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Parental Involvement in Mental Health Services for Diverse Youth

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LIST OF ABBREVIATIONS

AA……. ……..African American

ADHD……Attention-deficit hyperactivity disorder

ANOVA……...Analysis of variance

CBCL……Child Behavior Checklist

CIS……...Columbia Impairment Scale

HIS…….…..……Hispanic

HLM……Hierarchical linear modeling

MST……..……Multi-systemic therapy

NIMH……....National Institute of Mental Health

NHW……Non-Hispanic White

SES……Socio-economic status

USDHHS……..…….....U.S. Department of Health and Human Services

YSR……..Youth Self Report

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ABSTRACT OF THE DISSERTATION

Parental Involvement in Mental Health Services for Diverse Youth

by

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Parental involvement may be a particularly critical component of culturally competent psychotherapy for racial/ethnic minority youth, although limited research in this area is available. The present study aims to address gaps in the literature by 1) examining whether parent cultural variables (race/ethnicity, acculturation, language)

predict actual and preferred parental involvement, and 2) investigating whether parent cultural variables and parental involvement predict mental health outcome trajectories and service retention. The sample consists of 264 adolescents (aged 12-19) who have received outpatient mental health services, their parents, and their therapists. Research instruments measure parent cultural variables, preferred and actual parental involvement, functional impairment, symptomatology, and premature termination from baseline to 6-month follow-up time points. Analyses using multi-level modeling were conducted to control for nested data and clustering effects at the therapist level. Overall, hypotheses were supported such that both preferred and actual parental involvement led to a reduction of youth functional impairment. Racial/ethnic minority parents (African American and Hispanic) had higher levels of preferred involvement than non-Hispanic White parents. However, in some instances, Hispanic parents reported less actual involvement. Hispanic parents also reported a significant reduction in their child's functional impairment over time compared to other racial/ethnic groups. Findings from this study may facilitate the development of interventions that encourage parents to play a key role in their child's mental health treatment and improve the quality of care for racial/ethnic minority youth.

1. Study Objective

It is estimated that in 25 years, 40% of adults and 48% of children will be from racial and ethnic minority backgrounds (U.S. Department of Health and Human Services [USDHHS], 2001). The changing demographics of the United States draws attention to current trends in policy and science that highlight the importance of reducing higher levels of unmet mental health need and rates of premature termination from mental health services, increasing the quality of and satisfaction with care, and improving treatment outcomes for ethnic minorities (National Center for the Dissemination of Disability Research, 2002; USDHHS, 2001; Zane, Enomoto, & Chun, 1994). While much of the past research on the associations among race, ethnicity, and mental health services has focused on adults, empirical investigations on children and adolescents are also quite striking. The Surgeon General's report on mental health (USDHHS, 1999) indicates that approximately 20% of all children and adolescents have diagnosable mental health disorders with at least a minimum level of functional impairment. Yet, it is estimated that only 20% of children in need of services receive any mental health care (U.S. Public Health Service, 2000). Of those that enter services, 40 to 60% of children terminate treatment prematurely (USDHHS, 1999). Within this underserved population of children, ethnic minority youth are of particular concern, as there is evidence that ethnic minority children have even higher levels of unmet need as compared to non-Hispanic Whites (Hough, Hazen, Soriano et al., 2002; Kataoka, Zhang, & Wells, 2002; Yeh, McCabe, Hough, Dupuis, & Hazen,

2003). These compelling statistics continue to support the need for the development and dissemination of culturally competent psychotherapies for minority youth.

Familial involvement has been proposed to be a particularly critical component to take into account in culturally competent psychotherapy for ethnic minorities, and especially for youth (USDHHS, 2001). Families have been shown to be a primary source of care, social and emotional support, and promoting resilience in the face of mental health problems (Pescosolido, 2001). Research has explored the role of family members in children's functioning. One study has shown that grandparents provided support and positive influence for African American children of low-income, divorced or separated parents and decreased their chances of dropping out of school (Robins, West, & Herjanic, 1975). Family support was also crucial in relieving urban children's anxiety and enhancing social competence in the classroom (Hill, Levermore, Twaite, & Jones, 1996). For children of Vietnamese refugees, strong family ties contributed to their resilience after immigrating to the U.S. (Zhou & Bankston, 1998). In psychotherapy for youth, encouragement from social support networks to seek help was significantly associated with keeping a first appointment at an outpatient mental health program and longer length of stay in services (McKay, Pennington, Lynn, & McCadam, 2001; Harrison, McKay, & Bannon, 2004). In sum, this literature suggests that for ethnic minority youth, culturally appropriate psychotherapy should include being cognizant of the youth's familial context and how it may affect treatment and should incorporate family involvement. As evidence shows that minority families in youth mental health services may experience even higher

dropout rates than non-Hispanic Whites (Kazdin, Stolar, & Marciano, 1995), family involvement in services may be both a challenge with minority families as well as even more critical for treatment dropout and success in treatment as compared to non-Hispanic Whites. Thus, the present study proposes to examine racial/ethnic, acculturative, and language proficiency patterns in parental involvement and their subsequent relationship to outcomes in usual care.

2. Literature Review

Parental involvement in mental health services for youth

Researchers and policy-makers have highlighted the importance of involving multiple stakeholders in treatment planning and implementation as well as emphasizing the importance of family variables in psychotherapy (Brannan, 2003; Coffey, 2004; Koch, Lewis, & McCall, 1998; Street, Niederehe, & Lebowitz, 2000). As key stakeholders, parents are involved in aspects of problem recognition, the decision to seek help, and service selection for their adolescents' mental health problems (Cauce, Paradise, Domenech-Rodriguez et al., 2002). Evidence has also shown that parents play a crucial role in service utilization, facilitating improvements during treatment, and maintaining these changes after treatment for children and adolescents is complete (Kazdin, 1989). Thus, parents are the gatekeepers to youth mental health care (McMiller & Weisz, 1996). They are often viewed as essential components to youth's treatment success (Henggeler, 1994). Since youth are dependent on and influenced by their parents or caregivers, current treatment approaches should extend beyond individual therapy with adolescents to include participation from parents (Barrett & Shortt, 2003; Kazdin, 2000; Kazdin & Weisz, 1998). In fact, many evidence-based treatments for children are parent-mediated, where parents learn how to change their behavior that in turn, would improve their child's behavior (Bagner & Eyberg, 2007; Brestan, Eyberg, Boggs, & Algina, 1997; Nixon, Sweeney, Erickson, & Touyz, 2003). Thus, parental involvement is argued to be a crucial element in the planning and

delivery of mental health services for children (Long, 1997; Stroul & Friedman, 1986; Taub, Tighe, & Burchard, 2001).

Indeed, an overview of the clinical trials literature illustrates that parental involvement and specific engagement of parents in treatment influences the outcome of their child's psychotherapy. Diamond and Josephson (2005) reviewed randomized clinical trials in the past decade that included parents as the primary participant in youth psychotherapy and concluded that family treatments were effective with externalizing disorders, such as conduct and substance abuse disorders. They were also effective in reducing the comorbid family and school behavior problems associated with ADHD and depression and anxiety. Although little is known about how parental involvement affects treatments for internalizing problems, improvements in cognitive behavioral therapy for anxious children were found when the treatment included parental involvement (Barrett, Dadds, & Rapee, 1996; Howard & Kendall, 1996) and anxiety symptoms were reduced in children with Asperger syndrome (Sofronoff, Attwood, & Hinton, 2006). Interventions that have focused on improving parental engagement have been tested and have shown positive results such as greater attendance (McKay & Bannon, 2004). Interventions for children that involved parents as co-therapists led to positive treatment outcomes (Budd, Madison, Itzkowitz, & George, 1986; Short, 1984) and better outcomes than when parents were not involved (Charlop-Christy & Carpenter, 2000). Thus, parental involvement in child-focused therapy is associated with positive outcomes in some domains (Barmish & Kendall,

2005). Engaging parents during treatment can contribute to greater compliance, effectiveness, and maintenance of improvements in therapy.

In summary, evidence suggests that consideration of families' input in treatment planning and engaging them in services improves service retention and may affect eventual outcomes. While parental involvement may be an important variable in youth mental health treatment, empirical research on the effectiveness of parental involvement in the treatment of children's mental health problems in real world or treatment-as-usual settings is still scarce. Clinical trials findings may not be applicable to community-based studies because certain controls, such as uniformity of parental involvement, may not be present in community-based studies where there is more variability in whether or how parents are involved in treatment. Further investigation on the effectiveness of parental involvement is needed to explore the generalizability of findings from interventions studies. Given the importance of providing culturally-competent services to the increasing ethnic minority child population, one area that may be of particular importance is to understand the role of parental involvement in treatment for ethnic minority youth.

The importance of parental involvement in psychotherapy for racial/ethnic minority youth

Current literature provides evidence that racial/ethnic minority youth are more likely to have higher drop-out rates, lower attendance, and less satisfaction with treatment (Flisher, Kramer, Grosser et al., 1997; Kataoka et al., 2002; McCabe, Yeh, Hough et al., 1999; National Institute of Mental Health [NIMH], 2001; USDHHS,

2001). Evidence that supports disparities in treatment retention demonstrates that minority families exhibit higher rates of dropout and premature termination than non-minority families (McCabe, 2002; Morrisey-Kane & Prinz, 1999). A study examining factors that predict premature termination among Mexican American families found that negative attitudes toward mental health services (an attitude more likely held by Latino groups than non-Hispanic Whites) predicted lower treatment retention (McCabe, 2002). Although further research is needed to elucidate these effects, this may have some implications regarding differential rates of premature termination between Latino and non-Hispanic White families. African American youth had a shorter length of treatment than non-Hispanic Whites (Bui & Takeuchi, 1992). Kazdin et al. (1995) reported that African American families had a higher rate of drop out than non-Hispanic White families for treatment on their child's externalizing problems over and above the effects of socio-demographic and clinical variables. In addition, some evidence shows that minority families may be particularly difficult to engage. Without more intensive treatment efforts, 56% of clients can be lost between the call to request services and the first intake appointment (McKay, McCadam, Gonzales, 1998). On the other hand, Bui and Takeuchi (1992) found that the dropout rates of African American adolescents did not differ from those of non-Hispanic White adolescents. Although they are underrepresented in treatment, when they entered treatment, Asian American youth attended more sessions than non-Hispanic Whites. (The latter finding may be due to in part to the presence of ethnicity-specific mental health services in the area where the study took place.) Although not entirely

consistent, the majority of the literature on treatment retention (or premature dropout) seems to suggest that ethnic minority youth stay in treatment for shorter periods of time or dropout of treatment prematurely.

It is plausible that dropping out after one session or terminating services before treatment completion may indicate that the family is dissatisfied with their initial contact with the agency/therapist and/or the services they have received up to the point of termination. It is possible (albeit less likely) that the family has received the services they wanted, have experienced significant improvement, and/or are satisfied with the outcomes (Bui & Takeuchi, 1992). Usually, however, clients who drop out are not likely to receive the maximum benefits services offer, and may continue to experience significant levels of impairment (Kazdin, Holland, & Crowley, 1994; Larsen, Nguyen, Green, & Attkisson, 1983).

To address these challenges in treatment retention in the child population in general, research has demonstrated that involving the family in the treatment process is integral to service retention. Studies show that the degree to which families are involved in service planning and family perception of aspects of the therapeutic relationship are predictive of premature dropout (Garcia & Weisz, 2002). In one study, client/family reported therapeutic relationship problems was the greatest predictor of premature termination (Garcia & Weisz, 2002), and matching parental preference for type of service offered to children and what the child actually receives was significantly associated with higher number of sessions attended (Bannon & McKay, 2005). In a review of literature on attendance and adherence to child and

adolescent therapy, researchers argue that increasing parent motivation to participate in treatment and targeting parent's perceived barriers to treatment would enhance parent participation in treatment and subsequently increase their child's attendance and adherence to treatment (Nock & Ferriter, 2005; Nock & Photos, 2006). Greater family involvement and therefore, better therapeutic alliance, may improve treatment retention, and eventual outcomes in therapy.

If family involvement is indeed associated with better treatment retention for youths, this may be a key factor in improving services for ethnic minority youth; although racial/ethnic minority youth research on treatment outcomes such as symptomatology and functional impairment is limited, there are now some studies demonstrating that racial/ethnic minority youth have positive outcomes in treatment and others showing no differences in outcomes between racial/ethnic minority youth and non-Hispanic White youth (Borduin, Mann, Cone et al., 1995; Ginsburg & Drake, 2002; Huey & Polo, 2008; Hudley & Graham, 1993; Lochman, Coie, Underwood & Terry, 1993; MTA Cooperative Group, 1999; Reid, Webster-Stratton, & Beauchaine, 2001; Silverman, Kurtines, Ginsburg et al., 1999). These mixed findings emphasize the importance of further research in this area to disentangle the findings and explore whether parental involvement might help to explain why racial/ethnic minority youth have better outcomes in some instances and while no differences are found in others.

Although parental involvement appears to play an important role in treatment retention for the general population, it may be particularly integral in psychotherapy for racial/ethnic minority youth due to cultural factors that may make treatment

retention especially difficult for racial/ethnic minority families. These factors include differences in explanatory models, the influence of acculturation, and linguistic issues.

Explanatory models. It is often conjectured that ethnic minority families may adhere to cultural values, beliefs, attitudes, and behaviors that are incompatible with Western conceptualizations of mental health and mental health care (Telles, Karno, Mintz et al., 1995; Zane et al., 1994). Ethnic minorities may have negative attitudes in regards to treatment or are dissatisfied with services (Bui & Takeuchi, 1992; McCabe, 2002). Experts hypothesize that similarities or differences in explanatory models (i.e. beliefs about causes of problems, reasons for symptom onset, pathophysiology, course of illness, treatment goals, and problem perception) between patients and providers may impact problem conceptualization, patient engagement in treatment plans, and treatment outcomes (Brown, Abe-Kim, & Barrio, 2003; Kleinman, 1978; Lewis-Fernandez & Diaz, 2002). For instance, ethnic minority women may have a more holistic view of psychological health (Comas-Diaz, 1992), and prefer short-term, directive, individual treatment without the use of psychotropic medication for their depression (Alvidrez & Azocar, 1999; Azocar, Miranda, & Dwyer, 1996). These findings suggest that racial/ethnic minorities' notions about psychological health, expectations, coping styles, and preferences for treatment may be culturally different from those of the general population or those of the clinician's. This emphasizes understanding the patient's explanatory models in order to develop a collaborative relationship between patient and provider (Azocar et al., 1996; Brown et al., 2003). In fact, evidence shows that client-therapist agreement on treatment goals,

coping styles, and pretreatment similarities (race/ethnicity, language) predicted greater depth, smoothness, and positivity of the therapy sessions, less dysphoria, and higher psychosocial functioning in an Asian American and White outpatient sample (Zane, Sue, Chang, et al., 2005).

Similarly in youth psychotherapy, non-Hispanic White parents were found to have more favorable attitudes towards medication and counseling for their child's social anxiety disorder, were more likely to view treatment as feasible, and were more likely than minority parents to follow through with recommendations to seek additional professional nonpsychological consultation (such as from a pediatrician or physical therapist) as compared to ethnic minority parents (Chavira, Stein, Bailey & Stein, 2003; MacNaughton & Rodrigue, 2001). These racial/ethnic differences in parents' attitudes and behaviors may be partially attributed to cultural variations on parents' beliefs about the causes of their child's problems, treatment goals and expectations, problem recognition, and preferences for types of treatment (Cauce et al., 2002; Yeh, McCabe, Hough et al., 2005; Zane et al., 2005). Researchers have found that racial/ethnic minority parents were less likely to attribute their child's problems to biopsychosocial causes (physical causes, personality, familial issues) than non-Hispanic White parents (Yeh, Hough, McCabe, Lau, & Garland, 2004). Parents' beliefs about the causes of their child's problems have important implications for treatment retention because parents who attributed their child's problems to physical and trauma causes and not to sociological, spiritual, or nature disharmony causes had a greater likelihood of using mental health services at a 2-year follow-up (Yeh et al.,

2005a). It is plausible that having conflicting attitudes or explanatory models may lead to poorer treatment retention for racial/ethnic minority groups as compared to non-Hispanic Whites (USDHHS, 2001). Thus, involving racial/ethnic minority parents in their child's treatment would provide the clinician the opportunity to understand the parents' explanatory models about their child's emotional or behavioral problems. Engaging families in treatment, especially highly resistant minority families, is best addressed with an ecological multilevel approach that includes interventions at the child and parent levels and involves ethnic minority parents in planning and reviewing services (Walker, 2005). Doing so may help to improve the collaborative relationship between parent and therapist, thereby increasing treatment retention, and ultimately leading to more culturally competent treatment.

Acculturation. Racial/ethnic minority parents' acculturation may also influence their involvement, treatment retention, and outcomes in their child's psychotherapy. Various models of acculturation have been proposed by scholars, including unidimensional and bidirectional models. The unidimensional model conceptualizes acculturation along one continuum such that individuals are either more affiliated with their host culture (implying that they are less affiliated with their native culture) or more affiliated with their native culture (implying that they are less affiliated with their host culture). Although the unidimensional model has the benefit of being more parsimonious and has been shown to be a better predictor of generation status (Flannery, Reise, & Yu, 2001), current literature leans towards a bidirectional or multidimensional conceptualization of acculturation proposed by Berry (1997), which

separates affiliation to the native culture and affiliation to the host culture into two independent dimensions. This bidimensional model theorizes that, through an interaction of two cultures, an individual can endorse cultural values and beliefs of either the host (e.g. American) culture or original (native) culture, both cultures, or neither culture (Table 1).

Table 1. Berry's Model of Acculturation

	Affiliation to American culture = YES	Affiliation to American culture = NO
Affiliation to native culture = YES	Integration	Separation
Affiliation to native culture = NO	Assimilation	Marginalization

Empirical comparisons of the unidimensional and bidimensional models suggest that Berry's model moves beyond assimilation processes and allows the opportunity to understand how an individual may endorse and balance attitudes and behaviors of more than one culture or neither culture in ways that the unidimensional model cannot (Cabassa, 2003). Furthermore, there is evidence that the bidimensional model provides somewhat higher incremental validity (Flannery et al., 2001). Therefore, the present study draws from Berry's (1997) model of acculturation by conceptualizing acculturation bidimensionally, such that individuals will be assessed along two separate continuums (affiliation to other culture and affiliation to American culture).

Of significance to mental health service use, it is purported that individuals who are more affiliated with the values of their culture of origin and/or are less

affiliated with values of mainstream American culture may be more likely to have attitudes, values and beliefs that are not conducive to mental health service use (USDHHS, 2001). Acculturation has been found to be predictive of attitudes towards professional help-seeking (Tata & Leong, 1994). Specifically, greater assimilation is associated with more willingness to use psychological services for East Asian immigrants (Barry & Grilo, 2002; Tata & Leong, 1994). In addition, endorsement of affiliation with both cultures is associated with higher levels of psychological functioning and sociocultural adaptation as compared to those individuals who endorse not belonging to either acculturation mode which was associated with the poorer outcomes (Berry, Phinney, Sam, & Vedder, 2006). Thus, one may hypothesize that parents who are less acculturated to "mainstream" U.S. culture may be less likely to be involved in their child's treatment and a lack of strong affiliation with any culture may be associated with lower functioning that may negatively impact their child's outcome trajectories.

Language. Language use is often used as a proxy for acculturation (Padilla, 1980). Thus, this may also be an important factor to consider for parental involvement in minority populations. Studies on parental involvement in education found that Asian American and Asian immigrant mothers who spoke English at home were more likely to be involved in their child's school (Shuang, 2008). Compared to bilingual or English-speaking parents, Spanish-speaking parents were not as involved in their child's school and reported lower levels of communication, more negative attitudes towards their child's school, and less positive interactions with teachers (Lopez, 2007;

Wong & Hughes, 2006). Language similarity between service providers and clients is also an important component of cultural competence (Yeh, Eastman, & Cheung, 1994; Takeuchi, Sue, & Yeh, 1995). For example, therapist-client language match was a predictor of premature dropout and number of sessions attended in an adolescent Mexican American sample (Yeh et al., 1994). Non-English speaking or bilingual clients are likely to benefit most from treatment when their therapists are also bilingual and can meet their linguistic needs (Bamford, 1991; Flaskerud & Lu, 1991; Altarriba & Santiago-Rivera, 1994). It follows that those parents who feel more comfortable with their language abilities or that of their child's therapist may feel more able to be involved.

Current research. Some studies have begun to examine the efficacy and effectiveness of parental involvement in psychotherapy for racial/ethnic minority youth. One study of Latino boys with emotional and behavioral problems reported that structural family therapy improved child functioning post-treatment (Szapocsnik, Santisteban, Rio et al., 1989). In a randomized trial with children with Tic disorders, parent management training was found to be efficacious in reducing disruptive behaviors (Scahill, Sukhodolsky, Bearss et al., 2006). Pantin, Coatsworth, Feaster and colleagues (2003) examined the efficacy of an intervention geared at fostering parental investment in a sample of poor immigrant Hispanic families and reported that the program was successful in increasing parental investment and subsequently reducing adolescent behavior problems. A reduction in behavioral problems was reported for children of Asian American mothers after completing a parent management program

(Reid et al., 2001). In addition, Multisystemic Therapy (MST) is an evidence based practice that was developed with diverse samples and originates from the theory that an adolescent's social ecology, which includes parental factors, affect their psychosocial adjustment and are related to their likelihood of developing and maintaining emotional and behavioral problems (Borduin & Henggeler, 1990). MST has demonstrated both efficacy and effectiveness (Curtis, Ronan, & Borduin, 2004; Huey, Henggeler, Rowland et al., 2004; Rowland, Halliday-Boykins, Henggeler, et al., 2005) for both Caucasian and ethnic minority youth (Brondino, Henggeler, Rowland et al., 1997; Halliday-Boykins and Henggeler, 2001; Halliday-Boykins, Schoenwald, & Letourneau, 2005). Overall, these findings show promise in involving racial/ethnic minority parents in their child's treatment. However, more research is needed to gain a better understanding of how underlying cultural factors may affect parental involvement and how that in turn, affects treatment outcomes and treatment retention.

Preferred versus actual parental involvement

Although there is evidence that supports the efficacy of parental involvement, less research has been done to understand the nature of parental involvement in usual care. Usual care is defined as the routine or standard care that is already being provided at a mental health care setting and no particular treatment or intervention is being introduced (Kazdin, 2003). Most research on parental involvement has been conducted in the context of involving parents as part of an intervention (e.g. MST, parent management training) in randomized clinical trials (in which usual care is often one of the control groups). Less is known about whether parents prefer to be involved

in the first place and given the volition, whether they actually involve themselves in their child's psychotherapy and in what ways. Studies such as one by Israel, Thompson, Langeveld, and Stormark (2007) have begun to distinguish between different types of involvement (behavioral [i.e. actual] versus emotional [i.e. preferred] involvement), but we have yet to understand how those differences manifest across cultural groups or in relation to cultural factors.

Preferred involvement. Parents' cultural values may dictate their involvement in their child's life. For example, ethnic minorities have been thought to have more interdependent self-construals whereas mainstream American culture is characterized by a more independent self-construal (Markus & Kitayama, 1991). Therefore, ethnic minorities may have a greater sense of familism or collectivism and may feel more obligated to provide care for their family (Freeberg & Stein, 1996). This may have implications for differences in the parental role in various aspects of their children's lives (Chao, 1994; Stewart & Bond, 2002). Chao (1994) proposed that values of *chiao shun* (teaching children culturally appropriate behavior) and *guan* (caring, concern, control) in Chinese culture may help to explain the high degree of Chinese parent's involvement in their child's lives. In the education literature, differences between racial and ethnic groups in parental involvement have been demonstrated in domains such as education (contact with schools, homework support) (Coll, Akiba, Palacios et al., 2002). Parental involvement was an important factor in the educational aspirations of African American and Hispanic adolescents (Qian & Blair, 1999). Among low-income African American preschoolers, parental involvement was a primary predictor

of academic achievement (Marcon, 1999). Asian parents are more likely to be involved in monitoring and helping their children with homework and assuring that they have adequate academic resources (Ho, 1994; Chao, 1996). Thus, it is important to understand how parental cultural factors may influence the involvement of ethnic minority parents in treatment for their child's problems.

Actual involvement. Although some cultural values and beliefs may propel racial/ethnic minority parents to prefer to be involved in their child's treatment, the literature has identified some barriers to their actual involvement. The absence of parental involvement may not necessarily imply that parents lack volition, but instead, it may be a reflection of stressors, beliefs, or cognitions that prevent participation (Rosenstock & Vincent, 1979). Racial/ethnic minority parents are often faced with additional barriers to being involved in therapy, compared to non-Hispanic White parents (Harrison et al., 2004; Kazdin et al., 1997; McMiller & Weisz, 1996), which may hinder their actual involvement.

A barriers-to-treatment model proposes that the influence of parents' perceived barriers (e.g. stressors and obstacles that compete with treatment, perceived relevance of treatment, and relationship with the therapist) may increase the likelihood of early termination from their child's psychotherapy (Coatsworth, Duncan, Pantin, & Szapocznik, 2006; Kazdin et al., 1997; Kazdin et al., 1995; Nock & Kazdin, 2001). In addition, a greater number of perceived barriers was found to be related to lower adherence to treatment recommendations (MacNaughton & Rodrigue, 2001). Parents who did not remain involved in therapy for their child's problems focused more on

their own problems such as economic difficulties, parental stress, and relationship difficulties (Attride-Stirling, Davis, Farrell, Groark, & Day, 2004). Racial/ethnic minority parents may experience different levels of stress and caregiver strain, financial burden, and language difficulties (Kang, Brannan, & Helfinger, 2005; McCabe, Yeh, Lau, Garland, & Hough, 2003; Takeuchi, Sue, & Yeh, 1995). Studies on parental involvement education found that minority parents are often less involved in school functions such as meetings with teachers, than Non-Hispanic White parents (Lopez, 1993; Mau, 1997). Research has suggested that the racial socialization (perceptions of racism, cultural pride, religiosity, values underlying child rearing practices) of African American parents impacts their involvement in their children's schooling (McKay, Atkins, Hawkins, Brown, & Lynn, 2003). Thus, due to different cultural experiences and values, ethnic minority parents may exhibit levels or aspects of parental involvement that are different from parents of the majority culture.

In addition, some concrete barriers such as problems with the parents' transportation to their child's psychotherapy sessions (Koroloff, Elliot, Koren, & Friesen, 1994), time constraints, lack of economic resources (Tolan & McKay, 1996), and lack of child care (McKay et al., 1996) may factor into decreasing the likelihood of parental involvement. Lack of financial resources may contribute to objective caregiver strain (Brannan, Heflinger, & Foster, 2003). Consistent with previous literature, parents who experience more socioeconomic disadvantage and were minorities were more likely to drop out of treatment (Kazdin et al, 1997).

The above evidence suggests that racial/ethnic minority parents may prefer to be involved in their child's treatment, but certain barriers may stand in the way of their actual involvement. This discrepancy delineates the importance of separately examining preferred and actual involvement in relation to cultural variables and how they may converge and diverge.

3. Significance of present research

Although the trend in the literature supports that parents play an important role in their child's psychotherapy and that parental involvement may be a necessary component of culturally competent psychotherapy for minority youth, few studies have systematically examined the relationships between parent cultural variables (race/ethnicity, acculturation, language proficiency), preferred and actual parental involvement, and subsequent outcomes in the usual care of a population of racially and ethnically diverse sample of youth and families utilizing outpatient mental health services. Further investigating these relationships could be beneficial to improving client-provider relationships, client satisfaction, and outcomes and reducing drop-out rates and disparities in mental health care for minority youth and families.

The current study also plans to contribute to the literature by gaining a better understanding about the nature of parental involvement – whether and how (types of involvement, e.g. treatment planning, implementation, etc.) they prefer to be involved in the first place, whether and how they are actually involved, and how that would influence treatment. Some research suggests that parental involvement may be helpful in certain aspects of cognitive-behavioral therapy for children with anxiety disorders, such as providing the therapist with information about the child and assisting with the development and implementation of treatment strategies (Spence, Donovan, & Brechman-Toussaint, 2000; Suveg, Roblek, Robin et al., 2006). However, over-involvement or being involved in ways that interfere with treatment may also hinder the treatment process.

It is also possible that parental involvement may be more effective with certain age groups, problems, disorders, or symptoms, but less effective with others. For instance, a meta-analysis of parental involvement in the treatment of ADHD revealed that parental involvement helped to reduce internalizing symptoms, but less so with externalizing symptoms (Corcoran & Dattalo, 2006). From a developmental standpoint, the majority of existing research on parental involvement is based on samples of younger children (i.e. age 12 or younger) and thus their results may not be generalizable to adolescent populations. Although it is plausible that the quality and effectiveness of parental involvement for older children may potentially be different, little is known about whether parents of adolescents prefer to be involved in treatment and whether that in turn, is beneficial to the youth. In addition to the aforementioned gaps, even less is known about how these relationships occur in populations of ethnic minority families. Thus, further exploring the nature of parental involvement (e.g. whether it has an impact on treatment outcomes in the first place) for adolescents in usual care settings may be a necessary first step before working towards interventions that require or encourage parental involvement (e.g. asking parents to come in to treatment) .

Thus, the present study aims to 1) examine whether there are racial/ethnic differences in actual and preferred parental involvement, 2) examine whether parent cultural variables (race/ethnicity, acculturation, language proficiency) predict youth outcome trajectories, 3) examine whether parent cultural variables predict preferred

and actual parental involvement, and 4) examine whether preferred and actual parental involvement predicts outcome trajectories.

4. Hypotheses

The main research question of the present study is to examine the relationships between parental involvement in psychotherapy, parent cultural factors, and youth outcome trajectories. Separate hypotheses are presented for preferred and actual involvement in order to examine how they may differentially be related to parent socio-cultural variables and affect service retention and mental health outcome trajectories.

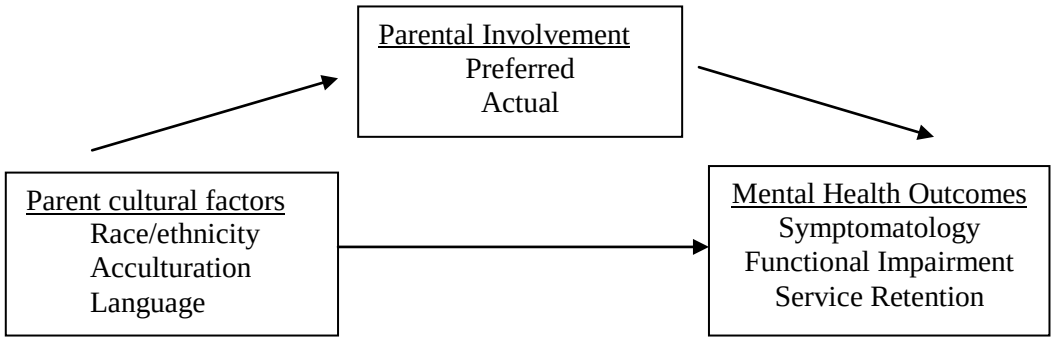

Figure 1. Primary hypotheses

Research question 1a: Are there racial/ethnic, acculturation, and language differences in preferred parental involvement?

Hypothesis 1a: Racial/ethnic minority parents will have greater preferred involvement than non-Hispanic White (NHW) parents, and greater parental affiliation with another culture (not mainstream American) will be associated with greater preferred parental involvement. No differences in preferred involvement in regards to language proficiency are expected.

Research question 1b: Are there racial/ethnic, acculturation, and language differences in <u>actual</u> parental involvement?

Hypothesis 1b: Parents who are racial/ethnic minorities will have less actual involvement than non-Hispanic White (NHW) parents, and less affiliation with American culture and poorer English language proficiency will be associated with less actual involvement.

Research question 2: Does parental involvement predict service retention and mental health outcome trajectories?

Hypothesis 2: Parental involvement will generally predict better service retention and mental health outcome trajectories (a decrease in symptomatology and functional impairment). Actual and preferred involvement is expected to differentially affect outcomes such that actual involvement will predict better service retention and mental health outcome trajectories.

Research question 3: Do parent cultural variables (race/ethnicity, acculturation, language) predict premature termination and mental health outcome trajectories?

Hypothesis 3: Parents who are racial/ethnic minorities, are less affiliated with American culture, and have poorer English language abilities are expected to have poorer service retention and worse mental health outcome trajectories (increase in symptomatology and functional impairment) than NHW parents.

5. Method

The present study utilized data from the larger Cognitive Consensus in Cross Cultural-Competence Project (PI: May Yeh; NIMH R01 MH071483). This NIMH funded project focuses upon a diverse sample of adolescents receiving outpatient psychotherapy in the schools and mental health clinics. The Cognitive Consensus Project is a prospective, longitudinal study of a cohort of approximately 270 African American, Asian American/Pacific Islander, Latino, and non-Hispanic White adolescents aged 12 and older receiving school based and clinic based mental health services in a large county in California.

Participants

The current study involves subjects from the larger study that had complete data for adolescents, parents, as well as therapists, resulting in 264 adolescent-parent-therapist sets. Therapists were recruited first, and then adolescents and parents were recruited from within these therapists' client case loads. The therapist sample consists of clinicians providing school-based outpatient psychotherapy in a large school district and in county mental health clinics. The adolescent sample consists of 264 youth aged 12 and older receiving school-based and clinic based psychotherapy. Youth who attended school within a specific, large school district and their parents were eligible for the study upon referral to outpatient psychotherapy, therapist agreement to participate, parental consent, and adolescent assent. Specific inclusionary and exclusionary data for adolescents and parents were as follows:

Inclusion Criteria:

1. Referred for outpatient psychotherapy services at the particular school district or County Mental Health Clinics
2. Aged 12 or older
3. Therapists have agreed to take part in the study
4. Youth are African American, Asian American/Pacific Islander, Latino, or non-Hispanic White.

Exclusion Criteria:

Youth and/or parents were excluded if mental retardation, severe brain injury, pervasive developmental disorder, or sensory impairment is evident through school records or self-report, as the measures employed in this study may not have been appropriate for such populations.

Sample characteristics - Youth. Participants in the present study consisted of 72% of youth who utilized school-based services and 22% who utilized clinic-based services. Of all the youth, twenty-one percent of the youth utilized MST (multi-systemic therapy) services. More than half (60%) were male and the mean age of the youth at the baseline interview was 14 (*S.D.*=1.6). The race/ethnicity breakdown was as follows: 6% were non-Hispanic White, 18% were African American, 71% were Hispanic, and 5% were Asian-Pacific Islanders, American Indian or Alaskan Natives, and other races/ethnicities. The majority (72%) of the youth were born in the U.S.

Sample characteristics – Parents. Most of the parent respondents were female (90%), and the mean age was 42 (*S.D.*=8.8). The race/ethnicity breakdown was as follows: 10% were non-Hispanic White, 18% were African American, 67% were

Hispanic, and 5% were Asian-Pacific Islanders, American Indian or Alaskan Natives, and other races/ethnicities. Thirty-three percent of the parents were born in the U.S. Among the primary caregiver respondents, 68% reported education levels of a high school graduate or lower, and the mean annual household income was $22,315 (*S.D.*=14,674). Most primary caregiver respondents were biological parents (81% mother, 9% father), 9% were other blood relatives (e.g., grandparents), and less than 1% were stepparents or did not respond to this item.

Variants of service use. Logistic regression and univariate ANOVAs were conducted to examine whether type of service use varied by race/ethnicity and SES. Use of MST services did not vary significantly by parent race/ethnicity, income, or level of education. Use of clinic-based versus school-based services did not vary significantly by level of education, however, clients of school-based services (*M*=23869, *S.D.*=15.452) had significantly higher income than clients of clinic-based services (*M*=16859, *S.D.*=9847), $F(1,255)=10.501$, $p=.001$. In addition, AA families were significantly more likely to use clinic-based services (or less likely to use school-based services) than NHW families ($p=.003$).

Procedures

Study personnel recruited clinic-based and school-based therapists through various outpatient mental health clinics in a large county in California. Upon therapist consent to participate in the study, clients of those therapists were asked for permission to be contacted by study personnel to provide further information about the study. Upon receipt of permission to contact the families, study personnel then

contacted the parents to screen for eligibility and to schedule baseline interviews. Youth and parents provided assent/consent before participating in the baseline interviews.

Parents, youth, and therapists were administered one baseline interview and four follow-up interviews. Baseline interviews of the adolescents, parents, and therapists are targeted to occur within one week of intake. Follow-up interviews with adolescents and parents took place at 2, 4, 6, and 12 months after the baseline interview, regardless of treatment status, to obtain outcome measures across post-treatment and short-term follow-up. Therapist follow-up interviews took place at each follow-up time point unless treatment was terminated. Baseline surveys were conducted in person, and follow-up interviews were conducted by phone.

The Cognitive Consensus Project began data collection in March 2006, with baseline data collection completed in 2009 and completion of 12 month follow-ups projected for 2010.

Measures

The specific aims of the present study were addressed by the use of measures that were collected as part of the Cognitive Consensus Project:

Sociodemographics. Self-report information collected from adolescents included race/ethnicity, age, gender, grade level, number of years in the U.S., and language preference and proficiency. Self-report information collected from the parent included age, gender, single/dual parent home status, race/ethnicity, language preference and

proficiency, number of years in the U.S., household income, and highest degree of education.

Parent cultural variables

1) Race/ethnicity: Parent race/ethnicity was based on self report, using U.S. Census categories for self-identifying their race and ethnicity.
2) Acculturation: *PAN Acculturation Scale (Soriano, 1999; Soriano & Hough, 2000).* The PAN Acculturation Scale is designed to measure acculturation or the extent to which respondents reflect social, linguistic, and cultural characteristics aligned with "mainstream" or American culture, some other salient social or cultural group they are members of, or both (bicultural). It is intended for adults and adolescents and assesses acculturation across all minority groups. Respondents were asked to list one other culture, besides American, that is relevant to them. (If Caucasian participants have difficulty identifying a culture other than American, they have the option of using their parents'/ancestors' cultures, such as Italian or Irish, as their indigenous culture.) The PAN conceptualizes acculturation on two scales: affinity level to mainstream American culture and affinity to the alternative/indigenous culture named by the participant. Parents were asked to rate 22 items as being true for: My cultural group, American culture, Both, or Neither. Scales were summed across the items (e.g., an endorsement of "American culture" or "Both" for an item would be counted towards the mainstream American Culture score). The acculturation variable in the present study is on two

continuous scales – one scale of affinity to mainstream American culture, ranging from 0 to 22, with higher values indicating higher affinity to American culture and a second scale of affinity to "Other" culture, ranging from 0 to 22, with higher values indicating higher affinity to "Other" culture. The reported alphas for the two subscales are: α=.95 for mainstream American culture and α=.95 for alternative culture.

3) English language proficiency: Participants were asked to rate, on a 5-point Likert-type scale of 1=Poor to 5=Excellent, how well they read, speak, and write in English.
4) English language preference: Participants were asked to rate, on a 5-point Likert-type scale of 1=Never to 5=Always, how often they prefer to read, speak, and write in English.

Parental involvement.

1) Preference for involvement – *Treatment Decision Making Structure* (unpublished measure; Yeh, McCabe, Garland, Ganger, & Liang, 2005b). On this measure, the parents were asked questions about the degree to which they think various stakeholders (e.g. client, parent, therapist) should be involved in making decisions about what should happen in the adolescent's treatment. For each person listed, the parent rated their level of preference for that stakeholder's involvement on a 5-point Likert scale (0= *No role*, 1=*small*, 2=*medium*, 3=*large*, 4=*most important*). Parent preference for involvement was determined by whether they indicate preference for themselves to be

involved and if so, to what extent. This measure was administered at baseline and follow-up interviews (if the youth was still receiving services).

2) Actual involvement

Parent report: In follow-up interviews, parents were asked to indicate whether they were actually involved in several aspects of their child's counseling (in-person background session, telephone call when counseling started, regular telephone contacts, regular counseling sessions, every counseling session), with responses in Yes or No format. Parents were also asked on a 10-point scale how hard it was for them to make it to sessions and how hard it was for them to follow through on plans (1=*extremely easy* to 10=*extremely hard*).

Therapist report: Therapists rated parental involvement on the Engagement Measure (Hall, Meaden, Smith, & Jones, 2001) which evaluates 6 areas of engagement in therapy (appointment keeping, communication and openness, perceived usefulness of treatment, collaboration with treatment, and medication compliance). This measure has demonstrated good test-retest and inter-rater reliability and good face and discriminatory validity (Hall et al., 2001). These data are collected during follow-up interviews. An overall engagement score was created based on the sum of the following areas of engagement:

a. Appointment keeping – Assesses the degree to which the parent keeps and attends scheduled appointments with the therapist. The

therapist was asked to rate, in the follow up interview, the parent on appointment keeping without support (i.e. without key-worker [mental health worker who is most involved with the child, usually the therapist] bringing the child) and with support (key-worker bringing child to appointment) on a 5-point scale (1=*never keeps appointments* to 5=*always keeps appointments*).

b. Communication and openness – Assesses the degree to which the parent volunteers relevant material about the youth and is open in discussing the youth's feelings, problems, and current situation. The therapist was asked to rate the parent's involvement with treatment on a 5-point scale (1=*never* to 5=*always*).

c. Collaboration with treatment – Assesses the extent to which the parent agrees to proposed intervention, as stated in their care plan, and is involved in carrying it out. The therapist was asked to rate the parent's collaboration on a 5-point scale (1=*never* to 5=*always*).

d. Involvement in treatment (e.g. carrying out "homework", etc.) – Assesses the extent to which the parent is involved in carrying out the proposed intervention. The therapist was asked to rate the parent's involvement with treatment on a 5-point scale (1=*never involved in proposed intervention* to 5=*always involved in proposed intervention*).

Motivation: At follow-up interviews, therapists were asked to rate parents' level of motivation on a 10-point scale (1=*not at all motivated* to 10=*extremely motivated*).

Symptomatology and Functional Impairment

Symptomatology: Child Behavior Checklist (CBCL) and Youth Self-Report (YSR) (Achenbach, 1991a; Achenbach, 1991b). The CBCL is a parent-report instrument for youth aged 4-18 that asks parents to rate 113 emotional and/or behavioral items on a 3-point Likert scale (0=*not true*, 1= *somewhat or sometimes true*, 2=*very true or often true*) on youth symptomatology. The YSR is a 112-item youth-report instrument (ages 11-18) that parallels the CBCL. The CBCL and YSR generate 8 narrow-band syndrome scores, broad-band Internalizing and Externalizing problem scores, and a Total problems score (CBCL scale alphas = .59-.95; YSR scale alphas=.54-.96), each with thresholds for clinical and borderline clinical functioning. The scales have well-established reliability (mean r test-retest for CBCL=.89, YSR r=.72) and construct validity (CBCL Total Problems score correlates r=.82 with the Parent Questionnaire [Conners, 1973] and .81 with the Revised Behavior Problem Checklist [Quay & Peterson, 1983]). Spanish translations of the CBCL and YSR were available. The CBCL and YSR were administered during the baseline interview and at each follow-up interview.

General Functional Impairment: Columbia Impairment Scale (CIS; Bird, Shaffer, Fisher et al, 1993). The CIS is a measure of global impairment for children and adolescents that assesses four different areas of functioning: use of leisure time,

functioning in job or schoolwork, interpersonal relations, and psychopathological domains. There are two versions of the CIS: adolescent and parent. The CIS has 13 items rated on a 5-point Likert scale (0=no problem to 4=very big problem). Items are summed to create an overall score. The scale has high internal consistency (α=.70-.89), excellent test-retest reliability (Parent ICC=.89; Child ICC=.63), and good concurrent validity when correlated with the Children's Global Assessment Scale (CGAS [Shaffer, Gould, Brasic et al., 1983]; Parent-CIS; *r*=-.73; Child-CIS: *r*=-.48). Both parent and adolescent versions were administered. A Spanish Translation is available. The CIS was administered during the baseline and follow-up interviews.

Premature Termination. At each follow-up interview, therapists were asked whether the youth is still in therapy. If not, then the therapist indicated (yes or no response) whether the youth was prematurely terminated and the specific reasons for it.

Table 2. Data collection time points per measure

Measure	Baseline	All follow-ups	Follow-up if in services
Race/ethnicity, acculturation (PAN), language	X		
Child Behavioral Checklist (CBCL)	X	X	
Columbia Impairment Scale (CIS)	X	X	
Premature termination			X
Types of involvement	X		X
Difficulty making sessions/follow plans			X
Preference for involvement (TDM)	X		
Motivation			X
Engagement			X
% Appointments attended			X

6. Analytic Approach

Analysis for the present study utilized a sequential multi-step approach such that findings from the analysis at one step helped inform the method of analysis of subsequent steps.

Step 1: Data Screening

Before beginning analysis, data screening procedures were used to detect and address outliers, nonlinearity, missing data, and abnormalities. Percentage of missing data for the outcome measures (functional impairment and symptomatology) for the baseline, 2-, 4-, and 6-month follow up time points were roughly <1%, 18%, 19%, and 17%, respectively. Percentage of missing data for parental involvement measures at 2-, 4-, and 6-month follow-up time points were roughly 12%, 32%, and 46%, respectively. More missing data for the parental involvement measures compared to the outcome measures was expected because information about involvement was only collected at follow-ups if the youth was still receiving services whereas outcome data continued to be collected regardless if the youth was still in therapy.

Step 2: Intercorrelations

Intercorrelations were examined between all variables of interest. Results from the correlation table helped to guide subsequent analysis in terms of deciding which outcome data to use (e.g. parent report versus youth report versus both, actual versus preferred involvement) and which variables to control for (e.g., socioeconomic status). The intercorrelations between parent cultural variables and socio-economic status (income and parent education level) (Table 4a) revealed that acculturation, and

language proficiency and preference were significantly related to socio-economic status. (The ANOVAs as discussed below also show a significant relationship between race/ethnicity and SES). Therefore, income and parent education level were entered as covariates into the models that involved the parent cultural variables. The intercorrelations between the parental involvement variables (Table 4c) showed that the different variables measuring preferred and actual involvement were not consistently significantly correlated. As a result, the two types of involvement were analyzed separately. The intercorrelations between parent and youth report of the CBCL/YSR and CIS were statistically significant, although the correlation coefficients were small to moderate in size and may not statistically substantiate that there is a high degree of inter-informant agreement on these measures. Nevertheless, since the present study is primarily interested in *parental* involvement and *parent* cultural variables, it makes sense conceptually to emphasize parents' perspectives on their child's symptomatology and functional impairment and how they relate to their cultural factors and involvement. Thus, only parent report of symptomatology and functional impairment was used for the current study.

Given that race/ethnicity was a categorical variable, several one-way ANOVAs were conducted to examine racial/ethnic differences in income, education, language, acculturation, parental involvement, and outcomes. The tests revealed that race/ethnicity significantly predicted parent level of education ($F(2,247)=48.435$, $p<.001$, partial $\eta^2=.282$), income ($F(2,243)=8.092$, $p<.001$, partial $\eta^2=.062$), affiliation to other culture ($F(2,248)=91.979$, $p<.001$, partial $\eta^2=.426$), affiliation to

American culture ($F(2,248)=53.365$, $p<.001$, partial $\eta^2=.301$), English language preference ($F(2,178)=17.035$, $p<.001$, partial $\eta^2=.161$), and English language proficiency ($F(2,247)=109.553$, $p<.001$, partial $\eta^2=.470$). In regards to outcome variables, race/ethnicity significantly predicted parent CIS ($F(2,248)=8.195$, $p<.001$, partial $\eta^2=.062$). As for parental involvement, racial/ethnic groups significantly differed on the frequency of regular telephone contacts ($F(2,242)=4.084$, $p=.018$, partial $\eta^2=.033$). Specifically, Dunnett's T3 post-hoc analyses revealed that HIS parents ($M=2.250$, $SE=1.326$) had significantly lower levels of education than NHW ($M=3.926$, $SE=.217$) and AA parents ($M=3.702$, $SE=.085$) (all ps$<.05$). HIS parents ($M=20249$, $SE=1045$) reported significantly lower income compared to NHW parents ($M=31614$, $SE=2736$) ($p<.05$). All the racial/ethnic groups were significantly different from each other on the level of affiliation to an "other" culture, with HIS parents ($M=19.774$, $SE=.386$) describing themselves as more affiliated to an "other" culture than NHW ($M=7.148$, $SE=.989$) and AA parents ($M=12.681$, $SE=.750$) (all ps$<.05$). They were also significantly different from each other on the degree of affinity to American culture, with HIS parents ($M=8.760$, $SE=.460$) being the least affiliated with American culture, followed by AA parents ($M=16.362$, $SE=.892$) and NHW parents ($M=19.148$, $SE=1.177$) (all ps$<.05$). With regard to language, HIS ($M=5.268$, $SE=.259$) were significantly different from NHW ($M=12.333$, $SE=1.372$) on English language preference and HIS ($M=5.869$, $SE=.201$) were significantly different from NHW ($M=11.407$, $SE=.512$) on English language proficiency (all ps$<.05$). With outcome variables, NHW parents (M=21.889, SE=1.683) reported significantly higher

CIS scores than HIS parents (*M*=15.469, *SE*=.657) (all *p*s<.05). NHW parents (*M*=.926, *SE*=.068) had more regular telephone contacts than HIS parents (*M*=.758, *SE*=.027) (all *p*s<.05).

Step 3: Clustering effects/nested data

The purpose of this step was to account for potential clustering effects and non-independence of data due to repeated measures (data collected across follow-up points) nested within individuals and individuals nested within therapists.

In order to determine which variables in the study had a significant therapist effect, the intra-class correlations (ICCs) for the dependent variables were computed. For dependent variables with ICCs greater than .05 (Reise, Ventura, Nuechterlein, & Kim, 2005), it suggested that there was enough variation at the therapist level to justify controlling for therapist level effects. As shown in Table 5, therapist level effects were significant for premature termination, engagement, percentage of appointments attended by parent, types of involvement, and preference for mother's involvement. For instance, the ICC for Motivation is 0.28, suggesting that 28% of the variance in motivation is between therapists and 72% of the variance is at the individual and repeated measures level. Since a significant amount of variance is at the therapist level, 3 levels are required to control for therapist clustering effects.

Levels: Multi-level modeling using HLM 6.0 (Raudenbush, Bryk, Cheong, & Congdon, 2004) statistical program was used to conduct random effects multi-level modeling analyses. For models that involved repeated measures (e.g., CBCL measured across time), the repeated measures variables were entered in Level 1. Both

functional impairment and symptomatology were found to significantly decrease over time (see Tables 9a and 9b), thus justifying the need to examine these variables as repeated measures rather than averaging them across time. Level 2 consisted of individual level variables (e.g., baseline variables measured only once such as race/ethnicity, acculturation). Variation due to therapist effects was controlled for in Level 3. For models that did not involved repeated measures variables, individual level variables were entered in Level 1, which were nested within therapists in Level 2.

It is important to point out that some parental involvement variables were measured only at baseline and others were only measured at the follow-up time points that the youth was still receiving services, concurrently with the outcome measures. Preference for mother's and father's involvement was measured only at baseline and was thus treated as an individual level variable. Engagement, motivation, difficulty making to sessions, difficulty following through on plans, the different types of actual involvement as reported by the parent, and percentage of appointments attended by the parent were measured at follow-up interviews. In general, these repeated measures variables were generally in level 1, nested within individuals, but with some exceptions. When actual types of involvement as reported by the parent (e.g., interview when counseling started, phone call when counseling started, regular telephone contacts, regular sessions, every session) were treated as dependent variables in analyses examining parent cultural variables as predictors of parental involvement (Tables 8c-8g), the data for these variables were averaged across time

points. The rationale behind this was that the items for these variables were originally scored as either 0=no or 1=yes at each time point. Averaging these values across time allowed for the creation of the continuous dependent variable to test a linear regression model. In analyses with premature termination as a predictor of parental involvement (Table 10c), all the parental involvement variables were averaged across time (except for preferred involvement because it was only measured once). This was done in order to eliminate the need for the 3-level model with repeated measures of parental involvement in level 1 and simplifying it to a 2-level model with individuals in level 1 nested within therapists in level 2. Also, exploratory analyses revealed that parental involvement did not significantly change over time and therefore, averaging the scores across time points would not have differed significantly from examining the data over time.

Step 4: Racial/ethnic group comparisons

Although the present sample included individuals from several racial/ethnic groups, the decision of which racial/ethnic groups to include in analyses depended on whether the sample sizes of each group were large enough for comparison. Since only 5% (*n*=12) of the sample consisted of Asian Pacific Islander, American Indian or Alaskan Natives, and other races/ethnicities, only the Non-Hispanic White (NHW) (*n*=27), African American (AA) (*n*=47), and Hispanic (HIS) (*n*=178) groups were compared and used in analyses that involved racial/ethnic comparison. (For analyses that did not involve race/ethnicity, such as those examining the relationship between

parental involvement and symptomatology, all subjects in the study were included in the analyses to maximize power.)

Step 5: Examine predictors of parental involvement

The relationships between potential predictors of parental involvement were examined. Specifically, the pathways between parent cultural variables of race/ethnicity, acculturation, and language proficiency and actual and preferred parental involvement were explored to identify predictors of parental involvement.

Step 6: Predict outcome trajectories

The present study examined whether parent cultural variables and parental involvement predict outcome trajectories (symptomatology and functional impairment). The results indicate whether parent cultural variables and parental involvement predict a change in symptomatology and functional impairment, over and above the effects of nested data.

Although data was collected at baseline and 2-, 4-, 6-, and 12- month time points, analysis only utilized the data from the baseline through 6-month time point because the largest effect of parental involvement on outcome trajectories was expected to be between baseline and 6 months of treatment. Furthermore, many youth were expected to terminate treatment by the 12-month time point or be in the next course of treatment with a different therapist.

Analysis with premature termination as the dependent variable. The above analyses mostly pertain to using symptomatology and functional impairment as dependent variables in the models because they are continuous or dimensional

variables. However, since premature termination is a categorical variable (yes or no responses), multi-level modeling logistic regression techniques were employed for analyses that involved premature termination.

7. Results

Parental involvement

As one of the goals of the present study was to better understand the nature of parental involvement in usual care, descriptive statistics (Table 3) of the different parental involvement variables were examined. In general, most scores tended to fall towards the higher end of the distribution, except for difficulty making to sessions, difficulty following through on plans, and attendance at every counseling session.

Table 3. Descriptive statistics for parental involvement variables

Variable	Min. – Max.	Mean	S.D.
Motivation	1 - 10	6.571	2.016
Engagement	11 - 55	40.836	7.447
Difficulty making it to sessions	1 - 10	2.925	2.571
Difficulty following through on plans	1 - 10	3.028	2.389
Percentage of appointments attended	0 - 100	76.198	27.902
Interview when counseling started	0 - 1	.941	.226
Telephone contact when counseling started	0 - 1	.931	.229
Regular telephone contacts	0 - 1	.805	.353
Regular counseling sessions	0 - 1	.747	.380
Every counseling session	0 - 1	.143	.324

Note: Scores averaged across time points

Racial/ethnic, acculturation, and language differences in preferred parental involvement (Hypothesis 1a)

Separate multi-level models were tested to investigate the relationship between each of the parent cultural variables and preferred mother and father involvement. As shown in Table 6, both AA and HIS parents preferred mother's involvement significantly more so than NHW parents. Greater affinity to American culture

predicted lower preference for mother's involvement. Higher English language preference predicted lower maternal preference. After entering SES (income and parent education level) into the model as covariates, differences between NHW and HIS parents on maternal involvement and differences in language preference were no longer significant. Parent cultural variables were not significantly related to preference for father's involvement (Table 7).

Racial/ethnic, acculturation, and language differences in <u>actual</u> parental involvement (Hypothesis 1b)

Separate multi-level models were tested to investigate the relationship between each of the parent cultural variables and actual parental involvement (difficulty making it to sessions, difficulty following through on plans, and different types of involvement, e.g., regular phone contacts) based on *parent* report (Tables 8a-8g). The results revealed that HIS parents reported significantly less difficulty following through on plans made in counseling compared to AA parents. However, this was no longer significant after accounting for SES. AA parents were more likely to have had an interview with the therapist when counseling started as compared to HIS parents (not significant with SES). NHW parents were more significantly likely to have a telephone call with the therapist when counseling started as compared to AA and HIS parents (NHW vs. AA: not significant with SES). Both NHW and AA parents were more likely to have regular telephone contacts than HIS parents (NHW vs. HIS: not significant with SES). Greater English language preference predicted more regular telephone contacts (not significant with SES) whereas greater English language

proficiency predicted less regular telephone contacts. Language proficiency was also significantly negatively related to regular attendance at counseling sessions (not significant with SES).

Similar analyses were conducted to examine predictors of actual parental involvement, based on *therapist* report (Tables 9a-9c). The findings showed that parent cultural variables were not significantly related to parental engagement in therapy, parent motivation, and the percentage of appointments attended by the parent.

Parental involvement as a predictor of mental health outcome trajectories and service retention (Hypothesis 2)

Separate multi-level models were tested to investigate the relationship between each of the types of parental involvement and mental health outcome trajectories (functional impairment and symptomatology) and service retention. Analyses examining whether parental involvement predicted functional impairment (Table 10a) indicated that difficulty making it to sessions, difficulty following through on plans, and having an interview when counseling started were significantly and positively related to functional impairment across time (positive slope). In contrast, a higher percentage of appointments attended by the parent and attendance at every session predicted a decrease in functional impairment over time (negative slope).

Analyses investigating whether parental involvement predicted symptomatology (Table 10b) revealed that parents who reported greater difficulty making it to sessions tended to endorse an increase in symptomatology over time. On

the other hand, higher parental motivation and a greater preference for mother's involvement predicted a decrease in symptomatology over time.

In testing models examining the relationship between premature termination and parental involvement, premature termination was entered as the predictor variable and the parental involvement variables as the dependent variables (Table 10c). Given that premature termination is a dichotomous variable (0=no, 1=yes), logistic regression procedures would have been required if it were treated as a dependent variable. Instead, the variables were placed in reversed direction for ease of analysis and interpretation, while still being able to answer the proposed research questions. The results indicated that higher parental engagement and motivation, and a greater percentage of appointments attended by the parent were significantly related to lower premature termination.

Parental cultural variables as predictors of mental health outcome trajectories and service retention (Hypothesis 3)

Separate multi-level models were tested to investigate the relationship between each of the types of the parent cultural variables and mental health outcome trajectories (functional impairment and symptomatology) and service retention. Analyses examining whether parental race/ethnicity predicted functional impairment (Table 11a; Figure 2) indicated that HIS parents reported significantly less functional impairment over time compared to NHW and AA parents. In addition, greater language preference significantly predicted an increase in functional impairment over time. However, these findings were no longer significant after entering SES variables

(income and parent education level) into the models as covariates. In particular, parent education was consistently a significant predictor above and beyond the effects of race/ethnicity, acculturation, and language. Parental cultural factors were not found to be significant predictors of symptomatology and service retention (Tables 11b to 11d).

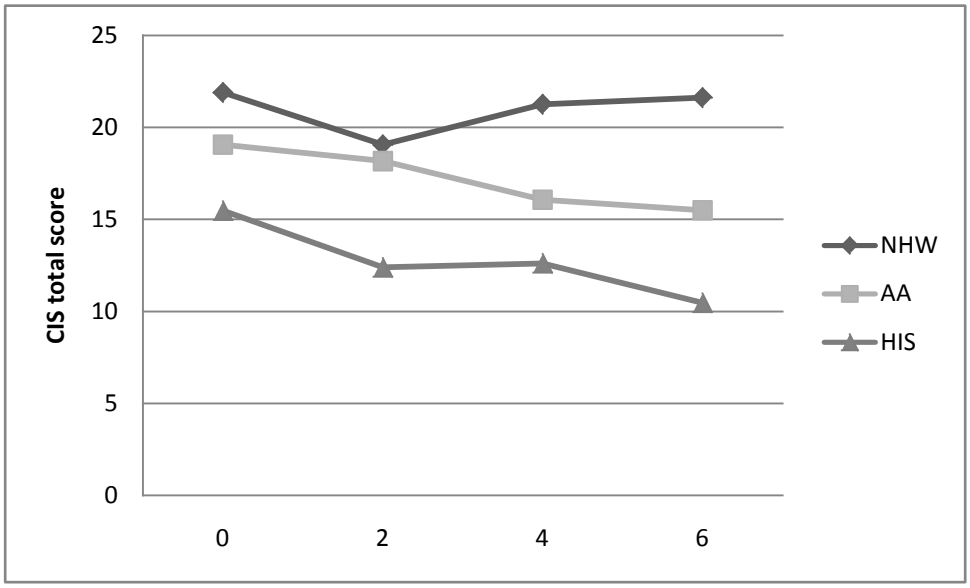

Figure 2. CIS scores by race/ethnicity across time points (months)

8. Discussion

The overall aim of the present study was to better understand the relationships between parent socio-cultural variables, parental involvement, and service retention and mental health outcome trajectories in youth outpatient mental health services. In general, the findings were mixed, with some supporting the hypotheses and others that were unexpected, calling for alternative explanations.

The first research question inquired whether race/ethnicity, acculturation, and language could predict preferred and actual parental involvement. As expected, both AA and HIS parents preferred mothers to play a role in counseling significantly more so than NHW parents. This finding is consistent with the educational literature on parental involvement, showing that racial/ethnic minority parents tend to play a large role and be strongly invested in their child's academic achievement (Chao, 1994; Chao, 1996; Coll et al., 2002; Ho, 1994; Marcon, 1999; Qian & Blair, 1999). It also is in line with studies that suggest that cultural values, such as interdependent self-construals, a greater sense of familism, collectivism, and obligation to care for family members, are more salient within ethnic minority families (Freeberg & Stein, 1996; Markus & Kitayama, 1991). Acculturation was a significant predictor as greater affinity to mainstream American culture was related to lower preference for mother's involvement, which also fits with the notion that perhaps adherence to Western values of individualism and independence may influence parents' preference for involvement in their child's treatment.

In terms of actual involvement, hypotheses were supported such that NHW parents were significantly more likely to have a telephone call with the therapist when counseling started as compared to AA and HIS parents. Moreover, greater English language preference was associated with more regular telephone contacts, corroborating with other studies suggesting that language may be important factor to consider with actual involvement in schooling and mental health services amongst racial/ethnic minority populations (Lopez, 2007; Takeuchi et al., 1995; Wong & Hughes, 2006; Yeh et al., 1994). Parents who have a greater preference for speaking English may feel more comfortable with communicating with English speaking therapists. Future research would benefit from the examination of therapist preferences for and role in initiating parent contact as well as the interaction between therapist and parent variables in the occurrence of actual contact.

The second aim of the present study was to examine whether greater parental involvement would lead to a decrease in functional impairment and symptomatology over time and be associated with less dropout. Consistent with the hypotheses, more attendance at sessions by the parent predicted reductions in functional impairment over time. Volition appeared to be a key factor as parents who were more motivated and preferred mothers to play a role in treatment tended to describe their children as being less symptomatic over time. In regards to service retention, higher levels of parental engagement, motivation, and percentage of sessions attended played significant roles in reducing premature termination. It appears that attendance at

sessions, motivation, preference, and engagement play significant roles in mental health outcome trajectories or in helping to retain families in treatment.

Of these aspects of parental involvement, it seems that factors related to volition (e.g., motivation) were more often significant predictors of outcomes than indicators of actual involvement (e.g., phone calls and attendance at sessions). This is not surprising given that researchers have emphasized the importance of motivation in the therapeutic process (Miller & Rollnick, 2002; Miller & Prinz, 2003; Nock & Ferriter, 2005). Motivational interviewing techniques such as increasing readiness for change, decreasing resistance to treatment, resolving ambivalence, and developing discrepancy between current behavior and future goals have been shown to be effective in reducing dropout and increasing treatment effectiveness for various psychiatric disorders, particularly substance abuse, in adults (Miller & Rollnick, 2002). In the context of youth psychotherapy, parents may be resistant to treatment (e.g., deny their role in their child's problems and be unwilling to change their parenting practices) and often faced with or perceive obstacles that may prevent them from wanting to remain in services. Increasing their motivation may help to address these challenges to their involvement in their child's care. In fact, empirical evidence exists to support the notion that parental motivation is a key factor. For instance, Nock and Photos (2006) found that increased parent motivation was associated with a decrease in perceived barriers to treatment, which then predicted greater treatment adherence. Parents who received an intervention that incorporated techniques to increase parental motivation in parent management training were more likely to report

greater readiness and ability to change their parenting practices, to attend significantly more sessions, and to report greater quantity and quality of treatment adherence as compared to those parents who were in the treatment as usual condition (Nock & Kazdin, 2005). Likewise, for initially less motivated parents in the child welfare system, an intervention with motivational techniques combined with Parent-Child Interaction Therapy was found to improve retention in treatment (Chaffin, Valle, Funderburk, Gurwich, Silovsky et al., 2009). Thus, in the context of the present study, it may be the case that parental motivation and preference for involvement play an integral role in therapy adherence and retention beyond phone contacts and attendance at sessions, allowing the youth to benefit from therapy (i.e., receive a greater dosage of treatment), and in turn, result in a reduction in symptomatology or functional impairment.

On the flip side, perceived barriers to therapy were associated with *increases* in impairment and symptomatology. For instance, the more parents endorsed having difficulty making it to sessions, the more they reported an increase in both functional impairment and symptomatology. In addition, parents who experienced difficulty following through on plans made in counseling tended to report more functional impairment across time. Indeed, there is evidence to demonstrate that although some parents may want to be involved in their child's counseling, there may be challenges that may prevent them from actually being involved (Attride-Stirling et al., 2004; MacNaughton & Rodrigue, 2001). These barriers may be both perceived, such as caregiver strain and stress, or concrete, such as financial burden, time constraints, and

transportation difficulty (Kang et al., 2005; Koroloff et al., 1994; McCabe et al., 2003; Takeuchi et al., 1995; Tolan & McKay, 1996). Parents' perceptions of obstacles to treatment increase the likelihood of premature termination (Coatsworth et al., 2006; Kazdin et al., 1997; Kazdin et al., 1995; Nock & Kazdin, 2001), and possibly reduce the opportunity to benefit from treatment. The findings from this study extend the knowledge of existing research by showing that perceived barriers to participating in counseling sessions and following through with plans made in therapy can negatively impact mental health outcome trajectories. These findings also emphasize that both preferred and actual involvement are important in influencing outcome trajectories and retention of clients in services, and that they each have differential effects on mental health outcomes.

The third aim of the current study was to examine whether parental cultural variables predicted mental health outcome trajectories and service retention. Overall, the results were not consistent with hypotheses such that HIS parents reported significantly less functional impairment over time compared to NHW and AA parents. Also unexpected, greater English language preference significantly predicted an increase in functional impairment over time. Acculturation did not have a significant effect on symptomatology and service retention.

The role of SES and parent psychoeducation

At first glance, many of the findings involving race/ethnicity were unexpected or inconsistent with hypotheses. However, upon further exploration of the data, understanding the role of SES may facilitate the interpretation of these results.

Although parent race/ethnicity, acculturation, and language appear to be important predictors of some areas of parental involvement and mental health outcome trajectories, at least half of the tests that were significant involving race/ethnicity were no longer significant after including SES into the models. This suggests that much of the variance in race/ethnicity may be accounted for by SES. For instance, it was conjectured that NHW parents would report lower levels of functional impairment over time. Instead, the findings unexpectedly indicated that HIS parents reported lower functional impairment in their children over time. However, further examination into the relationship between parent cultural variables and SES revealed that compared to AA and NHW parents, HIS parents also had the lowest levels of education and income. HIS parents reported being the most affiliated with their own culture and least affiliated with mainstream American culture. Furthermore, HIS parents reported the lowest degree of language preference and proficiency. This suggests that SES and race/ethnicity highly co-vary in the current study and that, like race/ethnicity, parent SES may also influence the therapeutic process. Studies have shown that higher levels of education in patients in psychotherapy were related to more perceived therapeutic alliance (Marmar, Weiss, and Gaston, 1989). Nock and Kazdin (2001) found that lower parent SES and racial/ethnic minority status predicted more negative expectations for their child's treatment (e.g., treatment will not work, their child will not improve, and that they will not be involved in treatment).

It may also be the case that parents with lower SES tend to report less impairment in their children, have the view that the impairment is less severe, or

conceptualize impairment in a manner that is not captured by the instruments used in this study. In particular, parent level of education has shown to be a significant predictor of mental health outcome trajectories. For instance, educational attainment was positively correlated with functional impairment and symptomatology. These findings point to the possibility that parents with higher levels of education may have more exposure or access to psychoeducation and mental health resources (e.g., through the internet, media covering psychiatric problems). In turn, they may be more knowledgeable about psychiatric disorders and their presentation and subsequently be more vigilant, sensitive, or aware or their child's functioning and emotional and behavioral symptoms. On the other hand, socioeconomic disadvantage has been shown to be associated with somatization of psychiatric symptoms such that racial/ethnic minorities, who also tended to have lower levels of SES, were also more likely to somaticize their psychiatric symptoms (Canino, Rubio-Stipec, Canino, & Escobar, 1992). Thus, it may be the case that the types of symptoms that HIS or low SES parents do believe are problematic were not assessed in the instruments administered in the current study (i.e., CIS, CBCL). These patterns of results are consistent with research demonstrating variations between racial/ethnic groups in parents' perceptions of their child's problems. For instance, Lau, Garland, Yeh, and colleagues (2004) found that NHW parents reported more internalizing and externalizing problems than their children as compared to racial/ethnic minority parents (Asian-Pacific Islander, AA, HIS). Possible implications of these findings include NHW parents having a lower threshold for youth emotional and behavioral

problems, being more aware of their child's psychopathology because they are better educated about various disorders and their symptoms, or conceptualizing mental health in ways that are more aligned with Western views of mental health.

Parent psychoeducation may also help to explain why having an interview when counseling started led to an increase in symptomatology over time. Perhaps being more involved in the initial assessment process with the therapist may increase parents' awareness of their child's problems that they otherwise would not have noticed, conceived to be as problems, or thought of them to be as severe.

Although psychoeducation may increase parents' sensitivity to psychopathology, it may not necessarily translate to greater parental involvement. For instance, English language preference predicted less preference for maternal involvement and greater English language proficiency was associated with fewer regular telephone contacts and less attendance at counseling sessions. However, the language variables were also significantly correlated with SES and most of their effects on parental involvement were no longer significant after controlling for SES. Given that both language preference and proficiency were positively correlated with SES, it is possible that higher SES parents may be more vigilant of their child's problems, but they may be less inclined to be involved in therapy.

It is also possible that the parent cultural variables in the present study (race/ethnicity, acculturation, language) did not fully capture the concept of "culture", which may also explain the lack of significant findings in the relationships between parent cultural variables, parental involvement, and mental health outcomes. It may

be helpful to find other ways of measuring and conceptualizing the parent cultural variables, such as conceptualizing acculturation categorically (based on Berry's model of acculturation) instead of along two separate continuums. Future studies may also benefit from exploring other proxies of culture that may better elucidate the aspects of culture that are most relevant to parental involvement and mental health outcomes, such as examining cultural values (e.g., independence and interdependence), attitudes, and behaviors; and explanatory models of mental illness (i.e. beliefs about causes of problems, reasons for symptom onset, pathophysiology, course of illness, treatment goals, and problem perception).

Possible associations between treatment and mental health outcome trajectories

Analyses examining the change in CIS and CBCL scores over time demonstrated that for all racial/ethnic groups in the sample, there was a significant decline in functional impairment and symptomatology from baseline to the 6-month follow-up time point. Although the present study is not designed as an intervention study and claims about treatment effects cannot be made, one potential explanation for the significantly negative slopes is that, from the parents' perspective, youth are benefitting from therapy.

In terms of racial/ethnic comparisons, the hypothesis that NHW would have better outcome trajectories than AA and HIS was not supported. This is consistent with prior research that has also shown that the relationship between race/ethnicity and outcome trajectories is quite varied, with some studies suggesting that racial/ethnic minorities have lower symptomatology over time than NHW individuals and others

suggesting no differences (Borduin et al., 1995; Ginsburg & Drake, 2002; Huey & Polo, 2008; Hudley & Graham, 1993; Lochman et al., 1993; MTA Cooperative Group, 1999; Reid et al., 2001; Silverman et al., 1999). In the present study, HIS parents reported fewer problems at baseline than NHW and AA parents and they reported more significant decrease in functional impairment over time (Figure 2). One interpretation of the differences in baseline scores could be that NHW and AA parents may be more likely to acknowledge their child's psychopathology than HIS parents as discussed previously. However, the significantly steeper decline in CIS scores suggests that perhaps HIS youth actually are improving the most compared to the other racial/ethnic groups (assuming that HIS parents are "accurate" reporters of their child's problems) and that HIS youth are benefitting from psychotherapy. This may make sense given that HIS parents also endorsed less difficulty following through on plans compared to other racial/ethnic groups. In addition, it is possible that the lower baseline scores noted for HIS youth are linked to better outcome trajectories as compared to the higher baseline scores noted for NHW and AA youth. It is also important to note that the particular county in which the study was located has placed a strong emphasis in recent years upon improving the cultural sensitivity of its mental health services. Thus, it is possible that in this particular county, culturally sensitive mental health services for HIS families are being implemented (e.g., better access to care, availability of Spanish-speaking therapists, providers knowledgeable about cultural competence, better quality of care), HIS parents feel more supported and understood in therapy leading to greater engagement, and consequently, HIS youth

show improvements over time. Further investigation into the reasons for this racial/ethnic difference in CIS score trajectories may greatly benefit the field.

In contrast, NHW parents reported significantly more functional impairment at baseline compared to HIS parents and they also perceived little improvement over time. This may suggest that they may initially have a lower threshold for reporting problems and they continue to maintain a more negative perspective despite their child receiving services. Alternatively, it is possible that there are racial/ethnic differences in impairment at baseline. AA parents appeared to fall somewhere in the middle, reporting significantly greater functional impairment at baseline compared to HIS parents (but less compared to NHW parents), and showing more decline in impairment over time than NHW parents, but not as steep a decline as compared to HIS parents. These results are surprising and interesting in light of previous notions that immigrant families may have more difficulty with access to services and when they are receiving services, they are less likely to remain in services due to aforementioned challenges. However, the present study's findings may be consistent with the concept of the "immigrant paradox", proposing that although immigrants may experience more stress in adjusting to a new culture, there are also protective factors related to being foreign-born (Burnam, Hough, Karno, Escobar, & Telles, 1987) and result in a lower lifetime prevalence in depressive, anxiety, and substance disorders in Mexican immigrants relative to U.S.-born Mexican Americans (Alegria, Canino, Shrout, Woo, Duan et al., 2008). On the other hand, if indeed HIS youth are showing improvement as a result of culturally competent services, these findings may provide evidence that the

outcomes of efforts to improve access to and to tailor psychotherapy for racial/ethnic minority populations are promising.

Summary and implications for treatment

On the whole, the present study delineates the integral roles that both preferred and actual parental involvement play in reduction of symptoms and/or functional impairment in psychotherapy for youth. The more parents prefer themselves to be involved and remain engaged and motivated in their child's mental health care, the more they perceive a decrease in their child's psychopathology and/or remain in services. To maximize these aspects of preferred involvement, it may be beneficial for therapists to employ techniques such as motivational interviewing, to increase parents' volition to be involved in their child's counseling. Once they are in services, the study findings demonstrated that having parents attend a higher percentage of appointments was associated with less premature termination and experiencing less difficulty attending sessions and following through on plans leads to reporting less psychopathology in their children. Thus, it follows that therapists may wish to explore with parents what they believe are obstacles to their involvement (e.g., language, transportation) and assist them with addressing those barriers. Results from analyses involving parent cultural factors in parental involvement and outcome trajectories suggest that in addition to being sensitive to parents' racial/ethnic background, acculturation, and language, being more aware of their level of education and their pre-existing knowledge of psychiatric disorders may also be crucial. Psychoeducation programs designed to familiarize lower SES and racial/ethnic minority parents may

help with raising their awareness and understanding of mental health disorders in children. It may also be beneficial for therapists to attempt to understand from the parents' point of view how they perceive their child's problems and what their threshold is for their symptom severity. Greater diagnostic agreement between parents and clinician/researcher generated diagnoses has been shown to predict parental engagement in therapy and reduce the likelihood of premature termination (Jensen-Doss & Weisz, 2008). However, psychoeducation and therapist-parent agreement on problems alone may not be adequate to involve parents in treatment. Some of the findings seem to suggest that while higher SES parents notice more problems or rate them as more severe, they are also less inclined to be involved. Therefore, it is possible that higher SES parents may not believe that there is a connection between their role in psychotherapy and change in their child's psychotherapy. It may be beneficial for service providers to further explore these parents' explanatory models of their child's illness to better involve them in their child's care. The findings from the present study may have the potential to improve the delivery and quality of care for socio-culturally diverse population of youth and families and to help inform and facilitate the development of interventions that encourage parents to play a key role in their child's mental health treatment.

Limitations

The present study examined the nature of parental involvement in usual care (versus in a clinical trial), which may be construed as a strength of the study because it allowed for observation of parental involvement "as is" without manipulation through

study design. However, a consequence of examining parental involvement in usual care is that parental involvement may have varied as a function of the type of mental health services the youth received. For instance, some youth in the study received school-based services, while others received clinic-based services, and some received MST services. In school-based services, parents may not have even been asked to play a role in therapy as therapists may have only been meeting with the youth at school. In clinic-based services, youth generally rely primarily on their caregivers to bring them to therapy. Thus, these parents may have attended a lower percentage of sessions than the therapist asked them to attend because of difficulty making it to sessions (and may opt to not bring their child to session at all). In MST services, therapy for the youth is delivered primarily through parent interventions, and therefore, parents have frequent contact with the therapist. MST therapists often drive to the parents for the sessions, thus eliminating some challenges to attendance at sessions and increasing the therapeutic dosage. Since the present study did not control for clinic or type of service level effects, the degree to which the type of services delivered influenced parental involvement is unknown.

On a related note, the present study did not distinguish between the different types of funding sources (e.g., MediCal, AB2726). Funding source often dictates the types of services the youth will receive and may vary by race/ethnicity and SES. For instance, low-income families tend to have publicly funded insurance (e.g., MediCal) and receive services through the county (e.g., clinic-based outpatient care). On the other hand, youth who receive mental health services through AB2726 (a state funded

program for children who have emotional and/or behavioral problems that affect their academic performance in school) may be more varied in terms of their SES since income is not part of the eligibility criteria to receive AB2726 services. These youth may also receive mental health services in such forms as day treatment, which may not be available to youth who only have MediCal. For instance, with the current sample, those families who were receiving school-based services had higher income than those who utilized clinic-based services. Likewise, as SES and race/ethnicity are closely associated, it is possible that the type of funding source and consequently the type of services received may also vary by race/ethnicity. As was found in the present study, African American families were more likely to utilize clinic-based services than school-based services compared to NHW and HIS families. A closer examination of interactions between SES, race/ethnicity, and type of service use would be important factors to consider in future studies because type of service can impact the quality and nature of parental involvement.

Another caveat of the present study is that only parent report was primarily used for the variables of interest. Although therapist report was also utilized to assess parental involvement, it would have also been informative to understand therapists' perspectives on whether there were improvements in the youths' symptomatology and functional impairment as they relate to parental involvement. The current study also did not incorporate youth report on parental involvement and mental health outcomes. It is possible that therapists and youth may or may not prefer parents to be involved in the first place and they may have differing views from parents on the types of

involvement they find to be beneficial. Since the therapeutic process involves collaboration between parents, therapists, and youth, gaining a more comprehensive understanding of parental involvement and mental health outcomes from multiple informants in future studies would be beneficial.

Other drawbacks of the study include uneven sample sizes of the racial/ethnic groups, which may have explained some of the lack of significant results involving race/ethnicity. However, multi-level modeling, by design, should have helped to manage the uneven sample sizes. Some of the analyses could have also been affected by greater amounts of missing data on certain follow-up measures (e.g., engagement and motivation), decreasing the power of those tests. Finally, although the present study benefited from longitudinal data and the ability to see change in outcomes over time, only data from baseline to the 6-month follow-up time point was examined. A different pattern of results may have emerged if all of the data including the 12-month follow-up were analyzed.

Future directions

The present study represents a preliminary step towards better understanding the role of parental involvement in improving the cultural competence of mental health service delivery to a socio-culturally diverse population of youth and continued research in this area is warranted. Some possible key factors in parental involvement that were not examined in this study are therapist characteristics and therapeutic alliance. It would be interesting to look more closely at therapist level effects (e.g., therapist language and whether parents' linguistic needs are met by the therapist,

therapist race/ethnicity and acculturation, theoretical orientation, type and level of training, degree to which therapist preferred parents to be involved) and whether there is agreement on the explanatory models between therapists, parents, and youth. Moreover, the majority of the measures used in this study were based on parent report only. Thus, future studies may examine whether parental involvement has an impact on mental health outcome trajectories from multiple informant's (e.g., youth and therapist) perspectives.

APPENDIX

Table 4a. Bivariate correlations: Parent cultural variables and outcomes.

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Income	--	.292***	.241***	.232**	-.219***	.268***	.182**	.013	.109	.090	-.030
2. Education		--	.652***	.477***	-.400***	.503***	.311***	.155	.235***	.081	.141*
3. English language proficiency			--	.719***	-.581***	.677***	.280***	.118	.088	.084	.072
4. English language preference				--	-.577***	.594***	.242**	.117	.081	.111	.023
5. Affinity to other culture					--	-.638***	-.187**	-.075	-.045	-.068	-.106
6. Affinity to American culture						--	.213**	.043	.132*	.076	.134*
7. Parent CIS							--	.347***	.688***	.224***	.182**
8. Youth CIS								--	.344***	.613***	.068
9. CBCL									--	.328***	.094
10. YSR										--	-.056
11. Premature termination											--

*p<.05
**p<.01
***p<.001

*p<.05, **p<.01, ***p<.001 Note: Scores for parental involvement measures averaged across time points
Premature termination: 0=no, 1=yes
Note: Baseline scores used for parent and youth CIS, CBCL, and YSR

Table 4b. Bivariate correlations: Parent cultural variables and parental involvement.

Variable	7	8	9	10	11	12	13	14	15	16
1. Income	.005	-.102	-.096	-.150*	.059	-.065	-.167**	.090	.019	-.046
2. Education	-.014	-.143*	-.019	-.042	.167**	.055	-.064	-.004	-.064	.028
3. English language proficiency	-.069	-.120	-.019	-.051	.137*	.036	.036	.086	-.002	.013
4. English language preference	-.049	-.127	-.098	-.192*	-.057	-.134	.091	.079	.036	.107
5. Affinity to other culture	.048	.085	.086	.037	-.087	.048	-.032	-.106	-.020	-.028
6. Affinity to American culture	-.037	-.081	.003	.007	.109	-.047	.075	.145*	-.010	.021
7. Motivation	--	.762***	.036	.028	.043	.032	.144*	.113	-.071	-.077
8. Engagement		--	.102	.222**	.089	.113	.220**	.037	-.078	.035
9. Interview start			--	.553***	.384***	.416***	.116	.079	.013	-.039
10. Phone start				--	.391***	.337***	.133*	.054	-.038	-.086
11. Regular phone					--	.386***	.103	-.064	-.049	.042
12. Regular session						--	.013	-.002	-.056	-.099
13. Every session							--	-.227***	.013	.045
14. % appointments attended								--	-.202**	-.209**
15. Hard to make sessions									--	.591***
16. Hard to follow plans										--

Table 4c. Bivariate correlations: Parental involvement and outcomes.

Variable	11	12	13	14	15
1. Motivation	-.095	-.114	-.049	-.122	-.287***
2. Engagement	-.038	-.034	.004	.004	-.268***
3. Interview start	-.010	.011	.027	-.022	-.092
4. Phone start	-.005	-.001	.023	-.032	-.066
5. Regular phone	.168**	.069	.107	.047	.026
6. Regular session	.074	.020	.093	-.005	.017
7. Every session	.014	.164**	.131*	.030	.078
8. % appointments attended	-.096	0.011	-.009	.044	-.355***
9. Hard to make sessions	.041	.004	-.006	.087	-.048
10. Hard to follow plans	.155*	.074	.096	.071	.069
11. Parent CIS	--	.347***	.688***	.224***	.182**
12. Youth CIS		--	.344***	.613***	.068
13. CBCL			--	.328***	.094
14. YSR				--	-.056
15. Premature termination					--

**p<.05, **p<.01, ***p<.001; Premature termination: 0=no, 1=yes*

Note: Baseline scores used for parent and youth CIS, CBCL, and YSR. Scores for parental involvement measures averaged across time-points.

Table 5. Determination of therapist level effects for each dependent variable.

Dependent Variable	**Variance components (unconditional model)**			**ICC**	**Therapist Effect (Level 3)**
	Level 1 variance	Intercept 1	Intercept 1 / Intercept 2		
Outcomes					
Functional impairment (CIS)	44.362	50.449	0.032	<.05	no
Symptomatology (CBCL)	38.505	73.604	3.502	<.05	no
Premature termination	--	0.396	--	0.12	yes
Parental involvement					
Motivation	7.259	0.156	0.002	<.05	no
Engagement	21.931	38.445	22.920	0.28	yes
% appts. attended	327.595	195.023	215.339	0.29	yes
Types of involvement					
Interview at start	0.029	0.020	--	0.40	yes
Phone call at start	0.028	0.032	--	0.52	yes
Regular phone calls	0.064	0.049	--	0.44	yes
Regular sessions	0.093	0.059	--	0.39	yes
Every session	0.042	0.090	--	0.68	yes
Hard to make sessions	4.811	3.229	<.001	<.05	no
Hard to follow plans	4.310	3.295	0.094	<.05	no
Preference for involvement					
Mother involvement	0.747	0.071	--	0.09	yes
Father involvement	2.570	0.132	--	<.05	no

Table 6. Effect of parent cultural variables on preference for mother's involvement, controlling for therapist effects (Level 2).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	3.399***		0.074	45.910
	Race/ethnicity				
2	NHW vs. AA [1] (B_1)	3.050***	**0.544****	**0.196**	**2.779**
	NHW vs. HIS[1] (B_2)		**(0.358*)**	**0.179**	**1.999**
3	AA vs. NHW[2] (B_1)	3.594***	**-0.544****	**0.196**	**-2.779**
	AA vs. HIS[2] (B_2)		-0.186	0.137	-1.358
	Acculturation	3.392***			
4	**Affinity to other culture** (B_1)		-0.016	0.010	-1.511
	Affinity to American culture (B_2)		**-0.037****	**0.010**	**-3.673**
	Language	3.283***			
5	**English language preference** (B_1)		**(-0.074*)**	**0.032**	**-2.324**
	English language proficiency (B_2)		-0.012	**0.027**	**-0.448**

**p<.05*
***p<.01*
****p<.001*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
(coeff.) *= no longer significant with socio-economic status (parent income and education) as covariates in model*
Variables in ***bold*** *= grand mean centered*
Note: unstandardized coefficients reported

Table 7. Effect of parent cultural variables on preference for father's involvement.

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	2.557***		0.145	17.581
	Race/ethnicity				
2	NHW vs. AA [1] (B_1)	2.377***	0.271	0.533	0.509
	NHW vs. HIS[1] (B_2)		0.196	0.461	0.425
3	AA vs. NHW[2] (B_1)	2.649***	-0.271	0.533	-0.509
	AA vs. HIS[2] (B_2)		-0.076	0.340	-0.222
	Acculturation	2.555***			
4	**Affinity to other culture** (B_1)		-0.020	0.025	-0.774
	Affinity to American culture (B_2)		-0.041	0.023	-1.812
	Language	2.488***			
5	**English language preference** (B_1)		-0.037	0.068	-0.546
	English language proficiency (B_2)		-0.020	0.059	-0.336

****p<.001*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
*Variables in **bold** = grand mean centered*
Note: unstandardized coefficients reported

Table 8a. Effect of parent cultural variables on difficulty making it to sessions (over time).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	3.005***		0.271	11.095
Level 2					
	Race/ethnicity				
2	NHW vs. AA [1] (B_1)	3.667***	0.944	2.045	0.462
	NHW vs. HIS[1] (B_2)		-0.762	1.647	-0.463
3	AA vs. NHW[2] (B_1)	4.611***	-0.944	2.045	-0.462
	AA vs. HIS[2] (B_2)		-1.706	1.274	-1.339
	Acculturation	2.999***			
4	**Affinity to other culture** (B_1)		-0.035	0.082	-0.424
	Affinity to American culture (B_2)		0.009	0.047	0.197
	Language	2.969***			
5	**English language preference** (B_1)		0.121	0.119	1.016
	English language proficiency (B_2)		-0.024	0.109	-0.221

****p<.001*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
*Variables in **bold** = grand mean centered*
Note: unstandardized coefficients reported

Table 8b. Effect of parent cultural variables on difficulty following through on plans (over time).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	3.052***		0.272	11.210
Level 2					
	Race/ethnicity				
2	NHW vs. AA [1] (B_1)	2.961	0.685	2.004	0.342
	NHW vs. HIS[1] (B_2)		0.070	1.616	0.044
3	AA vs. NHW[2] (B_1)	3.646***	-0.685	2.004	-0.342
	AA vs. HIS[2] (B_2)		**(-0.615*)**	**0.261**	**-2.352**
	Acculturation	3.047***			
4	**Affinity to other culture** (B_1)		-0.052	0.078	-0.658
	Affinity to American culture (B_2)		-0.004	0.046	-0.088
	Language	3.026***			
5	**English language preference** (B_1)		0.080	0.116	0.687
	English language proficiency (B_2)		0.003	0.105	0.028

**p<.05*
****p<.001*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
***(coeff.)** = no longer significant with socio-economic status (parent income and education) as covariates in model*
*Variables in **bold** = grand mean centered*
Note: unstandardized coefficients reported

Table 8c. Effect of parent cultural variables on interview when counseling started (averaged across time points), controlling for therapist effects (Level 2).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	0.958***		0.025	38.148
	Race/ethnicity				
2	NHW vs. AA [1] (B_1)	0.945***	0.037	0.044	0.827
	NHW vs. HIS[1] (B_2)		0.007	0.039	0.179
3	AA vs. NHW[2] (B_1)	0.982***	-0.037	0.045	-0.827
	AA vs. HIS[2] (B_2)		**-0.030***	**0.014**	**-2.135**
	Acculturation	0.959***			
4	**Affinity to other culture** (B_1)		0.002	0.002	1.139
	Affinity to American culture (B_2)		0.002	0.002	0.987
	Language	0.954***			
5	**English language preference** (B_1)		0.002	0.005	0.376
	English language proficiency (B_2)		-0.007	0.005	-1.319

**p<.05*
****p<.001*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
*Variables in **bold** = grand mean centered*
Note: unstandardized coefficients reported

Table 8d. Effect of parent cultural variables on telephone call when counseling started (averaged across time points), controlling for therapist effects (Level 2).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	0.920***		0.030	30.591
	Race/ethnicity				
2	NHW vs. AA [1] (B_1)	0.971***	**(-0.056*)**	**0.025**	**-2.271**
	NHW vs. HIS[1] (B_2)		**-0.065***	**0.029**	**-2.216**
3	AA vs. NHW[2] (B_1)	0.915***	**-0.056***	**0.025**	**2.271**
	AA vs. HIS[2] (B_2)		-0.009	0.021	-0.411
	Acculturation	0.917***			
4	**Affinity to other culture** (B_1)		-0.001	0.002	-0.671
	Affinity to American culture (B_2)		<.001	0.002	0.057
	Language	0.897***			
5	**English language preference** (B_1)		-0.003	0.006	-0.490
	English language proficiency (B_2)		-0.008	0.005	-1.523

**p<.05*
****p<.001*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
***(coeff.)** = no longer significant with socio-economic status (parent income and education) as covariates in model*
*Variables in **bold** = grand mean centered*
Note: unstandardized coefficients reported

Table 8e. Effect of parent cultural variables on regular telephone contacts (averaged across time points), controlling for therapist effects (Level 2).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	0.814***		0.039	20.782
	Race/ethnicity				
2	NHW vs. AA [1] (B_1)	0.914***	-0.032	0.065	-0.486
	NHW vs. HIS[1] (B_2)		**(-0.139*)**	**0.057**	**-2.441**
3	AA vs. NHW[2] (B_1)	0.882***	0.032	0.065	0.486
	AA vs. HIS[2] (B_2)		**-0.108***	**0.046**	**-2.356**
	Acculturation	0.809***			
4	**Affinity to other culture** (B_1)		-0.003	0.003	-0.904
	Affinity to American culture (B_2)		0.002	0.003	0.541
	Language	0.812***			
5	**English language preference** (B_1)		**(0.018*)**	**0.009**	**2.042**
	English language proficiency (B_2)		**-0.019***	**0.008**	**-2.460**

**p<.05*
****p<.001*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
***(coeff.)** = no longer significant with socio-economic status (parent income and education) as covariates in model*
*Variables in **bold** = grand mean centered*
Note: unstandardized coefficients reported

Table 8f. Effect of parent cultural variables on regular counseling sessions (averaged across time points), controlling for therapist effects (Level 2).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	0.729***		0.043	16.572
	Race/ethnicity				
2	NHW vs. AA [1] (B_1)	0.769***	0.008	0.080	0.103
	NHW vs. HIS[1] (B_2)		-0.055	0.070	-0.791
3	AA vs. NHW[2] (B_1)	0.777***	-0.008	0.080	-0.103
	AA vs. HIS[2] (B_2)		-0.063	0.056	-1.131
	Acculturation	0.731***			
4	**Affinity to other culture** (B_1)		-0.002	0.004	-0.581
	Affinity to American culture (B_2)		-0.004	0.004	-1.045
	Language	0.738***			
5	**English language preference** (B_1)		0.015	0.011	1.444
	English language proficiency (B_2)		**(-0.016*)**	**0.009**	**-1.784**

**p<.05*
****p<.001*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
***(coeff.)** = no longer significant with socio-economic status (parent income and education) as covariates in model*
*Variables in **bold** = grand mean centered*
Note: unstandardized coefficients reported

Table 8g. Effect of parent cultural variables on every counseling session (averaged across time points), controlling for therapist effects (Level 2).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	0.175**		0.047	3.677
	Race/ethnicity				
2	NHW vs. AA [1] (B_1)	0.205**	-0.049	0.057	-0.864
	NHW vs. HIS[1] (B_2)		-0.035	0.050	-0.694
3	AA vs. NHW[2] (B_1)	0.156*	0.049	0.057	0.864
	AA vs. HIS[2] (B_2)		0.014	0.040	0.366
	Acculturation	0.175**			
4	**Affinity to other culture** (B_1)		<-0.001	0.003	-0.368
	Affinity to American culture (B_2)		0.001	0.003	0.455
	Language	0.198**			
5	**English language preference** (B_1)		0.008	0.007	1.160
	English language proficiency (B_2)		0.001	0.006	0.209

**p<.05*
***p<.01*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
*Variables in **bold** = grand mean centered*
Note: unstandardized coefficients reported

Table 9a. Effect of parent cultural variables on motivation (over time).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	8.067***		0.203	39.628
Level 2					
	Race/ethnicity				
2	NHW vs. AA [1] (B_1)	8.682***	0.358	1.562	0.229
	NHW vs. HIS[1] (B_2)		-0.683	1.165	-0.587
3	AA vs. NHW[2] (B_1)	9.041***	-0.358	1.562	-0.229
	AA vs. HIS[2] (B_2)		-1.041	1.085	-0.959
	Acculturation	8.068***			
4	**Affinity to other culture** (B_1)		-0.058	0.059	-0.981
	Affinity to American culture (B_2)		-0.044	0.036	-1.240
	Language	8.071***			
5	**English language preference** (B_1)		0.005	0.095	0.051
	English language proficiency (B_2)		-0.049	0.082	-0.595

****p<.001*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
*Variables in **bold** = grand mean centered*
Note: unstandardized coefficients reported

Table 9b. Effect of parent cultural variables on engagement (over time), controlling for therapist effects (Level 3).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	39.519***		1.157	34.139
Level 2					
	Race/ethnicity				
2	NHW vs. AA [1] (B_1)	43.217***	-3.116	5.102	-0.611
	NHW vs. HIS[1] (B_2)		-3.149	3.689	-0.854
3	AA vs. NHW[2] (B_1)	40.101***	3.116	5.102	0.611
	AA vs. HIS[2] (B_2)		-0.032	3.831	-0.008
	Acculturation	40.170***			
4	**Affinity to other culture** (B_1)		0.166	0.212	0.781
	Affinity to American culture (B_2)		0.053	0.126	0.416
	Language	40.171***			
5	**English language preference** (B_1)		-0.305	0.316	-0.965
	English language proficiency (B_2)		0.256	0.275	0.933

****p<.001*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
*Variables in **bold** = grand mean centered*
Note: unstandardized coefficients reported

Table 9c. Effect of parent cultural variables on % appointments attended (over time), controlling for therapist effects (Level 3).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	78.898***		3.427	23.024
Level 2					
	Race/ethnicity				
2	NHW vs. AA [1] (B_1)	74.168***	-8.798	13.904	-0.633
	NHW vs. HIS[1] (B_2)		5.045	10.021	0.503
3	AA vs. NHW[2] (B_1)	65.370***	8.798	13.904	0.633
	AA vs. HIS[2] (B_2)		13.843	10.497	1.319
	Acculturation	78.828***			
4	**Affinity to other culture** (B_1)		0.743	0.567	1.310
	Affinity to American culture (B_2)		0.626	0.346	1.806
	Language	78.909***			
5	**English language preference** (B_1)		-0.624	0.872	-0.716
	English language proficiency (B_2)		0.628	0.754	0.833

**p<.05*
***p<.01*
****p<.001*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
*Variables in **bold** = grand mean centered*
Note: unstandardized coefficients reported

Table 10a. Parental involvement variables as predictors of functional impairment.

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	13.729***		0.723	18.991
	Actual involvement (parent report)				
2	**Hard to make sessions** (B_1)	13.069***	**0.628***	**0.302**	**2.078**
3	**Hard to follow plans** (B_1)	12.648***	**0.789****	**0.219**	**2.234**
4	Types of involvement	9.926***			
	Interview at start[1] (B_1)		**3.264***	**1.333**	**2.448**
	Phone call at start[1] (B_2)		1.301	2.051	0.634
	Regular phone calls[1] (B_3)		2.249	1.330	1.691
	Regular sessions[1] (B_4)		-2.985	1.739	-1.716
	Every session[1] (B_5)		**-2.408***	**1.099**	**-2.191**
	Actual involvement (therapist report)				
5	**Engagement** (B_1)	13.227***	-0.005	0.093	-0.054
6	**Motivation** (B_1)	12.962***	-0.474	0.253	-1.868
7	**% appointments attended** (B_1)	13.346***	**-0.058****	**0.021**	**-2.773**
Level 2					
	Preferred involvement (parent report)	13.576***			
8	**Mother involvement** (B_1)		-0.749	0.696	-1.076
	Father involvement (B_2)		-0.329	0.452	-0.728

p<.05, **p<.01, ***p<.001; [1] = dichotomous variable (0=no; 1=yes);Variables in **bold = grand mean centered*
Note: unstandardized coefficients reported; parental involvement variables at Level 1 were examined over time.

Table 10b. Parental involvement variables as predictors of symptomatology (CBCL total T-score).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	59.255***		0.939	63.085
	Actual involvement (parent report)				
2	**Hard to make sessions** (B_1)	58.480***	**0.556***	**0.265**	**2.095**
3	**Hard to follow plans** (B_1)	58.411***	0.145	0.272	0.533
4	Types of involvement	9.925***			
	Interview at start[1] (B_1)		3.265	1.662	1.964
	Phone call at start[1] (B_2)		1.300	2.195	0.592
	Regular phone calls[1] (B_3)		2.252	1.741	1.294
	Regular sessions[1] (B_4)		-2.987	1.583	-1.887
	Every session[1] (B_5)		-2.409	1.252	-1.924
	Actual involvement (therapist report)				
5	**Engagement** (B_1)	58.227***	0.057	0.076	0.749
6	**Motivation** (B_1)	58.442***	**-0.468***	**0.198**	**-2.369**
7	**% appointments attended** (B_1)	58.290***	-0.021	0.022	-0.940
Level 2					
	Preferred involvement (parent report)	59.394***			
8	**Mother involvement** (B_1)		**-1.488***	**0.685**	**-2.171**
	Father involvement (B_2)		-0.671	0.442	-1.519

p<.05, ***p<.001; [1] = dichotomous variable (no=0; yes =1); Variables in **bold = grand mean centered*

Note: unstandardized coefficients reported; parental involvement variables at Level 1 were examined over time.

Table 10c. Premature termination[a] (B_1) as a predictor of parental involvement (averaged across time), controlling for therapist effects (Level 2).

Model	Variable	Intercept (B_0)	Coefficient	SE	t-ratio
Level 1					
	Actual involvement (parent report)				
1	Hard to make sessions (Y)	3.137***	-0.555	0.641	-0.866
2	Hard to follow plans (Y)	2.908***	0.539	0.602	0.896
	Types of involvement				
3	Interview at start[1] (Y)	0.973***	-0.032	0.029	-1.112
4	Phone call at start[1](Y)	0.937***	-0.032	0.032	-0.992
5	Regular phone calls[1] (Y)	0.815***	-0.002	0.036	-0.052
6	Regular sessions[1] (Y)	0.730***	<0.001	0.054	0.002
7	Every session[1] (Y)	0.162**	0.031	0.031	1.009
	Actual involvement (therapist report)				
8	Engagement (Y)	42.229***	**-4.056****	**1.181**	**-3.436**
9	Motivation (Y)	6.957***	**-1.097****	**0.291**	**-3.768**
10	% appointments attended (Y)	82.923***	**-18.082*****	**3.962**	**-4.564**
	Preferred involvement (parent report)				
11	Mother involvement (Y)	3.412***	-0.037	0.139	-0.268
12	Father involvement (Y)	2.569***	-0.019	0.257	-0.075

**p<.05*
***p<.01*
****p<.001*
[a] = dichotomous variable (no=0; yes=1)
Y = Dependent variable, scores averaged across time points
Note: unstandardized coefficients reported

Table 11a. Parent cultural variables as predictors of functional impairment.

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	13.729***		0.723	18.991
2	Time (B_1)	15.558***	**-1.308*** **	**0.277**	**-4.726**
Level 2					
	Race/ethnicity				
3	NHW vs. AA [1] (B_1)	23.424***	-2.569	5.304	-0.484
	NHW vs. HIS[1] (B_2)		**(-10.240**)**	**3.855**	**-2.656**
4	AA vs. NHW[2] (B_1)	20.854***	2.569	5.304	0.484
	AA vs. HIS[2] (B_2)		**(-7.671***)**	**3.918**	**-1.958**
	Acculturation	13.603***			
5	**Affinity to other culture** (B_1)		-0.216	0.236	-0.914
	Affinity to American culture (B_2)		0.045	0.134	0.335
	Language	13.610***			
6	**English language preference** (B_1)		**(0.860**)**	**0.320**	**2.689**
	English language proficiency (B_2)		0.034	0.279	0.121

***p<.01*
****p<.001*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
***(coeff.)** = no longer significant with socio-economic status (parent income and education) as covariates in model*
*Variables in **bold** = grand mean centered*
Note: unstandardized coefficients reported

Table 11b. Parent cultural variables as predictors of symptomatology (CBCL total T-score).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
1	Unconditional model	59.255***		0.939	63.085
2	Time (B_1)	61.998***	**-2.033*** **	**0.262**	**-7.747**
Level 2					
	Race/ethnicity				
3	NHW vs. AA [1] (B_1)	63.606***	-1.470	6.414	-0.229
	NHW vs. HIS[1] (B_2)		-4.466	4.622	-0.966
4	AA vs. NHW[2] (B_1)	62.136***	1.470	6.413	0.229
	AA vs. HIS[2] (B_2)		-2.996	4.622	-0.648
	Acculturation	59.413***			
5	**Affinity to other culture** (B_1)		-0.188	0.271	-0.694
	Affinity to American culture (B_2)		-0.095	0.153	-0.623
	Language	59.407***			
6	**English language preference** (B_1)		-0.323	0.392	0.945
	English language proficiency (B_2)		0.370	0.343	-0.941

****p<.001*
NHW = Non-Hispanic White
AA = African American
HIS = Hispanic
[1] = dummy variable (NHW=0; AA =1; HIS =1)
[2] = dummy variable (AA=0; NHW=1; HIS=1)
*Variables in **bold** = grand mean centered*
Note: unstandardized coefficients reported

Table 11c. Premature termination[a] (B_1) as a predictor of parent cultural variables, controlling for therapist effects (Level 2).

Model	Variable	Intercept (B_0)	Coefficient	*SE*	*t*-ratio
Level 1					
	Acculturation				
1	Affinity to other culture (Y)	17.217***	-0.775	0.843	-0.920
2	Affinity to American culture (Y)	10.813***	1.299	0.880	1.476
	Language				
3	English language preference (Y)	5.887***	-0.016	0.435	0.068
4	English language proficiency (Y)	7.522***	0.030	0.540	-0.030

****p<.001*

[a] = dichotomous variable (no=0; yes=1)

Y = Dependent variable

Note: unstandardized coefficients reported

Table 11d. Logistic regression: Race/ethnicity as predictor of premature termination[a], controlling for therapist effects (Level 2)

Model	Variable	Coefficient	OR	CI	*t*-ratio
Level 1					
	Race/ethnicity				
1	NHW vs. AA [1] (B_1)	-0.262	0.770	0.276-2.150	-0.501
	NHW vs. HIS[1] (B_2)	-0.195	0.822	0.342-1.981	-0.437
2	AA vs. NHW[2] (B_1)	0.262	1.298	0.465-3.628	0.501
	AA vs. HIS[2] (B_2)	0.066	1.069	0.519-2.199	0.181

[a] = dichotomous variable (no=0; yes=1)

NHW = Non-Hispanic White

AA = African American

HIS = Hispanic

[1] = dummy variable (NHW=0; AA =1; HIS =1); [2] = dummy variable (AA=0; NHW=1; HIS=1)

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