parent-training: A systematic review and critique of guiding evidence. *Children and Youth Services Review, 53*, 113-120.

Becker, K. D., Boustani, M., Gellatly, R., & Chorpita, B. F. (2018). Forty years of engagement research in children's mental health services: Multidimensional measurement and practice elements. *Journal of Clinical Child & Adolescent Psychology, 47*(1), 1-23.

Becker, K. D., Lee, B. R., Daleiden, E. L., Lindsey, M., Brandt, N. E., & Chorpita, B. F. (2015). The common elements of engagement in children's mental health services: Which elements for which outcomes? *Journal of Clinical Child & Adolescent Psychology, 44*(1), 30-43.

Blanco, C., Patel, S. R., Liu, L., Jiang, H., Lewis-Fernandez, R., Schmidt, A. B., Liebowitz, M., & Olfson, M. (2007). National trends in ethnic disparities in mental health care. *Medical Care, 45*, 1012-1019.

Boyd-Franklin, N. (1993). Black families in Walsh, F. (Ed.). *Normal Family Process*. New York: Guilford Press.

Borrego Jr, J., Anhalt, K., Terao, S. Y., Vargas, E. C., & Urquiza, A. J. (2006). Parent-child interaction therapy with a Spanish-speaking family. *Cognitive and Behavioral Practice, 13*(2), 121-133.

Brestan, E. V., Jacobs, J. R., Rayfield, A. D., & Eyberg, S. M. (1999). A consumer satisfaction measure for parent-child treatments and its relation to measures of child behavior change. *Behavior therapy, 30*(1), 17-30.

Briggs-Gowan, M. J., Carter, A. S., Skuban, E. M., & Horwitz, S. M. (2001). Prevalence of social-emotional and behavioral problems in a community sample of 1-and 2-year-old children. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*(7), 811-819.

Brown, S. D., Unger Hu, K. A., Mevi, A. A., Hedderson, M. M., Shan, J., Quesenberry, C. P. … (2014). The multigroup ethnic identity measure-revised: measurement invariance across racial and ethnic groups. *Journal of Counseling Psychology, 61*(1), 154-161.

Burke, J. D., Waldman, I., & Lahey, B. B. (2010). Predictive validity of childhood oppositional defiant disorder and conduct disorder: implications for the DSM-V. *Journal of Abnormal Psychology, 119*(4), 739.

Burnett-Zeigler, I., Lee, Y., & Bohnert, K. M. (2017). Ethnic identity, acculturation, and 12-month psychiatric service utilization among black and hispanic adults in the US. *The Journal of Behavioral Health Services and Research*, 1-18.

Bussing, R., Zima, B. T., Gary, F. A., & Garvan, C. W. (2003). Barriers to detection, help-seeking, and service use for children with ADHD symptoms. *The Journal of Behavioral Health Services and Research, 30*(2), 176–89.

Bussing, R., Zima, B. T., Perwien, A. R., Belin, T. R., & Widawski, M. (1998). Children in special education programs: attention deficit hyperactivity disorder, use of services, and unmet needs. *American Journal of Public Health, 88*(6), 880–886.

Butler, A. M., & Titus, C. (2015). Systematic review of engagement in culturally adapted parent training for disruptive behavior. *Journal of Early Intervention, 37*(4), 300-318.

Chacko, A., Jensen, S. A., Lowry, L. S., Cornwell, M., Chimklis, A., Chan, E., ... & Pulgarin, B. (2016). Engagement in behavioral parent training: Review of the literature and implications for practice. Clinical Child and Family Psychology Review, 19(3), 204-215.

Chaffin, M., & Friedrich, B. (2004). Evidence-based treatments in child abuse and neglect. *Children and Youth Services Review, 26*(11), 1097-1113.

Chronis, A. M., Jones, H. A., & Raggi, V. L. (2006). Evidence-based psychosocial treatments for children and adolescents with attention-deficit/hyperactivity disorder. *Clinical Psychology Review, 26*(4), 486-502.

Comer, J.S., Chow, C., Chan, P., Cooper-Vince, C., & Wilson, L.A.S. (2013). Psychosocial treatment efficacy for disruptive behavior problems in young children: A meta-analytic examination. *Journal of the American Academy of Child and Adolescent Psychiatry, 52*, 26-36.

Comer, J. S., Furr, J. M., Miguel, E. M., Cooper-Vince, C. E., Carpenter, A. L., Elkins, R. M., ... & DeSerisy, M. (2017). Remotely delivering real-time parent training to the home: An initial randomized trial of Internet-delivered parent–child interaction therapy (I-PCIT). *Journal of Consulting and Clinical Psychology, 85*(9), 909.

Cunningham, C. E., Boyle, M., Offord, D., Racine, Y., Hundert, J., Secord, M., & McDonald, J. (2000). Tri-ministry study: correlates of school-based parenting course utilization. *Journal of Consulting and Clinical Psychology, 68*(5), 928.

Danko, C. M., Garbacz, L. L., & Budd, K. S. (2016). Outcomes of Parent–Child Interaction Therapy in an urban community clinic: A comparison of treatment completers and dropouts. Children and Youth Services Review, 60, 42-51.

Díaz, E., Añez, L. M., Silva, M., Paris, M., & Davidson, L. (2017). Using the Cultural Formulation Interview to build culturally sensitive services. *Psychiatric Services, 68*(2), 112-114.

Eiraldi, R. B., Mazzuca, L. B., Clarke, A. T., & Power, T. J. (2006). Service utilization among ethnic minority children with ADHD: A model of help-seeking behavior. *Administration and Policy in Mental Health and Mental Health Services Research, 33*, 607–622.

Eisenstadt, T. H., Eyberg, S. M., McNeil, C. B., Newcomb, K., & Funderburk, B. (1993). Parent–child interaction therapy with behavior problem children: Relative effectiveness of two stages and overall treatment outcome. *Journal of Clinical Child Psychology, 22*, 42–51.

Eyberg, S. M. (1993). Consumer satisfaction measures for assessingparent training programs. In L. Van de Creek, S. Knapp, & T.L. Jackson (Eds.), *Innovations in clinical practice: A source book*,Vol. 12 (pp. 377–382).Sarasota, FL: Professional Resource Press.

Eyberg, S. M., & Funderburk, B. (2011). PCIT: Parent-child Interaction Therapy Protocol: 2011. PCIT International, Incorporated

Enders, C. K. (2010). Applied missing data analysis. New York, NY: Guilford Press.

Eyberg, S. M., Nelson, M. M., & Boggs, S. R. (2008). Evidence-based psychosocial treatments for children and adolescents with disruptive behavior. Journal of Clinical Child and Adolescent Psychology, 37(1), 215-237.

Eyberg, S. M., & Pincus, D. (1999). ECBI & SESBI-R: *Eyberg child behavior inventory and Sutter-Eyberg student behavior inventory-revised: Professional manual*. Psychological Assessment Resources.

Fabrega, H., Ulrich, R., & Mezzich, J. E. (1993). Do Caucasian and black adolescents differ at psychiatric intake? *Journal of the American Academy of Child and Adolescent Psychiatry, 32*(2), 407–13.

Fantuzzo, J., Stoltzfus, J., Lutz, M. N., Hamlet, H., Balraj, V., Turner, C., & Mosca, S. (1999). An evaluation of the special needs referral process for low-income preschool children with emotional and behavioral problems. *Early Childhood Research Quarterly, 14*(4), 465-482

Fernandez, M. (2011). Treatment outcome for low socioeconomic status African American families in parent child interaction therapy: A pilot study. *Child and Family Behavior Therapy, 33*, 32–48.

Forehand, R., & Kotchick, B. A. (1996). Cultural diversity: A wake-up call for parenting training. *Behavior Therapy, 27*, 187–206

Flores, G. (2010). Racial and ethnic disparities in the health and health care of children. Pediatrics, 125(4), e979-e1020.

Funderburk, B. W., & Eyberg, S. (2011). Parent–child interaction therapy.

Garcia-Tornel, S., Calzada, E. J., Eyberg, S. M., Alguacil, J. M., Serra, C. V., et al., (1998). Inventario Eyberg del Comportamiento en Niños: Normalizacion de la version espanola y su utilidad para el pediatra extrahospitalario. *Anales Españoles de Pediatria, 48* , 475 – 482

Garland, A. F., Lau, A. S., Yeh, M., McCabe, K. M., Hough, R. L., & Landsverk, J. A. (2005). Racial and ethnic differences in utilization of mental health services among high-risk youths. *American Journal of Psychiatry, 162*(7), 1336-1343.

Gómez, M. L., Ashford, K., Linares, A. M., & Hall, L. A. (2015). A pilot test of the Everyday Stressors Index–Spanish Version in a sample of Hispanic women attending prenatal care. *Journal of Nursing Measurement*, *23*(3), 519-531.

Gopalan, G., Goldstein, L., Klingenstein, K., Sicher, C., Blake, C., & McKay, M. M. (2010). Engaging families into child mental health treatment: updates and special considerations. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 19*(3), 182.

Gross, D., Belcher, H., Ofonedu, M., Breitenstein, S., Frick, K., & Chakra, B. (2014). Study protocol for a comparative effectiveness trial of two parent training programs in a fee-for-service mental health clinic: Can we improve mental health services to low-income families? *Trials, 15*(1), 70.

Haine-Schlagel, R., & Walsh, N. E. (2015). A review of parent participation engagement in child and family mental health treatment. Clinical Child and Family Psychology Review, 18(2), 133-150.

Hall, LA. *Social support, everyday stressors, and maternal mental health* (Unpublished doctoral dissertation). Chapel Hill, NC: University of North Carolina; 1983.

Hall, L.A. (1990). Prevalence and correlates of depressive symptoms in mothers of young children. *Public Health Nursing, 7*, 71–79.

Hall, L.A., Kotch, J.B., Browne, D., & Rayens, M.K. (1996). Self-esteem as a mediator of the effects of stressors and social resources on depressive symptoms in postpartum mothers. *Nursing Research, 45*, 231–238.

Hall, G. C. N., Ibaraki, A. Y., Huang, E. R., Marti, C. N., & Stice, E. (2016). A meta-analysis of cultural adaptations of psychological interventions. Behavior Therapy, 47(6), 993-1014.

Hanson, W. E., Curry, K. T., & Bandalos, D. L. (2002). Reliability generalization of Working Alliance Inventory scale scores. *Educational and Psychological Measurement, 62*, 659-673. Doi:10.1177/0013164402062004008

Hatcher, R. L., & Gillaspy, J. A. (2006). Development and validation of a revised short version of the Working Alliance Inventory. *Psychotherapy Research, 16*(1), 12-25.

Herschell, A. D., Calzada, E. J., Eyberg, S. M., & McNeil, C. B. (2002). Parent-child interaction therapy: New directions in research. *Cognitive and Behavioral Practice, 9*(1), 9-16.

Hoza, B. (2007). Peer functioning in children with ADHD. *Journal of Pediatric Psychology, 32*(6), 655-663.

Huey, S. J., Jr., & Polo, A. J. (2018). *Evidence-based psychotherapies with ethnic minority children and adolescents.* In J. R. Weisz & A. E. Kazdin (Eds.), Evidence-based psychotherapies for children and adolescents (pp. 361-378). New York, NY, US: The Guilford Press.

Hunt, T. K., Slack, K. S., & Berger, L. M. (2017). Adverse childhood experiences and behavioral problems in middle childhood. *Child Abuse and Neglect, 67*, 391-402.

Ingoldsby, E. M. (2010). Review of interventions to improve family engagement and retention in parent and child mental health programs. *Journal of Child and Family Studies, 19*(5), 629-645.

Kaminski, J.W., & Claussen, A.H. (2017). Evidence base update for psychosocial treatments for disruptive behaviors in children. *Journal of Clinical Child and Adolescent Psychology, 46*, 477-499.

Kataoka, S., Zhang, L., & Wells, K. (2002). Unmet need for mental health care among U.S. children: Variation by ethnicity and insurance status. American Journal of Psychiatry, 159, 1548–1555.

Kazdin, A. E., Mazurick, J. L., & Bass, D. (1993). Risk for attrition in treatment of antisocial children and families. *Journal of Clinical Child Psychology, 22*(1), 2-16.

Kazdin, A. E., Whitley, M., & Marciano, P. L. (2006). Child–therapist and parent–therapist alliance and therapeutic change in the treatment of children referred for oppositional, aggressive, and antisocial behavior*. Journal of Child Psychology and Psychiatry, 47*(5), 436-445.

Kim-Cohen, J., Caspi, A., Moffitt, T. E., Harrington, H., Milne, B. J., & Poulton, R. (2003). Prior juvenile diagnoses in adults with mental disorder: developmental follow-back of a prospective-longitudinal cohort. *Archives of General Psychiatry, 60*(7), 709-717.

Kirmayer, L. J. (2006). Beyond the ‘new cross-cultural psychiatry’: cultural biology, discursive psychology and the ironies of globalization. *Transcultural Psychiatry, 43*(1), 126-144.

Kirmayer, L. J., Rousseau, C., Rosenberg, E., Clarke, H., Saucier, J. F., Sterlin, C., ... & Latimer, E. (2001). Development and evaluation of a cultural consultation service in mental health. *Culture and Mental Health Research Unit, Report*, 11.

Kleinman, A., & Benson, P. (2006). Anthropology in the clinic: the problem of cultural competency and how to fix it. *PLoS Medicine, 3*(10), e294.

La Roche, M. J. (2005). The Cultural Context and the Psychotherapeutic Process: Toward a Culturally Sensitive Psychotherapy. *Journal of Psychotherapy Integration, 15*(2), 169-185.

La Roche, M. J., & Christopher, M. S. (2009). Changing paradigms from empirically supported treatment to evidence-based practice: A cultural perspective. *Professional Psychology: Research and Practice, 40*(4), 396-402.

La Roche, M. J., & Bloom, J. B. (2018). Examining the effectiveness of the Cultural Formulation Interview with young children: A clinical illustration. *Transcultural Psychiatry*, *0*(0), 1-16.

Lau, A. S. (2006). Making the case for selective and directed cultural adaptations of evidence-based treatments: examples from parent training. *Clinical Psychology: Science and Practice, 13*(4), 295-310.

Lavigne, J. V., LeBailly, S. A., Gouze, K. R., Binns, H. J., Keller, J., & Pate, L. (2010). Predictors and correlates of completing behavioral parent training for the treatment of oppositional defiant disorder in pediatric primary care. *Behavior Therapy, 41*(2), 198-211.

Leijten, P., Raaijmakers, M., de Castro, B., & Matthys, W. (2013). Does socioeconomic status matter? A meta-analysis on parent training effectiveness for disruptive child behavior. *Journal of Clinical Child and Adolescent Psychology, 42*, 384–392.

Lewis-Fernández, R., Aggarwal, N. K., Bäärnhielm, S., Rohlof, H., Kirmayer, L. J., Weiss, M. G., ... & Groen, S. (2014). Culture and psychiatric evaluation: operationalizing cultural formulation for DSM-5. *Psychiatry: Interpersonal and Biological Processes, 77*(2), 130-154.

Lewis-Fernández, R., Aggarwal, N. K., Hinton, L., Hinton, D. E., & Kirmayer L. .J., (Eds.). (2015). *DSM-5® handbook on the cultural formulation interview*. American Psychiatric Association Publishing.

Lewis-Fernández, R., Aggarwal, N. K., Lam, P. C., Galfalvy, H., Weiss, M. G., Kirmayer, L. J., ... & Boiler, M. (2017). Feasibility, acceptability and clinical utility of the Cultural Formulation Interview: mixed-methods results from the DSM-5 international field trial. *The British Journal of Psychiatry, 210*(4), 290-297.

Lewis-Fernández, R., Balán, I. C., Patel, S. R., Sánchez-Lacay, J. A., Alfonso, C., Gorritz, M., ... & Moyers, T. B. (2013). Impact of motivational pharmacotherapy on treatment retention among depressed Latinos. *Psychiatry: Interpersonal & Biological Processes, 76*(3), 210-222.

Lyon, A. R., & Budd, K. S. (2010). A community mental health implementation of parent–child interaction therapy (PCIT). *Journal of Child and Family Studies, 19*(5), 654-668.

Martinez Jr, C.R. and Eddy, J.M., 2005. Effects of culturally adapted parent management training on Latino youth behavioral health outcomes. *Journal of Consulting and Clinical Psychology, 73*(5), p.841.

Matos, M., Bauermeister, J. J., & Bernal, G. (2009). Parent-child interaction therapy for Puerto Rican preschool children with ADHD and behavior problems: A pilot efficacy study. *Family Process, 48*(2), 232-252.

Matos, M., Torres, R., Santiago, R., Jurado, M., & Rodíguez, I. X. A. (2006). Adaptation of parent–child interaction therapy for Puerto Rican families: A preliminary study. *Family Process, 45*(2), 205-222.

McCabe, K., Yeh, M., Lau, A., Argote, C. B., & Liang, J. (2010). Parent-child interactions among low-income Mexican American parents and preschoolers: do clinic-referred families differ from nonreferred families?. *Behavior Therapy*, *41*(1), 82-92.

McCabe, K. M., Yeh, M., Garland, A. F., Lau, A. S., & Chavez, G. (2005). The GANA program: A tailoring approach to adapting parent child interaction therapy for Mexican Americans. *Education and Treatment of Children*, 111-129.

McCabe, K., & Yeh, M. (2009). Parent–child interaction therapy for Mexican Americans: A randomized clinical trial. *Journal of Clinical Child and Adolescent Psychology, 38*(5), 753-759.

McCabe, K., Yeh, M., Lau, A., & Argote, C. B. (2012). Parent-child interaction therapy for Mexican Americans: Results of a pilot randomized clinical trial at follow-up. *Behavior Therapy, 43*(3), 606-618.

McKay, M. M., Pennington, J., Lynn, C. J., & McCadam, K. (2001). Understanding urban child mental health service use: Two studies of child, family, and environmental correlates. *The Journal of Behavioral Health Services & Research, 28*(4), 475-483.

McKay, M. M., Bannon, W. M. (2004). Engaging families in child mental health services. *Child Adolescent Psychiatric Clinics of North America, 13*, 905-921.

McKay, M. M., McCadam, K., & Gonzales, J. J. (1996). Addressing the barriers to mental health services for inner city children and their caretakers. *Community Mental Health Journal, 32*(4), 353-361.

McMahon, R. J., & Frick, P. J. (2005). Evidence-based assessment of conduct problems in children and adolescents. *Journal of Clinical Child and Adolescent Psychology, 34*(3), 477-505.

Merikangas, K.R., He, J.P., Burstein, M., Swendsen, J., Avenevoli, S., Case, B., Georgiades, K., Heaton, L., Swanson, S., & Olfson, M. (2012). Service utilization for lifetime mental disorders in US adolescents: Results of the National

Comorbidity Survey–Adolescent Supplement (NCS-A). *Journal of the American Academy of Child & Adolescent Psychiatry, 50*(1), 32-45.

Merikangas, K. R., He, J. P., Brody, D., Fisher, P. W., Bourdon, K., & Koretz, D. S. (2010). Prevalence and treatment of mental disorders among US children in the 2001–2004 NHANES. *Pediatrics*, *125*(1), 75-81.

Mersky, J. P., Topitzes, J., Grant-Savela, S. D., Brondino, M. J., & McNeil, C. B. (2016). Adapting Parent–Child Interaction Therapy to foster care: Outcomes from a randomized trial. *Research on Social Work Practice, 26*(2), 157-167.

Mezzich, J. E., Caracci, G., Fabrega Jr, H., & Kirmayer, L. J. (2009). Cultural formulation guidelines. *Transcultural Psychiatry, 46*(3), 383-405.

Miranda, J., Bernal, G., Lau, A., Kohn, L., Hwang, W., & LaFromboise, T. (2005). State of the science on psychosocial interventions for ethnic minorities. *Annual Review of Clinical Psychology, 1*, 113-142.

Mukolo, a., & Heflinger, C. A. (2011). Rurality and African American perspectives on children’s mental health services. *Journal of Emotional and Behavioral Disorders*, 19, 83–97.

Munder, T., Wilmers, F., Leonhart, R., Linster, H. W., & Barth, J. (2010). Working Alliance Inventory-Short Revised (WAI-SR): psychometric properties in outpatients and inpatients. *Clinical Psychology and Psychotherapy, 17*(3), 231-239.

National Institute of Mental Health. *Blueprint for change: research on child and adolescent mental health.* Rockville: US Department of Health and Human Services Administration, Center of Mental Health Services, National Institute of Health, National Institute of Mental Health; 2001.

Nixon, R. D., Sweeney, L., Erickson, D. B., & Touyz, S. W. (2004). Parent–child interaction therapy: One-and two-year follow-up of standard and abbreviated treatments for oppositional preschoolers. *Journal of Abnormal Child Psychology, 32*(3), 263-271.

Nock, M. K., & Ferriter, C. (2005). Parent management of attendance and adherence in child and adolescent therapy: A conceptual and empirical review. *Clinical child and family psychology review, 8*(2), 149-166.

Nock, M. K., Kazdin, A. E., Hiripi, E., & Kessler, R. C. (2007). Lifetime prevalence, correlates, and persistence of oppositional defiant disorder: results from the National Comorbidity Survey Replication. *Journal of Child Psychology and Psychiatry, 48*(7), 703-713.

Novins, D. K., Bechtold, D. W., Sack, W. H., Thompson, J., Carter, D. R., & Manson, S. M. (1997). The DSM-IV outline for cultural formulation: A critical demonstration with American Indian children. *Journal of the American Academy of Child & Adolescent Psychiatry, 36*(9), 1244-1251.

Olfson, M., Druss, B. G., & Marcus, S. C. (2015). Trends in mental health care among children and adolescents. *New England Journal of Medicine, 372*(21), 2029-2038.

Owens, J. (2016). Early childhood behavior problems and the gender gap in educational attainment in the United States. *Sociology of Education, 89*(3), 236-258.

Padgett, D. K., Patrick, C., Burns, B. J., & Schlesinger, H. J. (1994). Ethnicity and the use of outpatient mental health services in a national insured population. *American Journal of Public Health, 84*(2), 222-226.

Paralikar, V. P., Sarmukaddam, S. B., Patil, K. V., Nulkar, A. D., & Weiss, M. G. (2015). Clinical value of the cultural formulation interview in Pune, India. *Indian Journal of Psychiatry, 57*(1), 59.

Parra-Cardona, J. R., Bybee, D., Sullivan, C. M., Rodríguez, M. M. D., Dates, B., Tams, L., & Bernal, G. (2017). Examining the impact of differential cultural adaptation with Latina/o immigrants exposed to adapted parent training interventions. *Journal of Consulting and Clinical Psychology, 85*(1), 58-71.

Pellerin, K. A., Costa, N. M., Weems, C. F., & Dalton, R. F. (2010). An examination of treatment completers and non-completers at a child and adolescent community mental health clinic. *Community Mental Health Journal, 46*(3), 273-281.

Phinney, J. S., & Ong, A. D. (2007). Conceptualization and measurement of ethnic identity: Current status and future directions. *Journal of Counseling Psychology, 54*(3), 271.

Pollock, M. A., Amankwaa, L. C., & Amankwaa, A. A. (2005). First-time fathers and stressors in the postpartum period. *The Journal of Perinatal Education, 14*(2), 19-25.

Qi, C. H., & Kaiser, A. P. (2003). Behavior problems of preschool children from low-income families review of the literature. *Topics in Early Childhood Special Education, 23(*4), 188-216.

Richardson, L. A. (2001). Seeking and obtaining mental health services: what do parents expect? *Archives of Psychiatric Nursing, 15*(5), 223–31.

Richman, L. S., Kohn-Wood, L. P., & Williams, D. R. (2007). The role of discrimination and racial identity for mental health service utilization. *Journal of Social and Clinical Psychology, 26*(8), 960-981.

Rowe, R., Costello, E. J., Angold, A., Copeland, W. E., & Maughan, B. (2010). Developmental pathways in oppositional defiant disorder and conduct disorder. *Journal of Abnormal Psychology, 119*(4), 726.

Rushton, J., Bruckman, D., & Kelleher, K. (2002). Primary care referral of children with psychosocial problems. *Archives of Pediatrics and Adolescent Medicine, 156*(6), 592-598.

Schim, S. M., Doorenbos, A. Z., Miller, J., & Benkert, R. (2003). Development of a cultural competence assessment instrument. *Journal of Nursing Measurement, 11*(1), 29-40.

Spoth, R., Redmond, C., Hockaday, C., & Shin, C. Y. (1996). Barriers to participation in family skills preventive interventions and their evaluations: A replication and extension. *Family Relations*, 247-254.

Southam-Gerow, M. A., Rodríguez, A., Chorpita, B. F., & Daleiden, E. L. (2012). Dissemination and implementation of evidence based treatments for youth: Challenges and recommendations. *Professional Psychology: Research and Practice, 43*(5), 527.

Stein, G. L., Kulish, A. L., Williams, C. S., Mejia, Y. C., Prandoni, J. I., & Thomas, K. C. (2017). Latina/o parent activation in children's mental health treatment: The role of demographic and psychological factors. *Journal of Latina/o Psychology*, *5*(4), 290.

Strydom, A., Romeo, R., Perez-Achiaga, N., Livingston, G., King, M., Knapp, M., & Hassiotis, A. (2010). Service use and cost of mental disorder in older adults with intellectual disability. *The British Journal of Psychiatry, 196*(2), 133-138.

Sue, S., Fujino, D. C., Hu, L. T., Takeuchi, D. T., & Zane, N. W. (1991). Community mental health services for ethnic minority groups: A test of the cultural responsiveness hypothesis. *Journal of Consulting and Clinical Psychology, 59*(4), 533.

Sue, S., & Zane, N. (2009). The role of culture and cultural techniques in psychotherapy: A critique and reformulation. *Asian American Journal of Psychology, S*(1), 3-14.

Takeuchi, J. (2000). Treatment of a biracial child with schizophrenoform disorder: Cultural formulation. *Cultural Diversity and Ethnic Minority Psychology, 6*(1), 93.

Torres, L., & Taknint, J. T. (2015). Ethnic microaggressions, traumatic stress symptoms, and Latino depression: A moderated mediational model. *Journal of Counseling Psychology, 62*(3), 393.

Turner, E. A. (2012). The parental attitudes toward psychological services inventory: Adaptation and development of an attitude scale. *Community Mental Health Journal, 48*(4), 436-449.

Yasui, M., & Henry, D. B. (2014). Shared understanding as a gateway for treatment engagement: A preliminary study examining the effectiveness of the culturally enhanced video feedback engagement intervention. *Journal of Clinical Psychology, 70*(7), 658-672.

Yasui, M., Hipwell, A. E., Stepp, S. D., & Keenan, K. (2015). Psychocultural correlates of mental health service utilization among African American and European American girls. *Administration and Policy in Mental Health and Mental Health Services Research, 42*(6), 756-766.

Young, A. S., Rabiner, D (2015). Racial/ethnic differences in parent-reported barriers to accessing children’s health services. *Psychological Services, 12*(3), 267-273.

Table 1

Baseline child and caregiver characteristics across full sample, and by condition

			Assessment Condition				
	Full sample (N=89)		CFI+AAU (n=39)		AAU (n=50)		Significance test
	N	%	N	%	N	%	
Child Sex							χ^2 (1,N=89) =.34 , *p*=.56
Female	28	31.5	11	28.2	17	34.0	
Male	61	68.5	28	71.8	33	66.0	
Child Ethnicity							χ^2 (2,N=89) = 5.9 *p*= .12
Hispanic	56	62.9	21	53.8	35	70	
Haitian	4	4.5	1	2.6	3	6	
Not Hispanic or Hattian	29	32.6	17	43.6	12	24	
Child Race							χ^2 (5,N=89) = 10.02 *p*=.08
American Indian	1	1.1	1	2.6	0	0.0	
Asian	1	1.1	1	2.6	0	0.0	
Black or African American	19	21.3	11	28.2	8	16.0	
White	56	62.9	22	56.4	34	68.0	
Bi/Multiracial	8	9.0	4	10.3	4	8.0	
Other	4	4.5	0	0.0	4	8.0	
Primary Caregiver Ethnicity							χ^2 (2,N=89) = 4.14 *p*=.13
Hispanic	56	62.9	20	51.3	36	72	
Haitian	4	4.5	2	5.1	2	4	
Non-Hispanic or Hattian	29	32.6	17	43.6	12	24	
Primary Caregiver Race							χ^2 (5,N=89) =10.40*p*=.07
American Indian	1	1.1	1	2.6	0	0.0	
Asian	1	1.1	1	2.6	0	0.0	
Black or African American	21	23.6	12	30.8	9	18.0	
White	56	62.9	22	56.4	34	68.0	
Bi/Multiracial	5	5.6	3	7.7	2	4.0	
Other	5	5.6	0	0	5	10.0	
Caregiver Education							χ^2 (5,N=89) = 5.09, *p*=.65
Some high school or less	14	15.7	4	10.3	10	20.0	
High School/GED	27	30.3	12	30.8	15	30.0	
Some College	9	10.1	4	10.3	5	10.0	
Associates Degree	8	9.0	4	10.3	4	8.0	
Bachelor’s Degree	17	19.1	8	20.5	9	18.0	
Graduate Degree	14	15.7	7	17.9	7	14.0	
DCF Involvement							χ^2 (1,N=89) =3.66, *p*=.06
Yes	19	21.3	12	30.8	7	14.0	
No	70	78.7	27	69.2	43	86.0	
Language of Services							χ^2 (1,N=89) =4.74, *p*=.03
English	60	67.4	31	79.5	29	58.0	
Spanish	29	32.6	8	20.5	21	42.0	
	Mean	SD	Mean	SD	Mean	SD	
Child Age	5.10	1.6	5.2	1.6	5.5	1.5	*b* = .02, *p* = .64
Baseline ECBI Severity	152.8	30.9	157.1	33.8	149.6	28.0	*b* = .00, *p* = .26
Caregiver Age	34.4	7.2	35.1	7.4	33.8	7.0	*b* = .01, *p* = .39
Income to Needs	2.3	3.5	2.2	3.1	2.3	3.7	*b* =-.02, *p* = .29
Housing Insecurity Total Score	3.53	.74	3.59	.68	3.49	.77	*b* =.17, *p* = .58

Table 2

Correlations among study variables

Domain	Variable	2	3	4	5	6	7	8	9	10	11	12	13
Assessment Satisfaction	1. Caregiver Satisfaction	.14	-.08	.02	.50*	.18	.34	.38*	-.23*	.26*	-.23*	.04	-.21
	2. Therapist Satisfaction	1	.12	-.08	.02	.27*	-.04	.45*	-.18	.16	-.09	-.06	.18
Treatment Engagement	3. Session Attendance (%)	-	1	.02	.24*	.08	.25*	.24*	-.52*	.30	-.15	-.23*	-.14
	4. CDI Homework Adherence	-	-	1	-.19	-.11	-.19	-.16	-.39*	-.17	.11	-.15	-.03
	5. Mid Therapeutic Alliance (C)	-	-	-	1	.17	.36*	.21	-.05	.65	.00	.04	-.04
	6. Mid Therapeutic Alliance (T)	-	-	-	-	1	-.13	.39*	-.21	.11	.01	.13	-.13
	7. Post Therapeutic Alliance (C)	-	-	-	-	-	1	.25*	-.07	.59	-.15	.03	-.21
	8. Post Therapeutic Alliance (T)	-	-	-	-	-	-	1	-.43*	.36*	-.07	.03	-.05
Treatment Outcome	9. Time to CDI Mastery	-	-	-	-	-	-	-	1	-.13	.08	-.11	.04
Treatment Satisfaction	10. Treatment Satisfaction	-	-	-	-	-	-	-	-	1	-.03	.03	.06
Predictors of Engagement	11. Stigma	-	-	-	-	-	-	-	-	-	1	-.14	.22*
	12. Ethnic Identity	-	-	-	-	-	-	-	-	-	-	1	.01
	13. Daily Stress	-	-	-	-	-	-	-	-	-	-	-	1

Note: C = Caregiver; T = Therapist
*Correlations greater than .217 are significant at p<.05.

Table 3

Caregiver and therapist satisfaction with pretreatment assessment, by condition

			Assessment Condition					
	Full sample (N=89)		CFI+AAU (n=39)		AAU (n=50)		Regression Model	
	Mean	SD	Mean	SD	Mean	SD	Significance Test	Effect Size
Caregiver Satisfaction								
Understands family's problems	4.50	1.1	4.54	1.25	4.48	.97	*b* = .16, *p* = .54	*d*= .14
Understands how problems affect life	4.44	1.23	4.47	1.36	4.41	1.11	*b* = .12, *p* = .63	*d= .23*
Understands family values	4.39	1.02	4.57	.99	4.25	1.02	*b* = .43, *p* = .07	*d= .42*
Understand past experiences dealing with problem	4.25	1.11	4.24	1.15	4.25	1.08	*b* = .10, *p* = .69	*d= .09*
Trust therapist to deal with problem	4.49	.93	4.59	.99	4.40	.87	*b* = .45, *p* = .03	*d= .48*
Understand how culture/ethnicity affects problem	4.25	1.26	4.39	1.35	4.15	1.16	*b* = .29, *p* = .35	*d= .21*
Overall how satisfied	4.66	.87	4.78	.96	4.56	.79	*b* = .43, *p* = .03	*d= .49*
Total Score	30.97	6.60	31.59	7.09	30.49	6.14	*b* = 1.97, *p* = .19	*d= .32*
Therapist Satisfaction								
Understands family's problems	4.61	.59	4.58	.58	4.63	.59	*b* = .07, *p* = .53	*d=.12*
Understands how problems affect life	4.63	.51	4.60	.51	4.66	.50	*b* = -.01, *p* = .90	*d= .02*
Understands family values	4.31	.84	4.53	.89	4.14	.74	*b* = .43, *p* = .02	*d= .53*
Understand past experiences dealing with problem	4.55	.66	4.66	.63	4.46	.67	*b* = .20, *p* = .13	*d= .32*
Trust therapist to deal with problem	4.39	.81	4.42	.84	4.37	.78	*b* = .23, *p* = .17	*d= .29*
Understand how culture/ethnicity affects problem	4.29	.84	4.44	.74	4.17	.89	*b* = .28, *p* = .06	*d= .33*
Overall how satisfied	4.52	.66	4.57	.60	4.47	.70	*b* = .23, *p* = .10	*d= .35*
Total Score	31.29	3.84	31.80	3.70	30.90	3.87	*b* =1.42, *p* = .04	*d= .37*

Note. Means reflect observed imputed means for intent-to-treat sample. All regression analyses controlled for site, length of intake, housing insecurity, caregiver race/ethnicity, DCF involvement, and language of assessment.

Table 4

Treatment engagement across sample, and by condition

			Assessment Condition					
	Full sample (N=89)		CFI+AAU (n=39)		AAU (n=50)		Regression Model	
	N	%	N	%	N	%	Significance Test	Odds Ratio
Initial Treatment Session Attendance (yes)	69	77.5	33	84.6	36	72.0	*b*=1.38, *p*=.09	*OR= 3.99*
Premature Dropout (yes)	45	50.6	17	43.6	28	56.0	*b*=1.24, *p*<.05	*OR = 3.46*
	M	SD	M	SD	M	SD		Effect Size
Session Attendance Rate (%)	.81	.23	.82	.25	.80	.21	*b*=.04, *p*=.42	*d*= 0.19
CDI Homework Adherence (% completed)	58.41	29.4	52.74	28.57	62.83	29.26	*b*=-9.99, *p*=.13	*d*= 0.34
Therapeutic Alliance (Mid, Caregiver)	58.35	8.40	56.82	8.22	59.55	8.32	*b*=.43, *p*=.82	*d*= 0.21
Therapeutic Alliance (Mid, Therapist)	56.22	5.24	56.51	4.64	56.00	5.63	*b*=1.10*, p=.42*	*d*= 0.25
Therapeutic Alliance (Post, Caregiver)	60.25	5.53	60.31	5.80	60.20	5.29	*b*=1.36, *p*=.23	*d= 0.24*
Therapeutic Alliance (Post, Therapist)	58.35	5.40	57.52	5.67	59.00	5.07	*b*=-1.28, *p*=.30	*d*= 0.19

Note. Means reflect observed imputed means for intent-to-treat sample. Analyses controlled for site, length of intake, housing insecurity, caregiver race/ethnicity, DCF involvement, and language of assessment. Analyses predicting session attendance, homework adherence and therapeutic alliance all additionally controlled for premature drop out.

Table 5

Summary of the moderation roles of stigma, ethnic identity, and daily stress on the effects of the CFI in full sample (N=89)

		Interaction Term		
		Stigma x Condition	Ethnic Identity x Condition	Daily Stress x Condition
Assessment Satisfaction	Caregiver Satisfaction	-.33	-.06	-.06
	Therapist Satisfaction	.12	-.78	.18*
Treatment Engagement	Initial Treatment Attendance	.02	.03	-.00
	Premature Dropout	.04	-.07	.01
	Session Attendance	.01	-.14	-.00
	CDI Homework Adherence	1.25	5.73	-.26
	Mid Therapeutic Alliance (C)	-.50	2.29	-.26
	Mid Therapeutic Alliance (T)	.17	1.30	-.18
	Post Therapeutic Alliance (C)	-.39	-1.93	-.07
	Post Therapeutic Alliance (T)	.10	.87	.14
Treatment Satisfaction	Treatment Satisfaction	-.04	.05	-.07
		Stigma x Condition x Time	Ethnic Identity x Condition x Time	Daily Stress x Condition x Time
Treatment Outcomes	Change in Behavior Problem Severity	-1.10**	2.61	.27
	Time to CDI Mastery	.10	2.35	-.22

Note: C= Caregiver; T = Therapist
**<.01, *<.05

MEASURES	T1	T2	T3	T4	T5
CFI + Assessment as Usual	T				
Cultural Formulation Interview	T				
Assessment as Usual	T				
Study Feasibility					
CFI Therapist Questionnaire					T
CFI-Fidelity Instrument	IE				
Participant Recruitment and Retention Log	IE				
Patient Satisfaction Outcomes					
Satisfaction with Intake Questionnaire		T, P			
Therapy Attitudes Inventory	P				P
Engagement Outcomes					
1st Session Attendance			T		
Homework Adherence				P	P
Session Attendance Rate				T	T
Treatment Drop Out Rate				T	T
WAI					T, P
Clinical Outcomes					
Parent Quickness to Mastery			T	T	T
Eyberg Child Behavior Inventory	P	P	P	P	P
Moderators					
Daily Stress					
ESI	P				
Ethnic Identity					
MEIM-R	P				
Stigma					
PATPSI	P				

Figure 1. Schedule of study measures. Domain of measure and time point conducted. T1: Baseline, T2: Post-Intake, T3: Session 1, T4: Mid-Tx (after CDI mastery), T5: Post-Tx. T: Therapist-report P: Parent-report, IE: Independent evaluator.

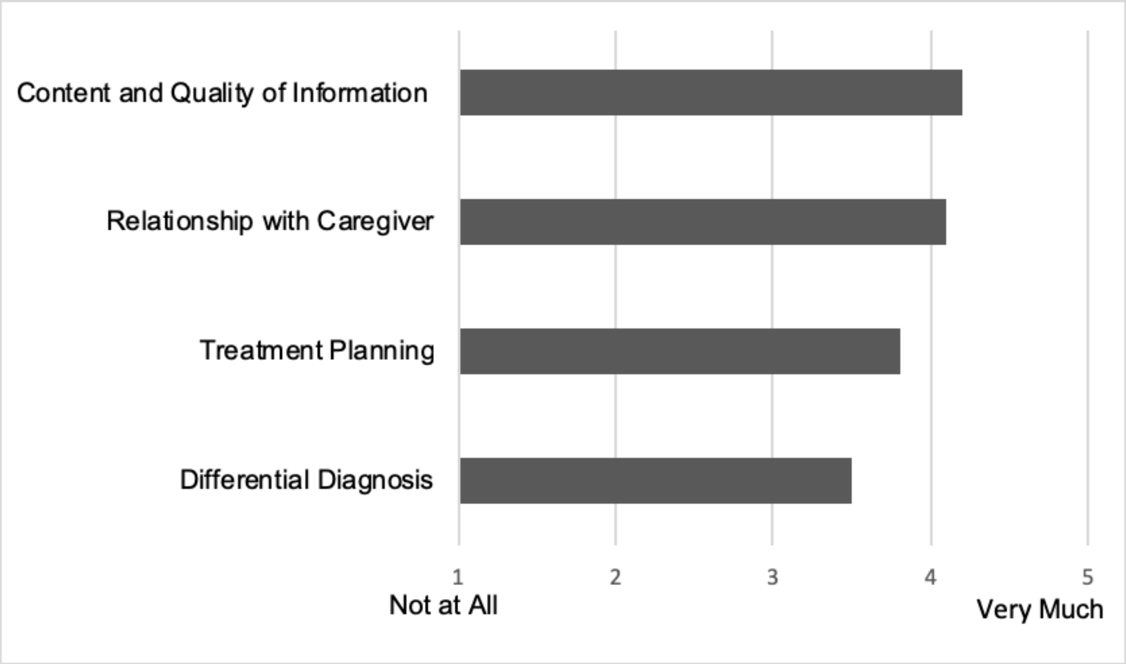

Figure 2. Therapist Rated Acceptability and Utility

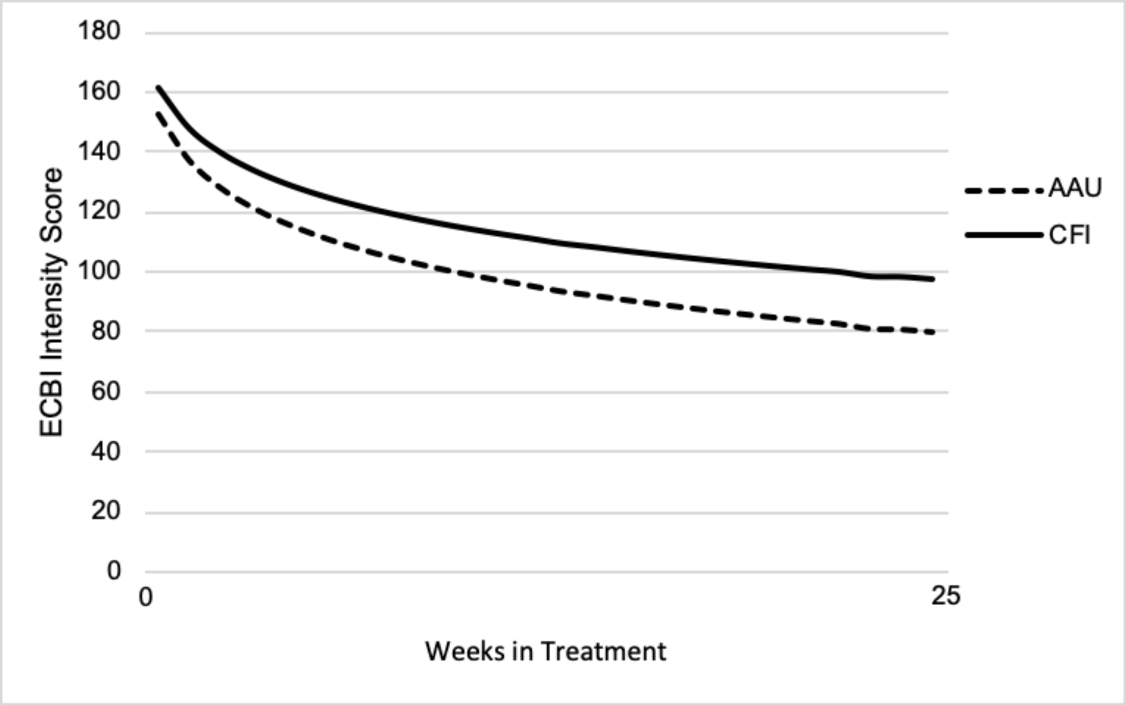

*Figure 3***.** Logarithmic model of child behavior severity over time in weeks. ECBI Intensity Score of 131 indicates clinical impairment.

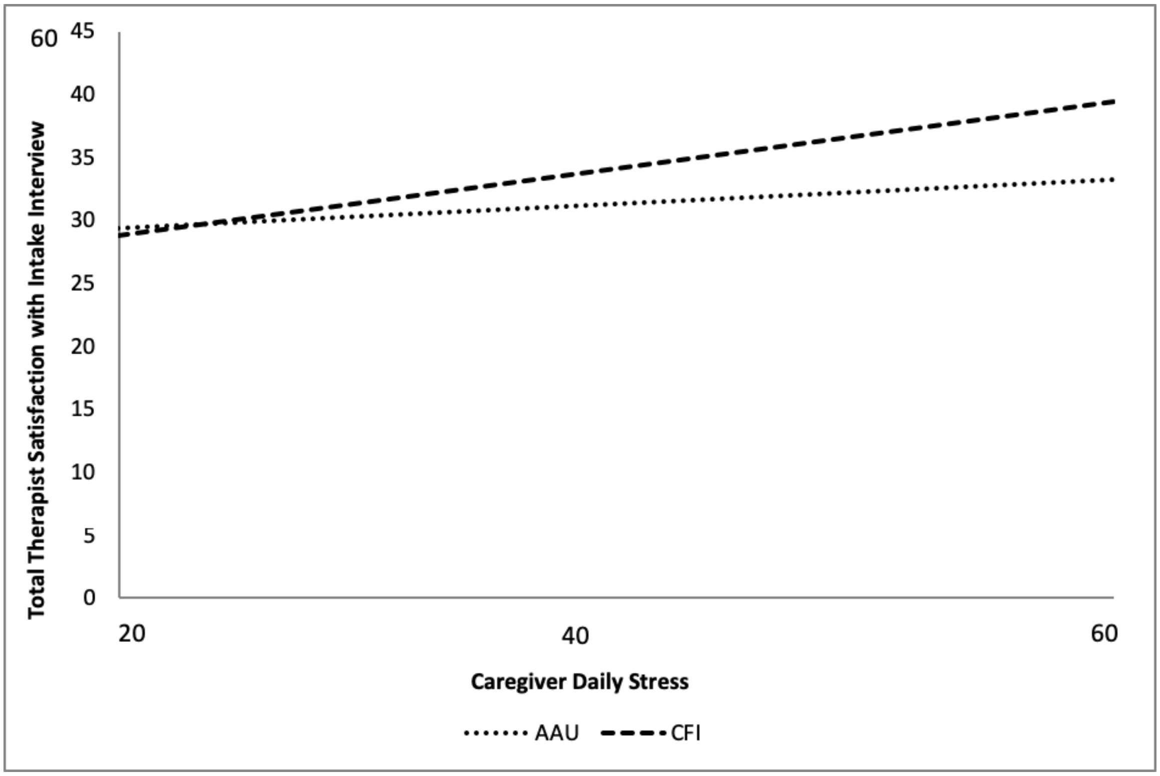

Figure 4. Therapist satisfaction with intake interview by caregiver daily stress.

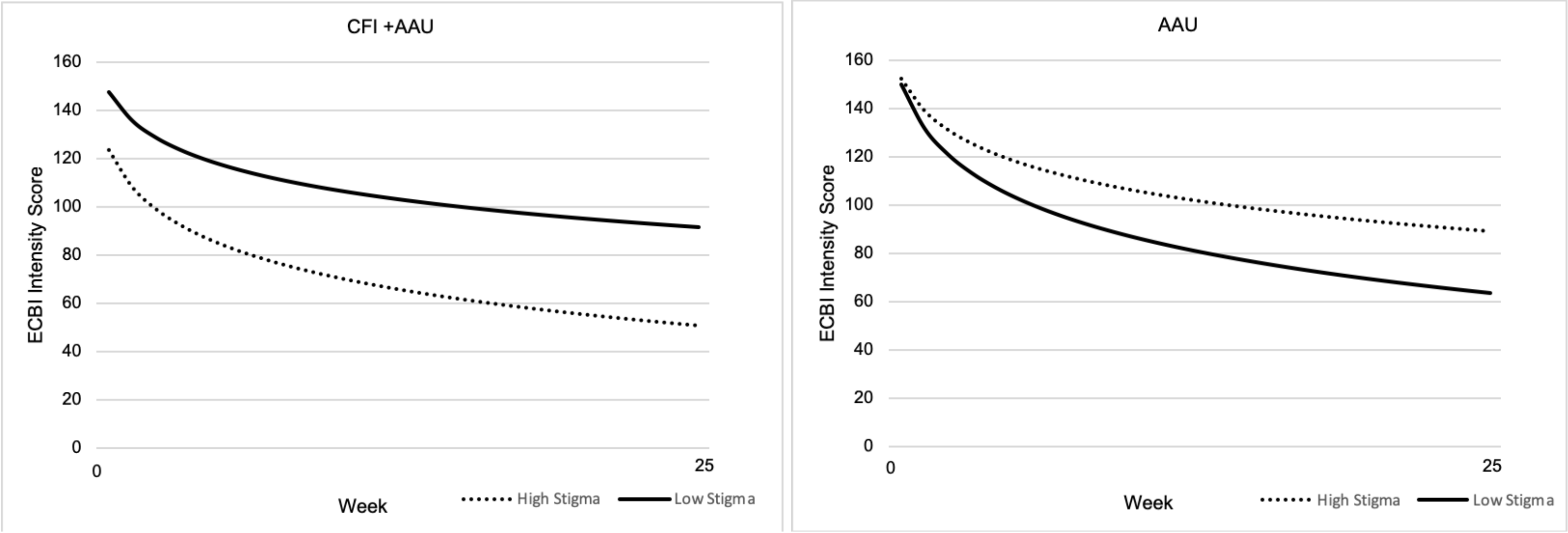

Figure 5. Logarithmic Model of ECBI intensity score across time with condition by stigma. An ECBI Intensity score of 131 or higher indicates clinical impairment.

Appendix A

Cultural Formulation Interview (CFI)

Supplementary modules used to expand each CFI subtopic are noted in parentheses.

GUIDE TO INTERVIEWER	INSTRUCTIONS TO THE INTERVIEWER ARE ***ITALICIZED.***
The following questions aim to clarify key aspects of the presenting clinical problem from the point of view of the individual and other members of the individual's social network (i.e., family, friends, or others involved in current problem). This includes the problem's meaning, potential sources of help, and expectations for services.	*INTRODUCTION FOR THE INDIVIDUAL:* I would like to understand the problems that bring you here so that I can help you more effectively. I want to know about ***your*** experience and ideas. I will ask some questions about what is going on and how you are dealing with it. Please remember there are no right or wrong answers.

CULTURAL DEFINITION OF THE PROBLEM

CULTURAL DEFINITION OF THE PROBLEM

(Explanatory Model, Level of Functioning)

Elicit the individual's view of core problems and key concerns. *Focus on the individual's own way of understanding the problem.* *Use the term, expression, or brief description elicited in question 1 to identify the problem in subsequent questions (e.g., "your conflict with your son").*	1. What brings you here today? *IF INDIVIDUAL GIVES FEW DETAILS OR ONLY MENTIONS SYMPTOMS OR A MEDICAL DIAGNOSIS, PROBE:* People often understand their problems in their own way, which may be similar to or different from how doctors describe the problem. How would *you* describe your problem?
Ask how individual frames the problem for members of the social network.	2. Sometimes people have different ways of describing their problem to their family, friends, or others in their community. How would you describe your problem to them?
Focus on the aspects of the problem that matter most to the individual.	3. What troubles you most about your problem?

CULTURAL PERCEPTIONS OF CAUSE, CONTEXT, AND SUPPORT

CAUSES

(Explanatory Model, Social Network, Older Adults)

This question indicates the meaning of the condition for the individual, which may be relevant for clinical care.	4. Why do you think this is happening to you? What do you think are the causes of your [PROBLEM]?
Note that individuals may identify multiple causes, depending on the facet of the problem they are considering.	*PROMPT FURTHER IF REQUIRED:* Some people may explain their problem as the result of bad things that happen in their life, problems with others, a physical illness, a spiritual reason, or many other causes.
Focus on the views of members of the individual's social network. These may be diverse and vary from the individual's.	5. What do others in your family, your friends, or others in your community think is causing your [PROBLEM]?

Stressors and Supports

(Social Network, Caregivers, Psychosocial Stressors, Religion and Spirituality, Immigrants and Refugees, Cultural Identity, Older Adults, Coping and Help Seeking)

Elicit information on the individual's life context, focusing on resources, social supports, and resilience. May also probe other supports (e.g., from co-workers, from participation in religion or spirituality).	6. Are there any kinds of support that make your [PROBLEM] better, such as support from family, friends, or others?
Focus on stressful aspects of the individual's environment. Can also probe, e.g., relationship problems, difficulties at work or school, or discrimination.	7. Are there any kinds of stresses that make your [PROBLEM] worse, such as difficulties with money, or family problems?

Role of Cultural Identity

(Cultural Identity, Psychosocial Stressors, Religion and Spirituality, Immigrants and Refugees, Older Adults, Children and Adolescents)

	Sometimes, aspects of people's background or identity can make their [PROBLEM] better or worse. By ***background*** or ***identity,*** I mean, for example, the communities you belong to, the languages you speak, where you or your family are from, your race or ethnic background, your gender or sexual orientation, or your faith or religion.
Ask the individual to reflect on the most salient elements of his or her cultural identity. Use this information to tailor questions 9–10 as needed.	8. For you, what are the most important aspects of your background or identity?
Elicit aspects of identity that make the problem better or worse. *Probe as needed (e.g., clinical worsening as a result of discrimination due to migration status, race/ethnicity, or sexual orientation).*	9. Are there any aspects of your background or identity that make a difference to your [PROBLEM]?
Probe as needed (e.g., migration-related problems; conflict across generations or due to gender roles).	10. Are there any aspects of your background or identity that are causing other concerns or difficulties for you?

CULTURAL FACTORS AFFECTING SELF-COPING AND PAST HELP SEEKING

Self-Coping

(Coping and Help Seeking, Religion and Spirituality, Older Adults, Caregivers, Psychosocial Stressors)

Clarify self-coping for the problem.	11. Sometimes people have various ways of dealing with problems like [PROBLEM]. What have you done on your own to cope with your [PROBLEM]?

PAST HELP SEEKING

(Coping and Help Seeking, Religion and Spirituality, Older Adults, Caregivers, Psychosocial Stressors, Immigrants and Refugees, Social Network, Clinician-Patient Relationship)

Elicit various sources of help (e.g., medical care, mental health treatment, support groups, work-based counseling, folk healing, religious or spiritual counseling, other forms of traditional or alternative healing). *Probe as needed (e.g., “What other sources of help have you used?”).* *Clarify the individual’s experience and regard for previous help.*	12. Often, people look for help from many different sources, including different kinds of doctors, helpers, or healers. In the past, what kinds of treatment, help, advice, or healing have you sought for your [PROBLEM]? *PROBE IF DOES NOT DESCRIBE USEFULNESS OF HELP RECEIVED:* What types of help or treatment were most useful? Not useful?

BARRIERS

(Coping and Help Seeking, Religion and Spirituality, Older Adults, Psychosocial Stressors, Immigrants and Refugees, Social Network, Clinician-Patient Relationship)

Clarify the role of social barriers to help seeking, access to care, and problems engaging in previous treatment. *Probe details as needed (e.g., “What got in the way?”).*	13. Has anything prevented you from getting the help you need? *PROBE AS NEEDED:* For example, money, work or family commitments, stigma or discrimination, or lack of services that understand your language or background?

CULTURAL FACTORS AFFECTING CURRENT HELP SEEKING

PREFERENCES

(Social Network, Caregivers, Religion and Spirituality, Older Adults, Coping and Help Seeking)

Clarify individual’s current perceived needs and expectations of help, broadly defined. *Probe if individual lists only one source of help (e.g., “What other kinds of help would be useful to you at this time?”).*	Now let’s talk some more about the help you need. 14. What kinds of help do you think would be most useful to you at this time for your [PROBLEM]?
Focus on the views of the social network regarding help seeking.	15. Are there other kinds of help that your family, friends, or other people have suggested would be helpful for you now?

CLINICIAN-PATIENT RELATIONSHIP

(Clinician-Patient Relationship, Older Adults)

Elicit possible concerns about the clinic or the clinician-patient relationship, including perceived racism, language barriers, or cultural differences that may undermine goodwill, communication, or care delivery. *Probe details as needed (e.g., “In what way?”).* *Address possible barriers to care or concerns about the clinic and the clinician-patient relationship raised previously.*	Sometimes doctors and patients misunderstand each other because they come from different backgrounds or have different expectations. 16. Have you been concerned about this and is there anything that we can do to provide you with the care you need?

VITA

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PUBLICATIONS AND SELECTED PRESENTATIONS

Sanchez, A. L., Comer, J. S. Coxe, S., Albano, A. M., Piacentini, J., Compton, S. N., Ginsburg, G. A., Rynn, M. A., Walkup, J. T., Sherrill, J. T., & Kendall, P. C. (in Press). The effects of youth anxiety treatment on school impairment: Comparing differential outcomes across CBT, SSRI medication, and their combination. *Child Psychiatry & Human Development*.

Furr, J. M., Sanchez, A. L., Hong, N., & Comer, J. S. (in press). *Exposure therapy for childhood selective mutism: principles, practices, and procedures.* In J. McGuire, T. Peris, & E. Storch (Eds), A Therapists' Guide to Exposure Therapy with Children and Adolescents. Elsevier.

Hong, N., Sanchez, A., & Comer, J. S. (2019). Multi-media field test: Can users strike out OCD with the nOCD app? *Cognitive and Behavioral Practice*.

Sanchez, A. L., Cornacchio, D., Poznanski, B. Golik, A., Chou, T., & Comer, J. S. (2018). The effectiveness of school-based mental health interventions for elementary aged youth: A meta-analysis. *Journal of the American Academy of Child and Adolescent Psychiatry*, 57(3), 153-165.

Sanchez, A. L., Jent, J., Chavira, D., Comer, J. S. Augmenting standard assessment with the Cultural Formulation Interview to optimize engagement in child mental health services. In Sanchez, A. (Chair). *Reducing disparities: Strategies for engaging minority and low-income families in mental health care.* To be presented at the annual meeting of the Association for Behavioral and Cognitive Therapies in November 2018.

Sanchez, A. L., Cornacchio, D., Chou, T., Leyfer, O., Coxe, S. & Pincus, D. B., Comer,J. S. (2017). Development of a scale to evaluate young children's responses to uncertainty and low environmental structure. *Journal of Anxiety Disorders,* 45, 17-33.

Sanchez, A. L., Cornacchio, D., Poznanski, B., Golik, A., Chou, T. & Comer, J. S. (2017, November). *The effectiveness of school-based mental health services delivered by school personnel: A meta-analytic evaluation.* In Sanchez, A. L. (Chair). Stepping out of our comfort zones: Moving beyond mental health clinics and delivering services to children in their natural environments. Presented at the annual meeting of the Association for Behavioral and Cognitive Therapies. San Diego, CA.

Comer, J. S., Furr, J. M., Kerns, C. E., Miguel, E., Coxe, S., Elkins, R. M., Carpenter, A. L., Cornacchio, D., Cooper-Vince, C. E., DeSerisy, M., Chou, T., Sanchez, A. L., Khanna, M., Franklin, M. E., Garcia, A. M., & Freeman, J. B. (2017). Internet-delivered, family-based treatment for early-onset OCD: A pilot randomized trial. *Journal of Consulting and Clinical Psychology*, *85*(2), 178-186.

Comer, J. S., Furr, J. M., Miguel, E., Cooper-Vince, C. E., Carpenter, A. L., Elkins, R. M., Kerns, C., Cornacchio, D., Chou, T., Coxe, S., DeSerisy, M., Sanchez, A. L., Golik, A., Martin, J., Myers, K., & Chase, R. (2017). Remotely delivering real-time parent training to the home: An initial randomized trial of Internet-delivered Parent-Child Interaction Therapy (I-PCIT). *Journal of Consulting and Clinical Psychology, 85*(9), 909-917.

Cornacchio, D., Sanchez, A. L., Chou, T., & Comer, J. S. (2017). Cognitive-behavioral therapy for children and adolescents. In S.G. Hofmann & G. Asmundson (Eds.), *The science of cognitive behavioral therapy: From theory to therapy*. New York: Elsevier.

Sanchez, A. L., Kendall, P. C. & Comer, J. S. (2016). Evaluating the intergenerational link between maternal and child intolerance of uncertainty: A preliminary cross-sectional evaluation. *Cognitive Therapy and Research, 40*(4), 532-539.

Masia Warner, C., Colognori, D., Brice, C., Sanchez, A. (2015). Training school personnel to implement evidence-based intervention for social anxiety disorder. In Klaus Ranta & Luis Joaquin Garcia-Lopez (Eds.), *An International Perspective on Social Anxiety Disorder*. New York: Springer

Sanchez, A. L., Chou, T., Becker K. D., Zoromski, A. K., Ogle, R. R., & Hooley, C. (2015, November). *New Advances and Recent Innovations in the School-Based Implementation of Evidence-Based Practices*. Presented at the annual meeting of the Association for Behavioral and Cognitive Therapies. Chicago, Il.