

# ADHD Problem Recognition for Latino Parents: The Role of Cultural Factors and Parental Cognitions

Brian W. Schneider  
*Marquette University*

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ADHD PROBLEM RECOGNITION IN LATINO PARENTS: THE ROLE OF  
CULTURAL FACTORS AND PARENTAL COGNITIONS

by

Brian W. Schneider, B.A., M.S.

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ABSTRACT  
ADHD PROBLEM RECOGNITION IN LATINO PARENTS: THE ROLE OF  
CULTURAL FACTORS AND PARENTAL COGNITIONS

Brian W. Schneider, B.A., M.S.

Marquette University, 2012

Latino youth experience similar or higher rates of mental health problems including ADHD, as compared to non-Latino children in the United States. They also are less likely to receive services due to a variety of access barriers and cultural factors which Latino families commonly experience. Behavioral help-seeking models have been developed to help explain the discrepancies between need and utilization for ethnically-diverse youth. Little research to date has investigated the impact of culture and parental beliefs of child behavior throughout the help-seeking process, including the beginning stage of problem recognition. Thus, the goal of the current study was to examine different acculturation factors as well as parental cognitions and their ability to predict correct identification of ADHD symptoms as problematic for Latino parents across different settings (i.e., home, school, peers, overall). Participants included 72 Latino parents who had at least one child between the ages of 5 and 12. Results indicated that several of the behavioral and cognitive acculturation factors were related to different problem recognition factors, including Anglo behavioral orientation, and the cultural values of familism and respect. In addition, the parental cognition of Child Control was related to several of the ADHD problem recognition variables. The findings have important implications for understanding the influence of culture and parent's perceptions of child behavior and mental illness on the process of identifying child behavior problems. In addition, results from this study can be helpful for providing cultural-sensitive assessment and intervention to Latino youth and their families.

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## TABLE OF CONTENTS

ACKNOWLEDGMENTS	i
LIST OF FIGURES AND TABLES	iv
CHAPTER	
I. INTRODUCTION	1
Attention-Deficit/Hyperactivity Disorder	2
Mental Health Service Need and Utilization	3
Behavioral Help-Seeking Models	4
Problem Recognition	6
Problem Recognition in Latinos	7
The Role of Cultural Factors	8
Core Cultural Values	9
Parental Cognitions	11
Parental Locus of Control	11
Etiological Explanations of Mental Illness	13
Specific Aims and Predictions	14
II. METHODOLOGY	
Method	15
Participants	15
Procedure	16
Materials/Measures	17
III. RESULTS	

Results	22
Descriptive Analyses	22
Preliminary Analyses	23
Primary Analyses	25
IV. DISCUSSION	
Discussion	29
Acculturation and ADHD Problem Recognition	30
Parental Cognitions and ADHD Problem Recognition	33
Limitations	36
Implications and Future Directions	36
BIBLIGOGRAPHY	39

## LIST OF FIGURES AND TABLES

Figure 1. Model of ADHD Problem Recognition in Latino Parents	51
Figure 2. Model of ADHD Help-Seeking for Latino Children	52
Table 1. Demographic Variables	53
Table 2. Descriptive Statistics for Predictors and Mediators	54
Table 3. Percentages of Good and Poor Problem Recognition of ADHD Symptoms	55
Table 4. Correlations between Predictors and Mediators	56
Table 5. Spearman Rho Correlations between Predictors and Outcomes	57
Table 6. Spearman Rho Correlations between Mediators and Outcomes	58
Table 7. Binary Logistic Regressions for Cultural Factors and Parental Cognitions with ADHD Problem Recognition	59

## Attention-Deficit/Hyperactivity Disorder Problem Recognition in Latino Parents: The Role of Cultural Factors and Parental Cognitions

Estimates indicate that 20 to 30% of children in the United States (U.S.) have a mental health disorder, with ADHD identified as one of the most common in children (American Psychiatric Association [APA], 2000; Bird et al., 2001; Duchnowski, Kutash, & Friedman, 2002). Unfortunately, less than 50% of these youth receive professional services (Kataoka, Zhang, & Wells, 2002). Even more concerning is that ethnic minorities, including Latino youth, who are at a higher risk for developing mental health problems, are even less likely to receive services (Center for Disease Control and Prevention, 2000; Kataoka et al., 2002; Yeh, McCabe, Hough, Dupuis, & Hazen, 2003). In order to better understand the disparity between need and utilization of services, help-seeking models have been developed. Recent models identify problem recognition (i.e., the point at which behaviors are labeled problematic) as the first stage of the help-seeking process (Cauce et al., 2002; Eiraldi, Mazzuca, Clarke, & Power, 2006). Although help-seeking models for mental health problems have existed for several decades, the role of cultural factors in the help-seeking process has largely been ignored.

Given the increasing number of Latino immigrants to the U.S. and the difficult balancing act that accompanies maintaining traditional Latino values while attempting to integrate Anglo-American values, the examination of cultural factors as it relates to parental problem recognition of maladaptive child behaviors is extremely important to decreasing the mental health disparities that currently exist for Latino youth in our country (Dalton, Elias, & Wandersman, 2001; Fuligni, Tseng, & Lam, 1999). While

limited, initial research suggests that cultural factors (e.g., traditional Latino values) may be related to parental cognitions (e.g., beliefs about the etiology of child behaviors) and that parental cognitions are related to parental problem recognition of child behavior problems (McCabe, Goehring, Yeh, & Lau, 2008; Yeh, Hough, McCabe, Lau, & Garland, 2004); however, research simultaneously examining the relationship among these factors has yet to be conducted. Thus, the goal of the present study was to test a parental problem recognition model, which proposed that parental cognitions (i.e., parental locus of control (PLOC) and etiological explanations for child ADHD behaviors) would mediate the relation between cultural characteristics (i.e., behavioral and cognitive acculturation) and parental problem recognition of ADHD in Latino parents (see Figure 1).

### **Attention-Deficit/Hyperactivity Disorder**

ADHD is one of the most commonly diagnosed childhood mental health disorders, affecting 3% to 7% of school-aged children in the U.S. It is characterized by a “persistent pattern of inattention and/or hyperactivity that is more frequent and severe than typically observed in individuals at a comparable level of development” (APA, 2000, p.85). Children diagnosed with ADHD are at greater risk for developing a wide range of emotional, behavioral, social, and academic problems than children without ADHD (Hoza et al., 2005; Mrug, Hoza, Gerdes, 2001; Smith, Barkely, & Shapiro, 2006), and the long-term developmental trajectory indicates that many children with ADHD continue to have problems as adults (Biederman et al., 2005; Flory, Molina, Pelham, Gnagy, & Smith, 2006).

To date, research supports two evidence-based treatments for children with ADHD. Pharmacological interventions, such as central nervous system stimulants (e.g., Ritalin), have been found to effectively treat ADHD symptoms, as well as related behaviors, such as oppositional behavior (Swanson, McBurnett, Christian, & Wigal, 1995). In addition, effective psychosocial treatments for ADHD include behavioral parent training and classroom interventions, which have been found to improve child behavior problems, parent-child interactions, parenting stress and efficacy, and academic performance (Fabiano et al., 2009; Hoza, Kaiser, & Hurt, 2008; Gerdes, Haack, & Schneider, 2010; Pelham & Fabiano, 2008). Unfortunately, most ADHD outcome studies have failed to include enough ethnic minorities to determine whether evidence-based interventions are effective for these families (Huey & Polo, 2010; Miranda et al., 2005).

### **Mental Health Service Need and Utilization**

This lack of research makes it difficult to fully understand factors that are likely contributing to the discrepancy between mental health service need and utilization among ethnic minority families. Recent census data indicate that understanding patterns of mental health service utilization is a pressing need for Latinos, who are the fastest growing ethnic minority group in the U.S. and are projected to represent a quarter of the youth population by 2050 (Ramirez & de La Cruz, 2003; U.S. Census Bureau, 2006). The majority of available findings suggest that Latinos are at a greater risk for developing various mental health problems, including externalizing problems, such as ADHD (Canino et al., 2004; Dominguez de Ramirez & Shapiro, 2005; U.S. Department of Health and Human Services, 2001, Yeh et al., 2003). Despite the high rates of mental health disorders in Latino youth, they are less likely than any other ethnic group to be

treated in clinical and school-based settings and are less likely to receive medication (Garland et al., 2005; Hough et al., 2002; Kataoka et al., 2002; Rowland et al., 2002; Woods et al., 2005). In addition to the high rates of unmet need, Latino parents have been found to be less likely to seek out professional help for their children (McMiller & Weisz, 1996), and when they do, are more likely to prematurely dropout of treatment (Huey, 1998 as cited in McCabe, 2002; Kazdin, Holland, & Crowley, 1997).

Both access barriers and cultural factors have been identified as possible explanations for this documented discrepancy between need and utilization in Latino families. The most common access barriers include problems with transportation, low parental education, limited availability of time to seek services, inability to afford services and child care, and limited health insurance (Flores et al., 2002; Kouyoumdjian, Zamboana, & Hansen, 2003; Pumariega, Glover, Holzer, Nguyen, 1998; U.S. Department of Health and Human Services, 2001). The most common cultural factors include lack of bilingual and bicultural mental health providers, negative beliefs and emotions related to mental health services, distrust toward providers, lack of knowledge related to mental illnesses, and immigration and acculturation status (Alegría et al., 2007; Alvidrez, 1999; Bussing et al., 2003; Callejas et al., 2006; Flores et al., 2002; McCabe et al., 1999; Vega & Lopez, 2001). While this research has been an important first step, further examination of help-seeking models is needed to better understand the complex factors that likely are responsible for the mental health disparities seen in the Latino community.

### **Behavioral Help-Seeking Models**

To date, several theoretical frameworks for understanding the help-seeking process have been developed, modified, and examined over time (e.g., Andersen, 1995;

Cauce et al., 2002; Eiraldi et al., 2006); however, research examining ethnic minority youth and the role of cultural factors is limited. The Behavioral Model of Health Service Use (BMHSU; Andersen, 1995; Andersen & Newman, 1973) has been particularly influential for investigating help-seeking behaviors and access to care. Anderson's multidimensional model incorporates societal and individual factors that influence each other at different points in the service utilization process. The BMHSU views the process of help-seeking as a function of the environment, population, health behaviors, and service outcomes.

The BMHSU, as well as many other help-seeking models, have generally outlined four stages – problem recognition, decision to seek help, service selection, and service utilization (e.g., Andersen, 1995; Cauce et al., 2002; Eiraldi et al., 2006). Problem recognition is defined as the point at which a behavior is first acknowledged and labeled as a problem. Once a behavior has been identified as problematic, decisions about the advantages and disadvantages of treatments are made; this stage is known as the decision to seek help. An individual or family must then select a treatment (service selection) and utilize the treatment (service utilization). While limited, several modifications to help-seeking models have been made to emphasize the influence of social networks on the course of help-seeking, adapting models for children and adolescents, and incorporating factors unique to ethnically-diverse populations (Cauce et al., 2002; Pescosolido 1991, 1992; Srebnik, Cauce, & Baydar, 1996).

Most recently, Eiraldi and colleagues (2006) proposed a helping-seeking model for families of ethnic minority youth with ADHD. According to this model, discrepancies between the need for services and service utilization among ethnic minority youth are the

result of access barriers, as well as individual, familial, and cultural factors that influence parental decisions to seek treatment at any point in the help-seeking process (see Figure 2). The development of this model is an important first step, because it emphasizes both the role of parents and the role of cultural factors in the help-seeking process. The next step is to empirically test each stage of this theoretical model, which begins with problem recognition.

### **Problem Recognition**

In the majority of cases, the mental health help-seeking process for children does not begin until a significant problem is recognized by their parents. Before seeking help, parents must label a behavior as a problem, which they perceive as not likely to go away on its own. Parental beliefs that their child's behaviors are abnormal, problematic, and in need of mental health services have been described as being the most important factors related to service utilization (Cauce et al., 2002; Horwitz et al., 1992; McMiller & Weisz, 1996; Power et al., 2005; Vera, Alegría, Freeman, Robles, Pescosolido, & Pena, 1998). Several factors have been found to be related to problem recognition. The most common include severity of problems, the degree of stress that child behaviors place on parents and the family, and the amount of tolerance family members have for child misbehaviors (Bussing et al., 2003; Eiraldi et al., 2006; Power et al., 2005; Zwaanswijk, Verhaack, Bensing, van der Ende, Verhulst, 2003). In addition, parent-child relationship problems, marital conflict, single parent status, family size, parental psychopathology, unemployment, and educational background are related to this stage (Eiraldi et al., 2006; Power et al., 2005; Teagle, 2002).

Professionals in the community also influence parental perceptions of child behaviors. For example, teachers are the second most common source of mental health referrals after parents (DuPaul & Stoner, 2003), are often the first to recognize mental health problems in children, and are considered to be reliable and valid reporters of child mental health problems (Woodward, Dowdney, & Taylor, 1997). It also is common for primary care providers to refer families to a mental health professional (Bennett, Power, Rostain, & Carr, 1996; Cauce et al., 2002; Eiraldi et al., 2006; Power et al., 2005). In summary, various factors have been found to predict problem recognition; however, the empirical literature examining the influence of cultural factors on parental problem recognition has been limited.

### **Problem Recognition in Latinos**

Before discussing the research, it is important to note that when investigating problem recognition in ethnic minority groups, it is important to be sensitive and to avoid biases related to the dominant culture's framework for identifying mental health problems. Specifically, reports indicate that there are intercultural differences in parental distress thresholds for managing child behaviors, perceptions for differentiating normal from abnormal child behavior, as well as what behaviors are classified as mental health problems (Alegría et al., 1991; Lambert et al., 1992; Weisz & Weiss, 1991; Weisz et al., 1988).

With that in mind, Arcia and Fernández (2003a, 2003b) are the only researchers, to date, that have investigated parental problem recognition in Latina mothers of children with behavioral problems. They found that greater functional impairment in the child and maternal distress were most commonly associated with early recognition of disruptive

behaviors in their children (e.g., hyperactivity, temper tantrums, noncompliance). Latina mothers who reported experiencing stressful life events (e.g., moving and changes in family composition), complaints from school, and whose children were engaging in self-injurious and aggressive behavior also were more likely than other mothers to identify their child's behavior as problematic. Interestingly, stigma associated with mental illness decreased the likelihood that parents recognized problematic child behavior. To extend this research, it seems important to examine cultural factors (i.e., behavioral and cognitive acculturation) that may further explain the role of cultural factors in parental problem recognition.

### **The Role of Cultural Factors**

Acculturation refers to the process of cultural change experienced by groups of individuals as they adapt to a new host culture (Redfield, Linton, & Heskovitz, 1936 as cited in Cuellar, 2000). Latino immigrants make a variety of adjustments, including learning a new language, familiarizing themselves with new cultural norms and customs, and making significant changes in their behavior (Berry, Phinney, Sam, & Vedder, 2006; Tadmor & Tetlock, 2006). Although the general definition of acculturation is similar across the psychological literature, the conceptual development and assessment has varied.

Some have proposed and examined unidimensional models of acculturation, which view acculturation as a process in which immigrants adopt the attitudes, values, and behaviors of the dominant group by moving from full preservation of their traditional culture to complete adaptation of the host culture (see Arends-Tóth & Van de Vijver, 2006 for a review). A competing perspective views acculturation as bi or

multidimensional in which individuals can maintain their traditional cultural values while also adopting the values of the host culture (e.g., Berry, 1980; Ryder, Alden, & Paulhaus, 2000). Regardless of the model, patterns of acculturation have been described to include three levels; two include behavioral change (e.g., language) and one includes cognitive change (e.g., changes in core values and beliefs; Marín, 1992). Unfortunately, most studies to date investigating acculturation have only measured behavioral change, while largely ignoring cognitive change. Examining *both* behavioral patterns of acculturation (i.e., behavioral acculturation), as well as cognitive changes in cultural value orientations (i.e., cognitive acculturation) is important when trying to understand the role of culture in parental problem recognition. Cognitive changes associated with acculturation are associated with many decisions about maintaining traditional Latino values or making adjustments to adapt values of the host country (Knight et al., 2009).

### **Core Cultural Values**

Since the process of acculturation results in both behavioral change and changes in core values and beliefs the acculturative process likely influences parental beliefs about child behavior and mental illness, and subsequently child behaviors they perceive to be problematic. Thus, assessing for specific cultural values salient in Latino families is essential for understanding parental problem recognition in these families. Some of these values which are particularly relevant for the current investigation include *familismo* and *respeto*.

*Familismo* generally is considered to be the core cultural value among the Latino population. Latinos tend to be very family-oriented, have large familial networks (Gaines et al., 1997; Ramírez & de la Cruz, 2003; Vega, 1990), and high levels of family support

(Almeida, Molnar, Kawachi, Subramanian, 2009). Additionally, the value of *respeto* often has been incorporated within *familismo*. *Respeto* is a characteristic that incorporates the maintenance of harmonious interpersonal relationships through respect for self and others, particularly older individuals who are perceived to have positions of authority (Alvarez, 2007; Arcia & Fernandez, 1998; Halgunseth, Ispa, & Rudy, 2006). The maintenance of *familismo* and *respeto* has been found to particularly important for Latino families. For example, Latino families with strong traits of *familismo* and *respeto* have more positive communication patterns with their children, including promoting empathy, awareness of family expectations, and nurturing advice about showing respect for family (Cervantes, 2002; Delgado-Gaitan, 1994). However, as Latino parents acculturate they often make cognitive changes related to maintaining their traditional values or adopting the individualistic values of the host culture. As they acculturate, many parents lose their traditional values, placing less emphasis on family respect, and more on independence and individual satisfaction (Halgunseth et al., 2006; Harwood, Miller, & Irizarry, 1995).

Although no research has directly examined the influence of these cultural factors on parental problem recognition, research suggests that they may play a role in this process. Less acculturated Latino parents generally have a greater tolerance for family members with mental illnesses (Martinez, 1993), including being more accepting of their children's behavior problems (Halgunseth et al., 2006; Roberts, Alegria, Roberts, & Chen, 2005; Schmitz & Velez, 2003); however, child behaviors in public settings are believed to be a reflection of the entire family (e.g., Valenzuela, 1999; Weisner, 1989). Parents may be more likely to recognize problems if they perceive their children's behaviors to be disruptive to others outside of the family (Bussing et al., 2003; Eiraldi et

al., 2006; Janicke & Finney, 2001; Teagle, 2002). Also, parents of Latino youth with lower levels of *familismo* may recognize problems in their children based on psychological distress associated with relinquishing ties to the family. As a child's behavior becomes less consistent with maintaining family ties or respect for the families' reputation, parents may perceive more problems (Lau et al., 2005). Furthermore, some of the behaviors associated with ADHD that are perceived to be disrespectful or defiant might be more likely to be identified by Latino parents as problematic. Parents may be more likely to label a behavior a problem if they perceive it as a deliberate attempt to be disrespectful (Eiraldi et al., 2006).

### **Parental Cognitions**

While still in its infancy, research suggests a possible connection between culture and parental problem recognition. Given findings from several initial studies (discussed below), it seems likely that parental cognitions may mediate the relationship between culture (i.e., behavioral and cognitive acculturation) and ADHD parental problem recognition. Specifically, changes made in behaviors and values as Latino parents acculturate likely serve as a mechanism for influencing parental perceptions of child behavior and mental health, which in turn influence whether certain child behaviors are identified as problematic. Research to date suggests that it may be particularly important to examine parental locus of control (PLOC) and etiological explanations of child ADHD (e.g., Cauce et al., 2002; Eiraldi et al., 2006).

### **Parental Locus of Control**

PLOC is the degree of control a parent feels he or she has over his or her child's behavior (Campis, Lyman, & Prentice-Dunn, 1986). Individuals with an external locus of

control are less likely to perceive problems with their behavior or that of others, as well as to feel they have less control improving problems within their own, as well as others' lives (e.g., Kennedy et al., 1999; Malcarne, Drahota, & Hamilton, 2005; Mirowsky & Ross, 1984; Sugarek, Deyo, & Holmes, 1988). A number of studies have demonstrated that external PLOC orientations are related to an increased risk of children developing various externalizing problems (Hagekull, Bohlin, & Hammarberg, 2001; Mouton & Tuma, 1988; Roberts, Joe, & Rowe-Hallbert, 1992); however, others suggest this relationship is bidirectional. Specifically, parents also may develop an external PLOC in reaction to their child's behavior (Morton, 1997). Additionally, studies have found that parents with an external PLOC are less likely to notice problems and to have less hope for improving their children's behaviors. This has been found to result in the use of more inconsistent and permissive parenting (Hagekull et al., 2001; Roberts et al., 1992), which is related to higher rates of child mental health problems (Johnston & Jassy, 2007; Kim, et al., 2003; Lindahl & Malik, 1999). Other studies have shown that parents with an external PLOC place their children at greater risk for physical injury, are less likely to recognize mental health problems (Damaskek et al., 2005), and that children are more likely to relate successes and failures to unknown causes (Morton, 1997).

Currently, the literature about the role PLOC may play in parental problem recognition for Latino families is limited; however, in general, Latinos have been found to have more external locus of control than non-Latino Whites (NLW; Malcarne et al., 2005; Sugarek et al., 1988). McCabe and colleagues (2008) compared PLOC among clinically referred and non-referred Latina mothers. Their findings indicated that mothers of children with behavioral problems had more external PLOC than mothers of children

without such problems, including feeling less responsible, in control, and effective. Parents with an external PLOC also were less likely to identify problems in their children. Additionally, the study found that as mothers acculturated to U.S. norms, they were more likely to feel that they had control over their children's behaviors, and that their children have less control over their lives as parents. Although this is the only study examining PLOC among Latino families, the findings suggest a possible indirect relationship between cultural factors and parental problem recognition via PLOC. Specifically, if traditional, less acculturated Latina mothers attribute their child's behaviors to an external PLOC, this will likely lead them to be less likely to endorse certain child behaviors as problematic.

### **Etiological Explanations of Mental Illness**

Based on current research, parental beliefs about the etiology of child behaviors also are likely to influence parental problem recognition. Latinos have been found to have a different set of beliefs related to mental illness than typically endorsed by NLWs in the U.S, with Latino parents being less likely to have etiological explanations consistent with medical or biopsychosocial models of mental illness (Yeh et al., 2004) and more likely to report sociological causes as being related to mental health problems. Yeh and colleagues (2004) also found that Latino parents were less likely than African American parents to endorse physical causes and prejudice, yet more likely than Asian/Pacific Islanders to perceive familial issues and trauma to be associated with childhood mental illnesses. Additionally, Yeh and colleagues (2005) showed that Latino parents were less likely to use specialty mental health services as compared to NLWs. Interestingly, characteristics associated with biopsychosocial etiological explanations had the strongest positive

relationship with service utilization. While limited, the findings from these studies suggests that cross-cultural differences in beliefs about the causes of mental illness exist and are related to identifying mental health problems and utilizing services.

With regard to ADHD, the current etiological conceptualization in the U.S. emphasizes neurological and genetic factors as the cause of ADHD (for a review, see Brassett-Harknett, & Butler, 2007). Psychosocial factors also account for certain aspects of the disorder (e.g., severity, outcome, comorbidity); however, there is minimal evidence that these contribute to the etiology of ADHD, as was previously believed (Barkely, 2006). Although research has provided support for neurological and genetic etiologies of ADHD, many individuals in the U.S. continue to report knowing little about the disorder; with ethnic minorities reporting the least amount of knowledge (Bussing et al., 1998; McLeod, Fettes, Jensen, Pescosolido, & Martin, 2007).

To date, some research has examined ethnic differences in parental perceptions of ADHD. Latina mothers have been found to lack a cultural model consistent with ADHD and are less likely to use biomedical explanations for the disorder (Arcia & Fernandez, 1998; Bussing, Gary, Mills, & Garvan, 2003). It has been suggested that the development of Latina maternal schemas of ADHD are based on their child's functioning (e.g., poor academic performance, peer problems), rather than specific diagnosable symptoms (Arcia & Fernández, 1998). These findings are particularly interesting, as they suggest that Latino parents may view certain ADHD-like behaviors as concerning, but may not perceive them as having a biopsychosocial origin, which may result in them not identifying the behaviors as problematic or in need of mental health treatment.

### **Specific Aims and Predictions**

The current study aimed to test a model of ADHD problem recognition for Latino parents. First, this study examined relations between behavioral and cognitive acculturation with parental locus of control and etiological explanations of ADHD. It was predicted that Anglo behavioral and cognitive acculturation would be positively related to an internal parental locus of control and endorsement of biopsychosocial etiological explanations of ADHD, whereas the opposite was expected for Latino acculturation. Next, associations between behavioral and cognitive acculturation, as well as parental locus of control and etiological explanations of ADHD with ADHD problem recognition were investigated. It was predicted that Anglo behavioral and cognitive acculturation would be positively related to an internal parental locus of control and biopsychosocial etiologies of ADHD, whereas Latino acculturation would be negatively related to these parental cognitions. Finally, it was predicted that an internal locus of control and biopsychosocial explanations for ADHD would be positively related to ADHD problem recognition. This study also sought to explore parental locus of control and etiological explanations of ADHD as possible mediators of the relation between behavioral and cognitive acculturation and ADHD problem recognition (see Figure 1).

## **Method**

### **Participants**

The participants in this study included 72 Latino parents residing in a culturally-diverse city in Southeastern Wisconsin. Parents were recruited from local Catholic churches, identified themselves as Latino, and had at least one child between the ages of 5 and 12 years. As can be seen in Table 1, the mean age of parents was 37.03 years ( $SD =$

5.27). In addition, the majority of the sample was female (65.3%), married (75%), of Mexican descent (93%), predominately spoke Spanish (84.8%), and had lived in the United States for more than ten years (79.2%). Most of the parents had a high school education or less (81.2%), an annual family income of less than \$40,000 (88%), and were of lower socioeconomic status as represented by a mean of 27.40 ( $SD = 10.07$ ) on a scale ranging from 8 to 66, with higher scores indicating higher SES (Hollingshead, 1975).

### **Procedure**

Parents were recruited through parent letters placed in church bulletins and verbal reminders from church personnel. Data was collected at the participating churches during family-oriented, church events. Interested parents completed the study at the time of the event or scheduled a different session. Following the consent process, parents completed two parts of the study, which took approximately 45 minutes each. The first part of the study involved parents watching the ADHD Behavioral Impairment Video (BIV; Haack, Gerdes, Schneider, & Lawton, 2010), which was created to measure ADHD problem recognition. Following the video, parents completed the Problem Recognition Questionnaire (PRQ) for ADHD (Haack, Gerdes, Schneider, & Lawton, 2010) and a modified version of the Beliefs about the Causes-Parent Version (Yeh & Hough, 2005) questionnaire for ADHD. The second part of the study consisted of parents completing several self-report measures, including a demographic form, the Acculturation Rating Scale for Mexican Americans-II (Cuéllar et al., 1995), the Mexican American Cultural Values Scale for Adolescents and Adults (Knight et al., 2010), and the Parental Locus of Control Scale (Campis et al., 1986). The two parts of the study were counterbalanced, and all self-report measures were randomized. Parents received a \$10 gift card for their

participation, as well as the opportunity to attend three sessions at their church, which focused on discussing relevant topics of interest to parents, including parent-child acculturation gaps, difficulties families experience acculturating, and suggestions for maintaining family harmony.

### **Materials/Measures**

**ADHD behavioral impairment video (BIV; Haack et al., 2010).** The ADHD BIV was created as a stimulus for measuring parental problem recognition of ADHD in a community sample. The video includes nine, 1-minute, language-free clips of an 8-year-old, Latino boy across three settings (i.e., home, school, and with peers). The scenes were scripted in order to ensure that the confederate child in the video displayed behaviors consistent with the core symptoms of ADHD, as well as functional problems common to ADHD across different domains (i.e., academic, social, and familial). A three-phase pilot study was completed to determine which ADHD symptoms and common functional problems were endorsed consistently by different sets of raters after viewing the BIV. First, three graduate students and a faculty expert on ADHD viewed the BIV and completed the PRQ. The ADHD symptoms and functional problems that were endorsed by at least 75% of the ADHD team were considered present and kept for the next step of pilot testing. Next, ten clinical psychology graduate students specializing in child psychopathology watched the video and completed the PRQ. The graduate students endorsed items generally consistent with responses made by the ADHD research team. As the last step, the video and PRQ were pilot tested with ten mothers of school-aged children from the community to confirm that parents viewed the behaviors as problematic and could correctly identify the target symptoms of ADHD and functional problems;

symptoms that were endorsed by at least 70% of the mothers were considered present. All of these symptoms and functional problems were previously endorsed by the members of the ADHD research team during the initial phase of development, and 85% of ADHD symptoms and 100% of the functional problems were considered present by the clinical psychology graduate students during the second phase of the pilot study.

**Problem recognition questionnaire (PRQ) for ADHD (Haack et al., 2010).**

The PRQ is available in English and Spanish and is designed to assess problem recognition of ADHD symptoms and common functional problems associated with the disorder. This measure assesses problem recognition both qualitatively and quantitatively. Initially, after viewing the BIV described above, parents were instructed to provide a brief qualitative narrative describing the behaviors they observed in the video and identifying those that were concerning to them. Next, parents completed the quantitative section of the PRQ, which included all 16 DSM-IV-TR (American Psychiatric Association, 2000) ADHD symptoms, as well as various functional problems across three settings (i.e., sixteen for home, eight for school, and eight for peers). Parents were asked to circle all behaviors (i.e., symptoms and functional problems) that they observed in the video, as well as provide a severity rating based on how concerning each behavior would be to them on a 4-point Likert scale, with greater numbers indicating greater problem severity. The PRQ can be examined based on three subscales (i.e., Total ADHD symptoms, Inattention symptoms, Hyperactivity/Impulsivity symptoms) across three settings (i.e., home, school, peers), as well as an overall scale combining the symptomology across all three settings. For purposes of the current investigation, only responses to the ADHD symptom items from the quantitative portion were used.

**Modified beliefs about causes-parent version (BAC; Yeh & Hough, 2005).**

The BAC is a 54-item semi-structured interview designed to assess parental explanatory etiologies for child problems, which is available in English and Spanish. For the purpose of the current investigation, the BAC was slightly modified (Yeh & Hourgh, 1997; Yeh & Hough, 2005) to be used with a community rather than clinical sample. Parents were asked to respond yes/no to a stem question of whether they believed that the child's behaviors seen in the BIV were due, in part to Biopsychosocial, Sociological, or Spiritual/Nature Disharmony etiologies. Biopsychosocial beliefs encompass five subscales, including Physical Causes (e.g., genetics or heredity), Personality (e.g., child's lack of discipline, self-control, or difficulties with anger), Relational Issues (e.g., child's problem with social skills), Familial Issues (e.g., conflict with family), and Trauma (e.g., abuse). The Sociological etiologies include four subscales: Friends (e.g., negative influence or peer pressure from child's friends or peers), American Culture (e.g., the influence of popular American culture), Prejudice (e.g., racial or ethnic discrimination or prejudice), and Economic Problems (e.g., not having money for things like food, clothing, housing, etc.). Spiritual/Nature Disharmony includes the subscales of Spiritual Causes (e.g., bad luck or chance) and Nature Disharmony (e.g., disruption of child's energy or vitality flow). Confirmatory factor analysis has found sufficient fit for a 2-factor (biopsychosocial vs. sociological/spiritual/nature disharmony) and 3-factor model (biopsychosocial vs. sociological vs. spiritual/nature disharmony). The 3-factor model was used for the current investigation. Construct validity has been supported by racial/ethnic differences on the biopsychosocial scales (Yeh et al., 2004). Good test-retest reliability has been demonstrated (Yeh & Hough, 1997).

**Demographic form.** The demographic form was used to ask questions about parental and child ethnicity, education level, occupation, number of parents living in the home, number of children in the family, general mental health history of the family, and level of social support from family and friends. In addition, SES was examined dimensionally by using the Hollingshead Scale (Hollingshead, 1975), which computes SES based on parental education and occupation.

**Acculturation rating scale for Mexican Americans-II (Cuéllar et al, 1995).** The ARSMA-II is a 30-item self-report measure available in English and Spanish. It assesses behavioral acculturation in terms of language use, ethnic identity, and ethnic interaction. Items are rated as not at all (0) to extremely often or almost always (5). Scores result in two subscales with higher scores representing greater affiliation/orientation with the particular culture. The Anglo Orientation Subscale (AOS) has 13 items and assesses orientation toward the mainstream Anglo culture in the United States. The Latino Orientation Subscale (LOS) has 17 items and assesses orientation toward the traditional Latino culture. Strong internal consistencies for the AOS (.88) and LOS (.83) have been reported (Cuéllar et al., 1995). In addition, construct validity was found using a sample of 379 individuals representing five generations (Cuéllar et al., 1995).

**The Mexican American cultural values scale for adolescents and adults (MACV; Knight et al., 2010).** The MACV, is a 50-item self-report questionnaire to be used to measure cultural value orientations in terms of Latino American Values (LV) and Mainstream Values (MV) and is available in English and Spanish. Items are rated as not at all (1) to completely believe (5). The LV is made up of 6 six subscales, including

Familism Support (e.g., family provides a sense of security because they will always be there for you), Familism Obligation (e.g., a person should share their home with relatives if they need a place to stay), Familism Referent (e.g., children should always do things to make their parents happy), Familism Total, Respect (e.g., no matter what, children should always treat their parents with respect), Religion (e.g., if everything is taken away, one still has their faith in God), and Traditional Gender Roles (e.g., it is important for the man to have more power in the family than the woman). The MV scale is made up of 3 subscales including Material Success (e.g., children should be taught that it is important to have a lot of money), Independence and Self-Reliance (e.g., when there are problems in life, a person can only count on him or herself), and Competition and Personal Achievement (e.g., one must be ready to compete with others to get ahead). Strong internal consistency reliability coefficients have been established for the LV (.88), the MV (.81 to .84), as well as the individual LV and MV subscales (.50 to .86) for parents. The MACV also has been shown to have good construct validity and to discriminate between immigrant and nonimmigrant Latinos (Knight et al., 2009). For the purpose for of the current investigation the familism total and respect scales were used.

**Parental locus of control scale (PLOCS; Campis et al., 1986).** The PLOCS is a 47-item parent-report measure to assess the degree of control a parents feels he or she has over his or her child's behavior, which is available in English and Spanish. It contains five subscales: a) Parental Efficacy (perception of effectiveness in parenting role); b) Parental Responsibility (responsibility for his or her child's behavior); c) Child Control of Parents' Life (child's needs dominating parents' lives); d) Parental Belief in Fate/Chance (parenting and child behavior are influenced by fate/chance); and Parental Control of

Child's Behavior (parents able to control child's behavior). The PLOCS items are rated on a 5-point Likert Scale, which ranges from "Strongly Disagree" to "Strongly Agree". Good internal consistency reliability coefficients have been established for the overall PLOCS and its five subscales ( $\alpha = .62$  to  $.80$ ) and evidence of construct and discriminant validity have been found (Campis et al., 1986). For the current investigation, the Parental Control of Child's Behavior and Child Control of Parent's Life subscales were used.

## Results

### Descriptive Analyses

Descriptive statistics for the cultural variables (i.e., ARSMA and MACV) and parental cognitions (PLOC and BAC) are presented in Table 2. The majority of parents in the sample identified less behavioral acculturation orientation toward the Anglo culture ( $M = 2.69$ ,  $SD = .75$ ) than toward the Latino culture ( $M = 4.36$ ,  $SD = .45$ ). Parents also endorsed high levels of familism ( $M = 4.39$ ,  $SD = .43$ ) and respect ( $M = 4.24$ ,  $SD = .49$ ). Additionally, parents endorsed moderate levels of parental control of child's behavior ( $M = 3.87$ ,  $SD = .63$ ) and child control over parent's life ( $M = 3.89$ ,  $SD = .56$ ). Parents endorsed 69% of items that make up the biopsychosocial beliefs subscale, 52% of the items that make up the sociological beliefs subscale, and 14% of the spiritual/nature disharmony beliefs subscale.

In addition, dichotomous categories for each of the ADHD problem recognition symptom sets (i.e., total ADHD, inattention, hyperactivity/impulsivity) for each setting (i.e., home, school, peers, and overall) were computed based on percentages of symptoms that were correctly identified as problematic on the quantitative portion of the PRQ

(severity rating of 3 or 4 on a 4 point Likert scale). Parents who correctly endorsed seventy-five percent or more of symptoms were coded “1” (good recognition). Parents who correctly endorsed less than seventy-five percent of symptoms were coded “0” (poor recognition). This method was chosen, as it generated the best split into nearly equal groups. Percentages of both broken down by symptom scales and setting and may be found in Table 3.

### **Preliminary Analyses**

**Predictors and mediators.** First, correlations between the predictors (i.e., cultural factors = ARSMA and MACV) and mediators (i.e., parental cognitions = PLOC and BAC) were conducted (see Table 4). The Anglo orientation scale was positively correlated with parental control ( $r = .28, p < .01$ ), suggesting that parents who report more behavioral orientation to Anglo culture endorse greater levels of control over their child’s behavior. Next, overall familism ( $r = .31, p < .01$ ) was positively correlated with spiritual/nature disharmony beliefs, suggesting that parents who endorsed higher levels of familism reported greater levels of spiritual/nature disharmony beliefs. The Latino orientation scale and respect were not associated with any of the parental cognitions.

**Predictors and outcomes.** Next, correlations between the predictor variables (i.e., cultural factors = ARSMA, MACV) and outcome variables (i.e., ADHD problem recognition) were conducted (see Table 5). The Anglo orientation scale was found to be negatively correlated ( $r = -.21, p < .05$ ), and the Latino orientation scale positively correlated ( $r = .21, p < .05$ ) with overall hyperactive/ impulsive problem recognition. This indicates that parents who endorsed higher levels of Anglo orientation were less likely to correctly identify overall hyperactive/impulsive symptoms, whereas parents who

endorsed higher levels of Latino orientation were more likely to correctly identify overall hyperactive/impulsive symptoms.

Examination of cognitive acculturation subscales revealed that familism was positively correlated with home hyperactivity/impulsivity ( $r = .22, p < .05$ ), school ADHD ( $r = .22, p < .05$ ) and inattention ( $r = .22, p < .05$ ), and overall hyperactivity/impulsivity ( $r = .24, p < .05$ ), suggesting that parents with higher levels of familism were more likely to correctly identify hyperactive/impulsive symptoms at home, ADHD and inattentive symptoms at school, and overall hyperactive/impulsive symptoms as problematic. Respect also was positively correlated with home hyperactivity/impulsivity ( $r = .20, p < .05$ ), school ADHD ( $r = .20, p < .05$ ), and peer ADHD ( $r = .27, p < .05$ ), inattention ( $r = .23, p < .05$ ), and hyperactivity/impulsivity ( $r = .27, p < .05$ ). This indicates an association between endorsements of higher levels of respect and correct identification of hyperactive/impulsive behaviors as problems at home, ADHD behaviors as problems at school, as well as ADHD, inattentive, and hyperactive/impulsive behaviors with peers as problematic.

**Mediators and outcomes.** Finally, correlations between mediators (i.e., parental cognitions = PLOC and BAC) and outcome variables (i.e., ADHD problem recognition) were conducted (see Table 6). Parental control was negatively correlated to school hyperactivity impulsivity ( $r = -.20, p < .05$ ), indicating that parents who endorsed higher levels of parental control of their child's behavior were less likely to correctly identify hyperactive/impulsive symptoms in a school setting as problematic. Child control also was positively correlated with home ADHD ( $r = .24, p < .05$ ) and inattention ( $r = .27, p < .05$ ), school inattention ( $r = .23, p < .05$ ), peer hyperactivity/impulsivity ( $r = .26, p < .05$ ),

as well as overall ADHD ( $r = .20, p < .05$ ), inattention ( $r = .31, p < .05$ ), and hyperactivity/impulsivity ( $r = .28, p < .05$ ). This suggests that parents who are less likely to perceive their child as having control over their lives are more likely to correctly identify ADHD and inattentive symptoms at home, inattentive and hyperactive/impulsive symptoms with peers, and overall ADHD, inattentive, and hyperactive/impulsive symptoms as problematic. Finally, sociological beliefs were positively correlated with home hyperactivity/impulsivity ( $r = .20, p < .05$ ), which indicated an association between parents who endorsed higher levels of sociological beliefs and correct identification of hyperactive/impulsive symptoms in the home setting as problematic. Biopsychosocial and spiritual/nature disharmony beliefs were not significantly related to any problem recognition outcome variables.

### **Primary Analyses**

Initially, it was proposed to conduct a series of mediational logistic regressions with parental cognitions (PLOC and BAC variables) as potential mediators between behavioral and cognitive acculturation factors (ARSMA and BAC variables) and ADHD problem recognition (total ADHD, inattention, and hyperactivity/impulsivity problem recognition across different settings; see Figure 1). However, Baron and Kenny's (1986) criteria for computing a mediational analysis with dichotomous outcome variables (MacKinnon & Dwyer, 1993) were not supported. Specifically, although significant zero-order correlations were found between some predictors and mediators, as well as between some predictors and mediators with ADHD problem recognition, there were no instances in which a specific mediator variable had significant relations with both a predictor variable and an ADHD problem recognition outcome variable. Therefore, a series of

direct binary logistic regressions were conducted aimed at determining which acculturation factors and parental cognitions were most predictive of ADHD problem recognition. Specifically, five direct binary logistic regressions were computed to predict ADHD problem recognition (i.e., total ADHD, inattention, hyperactivity/impulsivity) across different settings (i.e., home, school, peers, and overall). Regressions only were conducted if more than one predictor and/or mediator was significantly correlated with a problem recognition outcome variable. The outcome variables were coded (1) for parents who correctly identified symptoms as problematic and (0) for those who poorly identified these symptoms.

### **Problem Recognition in the Home Setting**

First, a direct binary logistic regression was computed for ADHD problem recognition of hyperactive/impulsive behavior in the home. A test of this model with three predictors (i.e., familism total, respect, sociological beliefs) against a constant-only model was not statistically significant  $X^2(3, N = 71) = 6.34, p > .05$ , indicating that this set of predictors did not reliably distinguish between parents who correctly identified hyperactive/impulsive symptoms in the home as problematic and those who did not recognize these symptoms as problematic. Additionally, according to the Wald criterion, none of the individual factors independently predicted correctly identifying hyperactive/impulsive symptoms in the home as problems.

### **Problem Recognition in the School Setting**

Next, a direct binary logistic regression was computed for recognition of total ADHD symptoms in school. A test of this model with two predictors (i.e., familism total, respect) against a constant only model was not statistically significant  $X^2(2, N = 71) =$

3.70,  $p > .05$ , demonstrating that this set of predictors did not reliably distinguish between parents who correctly identified ADHD symptoms in the school as problems and those who did not recognize these symptoms as problematic. Additionally, according to the Wald criterion, none of the individual factors independently predicted correctly identifying ADHD symptoms in the school as problems.

In addition, a direct binary logistic regression was computed for recognition of inattentive symptoms in school. A test of this model with two predictors (i.e., familism total, child control) against a constant-only model was statistically significant,  $X^2(2, N = 71) = 7.62, p < .05$ , indicating that the predictors, as a set, reliably distinguished between parents who correctly identified inattentive symptoms in the school as problematic and those who did not recognize these symptoms as problems. The Cox and Snell  $R^2$  and Nagelkerke  $R^2$  demonstrated that 10% and 14% of the variability in school inattention was explained by the combination of these factors. Classification was adequate, with 87.5% of parents who correctly identified symptoms problematic and 21.7% for parents who did not correctly identify symptoms to be problems, for an overall success rate of 66.2%. Additionally, according to the Wald criterion, only child control independently predicted correctly identifying inattentive symptoms in the school as problems,  $X^2(1, N = 71) = 3.84, p < .05$ . The odds ratio for child control indicates that parents who perceived their child to have less control over their lives were 2.67 times more likely to rate school-based inattentive symptoms as problematic.

### **Problem Recognition within a Peer Setting**

Next, a test of the peer hyperactivity/impulsivity model with two predictors (i.e., respect, child control) against a constant-only model was statistically significant,  $X^2(2, N$

= 71) = 8.78,  $p < .01$ , indicating that the predictors, as a set, reliably distinguished between parents who correctly identified hyperactive/impulsive symptoms in a peer setting as problematic as compared to parents who did not recognize these symptoms as problems. The Cox and Snell  $R^2$  and Nagelkerke  $R^2$  demonstrated that between 12% and 16% of the variability in peer hyperactivity/impulsivity was explained by the combination of these factors. Classification was adequate, with 83.7% of parents who correctly identified symptoms problematic and 39.3% for parents who did not correctly identify symptoms to be problems, for an overall success rate of 66.2%. According to the Wald criterion, none of the individual factors independently predicted correctly identifying hyperactive/impulsive symptoms in a peer setting as problems.

### **Overall Problem Recognition**

The last direct binary logistic regression was computed for the acculturation factors and parental cognitions predicting ADHD problem recognition symptoms collapsed across settings. A test of the overall hyperactivity/impulsivity model with four predictors (i.e., Anglo orientation scale, Latino orientation scale, familism total, and child control) against a constant-only model was statistically significant,  $X^2(4, N = 71) = 17.12, p < .01$ , indicating that the predictors, as a set, reliably distinguished between parents who correctly identified overall hyperactive/impulsive symptoms as problematic as compared to parents who did not recognize these symptoms as problems. The Cox and Snell  $R^2$  and Nagelkerke  $R^2$  demonstrated that between 21% and 29% of the variability in overall hyperactivity/impulsivity was explained by the combination of these factors. Classification was adequate, with 78.0% of parents who correctly identified symptoms

problematic and 56.7% for parents who did not correctly identify symptoms to be problems, for an overall success rate of 69.0%.

In addition, according to the Wald criterion, Anglo orientation scale ( $X^2(1, N = 71) = 4.20, p < .05$ ) and child control ( $X^2(1, N = 71) = 6.75, p < .05$ ) independently predicted correctly identifying peer hyperactive/impulsive symptoms as problems. The odds ratio for Anglo orientation scale indicates that parents with higher levels of Anglo orientation scale are .41 times less likely to rate overall hyperactive/impulsive symptoms as problematic. In addition, the odds ratio for child control indicates that parents who perceived their child to have less control over their lives were 4.19 times more likely to rate overall hyperactive/impulsive symptoms as problematic.

### **Discussion**

The goal of the present study was to examine an exploratory model of ADHD problem recognition in Latino parents. Meditational analyses with parental cognitions serving as mediators between acculturation and ADHD problem recognition were proposed. However, due to Baron and Kenny's (1986) criteria not being met, this study focused on examining the direct influence of acculturation and parental cognitions on ADHD problem recognition. Specifically, the current study examined relations between behavioral (i.e., Anglo and Latino orientation) and cognitive acculturation (i.e., familism, respect), parental locus of control (i.e., parent control over child's life and child control of parent's life), and etiological explanations of ADHD (i.e., biopsychosocial, sociological, spiritual/nature disharmony) with ADHD problem recognition. Findings suggest that several of the acculturation variables and parental cognitions were related to and

predictive of ADHD problem recognition outcomes, with familism, respect, and child control emerging most often. These findings may have important implications for conducting culturally-sensitive assessments and interventions, as well as reducing some of the service utilization disparities that Latino youth and their families experience (Arcia & Fernandez, 2003; Bussing et al., 2003; Eiraldi et al., 2006).

### **Acculturation and ADHD Problem Recognition**

**Behavioral acculturation.** The only significant correlations between behavioral acculturation and problem recognition that emerged were for overall hyperactivity/impulsivity, but the directionality of these relationships was contrary to what was predicted. Anglo behavioral orientation was found to be negatively correlated with overall hyperactive/impulsive problem recognition, whereas Latino behavioral orientation was positively related to problem recognition. In addition, Anglo behavioral orientation was found to be the only individual behavioral acculturation factor that significantly predicted overall hyperactive/impulsive problem recognition in the direct binary logistic regression. This suggests that identification with Anglo American behaviors are important for Latino parents correct identification of hyperactive/impulsive symptoms across settings as problematic. In particular, these findings suggest that as Latino parents acculturate to Anglo culture, they are less likely to correctly identify symptoms of hyperactivity/impulsivity as problematic. Although previous research is limited these findings are inconsistent with previous literature which has found that as individuals acculturate behaviorally, their beliefs about mental health and help-seeking change, in that they have a greater awareness of mental health problems and are more

likely to make the decision to seek professional services when a problem is identified (Eiraldi et al., 2006; Dettlaff & Berger-Cardoso, 2010).

The current findings may differ from previous research due to the limited range of behavioral acculturation in the current sample, as most parents had high endorsements on Latino orientation. Further, examining behavioral acculturation (e.g., food preference, language) may not be the best method for examining the influence of culture on Latino parental perceptions of child behavior problems, as evidenced by the lack of significant correlations between behavioral acculturation and problem recognition in the present study. A cognitive measure of acculturation, which examines core cultural values, may be better for understanding relations between culture and ADHD problem recognition.

**Cognitive acculturation.** Several noteworthy relations between familism and respect and ADHD problem recognition emerged. Findings suggest that endorsements of higher levels of familism were associated with correct identification of hyperactive/impulsive symptoms at home and overall, and ADHD and inattentive symptoms at school as problematic. Endorsements of respect were found to be significantly related to all peer symptom categories (i.e., ADHD, inattentive, hyperactive/impulsive) as well as symptoms of hyperactivity/impulsivity at home and ADHD at school. These findings are generally consistent with literature that has examined similar constructs.

Within the home setting, familism and respect were both related to correctly identifying symptoms of hyperactivity/impulsivity, indicating that Latino parents who place a strong value on the family and respect may be more likely to perceive hyperactive/impulsive behaviors in the home as problematic. This is consistent with

previous research that has indicated that parents, in general, perceive hyperactive/impulsive symptoms as more disturbing than symptoms of inattention (e.g., Eiraldi et al., 1997; Gadow et al., 2004; Johnston & Mash, 2001; Weiss et al., 2003). Latino parents, in particular, place a lot of emphasis on their child's ability to maintain proper respect, responsibility, and strong ties to their family (German, Gonzales, & Dumka, 2009; Taylor, Larsen-Rife, Conger, & Widaman, 2012). In light of the present findings, Latino parents may perceive hyperactive/impulsive behaviors as more disrespectful toward family members, and therefore correctly identify them as problematic.

Familism and respect also had strong relations with the correct identification of inattentive symptoms in the school. This suggests that symptoms of inattention (e.g., difficulty listening, being easily distracted) are perceived to be problematic in a school environment. Although Latino parents may be more accepting of their child's behavior in the home, they also are more likely to perceive their child's compliant and respectful behavior as a reflection of the entire family (Halgunseth et al., 2006; Roberts et al., 2005). Thus, Latino parents may be more sensitive to the opinions of school staff, especially if their child is having difficulties related to inattention in the classroom.

Additionally, respect was significantly correlated with all categories of ADHD problem recognition within a peer setting. The cultural value of respect represents appropriate behaviors for social interactions, as well as setting necessary boundaries within public settings (Arcia & Johnson, 1998; Calzada, Fernandez, & Cortes, 2010). The current sample of parents perceived both symptoms of inattention and hyperactivity/impulsivity as problematic in a social setting with similar-aged peers,

suggesting that they may perceive a child with high levels of inattention and hyperactivity/impulsivity as engaging in disrespectful behaviors toward other children. These findings may have important implications for treatment, as they suggest that Latino parents likely recognize and value the importance of peer relationships for their children. It is possible that specifically asking about how their child's symptoms have impacted their peer relationships as part of the assessment may increase their motivation for seeking and successfully completing professional services, which research suggests is currently a problem (Huey, 1998 as cited in McCabe, 2002; Kazdin, Holland, & Crowley, 1997).

Finally, familism and respect were included in several of the overall regressions, including three that were found to significantly predict problem recognition (i.e., school inattention, peer hyperactivity/impulsivity, and overall hyperactivity/impulsivity). Although they were found to be related to several problem recognition variables, they did not individually predict any outcome when entered with other variables. This suggests that cognitive acculturation, as measured through the core cultural values of familism and respect, has an influence on Latino parents' ability to correctly identify child behavior problems associated with ADHD, yet investigating these variables independently is not enough to make strong conclusions about problem recognition for Latino parents. Therefore, it is important to examine additional factors, such as parental cognitions about child behavior and mental health.

### **Parental Cognitions and ADHD Problem Recognition.**

**Parental Locus of Control.** Contrary to what was predicted, parental control of child behavior was only related to problem recognition of hyperactive/impulsive

symptoms at school and was not predictive of any problem recognition outcome in the regression analyses. Findings suggest that parents who believe that they have little control over their child's behavior may be more likely to perceive hyperactive/impulsive behaviors at school as problematic. Perhaps more interesting are the multiple significant relations between child control (parental perceptions of the amount of control their child has over his/her life) and correct identification of ADHD symptoms as problematic. Child control was found to be positively related to symptoms of ADHD and inattention at home, inattention at school, hyperactivity/impulsivity with peers, and ADHD, inattention, and hyperactivity/impulsivity across settings. Child control also was included in three of the five logistic regressions, all of which were found to significantly predict problem recognition. Child control also individually predicted inattentive symptoms at school and overall hyperactivity/impulsivity. These findings suggest that Latino parents who perceive their child as not having control over his/her life are more likely to correctly recognize symptoms of ADHD in various settings as problematic.

The findings are similar to previous research examining this construct. Specifically, previous studies have demonstrated that parents of children with behavioral problems often develop an external parental locus of control, including feeling less responsible and effective as parents (Hagekull et al., 2001; Johnston & Jassy, 2007; Kim et al., 2003). Thus, it seems reasonable that parents who perceive having less control over their child's behaviors would be more likely to rate disruptive behaviors of hyperactivity/impulsivity as problematic, as they may feel less confident in managing these behaviors.

**Etiological Beliefs.** Contrary to what was expected, the only significant relations between etiological explanations and ADHD problem recognition included a positive relation between sociological beliefs and problem recognition of hyperactive/impulsive symptoms at home, suggesting that parents who believe sociological factors, such as children's friends, American culture, discrimination/prejudice, and economic problems are related to the etiology of ADHD are more likely to view symptoms of hyperactivity/impulsivity as problematic. This implies that a child's hyperactive/impulsive behaviors at home may be more likely to be recognized when a parent believes that the source of the problems are the result of external sociological factors impacting the family.

Due to the limited significant these findings, it appears that etiological beliefs of ADHD may not be as important for recognizing problems as they may be for a family's decision about seeking help. For example, parents may recognize atypical and problematic child behaviors regardless of their perception of its etiology. However, whether they decide to seek services and from what source may largely depend on their etiological beliefs of a particular disorder or child behavioral problem. This is consistent with previous research that has demonstrated an association between biopsychosocial etiologies and the decision to seek professional mental health services (Yeh et al., 2004; Yeh et al., 2005).

In sum, the measures of familism, respect, and child control were the most consistently predictive of parental recognition of behavioral problems in children. This indicates that aspects of cognitive acculturation, measured through core cultural values, are important for understanding how Latino parents perceive child behavior problems.

Specifically, the maintenance of cultural values of familism and respect is generally related to a greater likelihood of correctly identifying ADHD-related behaviors as problematic. Additionally, parental cognitions, specifically, parental perceptions of their child's control over his/her life, also are important to consider when examining factors that influence parental perceptions of child behaviors as problematic. Future research further exploring these cognitive constructs and their relation with parental problem recognition in Latino parents is needed.

### **Limitations**

The current study had several limitations worth noting. First, the study had a moderate sample size, which may have reduced power for detecting some meaningful findings. Next, due to the demographics of Latino families in Southeastern Wisconsin, the majority of parents were of Mexican descent, spoke primarily Spanish, and were of low SES. In addition, there was a limited range in terms of acculturation rated by parents, as most parents identified as having strong affiliation toward Latino behavioral orientation and cultural values. Thus, future research would benefit from examining a more representative sample with greater variability in Latino subgroups, language use, and SES. Additionally, future studies should seek to examine Latino parents with greater variability in both behavioral and cognitive acculturation status.

### **Implications and Future Directions**

Ethnic minority youth, including Latinos, experience similar or higher rates of health problems, including ADHD, as compared to NLW children in the United States. Unfortunately, these youth are much less likely to receive professional services (Kataoka et al., 2002; Yeh et al., 2003) due to a variety of access barriers and cultural factors

(Alegria et al., 2007; Callejas et al., 2006; Flores et al., 2002). Behavioral help-seeking models have been developed to help explain the discrepancies between need and utilization. Little research to date has investigated the impact of culture and parental beliefs of child behavior throughout the help-seeking process, including the beginning stage of problem recognition (Cauce et al., 2002; Eiraldi et al., 2006). Investigating factors such as acculturation and parental cognitions of child behaviors is important when understanding how families determine what child behaviors are perceived as problematic. Understanding the connection between culture and problem recognition also has important implications for clinical assessment and intervention.

The current study provides progress toward identifying aspects of behavioral and cognitive acculturation, and parental cognitions of child behavior and their relations with ADHD problem recognition for Latino parents. Although an initial step, findings suggest that patterns of acculturation and parental cognitions of Latino parents influence whether certain symptoms of ADHD across different settings are recognized as problems. Findings suggest that increasing the responsibility of mental health professionals to be culturally-competent when providing psycho-education about ADHD and other childhood mental health disorders to culturally and ethnically diverse families. An initial step may be to promote greater collaboration between mental health agencies and organizations (e.g., churches, resource centers, family health care providers) that have working relationships with the Latino community. This may strengthen the awareness of behavior problems for Latino parents, as well as increase their means for receiving appropriate resources. Additionally, given that the current sample of Latino parents spoke

predominately Spanish, linguistically competent educators and providers may further increase Latino parents understanding of ADHD and related behaviors.

In addition, the results from this study advance research related to developing culturally-appropriate assessment and intervention for culturally-diverse families of youth with ADHD. Parents play an integral role throughout the evaluation and treatment process (Chacko et al., 2009; Fabiano et al., 2009). Integrating culture and parental beliefs about child behavior within the assessment process is important, as it may help strengthen conceptualization for increasing the cultural appropriateness of treatment interventions (Domenech-Rodriguez, Bauman, & Schwartz, 2011; Ruben Parra Cardona et al., 2012). This may include placing a greater emphasis on understanding the role of a child in the family system for Latino parents with varying levels of acculturation.

Finally, this area of research could be expanded by conducting a similar study using a clinical sample of families to determine how cultural values and parental cognitions impact parents who have already sought services for symptoms of ADHD. In addition, since the confederate child in the video was male it may be interesting to use a female confederate to see how gender may influence parental perceptions of child behaviors. Also, due to the inconsistencies between need and received care, this area of research should be expanded to other diverse populations of families who experience barriers receiving services.

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Figure 1. Model of ADHD Problem Recognition in Latino Parents

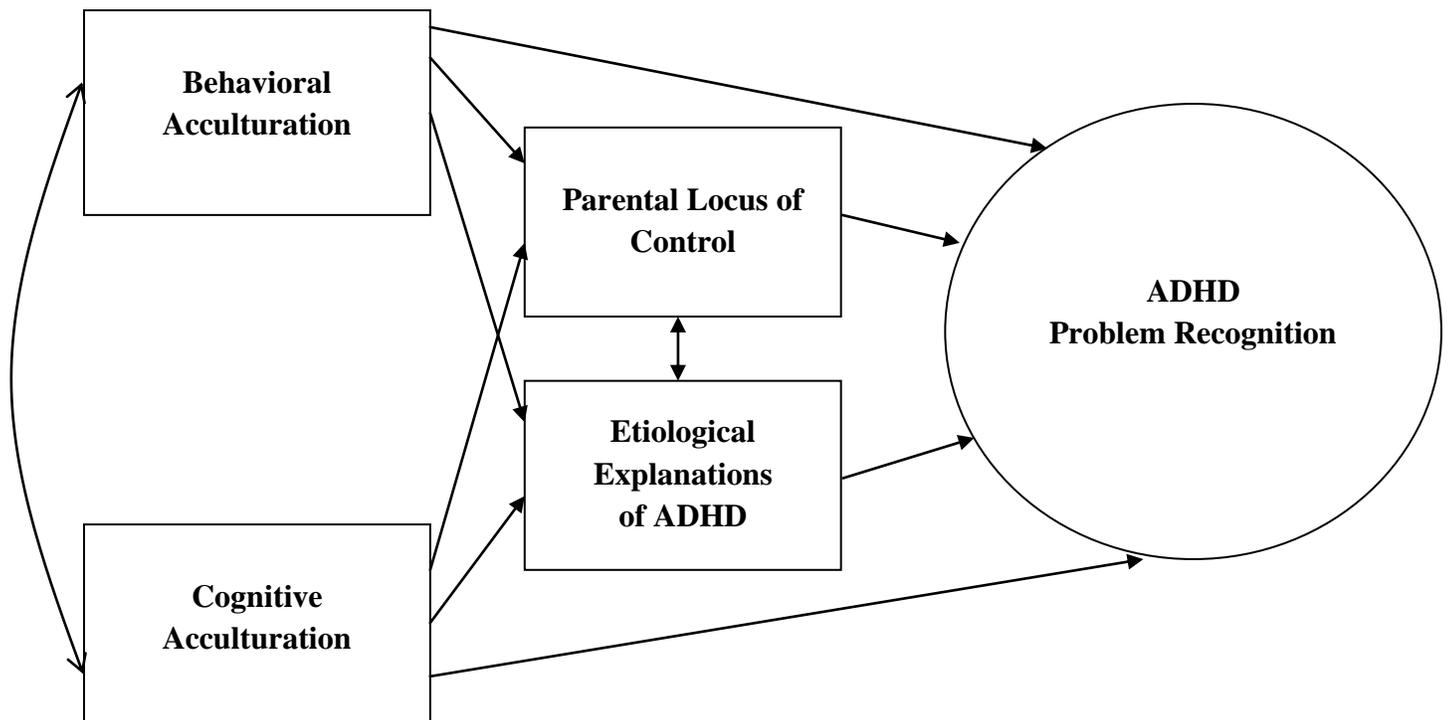
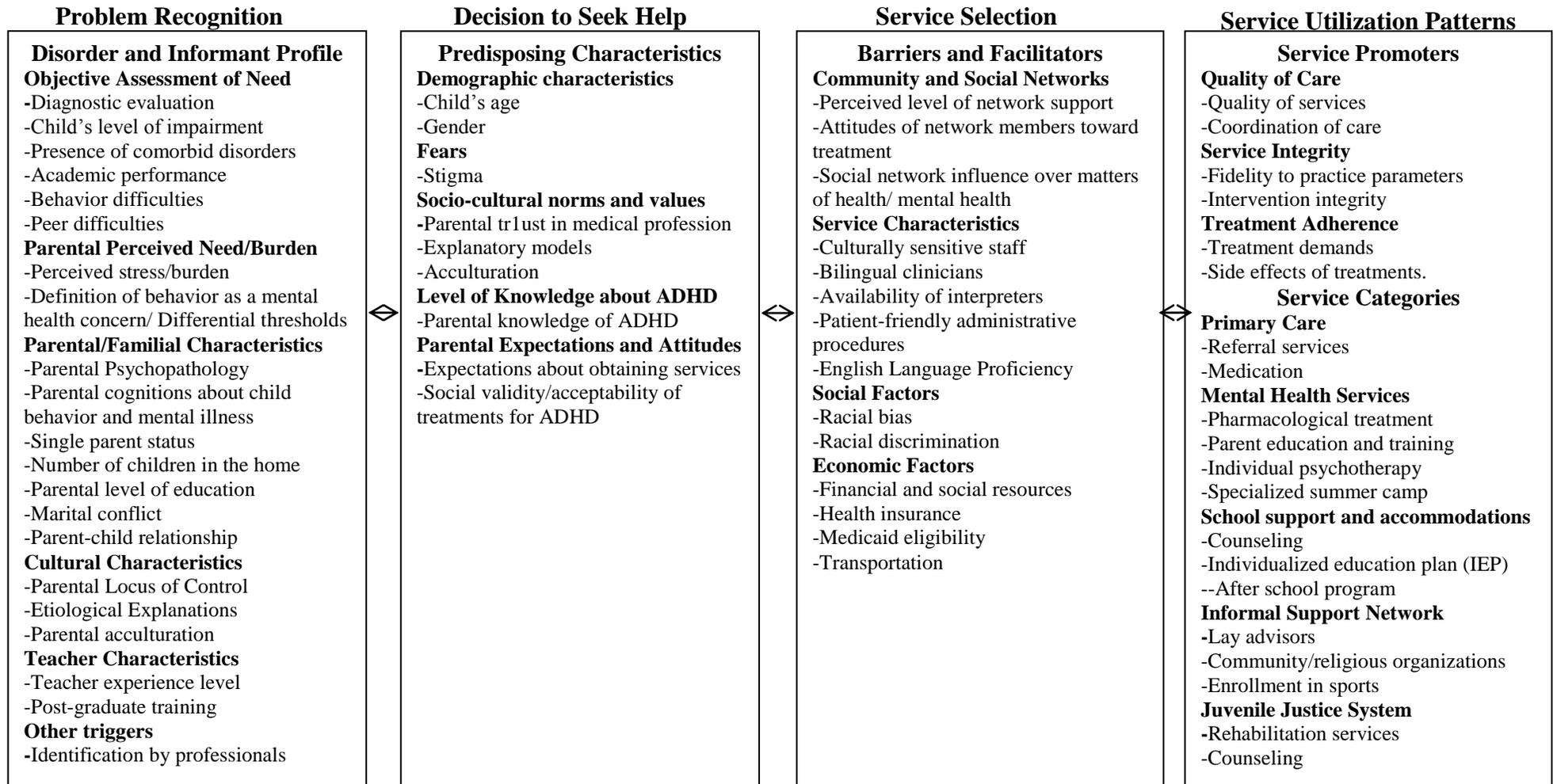


Figure 2: Model of ADHD Help-Seeking for Latino Children



Adapted from Cauce et al., 2002 & Eiraldi et al., 2006

Table 1  
*Demographic Variables*

	<i>M</i>	(SD)
Parent Age	37.03	5.27
Socioeconomic Status	27.40	10.07
	<i>n</i>	(%)
Parent Gender		
Male	25	34.7
Female	47	65.3
Marital Status		
Married	54	75
Never Married/Single	3	4
Divorced/Separated	2	3
Cohabiting	13	18
Parent Ethnicity		
Mexican	67	93.0
Puerto Rican	3	4.2
Other	2	2.8
Language of Parent		
Only Spanish	30	41.7
Predominately Spanish, some English	31	43.1
Both Spanish and English	10	13.9
Predominately English, some Spanish	1	1.4
Only English	0	0.0
Time in USA		
Less than 1 year	0	0
1-5 years	1	1.4
6-10 years	14	19.4
More than 10 years	53	73.6
Born in USA	4	5.6
First to Move to USA		
Self	13	18.6
Parent	11	15.7
Grandparent	4	5.7
Great grandparent	0	0
Other	42	60.0
Education		
Less than 4 <sup>th</sup> grade	5	7.1
Middle school (4-6 <sup>th</sup> grade)	11	15.7
Secondary school (7-9 <sup>th</sup> grade)	19	27.1
Some high school (10-11 <sup>th</sup> grade)	3	4.3
High school graduate/GED	19	27.1
Some college (<1yr)/associates degree	7	10.0
College Graduate	4	5.7
Graduate professional training/degree	2	2.9
Income		
Less than \$20,000	27	40
\$20,001 - \$40,000	33	48
\$40,001 - \$60,000	6	9
\$60,001 - \$80,000	2	3

Table 2  
*Descriptive Statistics for Predictors and Mediators*

<i>Variable</i>	<i>n</i>	<i>M</i>	<i>(SD)</i>
ARSMA			
Anglo Orientation Scale	72	2.69	.75
Latino Orientation Scale	72	4.36	.45
MACVS			
Familiism Total	72	4.39	.43
Respect	72	4.24	.49
PLOC			
Parental Control	72	3.87	.63
Child Control	72	3.89	.56
	<i>n</i>	<i>%</i>	
BAC			
Biopsychosocial	72	.69	
Sociological	70	.52	
Spiritual/Nature Disharmony	70	.14	

*Note:* ARSMA= Acculturation Rating Scale for Mexican Americans-II, Mexican American Cultural Values Scale for Adolescents and Adults; PLOC = Parental Locus of Control Scale; BAC = Beliefs about the Causes of ADHD.

Table 3  
*Percentages of Good and Poor Problem Recognition of ADHD Symptoms*

Variable	<i>N</i>	%
Home		
ADHD		
Good	35	48
Poor	38	52
Inattention		
Good	39	53
Poor	34	47
Hyperactivity/Impulsivity		
Good	25	34
Poor	48	66
School		
ADHD		
Good	45	62
Poor	28	38
Inattention		
Good	49	67
Poor	24	33
Hyperactivity / Impulsivity		
Good	46	63
Poor	27	37
Peer		
ADHD		
Good	43	59
Poor	30	41
Inattention		
Good	46	63
Poor	27	37
Hyperactivity / Impulsivity		
Good	45	62
Poor	28	38
Overall		
ADHD		
Good	36	49
Poor	37	51
Inattention		
Good	43	59
Poor	30	41
Hyperactivity / Impulsivity		
Good	31	43
Poor	42	57

Table 4  
*Correlations between Predictors and Mediators*

Variable	Parental Locus of Control		Beliefs about the Causes of ADHD		
	Parental Control	Child Control	Biopsychosocial	Sociological	Spiritual/Nature
ARSMA					
Anglo Orientation Scale	.28**	.14	.06	-.19	-.17
Latino Orientation Scale	.36	.05	.02	.08	.09
MACVS					
Familism Total	-.04	-.01	.07	.19	.31**
Respect	.03	.18	.01	.05	.15

Note: \*\* p < .01.

Table 5  
Spearman Rho Correlations between Predictors and Outcomes

Variable	Anglo Orientation Scale	Latino Orientation Scale	Familism Total	Respect
Home				
Total ADHD	-.02	.14	.05	.08
Inattention	.07	-.03	-.02	.05
Hyperactivity/Impulsivity	-.18	.15	.22*	.20*
School				
Total ADHD	-.02	.04	.22*	.20*
Inattention	.06	.15	.22*	.17
Hyperactivity/Impulsivity	-.17	.10	.18	.17
Peer				
Total ADHD	-.10	-.01	.08	.27*
Inattention	.04	-.04	.08	.23*
Hyperactivity/Impulsivity	-.08	-.04	.14	.27*
Overall				
Total ADHD	-.10	.08	.19	.18
Inattention	.07	.05	.17	.10
Hyperactivity/Impulsivity	-.21*	.21*	.24*	.18

Note: \*  $p < .05$ ; Problem recognition outcome variables were coded "1" for good recognition and "0" for poor recognition.

Table 6  
Spearman Rho Correlations between Mediators and Outcomes

Variable	Parental Locus of Control and Beliefs about the Causes of ADHD				
	Parental Control	Child Control	Biopsychosocial	Sociological	Spiritual/Nature Disharmony
Home					
Total ADHD	-.03	.24*	.04	.06	.09
Inattention	.04	.27*	.07	-.01	-.11
Hyperactivity/Impulsivity	.00	.17	.13	.20*	.15
School					
Total ADHD	-.12	.19	-.03	-.03	-.02
Inattention	-.12	.23*	.14	.12	.04
Hyperactivity/Impulsivity	-.20*	.17	-.11	-.06	-.01
Peer					
Total ADHD	.00	.17	-.05	.05	.04
Inattention	.07	.06	.01	-.05	.02
Hyperactivity/Impulsivity	.04	.26*	-.08	.04	.02
Overall					
Total ADHD	-.04	.20*	.01	.04	.11
Inattention	.08	.31*	.17	.06	.01
Hyperactivity/Impulsivity	.05	.28*	-.03	.06	.15

Note: \*  $p < .05$ ; Problem recognition outcome variables were coded "1" for good recognition and "0" for poor recognition.

Table 7  
*Binary Logistic Regressions for Cultural Factors and Parental Cognitions with ADHD Problem Recognition*

Variables	<i>B</i>	<i>SE</i>	Wald $\chi^2$ (Omnibus $\chi^2$ )	Odds Ratio	95% Confidence Intervals for Odds Ratio		Cox & Snell $R^2$	Nagelkerke $R^2$
					<i>Lower</i>	<i>Upper</i>		
Home Hyperactivity/Impulsivity								
Familism Total	.71	.89	.65	2.04	.36	11.62		
Respect	.59	.76	.60	1.80	.40	8.07		
Sociological	.13	.09	2.17	1.14	.96	1.35		
Overall			6.34				.09	.12
School Total ADHD								
Familism Total	.75	.78	.94	2.21	.47	9.71		
Respect	.42	.66	.40	1.52	.41	5.59		
Overall Model			3.70				.05	.07
School Inattention								
Familism Total	1.21	.65	3.54	3.36	.95	11.90		
Child Control	.98	.50	3.84*	2.67	1.00	7.07		
Overall Model			7.62*				.10	.14
Peer Hyperactivity/Impulsivity								
Respect	1.06	.57	3.48	2.88	.95	8.74		
Child Control	.89	.48	3.41	2.43	.95	6.23		
Overall Model			8.78**				.12	.16
Overall Hyperactivity/Impulsivity								
Anglo Orientation Scale	-.90	.44	4.20*	.41	.17	.96		
Latino Orientation Scale	1.30	.75	2.99	3.66	.84	15.93		
Familism Total	.87	.72	1.47	2.40	.58	9.84		
Child Control	1.43	.55	6.75**	4.19	1.42	12.35		
Overall Model			17.12**				.21	.29

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; Problem recognition outcome variables were coded "1" for good recognition and "0" for poor recognition.