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Predictors of Treatment Engagement in Ethnically Diverse, Urban Children Receiving Treatment for Trauma Exposure

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Predictors of Treatment Engagement in Ethnically Diverse, Urban Children Receiving Treatment for Trauma Exposure

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Psychology

by

Rebecca Jacqueline Fraynt

2012

ABSTRACT OF THE DISSERTATION

Predictors of Treatment Engagement in Ethnically Diverse, Urban Children Receiving Treatment for Trauma Exposure

by

Rebecca Jacqueline Fraynt

Doctor of Philosophy in Psychology

University of California, Los Angeles, 2012

Professor Bruce L. Baker, Chair

Keeping children and their families engaged in the treatment process is a major problem for mental health clinics (Kazdin, 1996; Wierzbicki & Pekarik, 1993). The following study used data collected for the National Childhood Traumatic Stress Network's Core Data Set to examine whether racial/ethnic disparities in treatment engagement exist in children seeking treatment for trauma exposure, as well as whether disparities persist after accounting for other variables correlated with length of treatment and premature termination. The sample consisted of 562 children receiving services from a child abuse treatment and prevention agency in Los Angeles

County. Our results indicated that African American children were consistently less engaged in treatment than Spanish-speaking Latino children. These disparities persisted even after controlling for other variables associated with treatment engagement outcomes. Child age, functional impairment, and receipt of group and field services were also consistent predictors of treatment engagement.

The dissertation of Rebecca Jacqueline Fraynt is approved.

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2012

DEDICATION

To my mother, Faina Bencian Fraynt.

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Predictors of Treatment Engagement in Ethnically Diverse, Urban Children Receiving Treatment for Trauma Exposure

Thirty to sixty percent of children and families drop out of mental health treatment prematurely (Kazdin, 1996). This creates financial problems for clinics, lengthens wait times for other families seeking treatment (Kazdin, 1996), and may even lead to worse outcomes for the families that choose to leave treatment (Angold et. al, 2000). There is also some evidence that premature termination may be a greater problem for clients from under-represented groups than European Americans (Armbruster & Fallon, 1994; Pumariega et. al, 1998). The present study examined whether racial/ethnic disparities exist in children's engagement in treatment for trauma exposure. The sample consisted of children receiving treatment at a community-based mental health clinic in Southern California. As recommended by Betancourt & Lopez (1993), this study then went on to see if a number of factors associated with children's social contexts and the treatment center itself may help to explain differences in treatment engagement across ethnic/racial groups. Specifically, we examined whether factors taken from Costello, Pescosolido, Angold & Burns's (1998) adaptation of the network-episode model of mental health care for children varied by racial/ethnic group and can help to explain some of the variance in children's treatment engagement.

Why Study Treatment Engagement?

Treatment engagement can be defined as a set of behaviors that demonstrate a client's active involvement in the treatment process. These behaviors include regular attendance at therapy sessions (as well as attending enough sessions to get an adequate dose of treatment), appropriate self-disclosure to the therapist, willingness to consider the therapist's suggestions,

and applying lessons learned from treatment to one's everyday life (Dreischner, Lammers & van der Staak, 2004).

Keeping children and their families engaged in the treatment process, or even in treatment long enough to get an adequate dosage of therapy, is a major problem for mental health clinics. Of the 30 to 60% of children who drop out of therapy, a majority of these children leave treatment within two to three sessions (Kazdin, 1996; Wierzbicki & Pekarik, 1993). Moreover, children and families often miss multiple therapy appointments prior to prematurely terminating from therapy. These statistics are troubling for a number of reasons. First, this is a financial burden for clinics, as therapists do not get reimbursed for missed sessions with clients. Second, this pattern of "no-shows" for therapy appointments takes up time therapists could be using to serve other families who need treatment and can demoralize staff working at an agency (Kazdin, 1996). Third, and perhaps most importantly, premature termination from therapy has been associated with negative outcomes for children (Angold et. al, 2000; Boggs et. al, 2005). Angold et. al (2000) found that it takes approximately eight sessions before children and families begin to feel the beneficial effects of therapeutic interventions, and that children who left therapy after one to two sessions actually had worse outcomes than children who never received mental health services after controlling for severity of problems at baseline. Identifying variables that may increase the chances of a family dropping out of therapy may thus help clinicians intervene with at-risk clients before they terminate treatment prematurely (Kazdin, 1996).

Current Theoretical Perspectives on Children's Engagement in Therapy

A number of researchers have posited theories about the factors that may contribute to families dropping out of treatment. Kazdin (1996) proposes a risk-factor model to help predict

which children are most likely to drop out prematurely from treatment for conduct disorder. This model suggests that premature termination is multiply determined by risk factors associated with the child, the family, and socioeconomic status (SES). Kazdin (1996) also proposes a burden-of-treatment model to explain the processes by which children and families prematurely drop out of treatment. This model proposes that children and families drop out of treatment when external stressors or the demands of therapy make treatment too much of a burden. Andersen's (1995) model of treatment engagement groups together many of the risk variables described by Kazdin (1996) into three key factors: *demographic* (i.e., genetic risk factors, race/ethnicity, cultural beliefs, etc.), *enabling* (i.e., variables that make treatment more or less accessible, such as financial resources, social support, distance to the agency, etc.), and *need* (i.e., symptom severity and functional impairment).

Costello et. al (1998) expanded upon Andersen's (1995) model in important ways that help to reflect better how children may initially access and engage in mental health treatment. Costello et. al (1998) propose that children's engagement in treatment is predicted by the characteristics of the child, existing social support systems, the illness career, and the treatment system. Each of these primary components can then be broken down into sub-categories.

They suggest that researchers examining child characteristics address individual child variables such as demographic characteristics, the child's health background (i.e., previous history of mental and physical illness and coping style), and characteristics of the child's current illness (i.e., severity, functional impairment, and comorbid disorders). However, they also discuss the fact that children do not usually enter treatment unless they have a problem that has been both recognized by, and is burdening, their parents in some tangible way. Thus, in Costello

et. al's (1998) model, child characteristics also include family-level variables such as family demographics (i.e., SES and race), family health background (i.e., family history of illness, family coping styles, and access to health insurance), and organizational factors (i.e., accessibility of treatment and family's ability to finance care).

The social support systems component looks at how families, schools and communities can provide support to children receiving mental health care services. The family category is then subdivided into structure (i.e., family size, strength of ties), content (i.e., health beliefs and attitudes, parent-child relationships), and functions (i.e., provision of emotional and tangible supports). The school category includes variables such as presence of professionals and paraprofessionals, staffs' attitudes towards parents, and the school's legal rights to decide on care for children (Costello et. al, 1998).

The illness career component of Costello et. al's, (1998) model focuses on where the child is within the treatment process and how children and caregivers interact with members of the treatment team. They suggest that researchers examining the illness career consider how and by whom a child's problem was recognized, the child's role upon entry into the treatment system (as a first-time patient, chronic patient, etc.), the timing of appointments and composition of the treatment team, and the ways in which children exit care.

The final factor, aspects of the treatment system, is sub-divided into three categories: structure, function, and content. Structure includes variables such as the size of the treatment system. Content includes the types of treatments offered at the agency, how effective these treatments are, and staff attitudes towards treatment and clients. Function includes the types of

support that the treatment setting provides for families, including medical care, emotional support, advice, or information.

In addition to describing the factors above, Costello et. al (1998) argue that the decision to enter or stay in mental health treatment is primarily influenced by social-contextual factors and social networks. This is different from Andersen's (1995) view that mental health care decisions are made through a rational, individualized thought process. Second, Costello et. al, (1998) emphasize that entry into, and engagement with, treatment are dynamic processes, and that all the factors described above interact to determine clients' behavior.

Finally, Costello et. al (1998) argue that entry into the children's mental health care system is different from entry into physical care. In standard medical care situations, parents are encouraged to take their children in for regular check-ups, can get advice from numerous sources about when they should seek treatment for their children, and, those who are insured can rely on their insurance to cover preventive care. None of these factors exist when parents take their children to receive mental health care. Costello et. al (1998) argue that such major differences in the two systems of care will probably also lead to different modes of entry and engagement in services.

The present study used portions of Costello et. al's (1998) model to examine factors that predict children's premature termination from treatment for trauma exposure. These include children's and families' social/geographic location characteristics (demographic characteristics such as child age and gender, and family structure), children's illness characteristics (children's symptom severity, functional impairment, comorbidity, and aspects of the trauma profile), characteristics of the illness career (such as referral source and timing between the first and

second treatment appointment), and aspects of the treatment system, particularly the network's structure and content (such as location of services and modality of treatment).

Problems with the Existing Literature on Children's Engagement in Therapy

One of the major problems with the current literature on children's engagement in therapy is that there is so little of it. Relatively few studies of treatment engagement include children (Kazdin & Mazurick, 1994; Miller, Southam-Gerow & Allin, 2008). This is problematic because, as Costello et. al's (1998) model points out, child and adolescent therapy has some fundamental differences from adult therapy. Thus, one would expect that somewhat different factors predict children's and adults' engagement in treatment. Wierzbicki & Pekarik (1993) demonstrated this in their meta-analysis of studies on therapy drop-out, in which they found that somewhat different variables predicted dropout from child and adult therapy.

Another fundamental problem in the premature termination literature is that there is no agreed-upon definition of premature termination. Premature termination has been defined as not showing up to the intake appointment, not attending any sessions after the intake, terminating after a pre-determined number of sessions (which also varies by study and treatment protocol), or terminating without the consent of the therapist (Kazdin & Mazurick, 1994; Wierzbicki & Pekarik, 1993). These varying definitions are problematic because researchers have found different rates of premature termination depending on the definition their study used (Wierzbicki & Pekarik, 1993). In addition, different variables may predict termination at different points in the treatment process (Kazdin & Mazurick, 1994; McKay & Bannon, 2004).

Heterogeneous samples constitute another problem in the literature on children's engagement in therapy. Many researchers studying this phenomenon use samples of children

with widely variable clinical problems, which is problematic because different variables may predict premature termination among children with different diagnoses (Kazdin & Mazurick, 1994; Kazdin 1996). A number of researchers have tried to remedy this problem by studying premature termination in relatively homogeneous samples of children participating in university-based, randomized-control trials (Kazdin & Mazurick, 1994; Kendall & Sugarman, 1997; Werba, Eyberg, Boggs & Algina, 2006). However, results from these studies may not generalize to children receiving treatments within community settings (Miller et. al, 2008).

Problems with Research on Ethnic/Racial Disparities in Treatment Engagement

A large number of studies have found that clients who do not identify as European American are less likely to initially access and stay engaged in therapeutic interventions (Barrett et. al, 2008; Cauce et. al, 2002; Wierzbicki & Pekarik, 1993; Zimmerman, 2005). However, there are a number of problems with the current research on ethnic/racial disparities in children's treatment engagement. One problem is that the majority of these studies use European Americans as a reference group (Cuffe et. al, 1995; Kazdin & Mazurick, 1994; Kendall & Sugarman, 1997). While this can provide useful information, many community mental health agencies, particularly those operating in highly dense urban settings, do not serve many European American clients. For treatment settings such as these, it may be more important to compare typically under-represented ethnic/racial groups to each other than to European Americans.

A second problem is that the majority of studies on ethnic/racial disparities in treatment engagement study children's initial entry into services as opposed to their ongoing engagement in services (Burns et. al, 2007; Garland et. al, 2003; Garland et. al, 2005; Gudiño et. al, 2008a;

Gudiño et. al, 2008b). While increasing children's initial access to services is a pressing public health concern (Burns et. al, 1997; Garland et. al, 2003), it is also important for us to understand how to keep children in services once they get there, and there is evidence that different variables predict initial access to services versus ongoing treatment engagement (Kazdin & Mazurick, 1994).

Study Strengths

The present study examined a large sample of children participating in community treatment, whereas many articles in the childhood treatment engagement literature either focus on adults, or study children participating in university-based randomized control trials (Miller et. al, 2008). Another relatively unique characteristic of this study was that it included large samples of African American and Latino children and did not use European American children as a reference group. This study also only examined children who had experienced at least one traumatic event. While exposure to childhood trauma can result in a variety of diagnoses (or no diagnosis at all), children exposed to trauma often share many common risk factors, thus increasing the homogeneity of the sample (Walrath et. al, 2006). These aspects of the study improved upon many of the sampling problems present in other studies of childhood premature termination from treatment.

In addition, this study used multiple, clearly operationalized definitions of treatment engagement, thus allowing the author to compare whether different variables predict different forms of premature termination within the same study (Kazdin & Mazurick, 1994). Treatment engagement was defined in four ways: number of sessions completed, percentage of missed

sessions, whether the family terminated therapy within seven or fewer sessions, and therapist rated reason for discharge.

Primary Study Questions

The present study used data collected from clients receiving trauma-informed treatment at Children's Institute, Inc. (CII), a community mental health agency in Los Angeles, California. We utilized the core data set (CDS) assessment, a research endeavor being sponsored by the National Childhood Traumatic Stress Network (NCTSN). We addressed three primary questions:

1) Do African Americans, Spanish-speaking Latinos, and English-speaking Latinos have different levels of treatment engagement in trauma-informed interventions?
2) If there are differences in treatment engagement among these ethnic/racial groups, can they be explained by aspects of Costello et. al's (1998) family network-based model, such as children's and families' social/geographic location, illness characteristics, and qualities of the treatment system? Conversely, if there are no differences in treatment engagement between the ethnic/racial groups being studied, do these other factors better explain variation in treatment engagement than racial/ethnic identification?
3) Are different factors in Costello et. al's (1998) family network-based model associated with treatment engagement among African Americans, English-speaking Latinos, and Spanish-speaking Latinos?

The National Childhood Traumatic Stress Network

The National Childhood Traumatic Stress Network (NCTSN) aims to encourage research that produces efficacious treatments for childhood trauma exposure, promotes sustainable implementation of these treatments in community settings, and addresses issues of cultural

diversity and competence. The network combines the expertise of community agencies and academic institutions to accomplish these goals. Participating practitioners collect data about children with a history of trauma who are about to receive services from their agency (the core data set; CDS).

Children's Institute, Incorporated

Children's Institute, Incorporated, (CII) in Los Angeles is a community treatment and service center participating in the NCTSN. CII's primary goal is to help prevent and treat child abuse within the Los Angeles area. Programs offered at the agency include treatment for child trauma and sexual abuse, emergency response for survivors of domestic violence, family preservation, kinship support services, and comprehensive foster care programs. CII has three primary locations within Los Angeles and serves approximately 15,000 children and families a year. A large proportion of CII clients are low-income Latino and African American children, who live in high-density urban environments.

STUDY HYPOTHESES

Question 1: Do African Americans, English-speaking, and Spanish-speaking Latinos have different levels of treatment engagement?

It is difficult to formulate hypotheses about whether there are differences in treatment engagement between African Americans and Spanish and English-speaking Latinos because many of the studies currently published in the literature focus on clients' initial access to services (Burns et. al, 2007; Garland et. al, 2003; Garland et. al, 2005; Gudiño et. al, 2008a; Gudiño et. al, 2008b) and use European Americans as a reference group (Cuffe et. al, 1995; Kazdin &

Mazurick, 1994; Kendall & Sugarman, 1997). The results of the available literature are summarized below.

In terms of initial access to services, a relatively large number of studies have found that European Americans have higher rates of initial access than non-European American groups (Garland et. al, 2003; Garland et. al, 2005; Hurlburt et. al, 2004; Staudt, 2003; Tingus, Heger, Foy & Leskin, 1996; Zimmerman, 2005). However, the research findings about African Americans are somewhat mixed. Two studies found that African Americans have lower rates of initial access to services than European Americans (Burns et. al, 1997; Cuffe et. al, 1995), while two other studies found that African Americans have higher rates of initial access to services (Bui & Takeuchi, 1992; Cohen, Deblinger, Mannarino, de Arellano, 2001). Another study found that African American children are only more likely than European Americans to receive services for externalizing problems (Gudiño, et. al, 2008b).

The few studies that directly compared African Americans and Latinos consistently indicated that Latinos initially access services at lower rates than African Americans (Cohen et. al, 2001; Gudiño, et. al, 2008b, Kataoko, Zhang & Wells, 2002). There were also a small number of studies that compared different groups of Latinos to each other. A study of Latino adults found that immigrants were less likely to initially access mental health services than US-born Latinos (Vega, Kolody, Aguilar-Gaxiola & Catalona, 1999). However, Gudiño, Lau & Hough (2008a), found that immigrant and non-immigrant Latino families had similar rates of overall access to mental health services, but that immigrant Latino youth were more likely to get services for externalizing problems while non-immigrant Latino youth were more likely to get services for internalizing problems. Taken together, the literature indicates that Latinos are

probably accessing services at somewhat lower rates than African Americans; however, it is unclear whether there is a difference in service access between Spanish and English-speaking Latinos.

The findings on Latinos' and African Americans' engagement in ongoing treatment are also somewhat mixed. A number of studies comparing non-white clients to European Americans found that the non-white clients had lower rates of treatment engagement (Armbruster & Fallon, 1994; Kazdin & Mazurick, 1994; Kazdin, Holland & Crowley, 1997; Kendall & Sugarman, 1997; Pumariega et. al, 1998; Wierzbicki & Pekarik, 1993). However, a few studies that compared Latinos, African Americans, and European Americans to each other did not find significant differences in treatment engagement between groups (Brookman-Frazee, Haine, Gabayan & Garland, 2008; McKay, Pennington, Lynn & McCadam, 2001; New & Berliner, 2000), and Pina et. al (2003) did not find statistically significant differences in premature termination between Latinos and European Americans. Cuffe et. al (1995) found that African American adolescents received fewer treatment sessions for depression than European Americans, and Bui & Takeuchi (1992) found that African Americans received fewer treatment sessions that either European Americans or Latinos. After an extensive literature search, we could only find one article that compared immigrant and US-born Latinos' engagement in ongoing treatment. Pumariega et. al (1998) found that immigrant Latinos actually received more treatment sessions than their US-born counterparts. The literature thus offers a somewhat unclear picture about whether there are significant differences in treatment engagement between African Americans and English and Spanish-speaking Latinos.

Because of the lack of consistent findings in the literature, Question One was an exploratory study question. Our findings add to the currently limited knowledge about African Americans', Spanish and English-speaking Latinos' ongoing treatment engagement (as opposed to their initial access to services) and compared these groups to each other instead of combining them or using European Americans as a reference group.

Question 2: Can Factors in Costello et. al's (1998) Family-Based Network Model Better Explain Variation in Treatment Engagement Than Racial/Ethnic Identification?

The present study used factors from Costello et. al's (1998) model to examine whether these factors better explain variance in ongoing treatment engagement than clients' racial/ethnic identification. Literature about the variables being studied in each factor is summarized below.

Children's Social/Geographic Location Characteristics

The two child social/geographic location characteristics being examined in this paper are age and gender. Based on the existing literature, we hypothesized that younger children will be more likely to stay engaged in treatment than older children. Both Tingus et. al, (1996) and Gudiño et. al, (2008b) found that school-age children were more likely to receive services than older adolescents. New & Berliner (2000) found that both school-age children and pre-schoolers were likely to stay in treatment longer than adolescent clients. In addition, Bui & Takeuchi (1992) and Garland et. al, (2003) found that younger adolescents were more likely to stay in and receive services than older adolescents. It is important to note that, while the majority of studies reviewed support the hypothesis that younger (particularly school-age) children are the most likely to receive and stay in services, a number of studies have found no age differences in children's treatment engagement (Dierker, Nargiso, Wiseman & Hoff, 2001; Kendall &

Sugarman, 1997; McKay et. al, 2001). One advantage of the current study is the wide age range of participating children (ages 2 to 18). Of the studies cited above, only four had comparably wide age ranges (Kataoka et. al, 2002; McKay et. al, 2001; New & Berliner, 2000; Tingus et. al, 1996).

The literature on whether gender predicts premature termination from therapy is somewhat mixed (Staudt, 2003), so this was an exploratory variable in this study. A number of studies have found that girls are more likely to stay in treatment than boys (Bui & Takeuchi, 1992; Farmer et. al, 1999; Pumariega et. al, 1994), and one study found that girls were more likely to initially access treatment (Garland et. al, 2003). On the other hand, a number of studies have found that boys are more likely to initially access (Bui & Takeuchi, 1992; Cuffe et. al, 1995; Farmer et. al, 1999; McKay & Bannon, 2004) and stay in treatment (McKay & Bannon, 2004; Wierzbicki & Pekarik, 1993). Other studies have found no gender differences in treatment access or retention (Dierker et. al, 2001; Kendall & Sugarman, 1997; McCabe, 2002; McKay et. al, 2001; New & Berliner, 2000; Stahmer et. al, 2005).

Family Demographic/Social Characteristics

The primary family demographic/social characteristic examined in this study was family structure. More specifically, we hypothesized that children with only one adult caregiver will be more likely to drop out of treatment prematurely. While two studies did not find that living in a single-parent household had an effect on children's premature termination from treatment (Dierker et. al, 2001; Pina et. al, 2003), a number of other studies have demonstrated that children are more likely to drop out of treatment if they live in a single-parent household (Cunningham et. al, 2000; Kazdin & Wassell, 1999; Kendall & Sugarman, 1997; Pumariega et.

al, 1994). Kazdin & Wassell (1999) hypothesize that having only one caregiver present in the household may present barriers to treatment (i.e., need for childcare, limited time for completion of other household responsibilities) that are not present in homes where there are multiple caregivers to divide household chores and childcare duties.

Children's Illness Characteristics

The present study examined a number of child illness characteristics that may be associated with treatment engagement, including presence of externalizing versus internalizing problems, symptom severity and functional impairment, presence of comorbid disorders, and various aspects of children's trauma profiles.

First, we hypothesized that children who exhibit externalizing problems will be more engaged in therapy than children who do not exhibit these problems. Gudiño et. al, (2008b) and McKay et. al, (2001) found that children with higher levels of externalizing problems were more likely to initially access services. While Kendall & Sugarman (1997) did not find that externalizing problems predicted treatment engagement, it is important to note that all the children enrolled in their study were receiving treatment for anxiety disorders. According to Costello et. al, (1998), it makes theoretical sense for parents to be more motivated to both put and keep their children in treatment for externalizing disorders, as these disorders tend to be more disruptive and visible to parents.

Second, we hypothesized that children with greater symptom severity and functional impairment will be more likely to engage in treatment. The vast majority of studies on this subject have found that children with higher levels of symptom severity and functional impairment are more likely to initially access and stay in treatment (Angold et. al, 2000;

Brookman-Frazee et. al, 1997; Burns et. al, 1997; Farmer et. al, 1999; Garland et. al, 2005; Kendall & Sugarman, 1997; Miller, Southam-Gerow & Allin, 2008; Stahmer et. al, 2005; Zahner, Pawelkiewicz, DeFrancesco & Adnopoz, 1992). It is important to note that Kazdin (1996) has found that, in samples of children with externalizing behaviors, greater symptom severity actually predicts lower levels of treatment engagement.

Third, we hypothesize that a number of aspects of children's trauma profiles will predict their treatment engagement. There is some evidence that children who have experienced multiple traumas (such as both physical and sexual abuse) stay in treatment longer than children who have only experienced one trauma (such as only physical or sexual abuse; Walrath et. al, 2006). In addition, a number of studies have found that children repeatedly exposed to trauma stay in treatment longer than children who have only been exposed to a single traumatic incident (New & Berliner, 2000; Tingus et. al, 1996). Finally, children who have been physically or sexually abused may be more likely to enter and stay in treatment than children who have been neglected (New & Berliner, 2000; Staudt, 2003). One advantage of the current study is that it examines a much more comprehensive set of traumas (therapists assess for children's exposure to twenty different forms of trauma, listed in Table 7) than previous studies, which have generally looked at one, two or three traumas (New & Berliner, 2000; Staudt, 2003; Tingus et. al, 1996; Walrath et. al, 2006).

Finally, we hypothesized that children who have more than one diagnosable disorder will have higher rates of treatment engagement than children with only one diagnosis. Costello et. al, (1998) and Vega et. al, (1998) both found that children and adults with comorbid disorders are more likely to gain initial access to mental health services.

Children's Entry Into Treatment

The study also examined whether children's method of entry into services, namely, their referral source, impacted treatment engagement. Parents of children who are mandated to come to therapy may be less likely to believe that their child or family has a problem and may therefore be less motivated to engage in treatment (Snyder & Anderson, 2009). This may be particularly problematic in under-represented groups, as individuals from these groups are more likely to be mandatorily referred to therapy and distrust the mental health service system (Snyder & Anderson, 2009; Southam-Gerow, Chorpita, Miller & Gleacher, 2008). There is also evidence that children who are referred to treatment by child welfare, schools, or other public institutions are more likely to experience psychosocial stress, have lower incomes, come from single-parent households, have academic difficulties, and present with externalizing problems (Southam-Gerow et. al, 2008). Interestingly, despite these well-documented differences between children mandatorily and voluntarily referred to treatment, studies that have directly compared treatment engagement between these two groups have found no statistically significant differences (Inueste-Montes & Montes, 1988; Koverola et. al, 2007; Miller, Southam-Gerow & Allin, 2008). Some researchers argue that, while clients voluntarily referred to treatment may be more intrinsically motivated to engage in the treatment process, clients who are legally mandated to enter treatment may attend sessions to avoid negative legal consequences, such as jail time or removal of children from the home (Koverola et. al, 2007).

One way in which this study differs from previous research is that children were grouped into three referral categories: self or family-referred, school-referred, and legally mandated into treatment. Inueste-Montes & Montes (1988) and Koverola et. al, (2007) only compared court-

referred to self-referred clients, and Miller et. al, (2008) placed clients referred by the court, other mental health agencies, and schools in the same group. We felt it was important to differentiate school from legally mandated referrals because, while schools can expel or suspend children for misbehavior and failure to engage in treatment, these types of consequences are qualitatively different from the court's ability to incarcerate parents or remove children from their homes. However, after an extensive literature search, we were unable to identify any articles that compared children referred to treatment by their schools to children who entered treatment voluntarily or who were legally mandated to begin therapy.

Based on the literature summarized above, we hypothesized that children in the "mandated into treatment" group would have the same levels of treatment engagement as children in the "voluntarily referred to services" group. Whether a school-referral made a difference in treatment engagement was examined as an exploratory question.

Treatment Setting

The present study examined whether the type of therapy children received (individual versus group therapy), the time between the first and second treatment sessions, and the location in which therapeutic services were provided were associated with children's treatment engagement. We hypothesized that children participating in group treatments, who receive at least some services out of the office, and who have shorter wait times between their intake and initial appointment will have higher levels of treatment engagement. A number of studies have shown that children participating in multi-family group therapies have higher levels of treatment engagement than children utilizing other treatment modalities (McKay et. al, 1999; McKay et. al, 2002; Meezan & O'Keefe, 1998). Numerous studies have demonstrated that children and

families are more likely to initially access and engage in home and school-based services (Kaplan, Calonge, Guemsey & Hanraham, 1998; Jaycox et. al, 2010; Slesnick & Prestopnick, 2004), and Slesnick & Prestopnick (2004) found that home-based services helped attenuate the negative effects of externalizing problems, family chaos, and low socioeconomic status on treatment engagement. There are also a number of studies showing that children who have shorter wait times between their intake and initial appointment are less likely to prematurely terminate treatment (Barrett et. al, 2008; Kendall & Sugarman, 1997; McKay et. al, 1996; Werba, Eyberg, Boggs & Algina, 2006).

Question 3: Are different factors in Costello et. al's (1998) family network-based model associated with treatment engagement among African Americans, English-speaking Latinos, and Spanish-speaking Latinos?

While a number of studies have examined the variance in treatment engagement between ethnic/racial groups, relatively little research has examined variance in treatment engagement within these groups, or whether different factors predict treatment engagement for different ethnic/racial groups. The previous research that has been conducted in relation to these questions has discussed three variables included in this study: family structure, presence of externalizing behavior problems, and source of referral (Bui & Takeuchi, 1992; Cohen et. al, 2001; Fluke, Yuan, Hedderson & Curtis, 2003; Gudiño et. al, 2008a; Gudiño et. al, 2008b; Pumariega et. al, 1998; Southam-Gerow & Allin, 2008; Zimmerman, 2005). The literature on these variables is summarized below. The rest of the variables included in this study (i.e., age, gender, aspects of

the trauma profile, comorbidity, and treatment setting factors) were examined in an exploratory manner.

Family Structure

There is evidence that African American children are more likely to live in single-parent households than children from other ethnic/racial groups (Ruggles, 1994). We therefore predicted that African American children in our sample would be most likely to live in single-parent households. Most of the literature also indicates that living in a single-parent household increases the risk of children's premature termination from mental health services (Cunningham et. al, 2000; Kazdin & Wassell, 1999; Kendall & Sugarman, 1997; Pumariega et. al, 1998). However, Pumariega et. al (1998), found that, while living in a single-parent household predicted fewer mental health treatment sessions for their overall sample, Latino children living in single-parent households actually had more treatment sessions than Latino children living with both parents. It is important to note that Pina et. al, (2003) found that single parent status had no relationship to premature termination in either their overall sample of children seeking treatment for anxiety disorders, or their Latino subsample. Because of these inconsistencies in the literature, we examined whether family structure impacts treatment engagement differently among the African Americans, Spanish-speaking and English-speaking Latinos in this study in an exploratory manner.

Presence of Externalizing Problems

Gudiño et. al (2008b) found that African American youth are less likely to receive services for internalizing problems than European American youth, but are more likely to receive services when they exhibit externalizing disorders. While Latino children in this study were also

more likely to receive treatment for externalizing than internalizing problems, they still consistently received less treatment than European American children. Zimmerman (2005) reported similar results: African American children were less likely to receive treatment for depression than European American children but just as likely to receive treatment for externalizing problems. Latino children were less likely than European Americans to receive treatment for both kinds of problems. We therefore hypothesized that the presence of externalizing problems will be a stronger predictor of treatment engagement for the African American children in the current sample than the Latino children.

We also hypothesized that Spanish-speaking Latino children will be less likely to prematurely terminate treatment for externalizing problems, while English-speaking Latino children will be less likely to prematurely terminate treatment for internalizing problems. Gudiño et. al, (2008a) found that, while there were no overall differences in mental health service utilization between immigrant and non-immigrant Latino youth, immigrant youth were more likely to receive services for externalizing problems, while non-immigrant youth were more likely to receive services for internalizing problems.

Referral Source

A number of studies have demonstrated that African American families are significantly more likely to be reported to Child Protective Services than European American families (Drake et. al, 2011; Fluke, Yuan, Hedderson & Curtis, 2003). Fluke et. al, (2003) also found that African American families are more likely to be reported to Child Protective Services than Latino families. We therefore hypothesized that African American children in this sample will also be more likely to be referred to treatment by DCFS than either the English-Speaking or Spanish-

Speaking Latino children. However, as mentioned previously, legally mandated referrals to mental health services do not seem to be significantly associated with treatment engagement (Inueste-Montes & Montes, 1988; Koverola et. al, 2007; Miller, Southam-Gerow & Allin, 2008), and, after an extensive literature review, we were unable to find any studies that compared children who were referred to services by their schools to children referred by child welfare or the court system. We therefore examined how referral source impacts treatment engagement in each ethnic/racial group in an exploratory manner.

METHOD

Participants

Participants were children who completed a Core Data Set intake assessment between February 2, 2005 and June 12, 2009, and who were discharged from services before September 30, 2009. Children participating in the study received services from the Children's Mental Health, Child Abuse Treatment Service, and Domestic Violence programs at CII. These programs provide services for children aged 2 to 18, who have been exposed to various forms of trauma, abuse, and neglect. Referrals come primarily from the Department of Child and Family Services in Los Angeles County, as well as local schools. CII also has partnerships with the foster care program at UCLA Harbor Medical Center, and QueensCare, a low-cost medical clinic. Additional referrals come from Project ERIN, a program which sends domestic violence advocates and police officers to provide an immediate response to domestic violence calls. After a child is referred to CII, the clinician assigned to work with the child and family obtains appropriate consents and conducts the Core Data Set within a month of beginning services with the child. In some cases, children receive the Core Data Set more than a month after beginning services, either because they were not initially receiving trauma-informed treatments at the agency (in which case they begin the Core Data Set at the initiation of trauma-informed interventions) or because clinical issues prevented the therapist from administering the Core Data Set within the first month of treatment.

Researchers at the agency obtained approval for this project from the Children's Institute, Incorporated IRB (CII IRB) and the Duke University Health System IRB (DUHS IRB). In

addition, the agency entered into a Data Use Agreement (DUA) that described the terms of use for the data entered into the CDS. Documentation of the IRB decision and the DUA from each center was collected by the Duke Clinical Research Institute and submitted to the DUHS IRB, as required, in order to gain approval for that center to enter data into the CDS. Additional IRB approval was obtained from the CII IRB and the University of California, Los Angeles in order to examine the billing records of children previously discharged from the agency.

Cases were selected from the Core Data Set database based on the following criteria:

1) Child identified as Latino or African American (but not both simultaneously).
2) Child had experienced at least one suspected traumatic event.
3) Child had only received outpatient services from CII.
4) If multiple siblings from the same family were present within the dataset, only one sibling from each family group was kept. Siblings with more data were kept in the sample. If both siblings had equal amounts of data, the eliminated sibling was determined by coin toss.

As of September 30, 2009 the CDS dataset included 754 children who were no longer receiving services from the CMH, DV, or CATS programs and had enough data to code their billing records. Of these 754 subjects, 56 were eliminated because they did not identify as either African American or Latino. Ten subjects were eliminated because they identified as both African American and Latino. This left a total of 688 subjects. Thirteen were eliminated because they had received inpatient services, 76 were eliminated because they had a sibling in the dataset,

and 37 were eliminated because they either reported no trauma exposure or all of their trauma exposure data were missing from the dataset. This left a total of 562 subjects. Demographic characteristics of these 562 children are summarized in Table 1. Females comprised 49.3% of the sample (277 girls), and the average age of children receiving an intake was 11.99 years (SD = 3.45). Of the total sample, 126 children identified as English-speaking Latino (22.4%), 329 children identified as Spanish-speaking Latino (58.4%), and 107 children identified as African American (19.0%). Table 2 summarizes the demographic characteristics of each subgroup being examined in this study (i.e., African Americans, English-speaking Latinos, and Spanish-speaking Latinos).

Measures

The following is a list of data available from the CDS. Table 3 summarizes which measures will be used to operationalize each construct.

Child Demographic Information: Clinicians obtained a variety of demographic information during the initial intake interview with the parent (and child, if the child was old enough to participate). This included the child's age, gender, primary language spoken in the home, and the total number of adults and children living in the household at the time of the assessment. If a child's primary language information was missing from Core Data Set, the first author obtained this information from his/her billing records in the TIER system. Information about the child's race and ethnicity was collected using a format similar to that used by the Office of Management and Budget (OMB) when collecting data for the United States Census (OMB, 1997). The clinician asked the parent or child to select one of two, mutually exclusive, options for ethnicity,

"Hispanic or Latino" or "Not Hispanic or Latino." The parent or child then had five racial categories to choose from: White, African American, Asian American, American Indian, and Hawaiian/Pacific Islander and could choose as many as applied. Table 1 summarizes the demographic characteristics of the sample.

Children's Functional Impairment: Clinicians filled out a scale about children's functional impairment entitled, *Indicators of Severity of Problems* using information obtained from the initial interview with parents and children. The *Indicators of Severity of Problems* scale was developed specifically by the National Childhood Traumatic Stress Network for the Core Data Set. The measure includes questions about 14 possible domains where a child's functioning may have been impaired in the last 30 days. Based on the intake interview, the clinician used a four-point scale to indicate whether each area was, "Not a problem", "Somewhat/sometimes a problem", "Very much/often a problem", or "Unknown." Table 4 summarizes children's levels of functional impairment at intake. Areas of functional impairment are listed in descending order of prevalence, with the problems most likely to occur very much or often at the top of the list. The four most common problems at intake were academic problems, behavior problems in the home/community, behavior problems at school/daycare, and attachment problems. Children had an average of 2.94 problems at least some of the time (SD = 2.11).

Clinical Problems: The primary clinician filled out a clinical evaluation for each child assessing whether the child had each of 20 different clinical problems, symptoms, or disorders based on information collected during the initial intake interview. For each problem, the clinician

answered the question, “Child has/exhibits this problem?” on a three-point scale. Possible responses were, “No”, “Probable”, and “Definite”. The child’s clinician also indicated the child’s primary clinical problem. Table 5 summarizes children’s clinical problems, symptoms, and disorders at intake. Problems are listed in descending order of prevalence, with problems most frequently marked as the child’s primary clinical problem at the top of the list. Children had an average of 4.86 clinical problems at intake (SD = 3.00). The most commonly reported primary clinical problems at intake were depression and PTSD. Problems were classified as internalizing (i.e., depression, PTSD, generalized anxiety disorder, acute stress disorder, panic disorder, separation disorder, phobia, and obsessive compulsive disorder) externalizing (i.e., oppositional defiant disorder, general behavior problems, ADHD, sexual behavior problems, substance abuse, and conduct disorder), or other (i.e., traumatic/complicated grief, attachment problems, suicidality, somatization, dissociation, and sleep disorder). Comorbidity was calculated by getting a total count of disorders that the therapist rated as “Probable” or “Definite”.

PTSD Symptom Severity: Children’s levels of PTSD symptoms were measured using the UCLA PTSD Reaction Index (*UCLA PTSD RI;* Steinberg et. al, 2004) and the Trauma Symptom Checklist for Children- Abbreviated (*TSCC-A;* Briere, 1996). Table 6 lists the average score and the number of children meeting clinical cut-offs for each measure. The *UCLA PTSD RI* (Steinberg et. al, 2004) is a 22-item measure that asks whether a child has been experiencing symptoms required to meet the DSM-IV criteria for PTSD. These include hyper-vigilance, nightmares, avoidance of traumatic reminders, and involuntary re-experiencing of the traumatic event. Children rate how much they have experienced the various symptoms in the past month on

a five-point Likert scale with zero meaning "None" and four meaning "Most." Children with scores of 38 or above on the scale are considered to have clinically significant PTSD symptoms. The scale has been used internationally to assess children's trauma symptoms and has consistently demonstrated good internal reliability, with two studies reporting Cronbach's alphas of 0.92 (Kutlac et. al, 2000; Rodriguez et. al, 2001). In this sample, children's mean score on the *UCLA PTSD-RI* was 23.67 (SD = 14.66), and 91 children (16.2% of the sample) met the cut-off for clinically significant PTSD symptoms. Children's total score on the *UCLA PTSD RI* was used as one measure of symptom severity in this study.

The *Trauma Symptom Checklist— Abbreviated* (TSCC-A; Zlotnick et. al, 1996) is the 44-item abbreviated version of the *Trauma Symptom Checklist* (TSCC; Briere, 1996). The TSCC-A assesses a broader range of potential trauma-related symptoms than the UCLA-PTSD RI, including symptoms of depression and clinically significant feelings of anger. Children endorse how often they have experienced a given symptom on a four-point scale, with zero meaning they have never experienced the symptom, and three meaning that they experience the symptom almost all the time. The *TSCC-A* (Zlotnick, et. al, 1996) includes five of the six subscales on the *TSCC* (Briere, 1996; excluding questions about sexual concerns). The measure yields T scores on five subscales: Depression, Dissociation, Anger, Post-Traumatic Stress, and Anxiety. A child who has a T score of 65 or higher on any of the subscales is considered to have clinically significant symptoms.

Childhood Trauma Exposure: To assess childhood trauma exposure, clinicians filled out the *General Trauma Information Form* about each client. Based on the intake interview, clinicians

indicated whether the client had, was suspected to have, or had not experienced 20 different forms of trauma. If the child was known to have experienced a given trauma, the clinician marked off at what ages the trauma had been experienced. In this case, clinicians also filled out a detailed form about the trauma, indicating if the child had been exposed to the trauma once or multiple times, who the perpetrator was (if applicable), the setting of the trauma, and whether serious injury was inflicted on anyone involved. Clinicians also specified the traumatic experience that was the primary focus of treatment. Children's trauma histories are summarized in Table 7. Traumas are listed in descending order of prevalence, with the most common primary traumas at the top of the list. The most common primary traumas were traumatic loss/bereavement, domestic violence, sexual abuse, and other. Children experienced an average of 3.83 traumas (SD = 2.31).

Treatment Modality: Information about children's treatment modality is available in CII's computerized billing record system: TIER. Please refer to Appendix A, "Session Counting Coding System" for a detailed description of how sessions were classified as individual, family, or group treatment. Percentage of individual sessions was calculated by dividing the number of attended individual sessions by the total number of attended sessions. The same procedure was used to calculate percentage of family and group therapy sessions. The first author and two trained coders were responsible for counting and classifying sessions. Coder one and the first author had a correlation of 0.99 on their classification of individual, family, and group therapy sessions (based on a sample of 27 cases). Coder two and the first author had a correlation of greater than 0.99 on their classification of individual and group therapy sessions, and a correlation of 0.99 on their classification of family sessions (based on a sample of 31 cases).

Time Between First and Second Treatment Session: Time between the first and second treatment sessions was calculated by subtracting the date of the second session at which the child was present from the first session at which the child was present.

Referral Source: Therapists marked whether children had been referred to treatment from the following sources: self, family, friends, school, the Department of Children and Family Services (DCFS), court, or the county. Children were then grouped into three referral categories. Children referred by themselves, family, or friends were categorized as voluntarily referred to services. Children referred by their school were classified as school-referred, and children referred by DCFS, the court, or the county were categorized as mandated into treatment.

Field Services: Information about location of services was also available in the TIER system. Therapists marked whether each treatment session occurred in the office or in the field. Field could mean a variety of locations, including home or school. Children were categorized based on whether all their sessions occurred in the office, or whether any of their treatment had occurred in the field.

Treatment Engagement

For the purposes of this study treatment engagement was defined in four ways:

1) *Total number of treatment sessions for which the child was present.* This included all individual, family, and group therapy appointments, as well as psychiatry and

psychological assessment appointments at which the child was present. Children in this sample attended an average of 34.02 treatment sessions (SD = 32.78). The first author and two trained coders were responsible for counting all child attended sessions. Coder one and the first author had a correlation of greater than 0.99 on their count of children's total attended sessions (based on a sample of 28 cases). Coder two and the first author also had a correlation of greater than 0.99 on their count of children's total attended sessions (based on a sample of 31 cases).

2) *Percentage of missed individual and family sessions.* This number was calculated by dividing the number of individual and family sessions for which children and their families no-showed or cancelled by the total number of individual and family scheduled sessions (minus any therapist cancelled sessions). Group sessions were not included in the calculation of this variable because therapists were inconsistent in tracking missed sessions for therapy groups within the agency. Children in this sample missed an average of 11.89% of their scheduled individual and family sessions (SD = 15.05%). The first author and two trained coders were responsible for counting all missed sessions. Coder one and the first author had a correlation of greater than 0.99 on their calculation of percentage of missed sessions (based on a sample of 27 cases). Coder two and the first author also had a correlation of greater than 0.99 on their calculation of percentage of missed session (based on a sample of 30 cases).

3) *Attendance at eight or more therapy sessions:* Angold et. al, (2000) found that children needed to attend an average of eight therapy sessions in order to receive any

benefit from treatment. We therefore categorized clients into two groups: clients who attended zero to seven sessions, and clients who attended eight or more sessions. Eighty one clients (or 14.4% of the sample) attended fewer than eight treatment sessions.

4) *Reason for Discharge:* When completing clients' discharge notes, therapists provided one of seven reasons for the discharge: successful completion of treatment, assessment and follow-up completed, dropped due to poor attendance, client left against program advice, moved out of area, change in placement, or other. We grouped clients into three discharge categories. Clients who were marked as successfully completing treatment or having completed their follow-up and assessment were placed in a group labeled, "successful completion." This group included 213 children (37.9% of the sample). Clients who were marked as dropped due to poor attendance and client left against program advice were placed in a group labeled, "client dropped out of treatment." This group included 163 children (29.0% of the sample). Clients who were marked as moved out of area or change in placement were placed in a group labeled, "client involuntarily left treatment." This group included 58 children (10.3% of the sample). One hundred twenty eight clients were either marked as "other" on their reason for discharge note or were missing a reason for discharge (22.8% of the sample). These clients were not included in analyses of this variable.

RESULTS

Question 1: Do African Americans, English-speaking, and Spanish-speaking Latinos have different levels of treatment engagement?

Prior to determining whether racial/ethnic background was significantly related to treatment engagement, we ran a series of correlations, t-tests, ANOVAs, and chi-square analyses to check if the various definitions of treatment engagement were significantly related to each other. Table 8 summarizes the results of these analyses. Table 9 summarizes the means and frequencies of each ethnic/racial group on each of the outcome variables.

To test question one, we ran two negative binomial regressions using racial/ethnic background as the predictor variable and total attended sessions and percentage of missed sessions as the outcome variables. Negative binomial regression was chosen over linear regression because total attended sessions is a count variable, percent of missed sessions is a percent variable, and neither variable's distributions approach normality. Coxe, West & Aiken (2009) recommend using negative binomial regression in the place of linear regression when analyzing count data that does not approximate the normal distribution. Attendance at eight or more sessions is a binary, categorical variable, so we then ran a logistic regression with attendance at eight or more sessions as the outcome variable and racial/ethnic background as the predictor variable. Discharge reason is a categorical variable with three levels, so we ran a multinomial logistic regression with discharge reason as the outcome variable and racial/ethnic background as the predictor variable.

Total Sessions Attended

Table 10 shows the results of the negative binomial regression using total attended sessions as the outcome variable and race/ethnicity as the predictor variable. The overall model was significant χ^2 (2, N = 562) = 8.47, p = .02. English and Spanish-speaking Latinos attended an average of 1.39 times more sessions than African Americans. These differences were statistically significant. There was no statistically significant difference in session attendance between the English-speaking and Spanish-speaking Latinos. The marginal mean for total attended sessions was 35.98 among English-speaking Latinos, 35.92 among Spanish-speaking Latinos, and 25.87 among African Americans.

Percentage of Missed Sessions

To run the negative binomial regression using percentage of missed sessions as the outcome variable, we used total number of missed individual and family sessions as the response variable and the natural logarithm of total scheduled individual and family sessions (minus any therapist cancelled sessions) as the offset variable. Table 11 shows the results of the negative binomial regression. The overall model was significant χ^2 (2, N = 558) = 6.97, p = .03. African Americans missed an average of 1.42 times more sessions than Spanish-speaking Latinos. This difference was statistically significant. There was no statistically significant difference in percentage of missed sessions between English-speaking Latinos and either of the two other ethnic/racial groups. The estimated marginal mean for percentage of missed sessions was 12.3% among English-speaking Latinos, 10.6% among Spanish-speaking Latinos, and 15.1% among African Americans.

Likelihood of Attending Eight or More Sessions

Table 12 shows the results of the logistic regression using attendance at eight or more sessions as the outcome variable and race/ethnicity as the predictor variable. The overall model was significant χ^2 (2, N = 562) = 8.86, p = .01. Spanish-speaking Latinos were 2.35 times more likely to attend at least eight sessions than African Americans. This difference was statistically significant. English-speaking Latinos did not differ significantly from either of the other two racial/ethnic groups. The model had a sensitivity of 0%, a specificity of 100%, and an overall hit rate of 85.6%. We squared the correlation between the predicted probability that a subject would attend at least eight sessions and their observed value on this outcome to obtain an analog to the R^2 statistic obtained in linear regression. This is the method recommended by Efron (1978). The Efron's pseudo-R^2 was 0.02 when race/ethnicity was included in the model predicting attendance at eight or more sessions.

Reason for Discharge

Table 13 shows the results of the multinomial logistic regression using reason for discharge as the outcome variable and race/ethnicity as the predictor variable. The overall model was significant [-2 Log Likelihood = 29.05, χ^2 (4, N = 434) = 22.66, p < .001]. African Americans were 1.51 times more likely to drop out of treatment and 1.79 times more likely to involuntarily leave treatment than Spanish-speaking Latinos. These differences were statistically significant. English-speaking Latinos were 1.70 times more likely to involuntarily leave treatment than Spanish-speaking Latinos. This difference was also statistically significant, but there was no statistically significant difference between English and Spanish-speaking Latinos on likelihood of dropping out of treatment. There were also no statistically significant differences between African Americans and English-speaking Latinos on reason for discharge. Table 14

shows the classification accuracy of the model. Were the model to classify people completely by chance, its overall hit rate would be 40.0%. When race/ethnicity was added into the model, the model's overall hit rate increased to 50.9%

Question 2: Can Factors in Costello et. al's (1998) Family-Based Network Model Better Explain Variation in Treatment Engagement Than Racial/Ethnic Identification?

To answer the second study question, we ran the same set of analyses as in question one but included variables in Costello et. al's (1998) Family-Based Network Model in addition to the race/ethnicity variable. Because of the large number of possible predictor variables, we first ran a series of univariate analyses to determine which of the possible predictor variables attained at least a .05 significance level with each outcome variable. The results of these univariate analyses are reported in Table 15. Predictors that attained a p-value of .05 or less were then put into a candidate model. Variables that attained at least a p-value of .10 in the candidate model were then included in the final model. A summary of the results of each of the final regressions run for question two is illustrated in Table 15.

Total Sessions Attended

Table 16 shows which predictor variables attained univariate significance with total attended sessions. The candidate model included the following variables: race/ethnicity, age, gender, total clinical problems, functional impairment, sexual abuse, physical abuse, total score on the UCLA PTSD-RI, TSCC Anxiety T-score, TSCC Depression T-score, TSCC Dissociation T-score, TSCC PTSD T-score, percentage of family sessions, percentage of group sessions, and field services. After eliminating any variables that did not attain at least a p-value of .10 in the

candidate model, the following variables were included in the final model: race/ethnicity, age, total impairment, percentage of group sessions, and field services.

Table 17 shows the results of the final negative binomial regression. The overall model was significant χ^2 (6, N = 562) = 54.28, $p < 0.001$. Closer examination of the parameter estimates indicated that all the variables included in the final model were significant predictors of total attended sessions. Thus, even after controlling for other variables in Costello et. al's (1998) model, race/ethnicity continued to be a significant predictor of total attended sessions, with both Latino groups continuing to attend significantly more sessions than African Americans.

Younger children, children with more functional impairment, children with a greater proportion of group treatment, and children who received at least some treatment in the field all attended more treatment sessions on average. When all other variables were held constant, children attended an average of 1.04 times more sessions for every year decrease in age and an average of 1.05 times more sessions for every additional area of functional impairment. Children who received all their treatment in groups attended an average of 1.95 times more sessions than children who received none of their treatment in groups (when all other variables were held constant). Children who received services in the field attended 1.46 times as many sessions as children who received all their services in the office (with all other variables held constant). The estimated marginal mean for total attended sessions for children receiving all their treatment in the office was 23.84. It was 34.96 for children receiving at least some of their treatment in the field.

Percentage of Missed Sessions

Table 16 shows which predictor variables attained univariate significance with percentage of missed sessions. The candidate model included the following variables: race/ethnicity, age, functional impairment, referral source, percentage of group sessions, and field services. Age and referral source were retained in the final model. Race/ethnicity was no longer a significant predictor of percentage of missed sessions when the model controlled for other variables.

The results of the final negative binomial regression are illustrated in Table 18. The overall model was significant χ^2 (3, N = 434) = 27.00, $p < .001$. Closer examination of parameter estimates indicated that older children tended to miss more sessions than younger children such that, when the model controlled for referral source, children missed 1.07 times more sessions for every year of increase in age. Children referred by their school missed significantly fewer sessions than either self-referred children or children with mandated referrals such that, when the model controlled for age, self-referred children missed 1.73 times as many sessions as school-referred children, and children with mandated referrals missed 1.46 times as many sessions as school-referred children. There was no significant difference in percentage of missed sessions between self-referred children and children with mandated referrals. The estimated marginal mean for percentage of missed sessions for self-referred children was 15.4%; it was 8.9% for school referred children and 13.0% for children with mandated referrals.

Likelihood of Attending Eight or More Sessions

Table 16 shows which predictor variables attained univariate significance with attending at least eight sessions. The candidate model included the following variables: race/ethnicity, internalizing problems, physical abuse, TSCC Anxiety T-score, TSCC Dissociation T-score,

TSCC PTSD T- score, percentage of family sessions, percentage of group sessions, and field services. The final model included race/ethnicity, physical abuse, percentage of group sessions, and field services. Table 19 shows the results of the final logistic regression. Even after controlling for other variables in Costello et. al's (1998) model, race/ethnicity continued to be a significant predictor of attendance at eight or more sessions, with Spanish-speaking Latinos being more likely than African Americans to complete at least eight sessions of treatment.

The overall model was significant χ^2 (5, N = 562) = 51.83, $p < .001$, and Efron's pseudo-R^2 statistic was 0.11. Closer examination of the model parameters indicated that physical abuse, group treatment, and field services were significant predictors of attendance at eight or more sessions. When all other variables were controlled for, children who had been physically abused were 2.20 times more likely to attend at least eight sessions than children who had not been physically abused. Children who received only group treatment were 4.73 times more likely to attend at least eight sessions than children who received no group treatment when the model controlled for other variables. Children who received at least some of their services in the field were 4.15 times more likely to attend at least eight sessions than children who received all their treatment in the office when the model controlled for other variables. The model had an overall hit ratio of 85.6%, a sensitivity of 0%, and a specificity of 100%.

Reason for Discharge

Table 16 shows which predictor variables attained univariate significance with reason for discharge. The candidate model included the following variables: race/ethnicity, age, externalizing problems, internalizing problems, functional impairment, percentage of group sessions, and field services. The following variables were included in the final, trimmed model:

race/ethnicity, age, internalizing problems, functional impairment, percentage of group sessions, and field services. Table 20 presents the results of the final multinomial logistic regression. The overall model came out significant [-2 Log Likelihood = 765.30, χ^2 (14, N = 430) = 71.94, $p < .001$].

Even after controlling for other factors in Costello et. al's (1998) model, race/ethnicity continued to be a significant predictor of reason for discharge. African Americans continued to be more likely to involuntarily leave or drop out of treatment than Spanish-speaking Latinos, and English-speaking Latinos continued to be more likely to involuntarily leave treatment than Spanish-speaking Latinos.

In addition to race/ethnicity, age, functional impairment, internalizing problems, and percentage of group treatment were also significant predictors of reason for discharge. Children were 1.13 times more likely to drop out of treatment and 1.34 times more likely to involuntarily leave treatment for every additional area of functional impairment when the model controlled for other variables. Children were 1.08 times more likely to drop out of treatment for every additional year of age when the model controlled for other variables, and children without internalizing problems were 2.38 times more likely to drop out of treatment than children with internalizing problems. However, neither age nor internalizing problems had a statistically significant effect on the likelihood of children involuntarily leaving services versus successfully completing them. Children who received no group treatment were 5.88 times more likely to involuntarily leave treatment than children who received only group treatment when the model controlled for other variables. However, percentage of group treatment did not significantly differentiate between children who dropped out versus successfully completed treatment.

Table 21 shows the classification accuracy of the model. Were the model to classify people completely by chance, its overall hit rate would be 39.9%. When race/ethnicity, age, internalizing problems, functional impairment, percentage of group sessions, and field services were entered into the model, the model's overall hit rate increased to 56.0%.

Question 3: Are different factors in Costello et. al's (198) family network-based model associated with treatment engagement among African Americans, English-speaking Latinos, and Spanish-speaking Latinos?

Prior to running the analyses for question three, we first ran a series of univariate analyses to determine which of the predictor variables differed among the ethnic/racial groups. The results of these univariate analyses are reported in Appendix B. Predictors that attained a p-value of .05 or less were then put into a candidate multinomial regression model with race/ethnicity as the response variable. The following variables attained a p-value of at least .10 in the candidate model and were therefore included in the final regression: age, externalizing problems, total chronic traumas, number of adults in the home, and referral source. The results of the final multinomial regression are reported in Table 22. African Americans were significantly more likely to have a mandated referral into services and to have fewer adults in the home than either English-speaking or Spanish-speaking Latinos. Spanish-speaking Latinos were significantly less likely to be diagnosed with an externalizing problem than children in the other two ethnic groups. English-speaking Latinos were significantly younger than the African American children in the sample.

To test question three, we re-ran the analyses for question two within each ethnic/racial group. Because the sample size in each group was lower than in question two, variables were selected for the candidate model if they attained a p-value of .10 or lower in the univariate analyses. As in question two, variables were included in the final model if they attained a p-value of .10 or lower in the candidate model. A summary of the results for question three is illustrated in Table 23.

English-Speaking Latinos

The univariate relationships between each predictor and outcome variable in the English-speaking Latino group are illustrated in Appendix C.

The final negative binomial regression predicting total attended sessions in English-speaking Latinos included age, exposure to sexual abuse, and field sessions as predictor variables. Results of the regression are shown in Table 24. The final model came out significant χ^2 (3, N = 126) = 16.49, p = .001. Closer examination of the parameter estimates indicated that English-speaking Latino children exposed to sexual abuse attended an average of 1.79 times more sessions than children who had not been sexually abused when controlling for age and field services. English-speaking Latino children who received at least some services in the field attended an average of 1.78 times more sessions in the field than children who only received services in the office.

The final negative binomial regression predicting percentage of missed sessions in English-speaking Latinos included only field sessions as a predictor variable. Table 25 shows the results of the negative binomial regression. The final model was significant χ^2 (1, N = 125) =

11.39, p = .001. Children who only received services in the office missed an average of 2.16 times more sessions than children who received at least some services in the field.

The final logistic regression predicting attendance at eight or more sessions in English-speaking Latinos included total impairment, total chronic traumas, and field services. Table 26 shows the results of the logistic regression. The overall model was significant χ^2 (3, N = 119) = 17.69, p = .001, and Efron's pseudo-R^2 statistic was 0.16. Children's likelihood of completing at least eight treatment sessions increased by 1.63 times with each additional chronic trauma (when controlling for other variables in the model). By contrast, children's likelihood of attending at least eight sessions *decreased* by a factor of 0.77 with each additional area of functional impairment (when controlling for other variables). Children receiving at least some services in the field were 4.65 times more likely to attend at least eight treatment sessions when compared to children receiving all their treatment in the office (with all other variables controlled for in the model). The model had an overall hit rate of 85.7%, a sensitivity of 21.1% and a specificity of 98.0%.

The final multinomial logistic regression predicting reason for discharge in English-speaking Latinos included only field sessions. Table 27 shows the results of the multinomial logistic regression. The overall model came out significant [-2 Log Likelihood = 14.45, χ^2 (2, N = 94) = 12.42, p = .002]. Closer examination of the parameter estimates indicated that English-speaking Latino children who received at least some services in the field were 8.67 times more likely to involuntarily leave treatment than to successfully complete therapy. Table 28 shows the classification accuracy of the model. Were the model to classify people completely by chance,

its overall hit rate would be 36.1%. When field services were added into the model, the model's overall hit rate increased to 46.8%.

Spanish-Speaking Latinos

The univariate relationships between each predictor and outcome variable in the Spanish-speaking Latino group are illustrated in Appendix D.

The final negative binomial regression predicting total attended sessions among Spanish-speaking Latinos included age, total impairment, percentage of group sessions, and field services. Table 29 shows the results of the final negative binomial regression. The final model came out significant χ^2 (4, N = 329) = 28.65, p < .001.

Closer examination of the parameter estimates indicated that Spanish-speaking Latino children received 1.07 times more sessions for every additional area of functional impairment when all other variables were held constant. A Spanish-speaking Latino child who received only group treatment received an average of 2.37 times more sessions than a Spanish-speaking Latino child who received no group treatment when all other variables were held constant. Spanish-speaking Latino children who received services in the field received an average of 1.42 times as many sessions as children who only received services in the office when all other variables were held constant.

The final negative binomial regression predicting percentage of missed sessions in Spanish-speaking Latinos included age and referral source. The results of the negative binomial regression are shown in Table 30. The overall model was significant χ^2 (3, N = 246) = 17.13, p = .001. Closer examination of the parameter estimates indicated that, for every additional year of age, Spanish-speaking Latino children missed 1.09 times more sessions (when referral source

was held constant). Children referred by themselves or their families missed 1.69 times more sessions than children referred by their school.

The final logistic regression predicting attendance at eight or more sessions in Spanish-speaking Latinos included number of adults in the home and field services. The results of the logistic regression are shown in Table 31. The overall model was significant χ^2 (2, N = 314) = 19.05, $p < .001$, and the Efron's pseudo-R^2 statistic was 0.05. The model had an overall hit ratio of 89.2%, a sensitivity of 0%, and a specificity of 100%. Closer examination of the estimation parameters indicated that children who received at least some treatment in the field were 4.28 times more likely to attend eight or more sessions of treatment.

The final multinomial logistic regression predicting discharge reason in Spanish-speaking Latinos included age, functional impairment, and internalizing problems as predictor variables. Table 32 shows the results of the multinomial logistic regression. The overall model came out significant [-2 Log Likelihood = 409.84, χ^2 (6, N = 259) = 28.08, $p < .001$].

Closer examination of the parameter estimates indicated that for every additional year of age, Spanish-speaking Latino children were 1.10 times more likely to drop out of treatment (when all other variables were held constant). For every additional area of functional impairment, Spanish-speaking Latino children were 1.25 times more likely to drop out of treatment and 1.34 times more likely to involuntarily leave treatment. Spanish-speaking Latino children with no internalizing problems were 2.94 times more likely to drop out of treatment than children with internalizing problems. Table 33 shows the classification accuracy of the model. Were the model to classify people completely by chance, its overall hit rate would be 45.1%.

When age, functional impairment, and internalizing problems were added into the model, the model's overall hit rate increased to 61.0%.

African Americans

The univariate relationships between each predictor and outcome variable in the African American group are illustrated in Appendix E.

The final negative binomial regression predicting total attended sessions in African Americans included functional impairment and percentage of individual sessions as predictors. Table 34 shows the results of the negative binomial regression. The overall model came out significant χ^2 (2, N = 107) = 11.01, p = .004.

Closer examination of parameter estimates indicated that African American children attended 1.09 times more sessions for every additional area of functional impairment (when percentage of individual sessions was held constant). In addition, African American children who received only individual treatment attended an average of 2.03 times more sessions than African American children who received no individual treatment (when functional impairment was held constant).

Total chronic traumas was the only variable included in the final negative binomial regression predicting percentage of missed sessions in African Americans. The overall model was not significant χ^2 (1, N = 101) = 1.41, p = .24. The results of the final model are illustrated in Table 35.

The final logistic regression predicting attendance at eight or more sessions in African Americans included only field services. The results of the final logistic regression are illustrated in Table 36. The overall model was significant χ^2 (1, N = 107) = 7.41, p = .006, and Efron's

pseudo-R^2 statistic was 0.07. The model had an overall hit ratio of 77.6%, a sensitivity of 0%, and a specificity of 100%. Closer examination of the estimation parameters indicated that children who received at least some treatment in the field were 3.65 times more likely to attend eight or more sessions of treatment.

The final multinomial logistic regression predicting discharge reason in African Americans included total impairment and physical abuse. The results of the model are illustrated in Table 37. The overall model came out significant [-2 Log Likelihood = 75.06, χ^2 (4, N = 78) = 13.38, p = .01].

Closer examination of the parameter estimates indicated that only functional impairment significantly differentiated between discharge outcomes. African American children were 1.33 times more likely to involuntarily leave treatment with every additional area of functional impairment. Functional impairment did not significantly differentiate between African American children who successfully completed versus dropped out of therapy. The model's classification accuracy is summarized in Table 38. Were the model to classify people completely by chance, its overall hit rate would be 35.4%. When total impairment and physical abuse were added into the model, its overall hit rate increased to 52.6%.

DISCUSSION

Question 1: Do African Americans, English-speaking, and Spanish-speaking Latinos have different levels of treatment engagement?

Our results consistently demonstrated that, of the three ethnic/racial groups, Spanish-speaking Latinos were most engaged in treatment and African Americans were least engaged in treatment. English-speaking Latinos appeared to fall somewhere between Spanish-speaking Latinos and African Americans on treatment engagement outcomes. When compared to African Americans, Spanish-speaking Latinos attended significantly more sessions, missed fewer sessions, were more likely to attend at least eight sessions, and were less likely to leave treatment involuntarily or drop out of services. English-speaking Latinos also attended significantly more sessions than African Americans but did not differ significantly from African Americans or Spanish-speaking Latinos on percentage of missed sessions or likelihood of attending at least eight sessions. English-speaking Latinos were also more likely than Spanish-speaking Latinos to involuntarily leave treatment.

Our findings were consistent with Bui & Takeuchi's (1992) finding that African Americans receive fewer treatment sessions than other ethnic/racial groups, as well as a study by Pumariega et. al, (1998) that indicated that immigrant Latinos receive more treatment sessions than non-immigrant Latinos. Our results contrasted with a number of studies that found no differences in treatment engagement between European Americans, Latinos, and African Americans (Brookman-Frazee et. al, 2008; McKay et. al, 2001; New & Berliner, 2000). It is important to note that Bui & Takeuchi (1992) included similar numbers of participants from each ethnic/racial group in their study, and that Pumariega et. al, (1998) had a very large sample of

Latinos. By contrast, Brookman-Frazee et. al, (2008) had a sample of only 169 children, the majority of whom were European American. McKay et. al, (2001) had a sample of 405 children, of which only 11% were Latino, and New & Berliner (2000) reported that 83% of their sample was European American. It is thus possible that the studies that have found no ethnic/racial differences in treatment engagement simply did not have enough power to detect differences between Latinos and African Americans.

Our findings are also noteworthy given that there is fairly consistent evidence that Latinos initially access services at lower rates than African Americans (Cohen et. al, 2001; Gudiño, et. al, 2008b, Kataoka et. al, 2002). The fact that Latino children are more engaged in ongoing treatment than African Americans lends evidence to the idea that the factors that predict initial treatment access are probably different than those that predict ongoing treatment engagement (Kazdin & Mazurick, 1994).

There are a number of possible explanations for why ethnic/racial differences exist in treatment engagement in this sample. First, Spanish-speaking Latinos, by virtue of their language preference, may be more likely than other clients to get a therapist of the same ethnic and cultural background. There is some evidence in the literature that clients who have therapists of the same ethnic/cultural background tend to be more engaged in treatment (Halliday-Boykins, Schoenwald & Letourneau, 2005; Sue, 1998).

Second, Spanish-speaking Latinos may be less acculturated than the other two ethnic/racial groups (Marin & Gamba, 1996), which may facilitate ongoing engagement in trauma-informed services. While the relationship between acculturation and family functioning is complex, there is some evidence that Latino families who are less acculturated report higher

levels of emotional and tangible support (Rodriguez et. al, 2007) and cohesiveness (Miranda, Estrada & Firpo-Jimenez, 2000). In addition, there is some evidence that the relationship between higher levels of acculturation in Latino adolescents and increased substance use can be explained by decreases in familism (Gil, Wagner & Vega, 2000). Engagement in trauma-informed treatment can be highly stressful for families, particularly when the therapy involves processing traumas that are stigmatizing or were perpetrated by other family members. Thus, one might expect that families who are more supportive and cohesive may be better able to mobilize the emotional and physical resources necessary to participate in trauma-informed interventions.

Finally, African Americans may be less engaged in treatment because they have less trust in the mental health services system than Latinos (Whaley, 2001). There may be a number of good reasons for this, including the fact that African Americans are more likely to be misdiagnosed or hospitalized by mental health service providers (Whaley, 2001), and that African American families are more likely to be reported to Child Protective Services than families from other ethnic/racial backgrounds (Drake et. al, 2011; Fluke, Yuan, Hedderson & Curtis, 2003). Thus, while cultural mistrust may be an understandable reaction to pervasive discrimination, it also presents a serious obstacle to engaging African American families in potentially helpful services.

Question 2: Can Factors in Costello et. al's (1998) Family-Based Network Model Better Explain Variation in Treatment Engagement Than Racial/Ethnic Identification?

The study's second question had two parts. First, does race/ethnicity continue to be a significant predictor of treatment engagement when controlling for other factors? Second, what factors besides race/ethnicity best predict treatment engagement?

Does Race/Ethnicity Continue to Be a Significant Predictor of Treatment Engagement When Controlling for Other Factors?

Our results were fairly consistent in finding that race/ethnicity continued to be a significant predictor of treatment engagement even when predictive models included additional variables. This was the case when examining total attended sessions, the likelihood of attending eight or more sessions, and reason for discharge. Race/ethnicity may have continued to be a significant predictor of these three treatment engagement outcomes because we were unable to measure a number of potentially more proximal predictors in this study. For example, as mentioned in question one, ethnic/cultural match between clients and therapists (Halliday-Boykins, Schoenwald & Letourneau, 2005; Sue, 1998), acculturation (Rodriguez et. al, 2007), and cultural mistrust (Whaley, 2001) may all be important predictors of treatment engagement. However, none of these variables were measured in the Core Data Set. This study also did not examine a number of other factors that may mediate the relationship between race/ethnicity and treatment engagement, such as socioeconomic status (Betancourt & Lopez, 1993), child and parent perceptions of treatment (Gopalan et. al, 2010), and the therapeutic alliance (Staudt, 2007).

Although race/ethnicity continued to be a significant predictor of total attended sessions, likelihood of attending at least eight sessions, and reason for discharge, it was no longer a significant predictor of percentage of missed sessions when other variables were accounted for in

the model. This may be because percentage of missed sessions measures behavior that occurs while a child and family are still in treatment, while the other three outcome variables have to do with decisions about when the child and family end treatment. Interestingly, referral source was a significant predictor of percentage of missed sessions but was not associated with the other three outcome variables. We found that children referred to services by their school missed fewer sessions than children who were either self-referred or referred by the court or DCFS. This may be because CII has an active school-based services program, and children referred by their schools may be more likely to get school-based services. The integration of clinical services into the school system may thus remove tangible obstacles to regularly attending therapy sessions, though it appears to have less of an effect on children's and families' decisions to stay in treatment. African American children in this sample were significantly less likely to be referred to services by their school than children in the two Latino groups, which may explain why race/ethnicity stopped being a significant predictor of percentage of missed sessions once referral source was included in the model.

What factors besides race/ethnicity best predict treatment engagement?

Table 15 summarizes the relationships between each predictor and outcome variable in the overall sample. Of the variables included in this study, age, functional impairment, and receipt of group treatment and field services were the most consistent predictors of treatment engagement in the overall sample. As hypothesized, younger children, children who received more group sessions, and children who received at least some services in the field were all more likely to stay engaged in treatment. Functional impairment had a more mixed relationship with treatment engagement, such that, while children with more functional impairment attended more

sessions, they were also more likely to be rated by their therapists as involuntarily leaving or dropping out of treatment.

Developmental characteristics of adolescents may make them more difficult to engage in treatment than young children (Oetzel & Scherer, 2003). Both adolescents and children are likely to begin treatment because their problems are distressing important adults in their lives rather than because they are intrinsically motivated to seek out services (Costello et. al, 1998). However, adolescents have more cognitive and physical resources with which to resist the demands of adult authority figures than young children (Oetzel & Scherer, 2003) and may be more motivated to act against the wishes of adults in order to assert their autonomy (Oetzel & Scherer, 2003; Winters, 1999). At the same time, adolescents may be less aware of the severity of their problems than adults because they are only beginning to develop abstract reasoning skills (Oetzel & Scherer, 2003). This constellation of developmental risk factors may make it particularly difficult for therapists to form a strong working alliance with adolescent clients and to keep them in treatment.

As we predicted, participation in group treatment and receiving services in the field consistently predicted more engagement in services. Group treatment may be more engaging for youth because it provides them with opportunities to gain support from their peers (Glodich & Allen, 1998). The involvement of peers may also help adolescents participate in treatment without feeling like they are giving up their autonomy to adults (Glodich & Allen, 1998; Oetzel & Scherer, 2003). Provision of field services to children and families has the advantage of removing many of the physical barriers to engaging in treatment, such as child care constraints

and mobilizing resources to get to the clinic (Kaplan et. al, 1998; Jaycox et. al, 2010; Slesnick & Prestopnick, 2004).

Functional impairment had a more mixed relationship with treatment engagement. As predicted, children with more functional impairment attended more therapy sessions. This is consistent with the work of a number of other researchers studying treatment engagement (Angold et. al, 2000; Brookman-Frazee et. al, 1997; Burns et. al, 1997; Farmer et. al, 1999; Garland et. al, 2005; Kendall & Sugarman, 1997; Miller et. al, 2008; Stahmer et. al, 2005; Zahner et. al, 1992). However, counter to our hypotheses, children with more functional impairment were also more likely to be rated by their therapists as involuntarily leaving or dropping out of treatment. Thus, it appears that while children with more functional impairment were getting more treatment than children with less severe problems, their therapists still felt that they were not receiving enough treatment. This may indicate that there is a mismatch between therapists' and clients' perceptions of "good" treatment outcomes.

It is also important to note that, while measures of symptom severity were significant predictors of total attended sessions and likelihood of attending at least eight sessions in univariate analyses, they were no longer significant predictors of these outcomes when the model accounted for other demographic and treatment setting characteristics. This is consistent with findings by Miller et. al, (2008) that, while symptom severity was significantly associated with treatment engagement in their sample, it did not account for a large proportion of the variance in engagement outcomes.

Question 3: Are different factors in Costello et. al's (1998) family network-based model associated with treatment engagement among African Americans, English-speaking Latinos, and Spanish-speaking Latinos?

The third study question also had two parts. We first examined whether there were differences among the ethnic/racial groups on any of the predictor variables. We then examined whether different predictor variables were associated with engagement outcomes in each ethnic/racial group.

Differences Among the Ethnic/Racial Groups on the Predictor Variables

As predicted, African Americans had fewer adults in the home and were more likely to be referred to services by DCFS or the court than children in the two Latino groups. Contrary to our expectations, Spanish-speaking Latino children were less likely to have externalizing problems than the English-speaking Latino and African American children in the sample. This contrasts with literature that has found that immigrant Latinos are more likely to receive services for externalizing rather than internalizing problems (Gudiño et. al, 2008a). We also found that the English-speaking Latinos in our sample were significantly younger than the African Americans.

Predictors of Treatment Engagement within Each Ethnic/Racial Group

Table 23 provides a summary of the predictor variables that were significantly associated with treatment engagement outcomes in each racial/ethnic group. We originally hypothesized that African Americans and Spanish-speaking Latinos would be more engaged in treatment if they had externalizing problems, while English-speaking Latinos would be more engaged if they had internalizing problems. Our data did not support this hypothesis. Externalizing problems were not related to treatment engagement outcomes in any of the ethnic/racial groups, and

internalizing problems were not related to treatment outcomes in African Americans. Spanish-speaking Latinos were actually more likely to successfully complete treatment (rather than drop out) when they had internalizing problems. In univariate analyses, Spanish-speaking Latino children with internalizing problems attended more sessions, missed fewer sessions, and were more likely to attend at least eight sessions. English-speaking Latinos with internalizing problems were also more likely to attend at least eight sessions in univariate analyses.

A possible reason that our findings differ from those of Gudiño et. al, (2008a) are that Gudiño et. al, (2008a) studied children with a wide range of presenting problems who were receiving a broad range of mental health services. The children in our sample were all receiving trauma-informed treatments from an agency specializing in the prevention and treatment of child maltreatment. Given that the definition of internalizing problems in this study included a number of diagnoses strongly associated with trauma exposure (such as PTSD), it may be that children with internalizing problems in this sample simply had presenting problems that agency staff were well-equipped to treat.

The two most consistent predictors of treatment engagement within each ethnic/racial group were functional impairment and receipt of field services. Functional impairment was associated with more total attended sessions in Spanish-speaking Latinos and African Americans. Functional impairment was also associated with higher rates of involuntarily leaving treatment in Spanish-speaking Latinos and African Americans and with higher rates of drop-out and lower likelihood of completing at least eight sessions in English-speaking Latinos. This mixed relationship between functional impairment and engagement outcomes within each ethnic/racial group was similar to the results we found in the overall sample.

Receipt of field services was associated with greater likelihood of attending at least eight sessions in all the ethnic/racial groups, and with a greater total number of sessions in both of the Latino groups. Field services were also associated with fewer missed sessions in the English-speaking Latino group. These results were all consistent with our findings in the overall sample. Interestingly, field services were also associated with higher levels of involuntarily leaving treatment in the English-speaking Latino group. This may be because therapists are more likely to provide field services to higher risk, or more unstable, families. Thus, while children who receive field sessions may attend more treatment sessions, they may also be at higher risk of needing to leave treatment for reasons out of their control.

It is also important to note that it was more difficult to predict treatment engagement outcomes in the African American group than in the two Latino groups. None of the predictor variables were significantly associated with percentage of missed sessions, and there were no predictor variables that significantly differentiated between treatment drop-outs and successful completers in the African American group. Part of this lack of significant findings may be attributable to the smaller sample size of the African American group. There were only 107 African American children included in the sample, and because of the large amount of missing discharge information only 78 African American children were included in the multinomial regression predicting reason for discharge.

It is also possible that different factors predict treatment engagement in African Americans than in Latinos. Our results were fairly consistent in demonstrating that African American children were less engaged in treatment than children in the two Latino groups. It also seems that the African American children in this sample may have different family structures

(i.e., fewer adults in the home) and may be referred into treatment through different sources (i.e., DCFS or the court) than the Latino children. There may also be important cultural differences between African American and Latino clients. While both Latinos and African Americans are from traditionally under-represented groups within the mental health services system, the majority of Latinos in the United States either migrated to the United States voluntarily or are the descendants of individuals who chose to live here. By contrast, the majority of African Americans are the descendants of individuals who were forced to come to the United States against their will (Whaley, 2001). These historical differences in migration patterns may foster very different attitudes towards mental health services, which often represent the values of the majority culture (Whaley, 2001). Therefore, measuring variables such as cultural mistrust (Whaley, 2001) and African American clients' experiences of discrimination within the mental health services system (Dana, 2002) may be particularly important predictors of treatment engagement within this group. Qualitative research may also be an important method of further elucidating predictors of treatment engagement in African Americans.

Limitations

This study has a number of limitations, many of which are related to the challenges of doing research in community settings. First, we were unable to report data on children's treatment outcomes. This information would have helped us understand whether attendance at a greater number of sessions led to a reduction in symptoms or improvement in functioning. Unfortunately, inconsistent collection of follow-up data made it difficult to statistically analyze this question.

Second, there were some inconsistencies in how clinicians at CII tracked missed group sessions, which limited us to only examining missed family and individual sessions. Even after limiting our analysis, it is difficult to determine whether we were able to accurately assess how many sessions were missed. Therapists cannot bill the Department of Mental Health for missed sessions and so have less motivation to track no-shows and cancellations in a consistent manner. Thus, while it is encouraging that children missed an average of only 12% of their scheduled sessions in this sample, this figure may be an under-estimate.

A third limitation of this study is that we were only able to track sessions attended by the identified patient. Because clinicians only track the attendance of the identified patient in the TIER system, it was not feasible to count collateral sessions including the child's parents or teachers (but not the child) for the purposes of this study. We are therefore significantly under-estimating the number of clinical contacts that therapists have with clients' families.

Finally, we were unable to categorize the treatment model in which the child was engaged. Given the increasing interest in the effectiveness of evidence-based practices in community settings (Hoagwood et. al, 2001; Weisz, Sandler, Durlak & Anton, 2005), it would have been useful to understand if evidence-based treatments offered by CII more effectively engage clients than treatment-as-usual, or if children from different ethnic/racial groups have a tendency to be assigned to different kinds of treatments. Unfortunately, this information was not tracked consistently for the CDS or in TIER.

Future Directions

Treatment setting variables, such as receipt of group treatment and field services, turned out to be reliable predictors of treatment engagement in this sample. It would be important to

replicate this study while including more treatment settings variables as potential predictors of treatment engagement outcomes. These could include factors such as ethnic-cultural match between clients and therapists, type of treatment to which the child is assigned, and distance of the agency from a family's residence.

Future studies should include additional variables that may mediate the relationship between race/ethnicity and treatment engagement outcomes, such as cultural mistrust (Whaley, 2001), client experiences of discrimination by mental health service providers (Dana, 2002), and acculturation (Gil, Wagner & Vega, 2000). Qualitative studies comparing families that successfully complete treatment to those who drop out may provide researchers with information on other factors that predict treatment engagement (Miller et. al, 2008).

It is also important for future research to further examine the association between treatment engagement and treatment outcomes. While there is evidence that premature termination is associated with negative outcomes for children and families (Angold et. al, 2000; Boggs et. al, 2005), it is important for clinicians and researchers to gain a more fine-grained understanding of the relationship between treatment dosage and outcome, particularly in community settings. It is also important to understand whether different measures of treatment engagement are differentially associated with clinical outcome measures.

Conclusions

Children receiving trauma-informed services from CII comprise a highly diverse, urban sample of children. Many of these children also experience a number of risk factors for poor psychosocial outcomes, including exposure to multiple traumas, high levels of comorbidity, and multiple areas of functional impairment.

CII is already engaging in a number of practices that promote treatment engagement, including providing group therapy services and conducting a large portion of treatment in the field. Overall, treatment engagement in this sample was relatively high: children attended an average of 34 treatment sessions, only 14% of clients dropped out of treatment prior to eight sessions, and clients missed relatively few scheduled treatment sessions (12%). However, despite these positive indicators of treatment engagement, therapists only rated 38% of the sample as successfully completing treatment.

It is also important to note that, while children receiving services from CII have high levels of treatment engagement, ethnic/racial disparities in treatment engagement appear to exist. Spanish-speaking Latino clients seem to be most engaged in mental health services offered by the agency, while African American clients appear to be least engaged in services. Even when a number of other factors were accounted for in predictive models, ethnic/racial differences in treatment engagement remained significant. Client age, functional impairment, and receipt of group therapy and field services were also consistent predictors of children's engagement in mental health services.

Future research should focus on additional treatment setting and cultural characteristics that may mediate the relationship between race/ethnicity and treatment engagement outcomes. Qualitative research may further help identify factors that predict treatment engagement. It is also important for researchers to better understand the relationship between treatment engagement and treatment outcomes.

Table 1. *Demographic Characteristics of the Sample (N = 562)*

	Mean (SD)	n (%)
Age, years	11.99 (3.46)	
Female		277 (49.3)
English-Speaking Latino		126 (22.4)
Spanish-Speaking Latino		329 (58.5)
African American		107 (19.0)
Child Born In the US		494 (87.9)
Child Born Outside of US		47 (8.4)
Immigration Status Unknown		21 (3.7)
Child Lives with Parents		433 (77.0)
Child Lives with Relatives		82 (14.6)
Child Lives in Foster Care		33 (5.9)
Other Residence		11 (2.0)
Unknown Residence		3 (0.5)
Number of Adults in House	2.1 (1.1)	
Number of Children in House	2.6 (1.3)	

Table 2. *Demographic Characteristics of Each Ethnic/Racial Group*

	English-Speaking Latinos (n = 126)	Spanish-Speaking Latinos (n =329)	African American (n = 107)
	Mean (SD) or n (%)	Mean (SD) or n (%)	Mean (SD) or n (%)
Age, years	11.51 (3.64)	12.29 (3.38)	11.61 (3.62)
Female	59 (46.8)	164 (49.8)	54 (49.5)
Male	67 (53.2)	165 (50.2)	53 (50.5)
Primary Residence			
With Parents	87 (69.0)	294 (89.4)	52 (48.6)
With Relatives	27 (21.4)	31 (9.4)	24 (22.4)
Foster Care	6 (4.8)	3 (0.9)	24 (22.4)
Other	5 (4.0)	0 (0)	6 (5.6)
Unknown	1 (0.8)	1 (0.3)	1 (0.9)
Number of Adults in House	2.06 (1.17)	2.13 (1.14)	1.75 (0.79)
Number of Children in House	2.86 (1.47)	2.62 (1.24)	2.36 (1.33)

Table 3. *Study Constructs and Their Operational Definitions*

Construct	Associated Measure
Race/Ethnicity, Age, Gender, Home Language	Demographics obtained during intake interview.
Functional Impairment	*Indicators of Severity of Problems* scale.
Internalizing and Externalizing Problems, Comorbidity	*Clinical Evaluation.* Problems were classified as internalizing, externalizing, or other. Comorbidity was calculated by total number of problems.
PTSD Symptom Severity	Children's total score on the *UCLA PTSD RI,* and children's T scores on the Anger, Anxiety, Post-traumatic Stress, Depression, and Dissociation subscales of the *TSCC-A.*
Types of Trauma Exposure	*General Trauma Information Form*
Repeated vs. Single Trauma Exposure	*Trauma Detail Page*
Treatment Modality	Available in the TIER system.
Time to Second Session	Available in the TIER system.
Field Services	Available in the TIER system. Whether the child received any treatment outside of the clinic.
Referral Source	Available in the TIER system. Children were categorized as being self/family referred, school-referred, or mandated to come to treatment.
Attending at Least Eight Sessions	Available in the TIER system.
Total Number of Sessions	Available in the TIER system.
Percentage of Missed Sessions	Available in the TIER system. Total missed/ cancelled individual and family sessions divided by the total scheduled individual and family sessions minus any sessions that were cancelled by the therapist.
Reason for Discharge	Available in the TIER system.

Table 4. *Children's Functional Impairment at Intake.*

Area of Functional Impairment	n (%) Often a problem	n (%) Sometimes problem	n (%) Not a Problem	n (%) Unknown
1. Academic Problems	208 (37.0)	167 (29.7)	184 (32.7)	3 (0.5)
2. Behavior Problems Home/Community	132 (23.5)	178 (31.7)	249 (44.3)	3 (0.5)
3. Behavior Problems School/Daycare	107 (19.0)	145 (25.8)	303 (53.9)	7 (1.3)
4. Attachment Problems	69 (12.3)	141 (25.1)	330 (58.7)	22 (3.9)
5. Skipping School/Daycare	60 (10.7)	50 (8.9)	447 (79.5)	5 (0.9)
6. Suicidality	25 (4.4)	48 (8.5)	472 (84.0)	17 (3.1)
7. Other Medical Problem	21 (3.7)	30 (5.3)	501 (89.1)	10 (1.8)
8. Inappropriate Sexualized Behaviors	18 (3.2)	42 (7.5)	485 (86.3)	17 (3.0)
9. Substance Use	18 (3.2)	23 (4.1)	501 (89.1)	20 (3.6)
10. Self-Injurious Behaviors	11 (2.0)	46 (8.2)	498 (88.6)	7 (1.2)
11. Alcohol Use	11 (2.0)	23 (4.1)	516 (91.8)	12 (2.1)
12. Criminal Activity	10 (1.8)	32 (5.7)	514 (91.5)	6 (1.1)
13. Running Away from Home	6 (1.1)	32 (5.7)	515 (91.6)	9 (1.6)
14. Prostitution	1 (0.2)	0(0)	556 (98.9)	5 (0.9)

Table 5. *Children's Clinical Problems, Symptoms, and Disorders at Intake*

Clinical Problem	n (%) Probable	n (%) Definite	n (%) Primary Problem
1. Depression	264 (47.0)	131 (23.3)	147 (26.2)
2. PTSD	168 (29.9)	84 (14.9)	116 (20.6)
3. ODD	141 (25.1)	52 (9.3)	55 (9.8)
4. Generalized Anxiety	216 (38.4)	42 (7.5)	52 (9.3)
5. Behavioral problems	164 (29.2)	130 (23.1)	44 (7.8)
6. ADHD	84 (14.9)	32 (5.7)	39 (6.9)
7. Traumatic grief	157 (27.9)	52 (9.3)	27 (4.8)
8. Sexual behavior problems	47 (8.4)	18 (3.2)	12 (2.1)
9. Attachment problems	193 (34.3)	36 (6.4)	7 (1.2)
10. Substance abuse	30 (5.3)	29 (5.2)	7 (1.2)
11. Acute stress disorder	75 (13.3)	6 (1.1)	4 (0.7)
12. Conduct disorder	26 (4.6)	7 (1.2)	4 (0.7)
13. Panic Disorder	27 (4.8)	5 (0.9)	4 (0.7)
14. Separation Disorder	76 (13.5)	11 (2.0)	2 (0.4)
15. Suicidality	47 (8.4)	24 (4.3)	1 (0.2)
16. Somatization	105 (18.7)	14 (2.5)	1 (0.2)
17. Phobic Disorder	14 (2.5)	4 (0.7)	1 (0.2)
18. Dissociation	104 (18.5)	6 (1.1)	0 (0.0)
19. Sleep disorder	58 (10.3)	8 (1.4)	0 (0)
20. OCD	15 (2.7)	3 (0.5)	0 (0)

- Note: Percentages in primary problems do not add to 100% because 27 children were listed as having an "Other" condition as the primary disorder and 12 children had missing data.

Table 6. Children's Scores on the UCLA PTSD-RI & TSCC-A

	Mean Score (SD)	n Meeting Clinical Criteria (%)
UCLA PTSD-RI	23.67 (14.66)	91 (16.2)
Briere Anger T Score	48.00 (10.68)	39 (6.9)
Briere Anxiety T Score	50.75 (12.54)	62 (11.0)
Briere Depression T Score	48.69 (11.60)	52 (9.3)
Briere Dissociation T Score	50.20 (11.64)	59 (10.5)
Briere Post Traumatic Stress T Score	50.20 (11.77)	60 (10.7)

Table 7. Children's Trauma History at Intake.

Type of Trauma	n (%) Suspected	n (%) Known	n (%) Primary Trauma
1. Traumatic loss	8 (1.4)	329 (58.5)	109 (19.4)
2. Domestic violence	26 (4.6)	228 (40.6)	81 (14.4)
3. Sexual maltreatment/abuse	14 (2.5)	97 (17.3)	79 (14.1)
4. Other Trauma	5 (0.9)	49 (8.7)	41 (7.3)
5. Emotional abuse	26 (4.6)	157 (27.9)	38 (6.8)
6. Physical maltreatment	16 (2.8)	134 (23.8)	36 (6.4)
7. Sexual assault/rape	8 (1.4)	59 (10.5)	32 (5.7)
8. Impaired caregiver	12 (2.1)	168 (29.9)	31 (5.5)
9. School violence	9 (1.6)	173 (30.8)	25 (4.4)
10. Community violence	16 (2.8)	176 (31.3)	21 (3.7)
11. Neglect	17 (3.0)	74 (13.2)	12 (2.1)
12. Physical assault	7 (1.2)	67 (11.9)	9 (1.6)
13. Illness/Medical	1 (0.2)	73 (13.0)	6 (1.1)
14. Serious injury	1 (0.2)	101 (18.0)	6 (1.1)
15. Extreme Interpersonal Violence	4 (0.7)	38 (6.8)	3 (0.5)
16. Forced displacement	2 (0.4)	13 (2.3)	2 (0.4)
17. Political violence outside of US	0 (0)	5 (0.9)	1 (0.2)
18. Natural disaster	0 (0)	16 (2.8)	0 (0)
19. Kidnapping	2 (0.4)	10 (1.8)	0 (0)
20. Political violence in US	0 (0)	11 (2.0)	0 (0)

- Note: Primary trauma will not add up to 100% because 30 children have missing data on this variable.

Table 8. Relationships Between the Outcome Variables

Outcome Variable	Relationships between Outcome Variables
Total attended sessions	*% Missed sessions:* r (558) = -0.21***
	Eight or more sessions: t (560) = -9.62***
	0-7 sessions: M = 3.95 (SD = 1.92)
	8 or more sessions: M = 39.08 (SD = 32.82)
	Reason for discharge: F (2,431) = 29.10***
	Successful completers (M = 49.23, SD = 37.68) attended more sessions than drop-outs (M = 23.51, SD = 23.59; Tukey's HSD, p < .001) and children who involuntarily left treatment (M = 31.66, SD = 36.65; Tukey's HSD, p = .001) No significant difference in total attended sessions between drop-outs and children who involuntarily left treatment (Tukey's HSD, p = .239).
% Missed sessions	*Eight or more sessions:* t (556) = 4.58***
	0-7 sessions: M = 0.19 (SD = 0.25)
	8 or more sessions: M = 0.11 (SD = 0.12)
	Reason for discharge: F (2,431) = 30.75***
	Drop-outs missed more sessions (M = 0.19, SD = 0.19) than successful completers (M = 0.08, SD = 0.10; Tukey's HSD, p < .001) or children who involuntarily left treatment (M = 0.09, SD = 0.14, Tukey's HSD, p< .001). No significant difference between successful completers and children who involuntarily left treatment (Tukey's HSD, p = .642).
Eight or more sessions	*Reason for discharge:* χ^2 (2, N = 434) = 47.67***
	Analysis of standardized residuals indicated that successful completers were less likely to receive fewer than eight treatment sessions (z = -4.50), and drop-outs were more likely to receive fewer than eight sessions (z = 4.50).

*** $p \leq .001$

Table 9. Treatment Engagement Outcomes by Ethnic/Racial Group

Variable	English-Speaking Latino	Spanish-Speaking Latino	African American
Total Attended Sessions (M,SD)	35.98 (36.73)	35.92 (32.61)	25.87 (26.93)
Percentage of Missed Sessions (M,SD)	0.13 (0.17)	0.11 (0.13)	0.15 (0.17)
Attendance at Eight or More Sessions (n, %)	105 (83.3)	293 (89.1)	83 (77.6)
Reason for Discharge			
Successful Completion (n, %)	40 (31.7)	147 (44.7)	26 (24.3)
Dropped Out (n, %)	35 (27.8)	94 (28.6)	34 (31.8)
Involuntarily Left Treatment (n, %)	19 (15.1)	21 (6.4)	18 (16.8)
Missing, Unknown, or Other (n, %)	32 (25.4)	67 (20.4)	29 (27.1)

Table 10. Negative Binomial Regression for Total Attended Sessions Using Race/Ethnicity as the Predictor Variable (N = 562).

African American reference group			
Variable	*B*	SE *B*	Wald χ^2 (df)
English-speaking Latinos	0.33	0.13	6.09 (1)*
Spanish-speaking Latinos	0.33	0.11	8.40 (1)**
English-speaking Latino reference group			
Variable	*B*	SE *B*	Wald χ^2 (df)
Spanish-speaking Latinos	0	0.11	0 (1)

* $p \leq .05$, ** $p \leq .01$

Table 11. Negative Binomial Regression for Percentage of Missed Sessions Using Race/Ethnicity as the Predictor Variable (N = 558).

African American reference group			
Variable	*B*	SE *B*	Wald χ^2 (df)
English-speaking Latinos	-0.20	0.16	1.57 (1)
Spanish-speaking Latinos	-0.35	0.14	6.59 (1)**
English-speaking Latino reference group			
Variable	*B*	SE *B*	Wald χ^2 (df)
Spanish-speaking Latinos	-0.15	0.13	1.33 (1)

** $p \leq .01$

Table 12. Logistic Regression for Attendance at Eight or More Sessions Using Race/Ethnicity as the Predictor Variable (N = 562)

African American reference group				
Predictor	*B*	SE *B*	Wald's χ^2 (df)	e ^ *B*
English-speaking Latino	0.37	0.33	1.23 (1)	1.45
Spanish-speaking Latino	0.86	0.29	8.63 (1)**	2.35
English-speaking Latino reference group				
Predictor	*B*	SE *B*	Wald's χ^2 (df)	e ^ *B*
Spanish-speaking Latino	0.49	0.30	2.69 (1)	1.63

** $p \leq .01$

Table 13. Multinomial Logistic Regression for Reason for Discharge Using Race/Ethnicity as the Predictor Variable (N = 434)

African Americans and Successful completion of treatment as reference groups				
Predictor	*B*	SE *B*	Wald's χ^2 (df)	e ^ *B*
Dropped out vs. Successful completion				
English-speaking Latinos	-0.40	0.35	1.33 (1)	0.67
Spanish-speaking Latinos	-0.72	0.29	6.00 (1)*	0.49
Left treatment involuntarily vs. Successful completion				
English-speaking Latinos	-0.38	0.41	0.83 (1)	0.69
Spanish-speaking Latinos	-1.58	0.39	16.78 (1)***	0.21
English-speaking Latinos and Successful completion of treatment as reference groups				
Predictor	B	SE B	Wald's χ^2 (df)	e ^ B
Dropped out vs. Successful completion				
Spanish-speaking Latinos	-0.31	0.27	1.39 (1)	0.73
Left treatment involuntarily vs. Successful completion				
Spanish-speaking Latinos	-1.20	0.36	10.93 (1)**	0.30

* $p \leq .05$, *** $p \leq .001$

Table 14. Classification Accuracy of Mulitnomial Logistic Regression Model with Discharge Reason as the Outcome Variable and Race/Ethnicity as the Predictor Variable

	Predicted			
Observed	Successful completion	Dropped out	Left involuntarily	Percent correct
Successful completion	187	26	0	87.8
Dropped out	129	34	0	20.9
Left involuntarily	40	18	0	0
Overall percentage	82.0	18.0	0	50.9

Table 15. Summary of Question Two Results

	Outcome Variable			
Predictor Variable	Total attended	% Missed sessions	Eight or more	Discharge reason
Hypothesized positive association with engagement				
Adults in household	No association	No association	No association	No association
Externalizing problems	No association	No association	No association	No association
Symptom severity	No association	No association	No association	No association
Functional impairment	Confirmed	No association	No association	Contradicted
Total trauma	No association	No association	No association	No association
Chronic trauma	No association	No association	No association	No association
Physical abuse	No association	No association	Confirmed	No association
Sexual abuse	No association	No association	No association	No association
Comorbid disorders	No association	No association	No association	No association
Group treatment	Confirmed	No association	Confirmed	No association
Field services	Confirmed	No association	Confirmed	No association
Hypothesized negative association with engagement				
Age	Confirmed	Confirmed	No association	Confirmed
Time to 2nd session	No association	No association	No association	No association
Exploratory				
Gender	No association	No association	No association	No association
Internalizing problems	No association	No association	No association	Positively associated with treatment completion
Referral source	No association	School-referred children missed fewer sessions.	No association	No association

Table 16. Univariate Analyses Examining the Relationship Between Each Outcome and Predictor Variable in the Overall Sample

	Outcome Variable			
Predictor Variable	Total Attended	% Missed Sessions	Eight or More Sessions	Discharge Reason
Age	r (562) = -0.13**	r (558) = 0.10*	t (560) = .06	F (2,431) = 4.28*
Gender	t (560) = -2.16*	t (556) = 0.35	χ^2 (1, N = 562) = 3.62	χ^2 (2, N = 434) = 5.67
Total clinical problems	r (557) = 0.11**	r (553) = 0.05	t (555) = -1.38	F (2,427) = 0.63
Externalizing problems	t (555) = -0.74	t (551) = -1.55	χ^2 (1, N = 557) = 3.66	χ^2 (2, N = 430) = 6.78*
Internalizing problems	t (555) = -1.68	t (551) = 1.53	χ^2 (1, N = 557) = 12.53***	χ^2 (2, N = 430) = 7.58*
Functional impairment	r (562) = 0.11**	r (558) = 0.09*	t (560) = 1.06	F(2,431) = 12.48***
Total traumas	r (562) = 0.07	r (558) = 0.03	t (560) = -1.16	F (2,431) = 0.07
Total chronic traumas	r (533) = 0.06	r (529) = 0.02	t (531) = -1.35	F(2,411) = 1.31
Sexual abuse	t (560) = -3.71***	t (556) = 1.84	χ^2 (1, N = 562) = 2.27	χ^2 (2, N = 434) = 2.41
Physical abuse	t (560) = -2.12*	t (556) = 1.00	χ^2 (1, N = 562) = 4.28*	χ^2 (2, N = 434) = 2.17
UCLA PTSD-RI	r (493) = 0.13**	r (490) = -0.06	t (491) = -1.75	F(2,376) = 0.27
TSCC Anger	r (440) = 0.05	r (438) = -0.01	t (438) = -0.26	F(2,336) = 2.39
TSCC Anxiety	r (440) = 0.10*	r (438) = -0.03	t (438) = -2.75**	F(2,336) = 0.71
TSCC Depression	r (440) = 0.12*	r (438) = -0.02	t (438) = -1.75	F(2,336) = 0.15
TSCC Dissociation	r (440) =0.09*	r (438) = -0.03	t (438) = -2.60**	F(2,336) = 0.74
TSCC PTSD	r (440) = 0.11*	r (438) = -0.05	t (438) = -2.35*	F(2,336) = 1.17
Adults in home	r (499) = -0.01	r (495) = -0.02	t (497) = -1.84	F (2,380) = 0.17
Referral source	F (2,431) = 0.59	F (2,431) = 4.92**	χ^2 (2, N = 434) = 1.88	χ^2 (4, N = 327) = 8.89
Time to 2nd session	r (553) = -0.02	r (549) = 0.01	t (551) = -0.24	F (2,423) = 1.64
% Individual sessions	r (562) = -0.03	r (558) = 0.02	t (560) = -1.07	F (2,431) = 2.44
% Family sessions	r (562) = -0.11**	r (558) = 0.06	t (560) = 3.65***	F (2,431) = 0.47
% Group sessions	r (562) = 0.16***	r (558) = -0.08*	t (560) = -2.38*	F (2,431) = 3.27*
Field services	t (560) = -4.20***	t (556) = 3.89***	χ^2 (1, N = 562) = 29.64***	χ^2 (2, N = 434) = 10.07**

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Table 17. Negative Binomial Regression for Total Attended Sessions with the Overall Sample (N = 562)

Variable	*B*	SE *B*	Wald χ^2 (df)
English-speaking Latinos	0.29	0.14	4.66 (1)*
Spanish-speaking Latinos	0.34	0.12	8.33 (1)**
Age	-0.04	0.01	6.90 (1)**
Total impairment	0.05	0.02	6.67(1)*
% Group sessions	0.67	0.19	11.98 (1)***
Field services	0.38	0.09	16.96 (1) ***

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Table 18. Negative Binomial Regression for Percentage of Missed Sessions in the Overall Sample (N = 434)

Mandated referrals as the reference group			
Variable	*B*	SE *B*	Wald χ^2 (df)
Age	0.07	0.02	15.69 (1)***
Self/Family referral	0.17	0.16	1.14 (1)
School referral	-0.38	0.15	6.20 (1)*
Self-referrals as the reference group			
Variable	B	SE B	Wald χ^2 (df)
School referral	-0.55	0.14	15.14 (1)***

* $p \leq 0.05$, *** $p \leq 0.001$

Table 19. Logistic Regression for Likelihood of Attending Eight or More Treatment Sessions in the Overall Sample (N = 562)

African Americans as the reference group				
Predictor	*B*	SE *B*	Wald's χ^2 (df)	e ^ *B*
English-speaking Latino	0.37	0.35	1.10(1)	1.45
Spanish-speaking Latino	0.88	0.31	8.11(1)**	2.41
Physical abuse	0.79	0.32	5.91(1)*	2.20
% Group sessions	1.55	0.60	6.76(1)**	4.73
Field services	1.42	0.26	30.77(1)***	4.15
English-speaking Latinos as the reference group				
Predictor	B	SE B	Wald's χ^2 (df)	e ^ B
Spanish-speaking Latino	0.51	0.31	2.67(1)	1.66

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Table 20. Multinomial Logistic Regression for Discharge Reason in Overall Sample (N =430)

African Americans and Successful completion of treatment as reference groups				
Predictor	*B*	SE *B*	Wald's χ^2 (df)	e ^ *B*
Dropped out vs. Successful completion				
English-speaking Latino	-0.41	0.36	1.28 (1)	0.67
Spanish-speaking Latino	-0.80	0.30	6.96 (1)**	0.45
Age	0.08	0.03	5.62 (1)*	1.08
Internalizing problems	-0.86	0.39	4.83 (1)*	0.42
Total impairment	0.13	0.06	5.25 (1)*	1.13
% Group sessions	-0.15	0.43	0.12 (1)	0.86
Field services	-0.40	0.23	3.18 (1)	0.67
Left treatment involuntarily vs. Successful completion				
English-speaking Latino	-0.33	0.44	0.57 (1)	0.72
Spanish-speaking Latino	-1.43	0.41	12.08 (1) ***	0.24
Age	-0.03	0.05	0.41 (1)	0.97
Internalizing problems	-0.94	0.50	3.51 (1)	0.39
Total impairment	0.29	0.08	15.05 (1)***	1.34
% Group sessions	-1.80	0.83	4.70 (1)*	0.17
Field services	0.60	0.38	2.44 (1)	1.82
English-speaking Latinos and Successful completion of treatment as reference groups				
Predictor	B	SE B	Wald's χ^2 (df)	e ^ B
Dropped out vs. Successful completion				
Spanish-speaking Latino	-0.40	0.28	2.05 (1)	0.67
Left treatment involuntarily vs. Successful completion				
Spanish-speaking Latino	-1.09	0.38	8.26 (1)**	0.34

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Table 21. Classification Accuracy of Mulitnomial Logistic Regression Model for Reason for Discharge in the Overall Sample

	Predicted			
Observed	Successful completion	Dropped out	Left involuntarily	Percent correct
Successful completion	161	47	3	76.3
Dropped out	86	70	5	43.5
Left involuntarily	26	22	10	17.2
Overall percentage	63.5	32.3	4.2	56.0

Table 22. Racial/Ethnic Differences in the Predictor Variables (N =359)

African Americans and Mandated referrals as the reference groups				
Predictor	*B*	SE *B*	Wald's χ^2 (df)	e ^ *B*
English-speaking Latino vs. African American				
Age	-0.13	0.06	5.44(1)**	0.88
Externalizing problems	-0.23	0.43	0.27(1)	0.80
Total chronic traumas	0.20	0.12	2.98(1)	1.23
Number of adults in the home	0.39	0.20	4.01(1)*	1.48
Self referral	1.04	0.49	4.47(1)*	2.83
School referral	1.18	0.46	6.76(1)**	3.27
Spanish-speaking Latino vs. African American				
Age	-0.09	0.05	3.27(1)	0.91
Externalizing problems	-0.82	0.38	4.60(1)*	0.44
Total chronic traumas	0.11	0.11	0.98(1)	1.12
Number of adults in the home	0.45	0.18	6.14(1)*	1.57
Self referral	1.33	0.45	8.91(1)**	3.79
School referral	1.64	0.41	15.97(1)***	5.14
English-speaking Latinos and Mandated referrals as the reference groups				
Predictor	B	SE B	Wald's χ^2 (df)	e ^ B
Spanish- vs. English-speaking Latino				
Age	0.04	0.04	0.95 (1)	1.04
Externalizing problems	-0.59	0.29	4.26 (1)*	0.55
Total chronic traumas	-0.09	0.07	1.61 (1)	0.91
Number of adults in the home	0.06	0.12	0.23 (1)	1.06
Self referral	0.29	0.39	0.56 (1)	1.34
School referral	0.45	0.37	1.51 (1)	1.57

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Table 23. Summary of Question Three Results

Outcome Variable	English-speaking Latino	Spanish-speaking Latino	African American
Total attended sessions	*Positively associated:* * Sexual abuse * Field services	*Positively associated:* * Functional impairment * Group services * Field services	*Positively associated:* * Functional impairment * Individual services
% Missed sessions	*Negatively associated:* * Field services	*Positively associated:* * Age * Self-referral *Negatively associated:* * School referral	No significant predictors
Eight or more sessions	*Positively associated:* * Chronic traumas * Field services *Negatively associated:* * Functional impairment	*Positively associated:* * Field services	*Positively associated:* * Field services
Reason for Discharge			
Drop out	No significant predictors	*Positively associated:* * Age * Functional impairment *Negatively associated:* * Internalizing problems	No significant predictors
Involuntarily leaving treatment	*Positively associated:* * Field services	*Positively associated:* * Functional impairment	*Positively associated:* * Functional impairment

Table 24. Negative Binomial Regression for Total Attended Sessions in English-Speaking Latinos (N= 126)

Variable	*B*	SE *B*	Wald χ^2 (df)
Age	-0.05	0.03	3.36(1)
Exposure to sexual abuse	0.58	0.22	6.98(1)**
Field services	0.58	0.20	8.51(1)**

** $p \leq 0.01$

Table 25. Negative Binomial Regression for Percentage of Missed Sessions in English-Speaking Latinos (N= 125)

Variable	*B*	SE *B*	Wald χ^2 (df)
Field services	-0.77	0.23	11.05 (1)***

*** $p \leq 0.001$

Table 26. Logistic Regression for Likelihood of Attending Eight or More Treatment Sessions in English-Speaking Latinos (N =119)

Predictor	*B*	SE *B*	Wald's χ^2 (df)	e ^ *B*
Functional impairment	-0.26	0.13	4.40(1)*	0.77
Total chronic traumas	0.49	0.21	5.37(1)*	1.63
Field services	1.54	0.57	7.38(1)**	4.65

* $p \leq 0.05$, ** $p \leq 0.01$

Table 27.Multinomial Logistic Regression for Reason for Discharge in English-Speaking Latinos (N = 94)

Predictor	*B*	SE *B*	Wald's χ^2 (df)	e ^ *B*
Dropped out vs. Successful completion of treatment				
Field services	-0.67	0.48	1.99 (1)	0.51
Left treatment involuntarily vs. Successful completion treatment				
Field services	2.16	1.08	3.99 (1)*	8.67

* $p \leq 0.05$

Table 28. Classification Accuracy of Mulitnomial Logistic Regression Model for Reason for Discharge in English-Speaking Latinos

	Predicted			
Observed	Successful completion	Dropped out	Left involuntarily	Percent correct
Successful completion	27	13	0	67.5
Dropped out	18	17	0	48.6
Left involuntarily	18	1	0	0
Overall percentage	67.0	33.0	0	46.8

Table 29. Negative Binomial Regression for Total Attended Sessions in Spanish-Speaking Latinos (N= 329)

Variable	*B*	SE *B*	Wald χ^2 (df)
Age	-0.03	0.02	2.66 (1)
Functional impairment	0.06	0.03	4.09 (1)*
% Group sessions	0.86	0.24	12.59 (1)***
Field services	0.35	0.12	8.41(1)**

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Table 30. Negative Binomial Regression for Percentage of Missed Sessions in Spanish-Speaking Latinos (N= 246)

Mandated referrals as reference group			
Variable	*B*	SE *B*	Wald χ^2 (df)
Age	0.09	0.03	12.11(1)***
Self/Family referral	0.18	0.26	0.48(1)
Self-referrals as reference group			
Variable	*B*	SE *B*	Wald χ^2 (df)
School referral	-0.53	0.18	8.38(1)**

** $p \leq 0.01$, *** $p \leq 0.001$

Table 31. Logistic Regression for Likelihood of Attending Eight or More Treatment Sessions in Spanish-Speaking Latinos (N =314)

Predictor	*B*	SE *B*	Wald's χ^2 (df)	e ^ *B*
Number of adults in home	0.36	0.20	3.01(1)	1.43
Field services	1.45	0.38	14.30(1)***	4.28

***$p \leq 0.001$

Table 32. Multinomial Logistic Regression for Reason for Discharge in Spanish-Speaking Latinos (N =259)

Predictor	*B*	SE *B*	Wald's χ^2	e ^ *B*
Dropped out vs. Successful completion				
Age	0.10	0.04	5.04 (1)*	1.10
Total functional impairment	0.22	0.07	9.03 (1)**	1.25
Internalizing problems	-1.09	0.48	5.10 (1)*	0.34
Left treatment involuntarily vs. Successful completion				
Age	0.03	0.07	0.20 (1)	1.03
Total functional impairment	0.30	0.11	6.74 (1)**	1.34
Internalizing problems	0.18	1.10	0.03 (1)	1.20

* $p \leq 0.05$, ** $p \leq 0.01$

Table 33. Classification Accuracy of Mulitnomial Logistic Regression Model for Reason for Discharge in Spanish-Speaking Latinos

	Predicted			
Observed	Successful completion	Dropped out	Left involuntarily	Percent correct
Successful completion	127	19	0	87.0
Dropped out	61	31	0	33.7
Left involuntarily	14	7	0	0
Overall percentage	78.0	22.0	0	61.0

Table 34. Negative Binomial Regression for Total Attended Sessions in African Americans (N= 107)

Variable	*B*	SE *B*	Wald χ^2 (df)
Functional impairment	0.09	0.04	5.36(1)*
% Individual sessions	0.71	0.32	4.78(1)*

* $p \leq .05$

Table 35. Negative Binomial Regression for Total Percentage of Missed Sessions in African Americans (N= 101)

Variable	*B*	SE *B*	Wald χ^2 (df)
Total chronic traumas	-0.09	0.08	1.41(1)

Table 36. Logistic Regression for Attendance at Eight or More Sessions in African Americans (N = 107)

Predictor	*B*	SE *B*	Wald's χ^2 (df)	e ^ *B*
Field services	1.30	0.48	7.25(1)**	3.65

** $p \leq .01$

Table 37. Multinomial Logistic Regression for Reason for Discharge in the African American Sample (N = 78)

Predictor	*B*	SE *B*	Wald's χ^2 (df)	e ^ *B*
Dropped out vs. Successful completion				
Total impairment	-0.02	0.13	0.02 (1)	0.98
Physical abuse	-0.54	0.58	0.88 (1)	0.58
Left treatment involuntarily vs. Successful completion				
Total impairment	0.28	0.15	3.84 (1)*	1.33
Physical abuse	0.88	0.66	1.78 (1)	2.42

* $p \leq .05$

Table 38. Classification Accuracy of Multinomial Logistic Regression for Reason for Discharge in African Americans

	Predicted			
Observed	Successful completion	Dropped out	Left involuntarily	Percent correct
Successful completion	7	17	2	26.9
Dropped out	3	26	5	76.5
Left involuntarily	3	7	8	44.4
Overall percentage	16.7	64.1	19.2	52.6

Appendix A. Session Counting Coding System

Determining Which Episodes of Care to Include in Session Counting

Before beginning session counting, check the date that the client began receiving Core Data Set assessments. If the child has been enrolled in multiple programs, only count those programs that occur AFTER the Core Data Set had been administered. If the Core Data Set was administered in the middle of a period of treatment, count all the sessions within that period of treatment, even those occurring before the administration of Core Data Set. If there are multiple episodes of care, with one episode of care occurring after the one in which Core Data Set was administered, only count the sessions in that episode of care if it began within two months of the episode of care which included the Core Data Set.

Determining Which Sessions to Count

Only count notes which say "client present" "client cancelled" "therapist cancelled" or "client no show".

Classifying Sessions as Individual, Family or Group sessions

1. All sessions listed under the group tab should be counted as group sessions. When counting group sessions, make sure the target child is the client present at the group session. Do not count group sessions in which the child's parent or a sibling are the target client.
2. Individual Interactive Psychotherapy = individual session
3. Individual Rehabilitation Service = Only count interactions in which the child is an active participant and receiving some form of intervention as a session. IEP meetings, other

consultations with school administrators where the child is present but not actively participating would not count as sessions. Likewise, simply helping a client fill out an application or some other form is not a session unless there is an active intervention being administered. When reading individual rehabilitation notes, also determine whether the child was being seen alone (individual session) or with another family member (family session).

4. Occasional Family and Group Therapy = family session
5. If a session is marked, "Pro Bono, Client Cancelled/No Show," read the note. If it is unclear what kind of session was cancelled, count as an individual session.
6. Individual Psychotherapy = individual session
7. Initial assessment = This will always count as a session, but if the child is seen alone, it is an individual session. If the child is seen with a family member, it is a family session. If the therapist sees both the child and the parent, but they are interviewed separately, count as an individual session.
8. Individual medication service = Individual Medication Service is generally considered an individual session, even if the parent is present when the child is meeting with the psychiatrist (as a medical intervention by its nature targets the child specifically). However, if the parent was present for a psychiatry session that the therapist also attended, mark as a family session. This is because sessions which a therapist is co-facilitating with a psychiatrist tend to address more psychoeducational or family systems issues that are more similar to a family therapy session.
9. Individual assessment/ Psychological Testing = individual session

Multiple Sessions on the Same Day:

1. If the child has two clearly different kinds of sessions on the same day, mark both sessions (for example an individual and family session, or a family meeting after group)
2. If the child has an initial assessment, and then Core Data Set is administered by a case manager, only mark one session. (one family if the assessment is with the parent, one individual if the assessment is just with the child).
3. If two clinicians write notes about the same sessions (i.e., case manager was translating during therapy session, so they wrote a note and therapist also wrote a note for the session) only mark one session.
4. If the psychiatrist and therapist meet with child simultaneously, only count one note.

Appendix B. Comparison of Predictor Variables Among the Ethnic/Racial Groups

Predictor Variable	ESL (n,% or M,SD)	SSL (n,% or M,SD)	AA (n,% or M,SD)	F (df) or χ^2 (df, N)
Age	11.51 (3.46)	12.29 (3.38)	11.61 (3.62)	F (2,559) = 3.13*
Male	67 (53.2)	165 (50.2)	53 (49.5)	χ^2 (2, N = 562) = 0.41
Total clinical problems	5.08 (2.96)	4.60 (2.90)	5.39 (3.29)	F (2,554) = 3.24*
Externalizing problems	97 (77.0)	201 (61.1)	77 (72.0)	χ^2 (2, N = 557) = 11.14**
Internalizing problems	111 (88.1)	298 (90.6)	92 (86.0)	χ^2 (2, N = 557) = 2.74
Functional impairment	3.16 (2.08)	2.74 (1.98)	3.30 (2.45)	F (2,559) = 3.68*
Total traumas	4.06 (2.37)	3.63 (2.19)	4.17 (2.52)	F (2,559) = 2.98
Total chronic traumas	2.23 (1.82)	1.87 (1.68)	2.29 (1.83)	F (2,530) = 3.25*
Experienced sexual abuse	29 (23.0)	61 (18.5)	21 (19.6)	χ^2 (2, N = 562) = 1.15
Experienced physical abuse	34 (27.0)	80 (24.3)	36 (33.6)	χ^2 (2, N = 562) = 3.60
UCLA PTSD-RI	23.26 (14.04)	23.54 (14.70)	24.60 (15.32)	F (2,490) = 0.24
TSCC Anger	47.80 (11.22)	47.66 (10.11)	49.34 (11.81)	F (2,437) = 0.78
TSCC Anxiety	48.86 (11.18)	51.42 (12.66)	50.85 (13.58)	F (2, 437) = 1.49
TSCC Depression	48.19 (11.05)	48.83 (11.60)	48.83 (12.38)	F (2, 437) = 0.12
TSCC Dissociation	50.27 (11.04)	50.15 (11.95)	50.29 (11.46)	F (2,437) = 0.01
TSCC PTSD	49.64 (11.06)	50.47 (12.08)	49.99 (11.70)	F (2,437) = 0.19
Number of adults in home	2.06 (1.17)	2.13 (1.14)	1.75 (0.79)	F (2,496) = 3.60*
Referral source				χ^2 (4, N = 434) = 50.54***
Self-referred	29 (23.0)	69 (21.0)	18 (16.8)	
School-referred	51 (40.5)	143 (43.5)	23 (21.5)	
Mandated referral	24 (19.0)	34 (10.3)	43 (40.2)	
Time to 2nd session	14.02 (15.75)	13.41 (24.44)	23.29 (57.74)	F (2,550) = 3.88*
% Individual sessions	0.60 (0.30)	0.59 (0.31)	0.58 (0.31)	F (2, 559) = 0.02
% Family sessions	0.25 (0.23)	0.25 (0.25)	0.31 (0.30)	F (2, 559) = 2.25
% Group sessions	0.15 (0.26)	0.16 (0.26)	0.11 (0.23)	F (2, 559) = 1.76
Received field services	84 (66.7)	217 (66.0)	70 (65.4)	χ^2 (2, N = 562) = 0.04

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$.

Appendix C. Results of Univariate Analyses Examining the Relationship Between Each Outcome and Predictor Variable in English-speaking Latinos

	Outcome Variable			
Predictor Variable	Total Attended	% Missed Sessions	Eight or More Sessions	Discharge Reason
Age	r (126) = -0.18*	r (125) = 0.07	t (124) = 1.22	F (2,91) = 0.80
Gender	t (124) = -1.30	t (123) = -0.69	χ^2 (1, N = 126) = 0.77	χ^2 (2, N = 94) = 4.53
Total clinical problems	r (126) = 0.16†	r (125) = 0.09	t (124) = -1.10	F (2, 91) = 0.34
Externalizing problems	t (124) = -0.76	t (123) = -0.19	χ^2 (1, N = 126) = 0.22	χ^2 (2, N = 94) = 2.52
Internalizing problems	t (124) = 0.20	t (123) = 0.16	χ^2 (1, N = 126) = 6.68**	χ^2 (2, N = 94) = 4.82†
Functional impairment	r (126) = 0.05	r (125) = 0.09	t (124) = 1.94 †	F(2, 91) = 0.78
Total traumas	r (126) = 0.10	r (125) = 0.01	t (124) = -1.85†	F (2, 91) = 1.02
Total chronic traumas	r (119) = 0.08	r (118) = -0.02	t (117) = -2.28*	F(2, 87) = 0.64
Sexual abuse	t (124) = -2.35*	t (123) = 0.88	χ^2 (1, N = 126) = 4.74*	χ^2 (2, N = 94) = 0.55
Physical abuse	t (124) = -1.62	t (123) = 1.04	χ^2 (1, N = 126) = 2.06	χ^2 (2, N = 94) = 0.03
UCLA PTSD-RI	r (105) = 0.09	r (104) = -0.06	t (103) = -1.08	F(2,73) = 0.68
TSCC Anger	r (97) = -0.04	r (96) = 0.06	t (95) = 0.41	F(2,70) = 0.32
TSCC Anxiety	r (97) = -0.03	r (96) = 0.05	t (95) = -1.11	F(2,70) = 0.54
TSCC Depression	r (97) = 0.01	r (96) = 0.05	t (95) = -0.24	F(2,70) = 0.49
TSCC Dissociation	r (97) =0.03	r (96) = 0.05	t (95) = -0.79	F(2,70) = 1.54
TSCC PTSD	r (97) = 0.01	r (96) = -0.02	t (95) = -1.41	F(2,70) = 0.33
Adults in home	r (109) = -0.07	r (108) = 0.03	t (107) = 0.42	F (2,76) = 0.13
Referral source	F (2,101) = 1.69	F (2,101) = 0.81	χ^2 (2, N = 104) = 2.54	χ^2 (4, N = 75) = 4.93
Time to 2nd session	r (125) = 0.03	r (124) = 0.05	t (123) = -1.12	F (2,91) = 1.46
% Individual sessions	r (126) = -0.03	r (125) = -0.18*	t (124) = 1.01	F (2,91) = 3.20*
% Family sessions	r (126) = -0.11	r (125) = 0.24**	t (124) = 1.94†	F (2,91) = 0.69
% Group sessions	r (126) = 0.13	r (125) = -0.02	t (124) = -3.03**	F (2,91) = 1.91
Field services	t (124) = -2.16*	t (123) = 3.79***	χ^2 (1, N = 126) = 9.26**	χ^2 (2, N = 94) = 10.46**

† p≤ .10, * p ≤ .05, ** p ≤ .01, *** p ≤ .001

Appendix D. Results of Univariate Analyses Examing the Relationship Between Each Outcome and Predictor Variable in Spanish-speaking Latinos

	Outcome Variable			
Predictor Variable	Total Attended	% Missed Sessions	Eight or More Sessions	Discharge Reason
Age	r (329) = -0.12*	r (326) = 0.15**	t (327) = 0.03	F (2,259) = 4.86**
Gender	t (327) = -2.56*	t (324) = 0.16	χ^2 (1, N = 329) = 3.05†	χ^2 (2, N = 262) = 1.54
Total clinical problems	r (325) = 0.14**	r (322) = 0.06	t (323) = -1.31	F (2, 256) = 0.35
Externalizing problems	t (323) = -1.05	t (320) = -1.43	χ^2 (1, N = 325) = 1.85	χ^2 (2, N = 259) = 3.75
Internalizing problems	t (323) = -2.37*	t (320) = 3.02**	χ^2 (1, N = 325) = 6.59**	χ^2 (2, N = 259) = 7.09*
Functional impairment	r (329) = 0.11*	r (326) = 0.11*	t (327) = -0.25	F(2, 259) = 8.99***
Total traumas	r (329) = 0.07	r (326) = 0.08	t (327) = -1.43	F (2, 259) = 0.43
Total chronic traumas	r (313) = 0.07	r (310) = 0.09	t (311) = -1.38	F(2, 249) = 2.94†
Sexual abuse	t (327) = -2.87**	t (324) = 1.52	χ^2 (1, N = 329) = 1.48	χ^2 (2, N = 262) = 1.53
Physical abuse	t (327) = -1.55	t (324) = 0.25	χ^2 (1, N = 329) = 2.39	χ^2 (2, N = 262) = 0.74
UCLA PTSD-RI	r (297) = 0.15**	r (295) = -0.05	t (295) = -1.55	F(2,234) = 0.36
TSCC Anger	r (263) = 0.06	r (262) = -0.04	t (261) = -1.10	F(2,204) = 1.38
TSCC Anxiety	r (263) = 0.12*	r (262) = -0.06	t (261) = -2.72**	F(2,204) = 1.00
TSCC Depression	r (263) = 0.15*	r (262) = -0.01	t (261) = -2.12*	F(2,204) = 0.52
TSCC Dissociation	r (263) =0.11†	r (262) = -0.04	t (261) = -2.68**	F(2,204) = 0.30
TSCC PTSD	r (263) = 0.14*	r (262) = -0.08	t (261) = -2.26*	F(2,204) = 1.59
Adults in home	r (314) = 0.01	r (311) = 0.01	t (312) = -1.81†	F (2,246) = 0.36
Referral source	F (2,243) = 0.76	F (2, 243) = 2.52†	χ^2 (2, N = 246) = 0.63	χ^2 (4, N = 191) = 5.74
Time to 2nd session	r (323) = -0.01	r (320) = 0.06	t (321) = 1.02	F (2,253) = 2.35†
% Individual sessions	r (329) = -0.10†	r (326) = 0.14**	t (327) = -0.87	F (2,259) = 0.94
% Family sessions	r (329) = -0.09	r (326) = -0.03	t (327) = 2.04*	F (2,259) = 0.50
% Group sessions	r (329) = 0.21***	r (326) = -0.14**	t (327) = -0.93	F (2,259) = 2.73†

† $p \leq .10$, * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Appendix E. Results of Univariate Analyses for Each Outcome and Predictor Variable in African Americans

	Outcome Variable			
Predictor Variable	Total Attended	% Missed Sessions	Eight or More Sessions	Discharge Reason
Age	r (107) = -0.10	r (107) = 0.07	t (105) = -0.53	F (2,75) = 0.36
Gender	t (105) = 1.22	t (105) = 1.20	χ^2 (1, N = 107) = 0.27	χ^2 (2, N = 78) = 1.58
Total clinical problems	r (106) = 0	r (106) = -0.06	t (104) = -0.51	F (2, 74) = 2.16
Externalizing problems	t (104) = 0.86	t (104) = -0.25	χ^2 (1, N = 106) = 0.67	χ^2 (2, N = 77) = 1.94
Internalizing problems	t (104) = 0	t (104) = -1.04	χ^2 (1, N = 106) = 0.32	χ^2 (2, N = 77) = 1.95
Functional impairment	r (107) = 0.27**	r (107) = -0.01	t (105) = -0.11	F(2, 75) = 4.81*
Total traumas	r (107) = 0.07	r (107) = -0.09	t (105) = 0.73	F (2, 75) = 0.80
Total chronic traumas	r (101) = 0.04	r (101) = -0.17†	t (99) = 0.70	F(2, 69) = 0.54
Sexual abuse	t (105) = -0.74	t (105) = 0.80	χ^2 (1, N = 107) = 0.57	χ^2 (2, N = 78) = 1.78
Physical abuse	t (105) = -0.88	t (105) = 0.92	χ^2 (1, N = 107) = 1.04	χ^2 (2, N = 78) = 7.25*
UCLA PTSD-RI	r (91) = 0.16	r (91) = -0.09	t (89) = -0.35	F(2,63) = 1.01
TSCC Anger	r (80) = 0.20†	r (80) = -0.04	t (78) = 0.08	F(2,56) = 0.99
TSCC Anxiety	r (80) = 0.16	r (80) = -0.03	t (78) = -0.45	F(2,56) = 0.82
TSCC Depression	r (80) = 0.15	r (80) = -0.10	t (78) = -0.37	F(2,56) = 0.78
TSCC Dissociation	r (80) = 0.14	r (80) = -0.08	t (78) = -0.83	F(2,56) = 1.03
TSCC PTSD	r (80) = 0.11	r (80) = -0.02	t (78) = -0.11	F(2,56) = 1.62
Adults in home	r (76) = -0.13	r (76) = -0.14	t (74) = -1.10	F (2,52) = 0.44
Referral source	F (2,81) = 0.28	F (2, 81) = 1.62	χ^2 (2, N = 84) = 1.58	χ^2 (4, N = 61) = 3.86
Time to 2nd session	r (105) = -0.02	r (105) = -0.08	t (103) = -0.85	F (2, 73) = 0.43
% Individual sessions	r (107) = 0.20*	r (107) = -0.06	t (105) = -1.86†	F (2,75) = 0.84
% Family sessions	r (107) = -0.15	r (107) = 0.05	t (105) = 2.00*	F (2,75) = 0.95
% Group sessions	r (107) = -0.08	r (107) = 0.01	t (105) = -0.02	F (2,75) = 0.02
Field services	t (105) = -2.46*	t (105) = 0.91	χ^2 (1, N = 107) = 7.72**	χ^2 (2, N = 78) = 3.60

† $p \leq .10$, * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

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