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Lauren M. Haack
Marquette University

Alyson C. Gerdes
Marquette University, alyson.gerdes@marquette.edu

Kathryn E. Lawton
Marquette University

Brian W. Schneider
Aurora Mental Health

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Understanding and Measuring Functional Impairment in Diverse Children With ADHD: Development of the ADHD-FX Scale With an At- Risk, Community Sample

Lauren M. Haack

*University of California,
San Francisco, CA,*

Alyson C. Gerdes

*Psychology Department, Marquette University
Milwaukee, WI*

Kathryn E. Lawton

*Psychology Department, Marquette University
Milwaukee, WI*

Brian W. Schneider

*Aurora Mental Health,
Aurora, CO*

Abstract

Objective: The current study sought to develop a culturally appropriate measure of functional impairment related to ADHD for diverse families, as research suggests that functional impairment may be a more culturally universal construct than symptomatology. **Method:** Seventy-four low-acclulturated Latino parents (49 mothers and 25 fathers) of school-aged children provided quantitative and qualitative responses about problem recognition after viewing a language-free video of a child displaying symptoms and behaviors consistent with ADHD. **Results:** Thirty-two items were developed for the ADHD-FX scale based on most common responses given from participants. The scale is available in Spanish and English and instructs parents to consider how much each item affects their child in his or her everyday life (from 0 = *not at all* to 3 = *a lot*). **Conclusions:** The scale can provide an overall impairment score, as well as subscale scores in the theoretically derived domains of academic, peer, and familial impairment. (*J. of Att. Dis.* 2016; 20(6) 487-500)

Keywords ADHD, ADHD impairment, assessment, Latino/Hispanics

ADHD is one of the most prevalent mental health disorders found in children throughout the world, affecting 3% to 8% of children from various ethnic and cultural backgrounds (American Psychiatric Association [APA], 2013; Willcutt, 2012). To receive an ADHD diagnosis, a child must display six or more symptoms of inattention (IA), six or more symptoms of hyperactivity/impulsivity (HI), or six or more symptoms from both domains for at least 6 months (APA, 2013). Another required, yet often overlooked criterion to warrant a diagnosis of ADHD is that children must experience difficulties in at least two settings (i.e., at home or work, with peer group or relatives) that evidently impair or reduce the quality of their life functioning (APA, 2013; Gathje, Lewandowski, & Gordon, 2008). Thus, along with the core symptoms, children with ADHD typically experience substantial impairments in areas of academic achievement, social competence, and familial relationships (Pelham et al., 2010; Smith, Barkley, & Shapiro, 2006). Interestingly, the amount and severity of symptoms a child with ADHD displays appear to influence, although not fully explain, the amount and severity of functional impairment they experience (Gathje et al., 2008; Willcut et al., 2012). Given the association yet distinctness of ADHD symptoms and functional impairment, consideration of both constructs is necessary to fully appreciate the constellation of difficulties experienced by children with ADHD.

Although most of the research examining functional impairment in children with ADHD has been conducted with predominantly middle-class, Caucasian families in the United States, initial research suggests that these constructs may be relevant to families from various diverse backgrounds. For example, children diagnosed with ADHD in Puerto Rico were reported by their parents to experience lower academic achievement scores and more impaired social competence than children without ADHD ([Bauermeister et al., 2005](#)). In addition, the Puerto Rican parents of children with ADHD self-reported higher rates of parenting stress and poorer parenting practices than parents of comparison children ([Bauermeister et al., 2005](#)). Similarly, in a national study of Australian youth, children meeting criteria for ADHD displayed higher parental ratings related to school problems, social difficulties, and disruption to family activities than children not meeting ADHD criteria ([Graetz, Sawyer, & Baghurst, 2005](#)). Finally, in a study of German adolescents, children rated highly for ADHD also were rated by their parents as having lower academic competence, friendship skills, and emotional attachment to parents and peers than were children without high ratings for ADHD ([Essau, Groen, Conradt, Turbanisch, & Petermann, 1999](#)). Thus, it appears that international parental reports of increased academic, social, and familial impairment in children with ADHD are considerably similar to results found in U.S. samples of predominantly middle-class, Caucasian families.

Functional Impairment in Families At-Risk for Problem-Recognition Barriers

Not only does functional impairment seem to be a relevant construct for all families, research suggests it may be an *even more* culturally appropriate diagnostic criterion than ADHD symptomatology in certain populations at-risk for problem-recognition barriers (from here on out referred to as "at-risk"). One contributing factor to problem-recognition risk is a lack of exposure to the mental health field, as naive families may not have knowledge about and/or comfort with phrasing and jargon used to describe ADHD symptoms ([Gerdes, Lawton, Haack, & Hurtado, 2013](#)). In addition, many families hold different etiological beliefs for illness than the biopsychosocial theory predominant in the mental health field ([Lawton, Gerdes, Haack, & Schneider, 2012](#); [Yeh et al., 2005](#)), and thus may have a difficult time

identifying symptoms as defined by this theory. Families from various backgrounds also will have different expectations for acceptable versus unacceptable child behavior, which can lead to over- or underreporting the severity of symptoms based on the developmental guidelines of their culture (Gerdes, Lawton, Haack, & Schneider, 2013; Rothe, 2005). Thus, families who display limited exposure to the mental health field, hold alternative etiological beliefs for illness, and/or have differential cultural values, beliefs, and expectations from that predominant in the mental health field may be at-risk for accurately recognizing and identifying ADHD symptoms.

For example, a family with one or more of the aforementioned barriers may not endorse that their child "often fidgets with or taps hands and feet or squirms in seat" or "is often 'on the go' acting as if 'driven by a motor'" (*Diagnostic and Statistical Manual of Mental Disorders* [5th ed.; *DSM-5*] ADHD symptoms; APA, 2013). They may have difficulty understanding the connotation of those items, they may think that these behaviors are irrelevant to the problems for which they are seeking help, or they may feel that the behaviors are normative rather than characteristic of a problematic externalizing behavior. In contrast, regardless of cultural background, a parent may endorse that their child is getting poor grades, is being teased by their classmates, or is have trouble completing home routines (functional impairment behaviors commonly associated with ADHD), because such statements simply and objectively describe interactions with the environment that *any* child could face. Thus, families at-risk for identifying ADHD symptoms may benefit from supplemented assessment methods emphasizing functional impairment to encourage accurate problem recognition.

Certain populations appear to be at particular risk for problem-recognition barriers, such as low-acculturated Latino families (Gerdes, Lawton, Haack, & Schneider, 2013; Rothe, 2005). The term "low-acculturated Latino families" describes those who align closely with traditional Latino customs and values and have not assimilated to mainstream, Eurocentric customs and values (Bronfenbrenner, 1986). These families are disproportionately naive to mental health services, and thus many Latino families lack exposure to and comfort with the mental health field and related jargon that is used to describe ADHD symptoms (Gerdes, Lawton, Haack, & Schneider, 2013; US

Department of Health and Human Services, & National Institutes of Health Outreach Notebook Committee, 2002). In addition, low-acculturated Latino families tend to display “espiritualismo” and alternative/supernatural etiological explanations for mental illness (Lawton et al., 2012; Yeh et al., 2005), which can lead to beliefs that mental health symptoms are part of the unchangeable personality given to their child by God rather than characteristic of a mental health disorder. Finally, these families often emphasize traditional collectivist cultural values, such as “personalismo” and “familismo,” leading to more acceptance and understanding of externalizing behaviors as normative than typically is found in mainstream European American culture (Arcia & Fernández, 2003).

An excellent example of these cultural theories supported by empirical research can be found in a study by Arcia and Fernández (2003) investigating predominantly Spanish-speaking Latina mothers seeking professional help for childhood ADHD. In this study, mothers did not identify ADHD symptoms as present or problematic in their children; however, the most frequently reported catalyst for help-seeking was academic impairment (specifically, school reports of negative classroom behavior). Similarly, in a study by Gerdes, Lawton, Haack, and Hurtado (2013) examining problem recognition of ADHD symptoms and related impairment with predominantly Spanish-speaking Latino parents, HI symptoms were positively correlated with Anglo orientation, suggesting that reports of HI may be culturally dependent. HI symptoms also revealed low diagnostic utility in predicting both the presence and absence of ADHD, suggesting that Latino parents in the study perceived HI behaviors as developmentally normative rather than indicative of psychopathology. Although parental endorsement of ADHD symptoms emerged as culturally biased in this study, parental ratings of functional impairment (specifically, problems with learning, aggression, executive functioning, and peer interactions) emerged as culturally universal. Thus, these investigations demonstrated that while problem recognition related to ADHD symptomatology differed based on cultural background, the construct of functional impairment related to ADHD was similarly identified by *all* parents, regardless of acculturation.

Functional Impairment Assessment Materials for Diverse Children With ADHD

Given the evidence that functional impairment related to ADHD is an important consideration for all families, and particularly families at-risk for problem-recognition barriers, the availability of culturally appropriate assessment materials focused on functional impairment is needed. Up to this point, comprehensive, childhood ADHD assessments incorporating functional impairment have required utilization of one broad functional impairment measure, broadband behavior measures with brief impairment subscales, or various measures investigating individual domains of functioning, all of which are subject to limitations (see [Haack & Gerdes, 2011](#), for review).

The easiest and briefest method of assessing functional impairment is the utilization of one broad impairment measure, such as the Child and Adolescent Functional Assessment Scale ([Hodges, 1994](#)) or the Columbia Impairment Scale ([Bird et al., 1996](#)). While these measures can provide a general look at difficulties that often accompany symptomatology in children with mental health disorders, they do not provide information about ADHD-specific impairment ([Gordon et al., 2006](#)). The only existing broad functional impairment measure specific to ADHD is the Impairment Rating Scale (IRS; [Fabiano et al., 2006](#)), which asks parents to rate their child's level of impairment and provide qualitative responses on six ADHD-specific domains: peer relationships, sibling relationships, parent relationships, academic progress, self-esteem, and general family functioning. The IRS provides quantitative information on which of the six domains are impaired and to what degree, but given that each domain only is represented by one item, examination of qualitative responses is necessary to determine the nature of impairment experienced in each domain. Thus, the use of broad impairment measures is a quick and easy way to capture the degree of general impairment a child with ADHD is displaying, but it is not sufficient for gathering rich information about the nature of impairment experienced by the child.

An alternative brief method of assessing impairment is examination of specific subscales related to functional impairment on broadband behavior questionnaires, such as the Social Problems and

Rule Breaking Behavior subscales on the Child Behavior Checklist/6-18 (CBCL/6-18; [Achenbach & Rescorla, 2001](#)) and the Learning and Peer Problems subscales on the Conners-3 ([Conners, 2008](#)). These subscales are more specific to ADHD-related impairment and contain more items than the broad impairment measures described above; however, they are comprised of only a few items and thus often do not inquire about all aspects of the domain of impairment (e.g., the Peer Problems subscale on the Conners-3 contains items inquiring about peer rejection and lack of friends, but does not include items relating to social skills or social assertion). Therefore, although these measures may be more specific to ADHD-related impairment and contain more items than broad impairment measures, they still may be too broad and brief to capture aspects of ADHD-related impairment relevant to *all* families.

Alternatively, one can integrate multiple domain-specific impairment measures to capture rich information about ADHD-related impairment. For example, one could incorporate measures about academic impairment (e.g., the Homework Problems Checklist, [Anesko, Schoiock, Ramirez, & Levine, 1987](#); or the Academic Competency Evaluation Scale, [DiPerna & Elliott, 1999](#)), social impairment (e.g., Social Skills Improvement System, [Gresham & Elliott, 2008](#); or the Harter Self-Perception Profile for Children, [Harter, 1982](#)), and family impairment (e.g., the Alabama Parenting Questionnaire, [Shelton, Frick, & Wootton, 1996](#); the Parenting Stress Inventory–Short Form [PSI-SF], [Abidin, 1990](#); or the Confusion, Hubbub, and Order Scale, [Matheny, Wachs, Ludwig, & Phillips, 1995](#)). While integration of multiple domain-specific measures provides ample details about the level *and* nature of functional impairment a child with ADHD experiences, this method proves to be time-consuming and costly for professionals and families alike ([Pelham, Fabiano, & Massetti, 2005](#)). Tedious and inefficient assessment processes are especially problematic for families who are strapped for resources due to lack of money/insurance coverage and time away from work necessary to participate in lengthy clinical procedures ([US Department of Health and Human Services, & National Institutes of Health Outreach Notebook Committee, 2002](#)). Unfortunately, many populations at-risk for problem-recognition barriers (e.g., low-aculturated Latino families) also are disproportionately impoverished and underinsured compared with middle-class, Caucasian families

(Day, 2010). Therefore, if an impoverished and uninsured family is billed per hour of a clinician's time to score and interpret multiple assessment measures and also loses valuable hourly work wages to complete the measures in a clinic, a comprehensive assessment may not be realistic. In fact, in a recent study by Schneider, Gerdes, Haack, and Lawton (2013) investigating completion rates of comprehensive ADHD behavioral interventions, ethnic minority status was found to predict program drop-out before the assessment had even been completed.

Finally, all of the aforementioned methods of assessing functional impairment may be subject to practical and cultural biases and thus may not be appropriate assessment measures for all families (Haack & Gerdes, 2011; Lee & Humphreys, 2011). When examining the appropriateness of ADHD assessment measures with diverse families, language and education barriers are important factors to consider. These barriers are extremely salient in current culture as many families who experience problem-recognition barriers (i.e., low-aculturated Latinos) do not speak English or do not read English at a reading level typical for behavioral questionnaires (U.S. Census Bureau, 2010). If measures are to be used with non-English speaking families, a thorough translation and back-translation process emphasizing integrity of the original measures' construct and reading level is needed (Weeks, Swerissen, & Belfrage, 2007). Although some functional impairment measures have gone through this process, many have not (see Haack & Gerdes, 2011, for a review of measures available in Spanish). If a measure is not available in a language spoken by the family, in-person administration with a translator is needed, which can be impersonal and inaccurate.

Furthermore, even if a measure has been translated and deemed linguistically appropriate for a given population, it is possible that assessment measures created for a cultural group at large may not be appropriate for use with specific at-risk populations (APA, 2003; Padilla & Medina, 2001). In response to this potential problem, experts in the field, such as Lee and Humphreys (2011), state,

Measures that are specifically developed and validated (e.g., using focus groups to explore the possibility that some racial-ethnic groups may interpret available instruments differently than the

majority group) in racial-ethnic groups, including African Americans, may be superior to standard measures of ADHD. (pp. 3-8)

Despite this call, no studies to date have attempted to develop ADHD assessment measures with a specific ethnic minority population and their cultural attitudes, beliefs, values, and expectations in mind.

Summary

Research indicating that children with ADHD suffer significant functional impairment in the domains of academic achievement, social competence, and familial relationships is particularly important given the impact these difficulties have on a child's well-being and positive adjustment (Pelham et al., 2010; Smith et al., 2006). While ADHD symptoms may be difficult for some parents to recognize and identify as problematic due to differential cultural experiences and values, it appears that functional impairment is a construct relevant to all parents, such as low-aculturated Latinos (Arcia & Fernández, 2003; Gerdes, Lawton, Haack, & Schneider, 2013). Given the importance and universality of functional impairment related to ADHD, there is a need for a practical, efficient, and culturally appropriate assessment measure that addresses aspects of functional impairment relevant to diverse families. To ensure cultural-appropriateness, creation of this measure with the population-of-interest in mind appears to be more suitable than translating an existing measure (Lee & Humphreys, 2011; Padilla & Medina, 2001). This measure would be an important supplement to ADHD symptom ratings for any family, and would be an *essential* tool when working with families at-risk for problem-recognition barriers, such as low-aculturated Latinos. Ultimately, the creation of such a measure may contribute to appeased mental health disparities for diverse children in need of assessment and intervention for ADHD.

Specific Aims

The goal of the current study was to develop a culturally appropriate measure for diverse children with ADHD assessing functional impairment in academic, social, and familial domains (i.e., the ADHD-FX scale). Specifically, researchers conducted a quantitative

and qualitative investigation of parental perceptions of problem recognition and functional impairment related to ADHD with a sample shown to be at-risk for problem-recognition barriers. Low-acculturated Latino families were chosen as the target population for the current study, as this group experiences nearly every barrier to problem recognition previously reviewed (see above), and currently is one of the fastest growing ethnic minority groups in the United States (Day, 2010).

Method

Participants

Participants included 74 parents (49 mothers and 25 fathers), all of whom self-identified as Latinos and had at least one child between the ages of 5 and 12 years. The majority of parents were of Mexican descent (87.8%), had lived in the United States for more than 10 years (71.6%), and spoke only Spanish (40.5%) or primarily Spanish and some English (41.9%). Parents represented relatively low socioeconomic status (SES) levels, with the majority of parents obtaining below a high school education/General Educational Development (GED; 51.5%) and more than one third of parents reporting less than US\$20,000 annual family income (36.5%). The mean age of participants was 37.0 years ($SD = 5.3$). See Table 1 for more detailed demographic information.

Table 1. Parent Demographics (N = 74).

Practical factors		Cultural factors	
Age, M (SD) ^a	37.0 (5.3)	Ethnicity, n (%)	
Gender, n (%)		Latino, Mexican descent	67 (87.8)
Female	49 (66.2)	Latino, Puerto Rican descent	3 (4.1)
Male	25 (33.8)	Latino, Other descent	4 (5.4)
Marital status, n (%)		Time in United States, n (%) ^b	
Married	54 (73.0)	1-5 years	1 (1.4)
Unmarried	20 (27.0)	6-10 years	14 (18.9)
Number of children, n (%) ^c		More than 10 years	53 (71.6)
1-2	32 (43.2)	Born in the United States	4 (5.4)
3-4	33 (44.6)	Language, n (%) ^d	
5 or more	8 (10.8)	Only Spanish	30 (40.5)
Education, n (%) ^e		Primarily Spanish, some English	31 (41.9)
Some high school or less	38 (51.5)	Bilingual	10 (13.5)
Graduated high school/GED	19 (25.7)	Primarily English, some Spanish	1 (1.4)
Some college	7 (9.5)	Only English	0 (0.0)
College or graduate degree	6 (8.1)	Cognitive acculturation, M (SD) ^b	
Income, n (%) ^f		Latino American values	4.02 (0.4)
Less than US\$20,000	27 (36.5)	Mainstream values	2.96 (0.7)
US\$20,001-US\$ 40,000	33 (44.6)	Behavioral acculturation, M (SD) ^c	
US\$40,001-US\$60,000	6 (8.2)	Latino orientation	4.36 (0.5)
US\$60,001-US\$80,000	2 (2.8)	Anglo orientation	2.69 (0.8)
More than US\$80,000	0 (0.0)		

Note. GED = General Educational Development; ARSMA-II = Acculturation Rating Scale for Mexican Americans-II; MACV = Mexican American Cultural Values.

^aIndicates missing data for some participants.

^bAs measured by ARSMA-II (Cuéllar, Arnold, & Maldonado, 1995), with a range of 1 to 5, 5 indicating strong orientation.

^cAs measured by MACV scale for adolescents and Adults (Knight et al., 2009), with a range of 1 to 5, 5 indicating strong orientation.

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^cAs measured by MACV scale for adolescents and Adults (Knight et al., 2009), with a range of 1 to 5, 5 indicating strong orientation.

Procedure

Following multicultural guidelines to improve Latino participation in clinical research (e.g., Loue & Sajatovic, 2008; US Department of Health and Human Services, & National Institutes of Health Outreach Notebook Committee, 2002; Yancey, Ortega, & Kumanyika, 2006), a partnership with a trusted organization in the Latino community was established for participant recruitment. A local Catholic congregation was chosen for partnership, given findings that 70% of Latinos in the United States self-identify as Catholic (Espinosa, Elizondo, & Miranda, 2003). To encourage participation, church personnel at the congregation endorsed the project and its potential contribution to the community. In addition, data collection occurred at the congregation at the end of church-sponsored events and child care was provided. Parents were given the option to complete the session in English or Spanish.

Following the consent process, parents completed a 60- to 120-min procedure involving the viewing of videos and completion of an interview and questionnaires focused on child behavior and cultural functioning. Relevant to the current study, parents first viewed the ADHD Behavioral Impairment Video (BIV; Haack, Gerdes, Lawton, & Schneider, 2011; as cited in [Haack, Schneider, & Gerdes, 2011](#)), which was developed to assess ADHD problem recognition in various domains of functional impairment: at home, at school, and with peers. Following the video, parents completed the Problem-Recognition Questionnaire (PRQ) for ADHD (Haack, Gerdes, Lawton, & Schneider, 2011; as cited in [Haack, Schneider, & Gerdes, 2011](#)). Parents were shown the BIV settings in counterbalanced order to prevent carryover from domains. Parents were compensated with a US\$20 gift card for their participation. Data collection occurred during one academic school year (September through May).

Measures

Measures of interest include the ADHD BIV (Haack, Gerdes, Lawton, & Schneider, 2011; as cited in [Haack, Schneider, & Gerdes, 2011](#)) and the PRQ for ADHD (Haack, Gerdes, Lawton, & Schneider, 2011; as cited in [Haack, Schneider, & Gerdes, 2011](#)). In addition, a demographic form, the Acculturation Rating Scale for Mexican Americans-II (ARSMA-II; [Cuéllar, Arnold, & Maldonado, 1995](#)), and the Mexican American Cultural Values (MACV) scale for adolescents and adults ([Knight et al., 2009](#)) also were completed to assess practical and cultural demographics. All measures were available in Spanish and English.

ADHD BIV (Haack, Gerdes, Lawton, & Schneider, 2011; as cited in [Haack, Schneider, & Gerdes, 2011](#))

The ADHD BIV was developed as a stimulus for assessing parental problem recognition of ADHD in a community sample. The BIV consists of nine, 1-minute, language-free clips of an 8-year-old, Latino boy in three settings (i.e., home, school, and with peers). The scenes were scripted to ensure that the confederate child in the video displayed behaviors consistent with the core symptoms of ADHD, as well as functional problems commonly associated with ADHD in the

domains of academic, social, and familial impairment. A three-phase pilot study was completed to determine which symptoms and functional problems raters consistently endorsed after viewing the BIV. Initially, four members of a university-based ADHD research lab viewed the BIV and completed the PRQ. Symptoms and functional impairments endorsed by at least 75% of the ADHD lab members were considered present. Next, 10 clinical child psychology doctoral students viewed the BIV and completed the PRQ as a manipulation check; the graduate students endorsed items generally consistent with decisions made by the ADHD lab. As a final check, 10 mothers of school-aged children from the community viewed the BIV and completed the PRQ. Ultimately, symptoms and functional problems endorsed by at least 70% of the mothers in the pilot study were considered present. Of these items, the ADHD lab endorsed all symptoms and functional problems in the first phase of the pilot and the clinical child psychology doctoral students endorsed 85% of symptoms and 100% of functional problems in the second phase of the pilot.

PRQ for ADHD (Haack, Gerdes, Lawton, & Schneider, 2011; as cited in Haack, Schneider, & Gerdes, 2011)

The PRQ is a measure created to assess problem recognition of ADHD symptoms and related functional problems in a community sample. The measure was designed to be completed after viewing the BIV (see above for description). Specifically, after viewing each setting, parents first were instructed to describe behaviors they saw in the videos. Next, parents were provided a list of all *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev; *DSM-IV-TR*; *APA, 2000*) ADHD symptoms, as well as eight functional problems related to ADHD for each setting (i.e., home, school, and with peers). Functional problems from the PRQ were developed based on common treatment goals identified at a university-based ADHD clinic serving diverse populations. Parents were instructed to circle the symptoms and functional problems they observed in the video, and then give circled items a severity rating on a 4-point Likert-type scale, with greater numbers indicating greater problem severity. This measure was created in Spanish and English.

Demographic form

A demographic questionnaire was administered to collect general information about each participant, such as age, gender, income, educational attainment, and generational status.

ARSMA-II

The ARSMA-II is a 30-item self-report measure available in English and Spanish ([Cuéllar et al., 1995](#)). 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 original ARSMA-II frames questions specifically to Mexican Americans; thus, to accommodate all Latino subgroups, the word "Mexican" was changed to "Latino." This method has been used previously and maintains good reliability (e.g., Cronbach's $\alpha = .78$; [Steidel & Contreras, 2003](#)).

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 established using a sample of 379 individuals representing five generations ([Cuéllar et al., 1995](#)). The internal consistency of the ARSMA-II for the current study was good (Cronbach's α values for AOS and LOS = .89 and .81, respectively).

MACV scale for adolescents and adults

The MACV is a 50-item self-report questionnaire to be used to measure cultural value orientations in terms of Latino American Values (LAVs) and Mainstream Values (MVs), which is available in Spanish and English ([Knight et al., 2009](#)). Items are rated as *not at all* (1) to *completely believe* (5). The LAV is made up of several subscales, including Familism, Respect, Religion, and Traditional Gender Roles. The MV scale is made up of three subscales, including Material

Success, Independence/Self-Reliance, and Competition/Personal Achievement. Strong internal consistency reliability coefficients have been established for the LAV (.88), the MV (.81-.84), as well as the individual LAV and MV subscales (.50-.86) for parents. The MACV has also been shown to have good construct validity and to discriminate between immigrant and nonimmigrant Latinos ([Knight et al., 2009](#)). The internal consistency of the MACV for the current study was good (Cronbach's α values for LAV and MV = .92 and .86, respectively).

Results

Coding of Qualitative Responses

A team of researchers trained in cultural competency and ADHD assessment utilized a five-step procedure to code participants' qualitative responses. See [Figure 1](#) for a summary of the coding procedure.

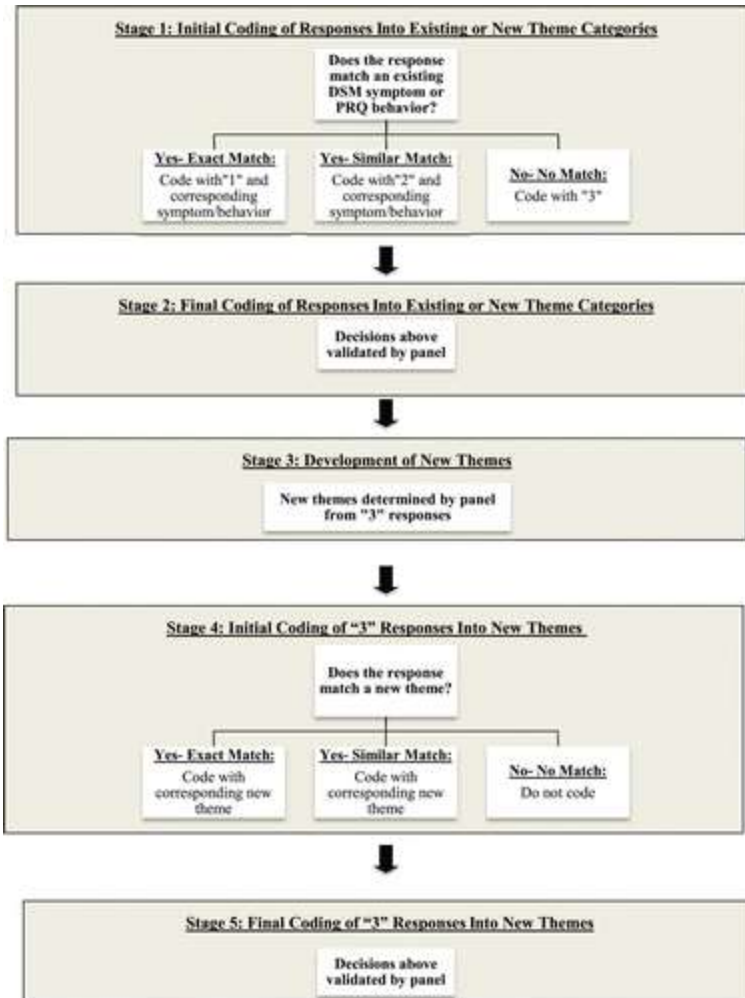


Figure 1. Procedure for coding qualitative responses.
Note. DSM = Diagnostic and Statistical Manual of Mental Disorder; PRQ = Problem-Recognition Questionnaire.

Stage 1: Initial coding of qualitative responses into existing or new theme categories

To begin, two bilingual coders categorized the qualitative responses from the PRQ into new or existing theme categories. Specifically, a coding of a "1" indicated that the response was identical to a *Diagnostic and Statistical Manual of Mental Disorder* (4th ed.; *DSM-IV*; APA, 1994) symptom or functional problem on the PRQ and a "2" represented a response similar to a *DSM-IV* symptom or functional problem on the PRQ. Responses were coded "3" if they described a new phenomenon not already captured by a symptom or functional problem on the PRQ.

Responses receiving a "1" or a "2" were also coded with as many corresponding symptoms/functional problems from the PRQ as appropriate. For example, a response of "always bothered his brother" received a "2," and was coded as corresponding with "disruptive or bothersome to sibling." A response of "was distracted and didn't listen during class" received a "2" and was coded with one symptom and one functional problem: "easily distracted" and "has difficulty listening during class instruction." A response of "is in his or her own world" was coded "3" as the phenomenon was not captured by any of the symptoms or functional problems on the PRQ. Both research assistants independently coded each response. Interrater reliability for initial coding between the two research assistants was high ($r = .97$).

Stage 2: Final coding of qualitative responses into existing or new theme categories

Next, a panel of the two research assistants and a faculty member with a background in ADHD and cultural competency met to discuss discrepancies in coding and finalize all coded responses into "existing" or "new" theme. Specifically, each response was discussed by the panel and decidedly coded 1, 2, or 3 (see above for more description of numbered codes). All responses that decidedly corresponded with a symptom/functional problem were reviewed by the panel a final time to ensure appropriateness of coding. Interrater reliability for initial coding between the two research assistants and the final decisions made by the panel was high ($r_s = .94$ and $.96$, respectively). As seen in [Table 2](#), columns A and B display information about how many parents qualitatively provided responses corresponding to each functional problem on the PRQ. Specifically, column A displays how many parents provided a response corresponding to the functional problem (n , % of N); column B displays how many of these parents described the behavior as "pretty much or very much concerning" (n , % of parents who endorsed the behavior).

Table 2. Summary of Qualitative Responses Corresponding to an Original PRQ Behavior (i.e., Responses Receiving a "1" or a "2" Coding) and Quantitative Responses on PRQ.

	A	B	C	D
	Parents quantitatively endorsing (n, % of N)	Parents qualitatively endorsing as concerning (n, % of A)	Parents quantitatively endorsing (n, % of N)	Parents quantitatively endorsing as concerning (n, % of C)
School behaviors				
Had difficulty listening during class instruction ^a	31 (42%)	18 (58%)	51 (69%)	48 (94%)
Did not turn in completed schoolwork ^a	5 (7%)	4 (80%)	51 (69%)	47 (92%)
Had a disorganized or messy desk ^a	0 (0%)	0 (0%)	55 (74%)	53 (96%)
Had difficulty getting along with teacher ^a	1 (1%)	1 (100%)	56 (76%)	52 (93%)
Was disruptive or bothersome to peers ^a	24 (32%)	15 (63%)	59 (80%)	57 (97%)
Had difficulty effectively communicating with peers ^a	4 (32%)	2 (50%)	59 (80%)	57 (97%)
Was bossy when interacting with peers	0 (0%)	0 (0%)	28 (38%)	27 (96%)
Did not follow the rules of the game when interacting with peers	0 (0%)	0 (0%)	49 (66%)	46 (94%)
Had difficulty completing seatwork ^a	5 (7%)	4 (80%)	52 (70%)	50 (96%)
Performed poorly on schoolwork	0 (0%)	0 (0%)	44 (59%)	44 (100%)
Did not follow teacher instructions ^a	42 (57%)	25 (60%)	66 (89%)	64 (97%)
Frequently got into trouble ^a	1 (1%)	1 (100%)	49 (66%)	48 (98%)
Did not respect peers' personal space ^a	0 (0%)	0 (0%)	54 (72%)	51 (94%)
Had difficulty effectively working with peers in group ^a	8 (11%)	5 (63%)	60 (81%)	56 (93%)
Was unable to appropriately play with peers	0 (0%)	0 (0%)	46 (62%)	46 (62%)
Was ignored or rejected by peers ^a	5 (7%)	5 (100%)	54 (73%)	51 (94%)
Peer behaviors				
Was disruptive or bothersome to peers ^a	6 (8%)	4 (67%)	56 (76%)	49 (88%)
Had difficulty effectively communicating with peers ^a	5 (7%)	2 (40%)	51 (69%)	49 (96%)
Was bossy when interacting with peers	0 (0%)	0 (0%)	21 (28%)	20 (95%)
Did not follow the rules of the game when interacting with peers ^a	16 (22%)	14 (89%)	62 (84%)	58 (94%)
Did not respect peers' personal space ^a	0 (0%)	0 (0%)	49 (66%)	46 (94%)
Had difficulty effectively working with peers in group	2 (3%)	1 (50%)	52 (70%)	49 (94%)
Was unable to appropriately play with peers ^a	32 (43%)	26 (81%)	61 (82%)	60 (98%)
Was ignored or rejected by peers ^a	23 (31%)	19 (83%)	60 (81%)	58 (97%)
Home behaviors				
Did not follow parental instructions ^a	21 (33%)	14 (67%)	61 (82%)	57 (93%)
Had difficulty completing home routines/tasks ^a	6 (8%)	3 (50%)	58 (78%)	56 (97%)
Was disruptive or bothersome to siblings ^a	20 (27%)	13 (65%)	60 (81%)	51 (85%)
Created stress for parents ^a	1 (1%)	1 (100%)	59 (80%)	53 (90%)
Had difficulty completing homework ^a	20 (27%)	10 (50%)	55 (74%)	50 (91%)
Had difficulty getting along with parents	1 (1%)	1 (100%)	33 (45%)	31 (94%)
Had difficulty getting along with siblings ^a	3 (4%)	2 (67%)	50 (68%)	48 (96%)
Made home environment chaotic	0 (0%)	0 (0%)	39 (53%)	37 (95%)

Note. PRQ = Problem-Recognition Questionnaire.

^aIndicates that this behavior ultimately was chosen for base of an item on the ADHD-FX scale.

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Stage 3: Development of new themes

All responses decidedly coded "3" were examined by the panel to determine new phenomenon that had not already been captured by *DSM-IV* symptoms or items on the PRQ. Consistent with other qualitative research and examination of the current data distribution, themes that were identified repeatedly (i.e., by at least 10% of the sample; i.e., at least seven parents) were developed into new codes. Seven new themes emerged in total (see [Table 3](#)).

Table 3. Summary of Qualitative Responses Corresponding to New Qualitative Codes (i.e., Responses Receiving a "1" or a "2" Coding; N = 74).

Codes	A	B
	Parents qualitatively endorsing (n, % of N)	Parents qualitatively endorsing as concerning (n, % of A)
Doesn't participate in his or her surroundings; appears as if is in his or her own world ^a	16 (21%)	11 (69%)
Doesn't understand, follow, and/or respect the rules of the house, classroom, and/or society ^a	25 (34%)	24 (96%)
Doesn't respect/treat his or her things and/or materials well ^a	10 (14%)	4 (40%)
Doesn't respect others around him ^a	16 (22%)	16 (100%)
Needs more help and/or attention than other children ^a	14 (19%)	13 (93%)
Doesn't have good social skills; has a lack of social understanding ^a	18 (24%)	12 (67%)
Doesn't express and/or show his or her feelings in an appropriate way ^a	7 (10%)	5 (71%)

^aIndicates that this code ultimately was chosen for base of an item on the ADHD-FX scale.

^aIndicates that this code ultimately was chosen for base of an item on the ADHD-FX scale.

Stage 4: Initial coding of "3" responses into new themes

Next, each "3" response was coded with the seven new themes by two bilingual research assistants; interrater reliability for initial coding between the two research assistants was high ($r = .93$).

Stage 5: Final coding of "3" responses into new themes

Finally, the panel met to discuss discrepancies in coding of "3" responses and finalize all coded responses similar as described above. Interrater reliability for initial coding between the two research assistants and the final decisions made by the panel was high ($r_s = .94$ and $.99$, respectively). [Table 3](#) provides information about how many parents qualitatively provided responses corresponding to one of the seven new phenomenon codes.

Frequencies of Quantitative Responses

In addition to coding open-ended qualitative responses from the PRQ, researchers examined the frequency of quantitative responses on the PRQ. [Table 2](#) displays the frequencies in which parents endorsed each PRQ behavior (i.e., all *DSM-IV-TR* ADHD symptoms and eight functional problems from each setting) as present and concerning. Specifically, column C displays how many parents endorsed the PRQ behavior as present (n , % of N); column D displays how many of these parents indicated that the behavior they endorsed as present was

“pretty much or very much concerning” (*n*, % of parents who endorsed the behavior).

Scale Creation

Items were chosen for the ADHD-FX scale based on the qualitative and quantitative responses on the PRQ. Based on previous research utilizing qualitative data analysis, as well as examination of the current data distribution, items were chosen for the scale if they were endorsed by 10% of participants (i.e., at least seven parents) on the qualitative piece and/or two thirds of participants (i.e., at least 49) on the quantitative piece.

To best ensure that items were based on language that would be relevant and comfortable for parents at-risk for problem-recognition barriers, final wording was chosen based on the responses most often initiated on the qualitative piece of the PRQ. For example, the ADHD-FX item “doesn’t respect others around him (e.g., parents, siblings, and/or family members)” was created because similar wording frequently emerged in the qualitative responses related to the new theme of “respecting others.” In addition, wording was altered for items from the original PRQ if parental responses trended toward different grammar or vocabulary usage. For example, the PRQ item, “had difficulty following teacher instructions,” was worded on the ADHD-FX scale as “doesn’t pay attention to, follow, and/or obey teacher instructions” based on the numerous responses utilizing such wording. Instead of creating one language version and performing a back-translation process, items were simultaneously created in Spanish and English based on wording used in the Spanish and English PRQ responses.

Finally, to minimize confusion and time-length of the measure, it was decided that items would represent three impairment domains (home, school, and peer) but fall under two settings (school and home). The items related to peer impairment are asked in context of the school setting based on overlap that emerged in analysis of school and peer PRQ qualitative and quantitative responses. See the [appendix](#) for completed version of the ADHD-FX scale in Spanish and English.

Discussion

Overall, researchers were able to integrate quantitative and qualitative responses obtained from an at-risk community sample to develop the ADHD-FX scale: a culturally appropriate tool for assessing ADHD and related impairment in at-risk, school-aged children. Thirty-two items were developed for the ADHD-FX scale based on most common responses given from participants. Several items were based on functional impairment questions from the original PRQ, whereas several others were based on new phenomenon that was not captured in the original PRQ. The scale is available in Spanish and English and instructs parents to consider how much each item affects their child in his or her everyday life (from 0 = *not at all* to 3 = *a lot*). The scale can provide an overall impairment score, as well as subscale scores in the theoretically derived domains of academic, peer, and familial impairment. Sample items include the following: (child) "doesn't pay attention to, follow, and/or obey teacher instructions, is ignored, rejected, and/or teased by peers," and "doesn't effectively complete home routines/tasks (e.g., the morning routine, chores, etc.)."

The ADHD-FX is the only available brief, yet comprehensive measure assessing multiple domains of impairment shown to be relevant for children with ADHD, *especially* for populations at-risk for problem-recognition barriers, such as low-acculturated Latinos. In addition, to the authors' knowledge, this measure is the first of its kind that was constructed from a qualitative and quantitative investigation with a designated at-risk population. The innovative methodology employing language-free videos and qualitative and quantitative inquiry was utilized in an attempt to limit potential Eurocentric cultural biases and provide an uncensored voice for families to identify the most salient aspects of functional impairment related to ADHD and describe the constructs in their own words.

The ADHD-FX is intended to be used not only as a diagnostic tool but also as a method to conceptualize cases, guide culturally appropriate intervention, and measure treatment gains in the domains of academic, social, and familial impairment often experienced by children with ADHD and their families. As previously discussed, functional impairments related to academic, social, and familial

difficulties are often the most salient concerns for families presenting for ADHD services and thus should be used to inform treatment planning and goals. Given its relative brevity but comprehensive coverage of functional impairment, the ADHD-FX is a quick and easy tool that can be used to provide an initial view of impairment specific to each child, as well as measure meaningful improvement in relevant impairment throughout and following treatment. This measure would be a beneficial supplement to assessment of ADHD symptomatology with *any* family, but is *essential* when working with populations at-risk for problem-recognition barriers.

Limitations and Future Directions

The researchers attempted to minimize their influence on participants' qualitative responses in several ways, including the use of language-free video clips and inquiry of qualitative before quantitative responses. However, as is the case with all qualitative research, it is important to acknowledge the context of the researchers and research question to shed light on any unintentional influence the researcher team may have had on qualitative responses and analysis (Kuper, Reeves, & Levinson, 2008). The research team consisted of undergraduate and graduate research assistants and faculty at an urban, Catholic institution. All members of the field research team were proficient in both English and Spanish and predominantly Caucasian. As described previously, the research team formed a mutually beneficial collaboration with the congregation of the participants. The research team members had interacted with members of the congregation several times over the course of the academic year during various volunteer events at the churches. Participants were informed that the purpose of the study was to learn more about how Latino families think and feel about child behavior to improve mental health services for diverse families. It is possible that some participants felt obliged to provide certain responses to accommodate the aim of the study. It is also possible that researchers were inclined to code responses in a certain way given their investment in developing a culturally sensitive assessment measure. The research team met regularly during the course of the study to discuss such issues and minimize potential biases.

It was the intent of the researchers to devote the examination of the current study to one population particularly at-risk for problem-recognition barriers, with the hopes that the measure would ensure cultural-appropriateness in these families and eventually would prove culturally valid and generalizable to all families. Low-acculturated Latino families were selected as the target population for the current study, as this group faces several practical and cultural barriers to problem recognition (see introduction for review), and currently is one of the fastest growing ethnic minority groups in the United States ([Day, 2010](#)). To ensure that the ADHD-FX is appropriate for use with any family, examination of the measure's psychometric and cultural validity with Latinos and other diverse populations is a critical next step. Investigations should include families from various ethnic/cultural backgrounds, SES levels, and family structures (e.g., single-parent homes).

To translate the current study into improved mental health disparities, several steps need to be taken. As outlined in the introduction, unmet service need for diverse children with ADHD may in part be due to disconnect between available mental health services and diverse families' cultural worldviews ([Rothe, 2005](#)). Thus, researchers and clinicians alike must commit to utilizing this and other culturally appropriate methodologies when examining ADHD and service utilization with all diverse populations. In addition, as many children with different forms of psychopathology display difficulties beyond that of incapacitating symptoms that interfere with their social/emotional functioning and well-being ([Weisz & Kazdin, 2010](#)), functional impairment research should be expanded to individuals with other disorders, as well as individuals treated in other settings and with other treatment modules. In summary, thorough understanding of how diverse families conceptualize, recognize, and respond to intervention for functional impairment related to childhood psychopathology may be the key to providing culturally sensitive services and ultimately eliminating mental health disparities for diverse children in our country.

Appendix

ADHD-FX Scale



Child's birthdate:

 / /
 Month day year

Today's date:

 / /
 Month day year

Child's name:

Child's ethnicity:

Child's gender:

Child's school grade: Your name:

Your relation to child:

IMPORTANT NOTE! If this child is currently receiving medication for treatment of inattention and/or hyperactivity (e.g., Ritalin), please complete this measure about this child's behavior when he or she is NOT receiving medication. Thus, consider what your child behaved like before being placed on medication, when he or she does not receive the medication, or when the medication has worn off.

These ratings reflect the child's behavior when he or she has NOT received medication.

These ratings reflect the child's behavior when he or she HAS received medication.

The child does not receive medication.

Please describe things about this child's behavior that you like:

At home:	At school:	With peers:
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Please describe things about this child's behavior that you would like to see change:

At home:	At school:	With peers:
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Below are behaviors that some children may display or experience. For each behavior, please consider how much that behavior affects this child in his or her everyday life AT SCHOOL.

For example, consider #3. If this child *does* respect peers' personal space, and thus this behavior does not affect this child at all, circle a "0." If your child *does not* respect peers' personal space at school and this behavior affects this child a little, circle "1." If the behavior affects this child quite a bit at school, circle "2." If the behavior affects this child a lot at school, circle "3." If this question is not relevant or applicable, or you do not know the answer, circle "DK" for "don't know." Please try to answer all items.

School	How much does the behavior affect this child at school?				
	Not at all	A little	Quite a bit	A lot	Don't know
Behavior:					
1. Doesn't listen and/or pay attention during class instruction.	0	1	2	3	DK
2. Has a disorganized or messy desk.	0	1	2	3	DK
3. Doesn't respect peers' personal space.	0	1	2	3	DK
4. Doesn't understand, follow, and/or respect the rules of the classroom and/or society.	0	1	2	3	DK
5. Is ignored, rejected, and/or teased by peers.	0	1	2	3	DK
6. Doesn't effectively complete seatwork.	0	1	2	3	DK
7. Doesn't participate in his or her surroundings, appears as if is in his or her own world.	0	1	2	3	DK
8. Is distracting, disruptive, and/or bothersome to peers.	0	1	2	3	DK
9. Doesn't respect/treat his or her things and/or materials well.	0	1	2	3	DK
10. Needs more help and/or attention than other children.	0	1	2	3	DK
11. Doesn't pay attention to, follow, and/or obey teacher instructions.	0	1	2	3	DK
12. Doesn't respect others around him or her (e.g., teacher and/or classmates).	0	1	2	3	DK
13. Frequently gets into trouble.	0	1	2	3	DK
14. Doesn't effectively work with peers in a group.	0	1	2	3	DK
15. Doesn't express and/or show his or her feelings in an appropriate way.	0	1	2	3	DK
16. Doesn't get along with teacher.	0	1	2	3	DK
17. Doesn't have good social skills; has a lack of social understanding.	0	1	2	3	DK
18. Doesn't turn in completed schoolwork.	0	1	2	3	DK
19. Doesn't appropriately play with peers.	0	1	2	3	DK

Below are behaviors that some children may display or experience. For each behavior, please consider how much that behavior affects this child in his or her everyday life AT HOME.

Specifically, if the behavior does not affect this child at home, circle "0." If the behavior affects this child a little at home, circle "1." If the behavior affects this child quite a bit at home, circle "2." If the behavior affects this child a lot at home, circle "3." If this question is not relevant or applicable, or you do not know the answer, circle "DK" for "don't know." Please try to answer all items.

Home Behavior:	How much does the behavior affect this child at home?				
	Not at all	A little	Quite a bit	A lot	Don't know
20. Doesn't pay attention to, follow, and/or obey parental instructions.	0	1	2	3	DK
21. Doesn't effectively complete homework.	0	1	2	3	DK
22. Doesn't respect/treat his or her things and/or materials well.	0	1	2	3	DK
23. Is distracting, disruptive, and/or bothersome to siblings.	0	1	2	3	DK
24. Doesn't participate in his or her surroundings; appears as if is in his or her own world.	0	1	2	3	DK
25. Doesn't understand, follow, and/or respect the rules of the house and/or society.	0	1	2	3	DK
26. Creates stress for parents.	0	1	2	3	DK
27. Needs more help and/or attention than other children.	0	1	2	3	DK
28. Doesn't get along with and/or fights with siblings.	0	1	2	3	DK
29. Doesn't have good social skills; has a lack of social understanding.	0	1	2	3	DK
30. Doesn't effectively complete home routines/tasks (e.g., the morning routine, chores, etc.).	0	1	2	3	DK
31. Doesn't respect others around him or her (e.g., parents, siblings, and/or other family members).	0	1	2	3	DK
32. Doesn't express and/or show his or her feelings in an appropriate way.	0	1	2	3	DK

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References

- Abidin R. R. (1990). *Parenting Stress Index (PSI) manual*. Odessa, FL: Psychological Assessment Resources.
- Achenbach T. M., Rescorla L. A. (2001). *Manual for the ASEBA School—Age forms & profiles*. Burlington: Research Center for Children, Youth, & Families, The University of Vermont.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Anesko K. M., Schoiock G., Ramirez R., Levine F. M. (1987). The Homework Problem Checklist: Assessing children's homework difficulties. *Behavioral Assessment, 9*, 179-185.
- Arcia E., Fernández M. C. (2003). From awareness to acknowledgement: The development of concern among Latina mothers of children with disruptive behaviors. *Journal of Attention Disorders, 6*, 163-175.
- Bauermeister J. J., Matos M., Reina G., Salas C. C., Martínez J. V., Cumba1 E., Barkley R. A. (2005). Comparison of the DSM-IV combined and inattentive types of ADHD in a school-based sample of Latino/Hispanic children. *Journal of Child Psychology and Psychiatry, 46*, 166-179.
- Bird H. R., Andrews H., Schwab-Stone M., Goodman S., Dulcan M., Richters J., . . .Gould M. S. (1996). Global measures of impairment for epidemiological and clinical use with children and adolescents. *International Journal of Methods in Psychiatric Research, 6*, 295-307.
- Bronfenbrenner U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology, 22*, 723-742.
- Conners C. K. (2008). *Conners Comprehensive Behavior Rating Scale manual*. Toronto, Ontario, Canada: Multi-Health Systems.
- Cuéllar I., Arnold B., Maldonado R. (1995). Acculturation Rating Scale for Mexican Americans–II: A revision of the original ARSMA scale. *Hispanic Journal of Behavioral Sciences, 17*, 275-304.
- Day J. C. (2010). *National Population Projections*. Population Division, The U.S. Census Bureau. Retrieved from <http://www.census.gov/population/www/pop-profile/natproj.html>
Google Scholar

- DiPerna J. C., Elliott S. N. (1999). Development and validation of the academic competence evaluation scales. *Journal of Psychoeducational Assessment, 17*, 207-225.
- Espinosa G., Elizondo V. P., Miranda J. (2003). *Hispanic churches in American public life: Summary of findings (No. 2)*. Institute for Latino Studies, University of Notre Dame.
- Essau C. A., Groen G., Conradt J., Turbanisch U., Petermann F. (1999). [Frequency, comorbidity and psychosocial correlates of attention-deficit/hyperactivity disorder. Results of a Bremen adolescent study]. *Fortschritte Der Neurologie-Psychiatrie, 67*, 296.
- Fabiano G. A., Pelham W. E., Gnagy E. M., Waschbusch D. A., Lahey B. B., Chronis A. M., . . . Burrows-Maclean L. (2006). A practical measure of impairment: Psychometric properties of the Impairment Rating Scale in samples of children with attention deficit hyperactivity disorder and two school-based samples. *Journal of Clinical Child & Adolescent Psychology, 35*, 369-385.
- Gathje R. A., Lewandowski L. J., Gordon M. (2008). The role of impairment in the diagnosis of ADHD. *Journal of Attention Disorders, 11*, 529-537.
- Gerdes A. C., Lawton K. E., Haack L. M., Hurtado G. D. (2013). Assessing ADHD in Latino families: Evidence for moving beyond symptomatology. *Journal of Attention Disorders, 17*, 128-140.
- Gerdes A. C., Lawton K. E., Haack L. M., Schneider B. W. (2013). *Latino parental help seeking for childhood ADHD*. Administration and Policy in Mental Health and Mental Health Services Research (2013), 1-11, doi 10.1007/s10488-013-0487-3.
- Gordon M., Antshel K., Faraone S., Barkley R., Lewandowski L., Hudziak J. J., . . . Cunningham C. (2006). Symptom versus impairment: The case for respecting DSM-IV's Criterion D. *Journal of Attention Disorders, 9*, 465-475.
- Graetz B. W., Sawyer M. G., Baghurst P. (2005). Gender differences among children with DSM-IV ADHD in Australia. *Journal of the American Academy of Child and Adolescent Psychiatry, 44*, 159-168.
- Gresham F. M., Elliott S. N. (2008). *Social Skills Improvement System: Rating scales*. Bloomington, MN: Pearson Assessments.
- Haack L. M., Gerdes A. C. (2011). Functional impairment in Latino children with ADHD: Implications for culturally appropriate conceptualization and measurement. *Clinical Child and Family Psychology Review, 14*, 318-328.
- Haack L. M., Schneider B. W., Gerdes A. C. (2011, April). Conceptualizing ADHD across cultures: development and validation of the BIV and

- PRQ. Poster presented at the conference of the Wisconsin Psychological Association, Madison, WI.
- Harter S. (1982). The perceived competence scale for children. *Child Development, 53*, 87-97.
- Hodges K. (1994). *The Child and Adolescent Functional Assessment Scale. Ypsilanti: Department of Psychology, Eastern Michigan University.*
- Knight G. P., Gonzales N. A., Saenz D. S., Bonds D. D., Germán M., Deardorff J., . . . Updegraff K. A. (2009). The Mexican American Cultural Values Scale for adolescents and adults. *The Journal of Early Adolescence, 30*, 444-481.
- Kuper A., Reeves S., Levinson W. (2008). Qualitative research: An introduction to reading and appraising qualitative research. *British Medical Journal, 337*, 404-407.
- Lawton K. E., Gerdes A. C., Haack L. M., Schneider B. W. (2012). Acculturation, cultural values, and Latino parental beliefs about the etiology of ADHD. *Administration and Policy in Mental Health and Mental Health Services Research, 41*, 189-204.
- Lee S. S., Humphreys K. L. (2011). Assessment of attention deficit hyperactivity disorder in young children. In Evans S. W., Hoza B. (Eds.), *Treating attention deficit hyperactivity disorder* (pp. 2-24). Kingston, NJ: Civic Research Institute.
- Loue S., Sajatovic M. (2008). Research with severely mentally ill Latinas: Successful recruitment and retention strategies. *Journal of Immigrant and Minority Health, 10*, 145-153.
- Matheny A. P., Wachs T. D., Ludwig J. L., Phillips K. (1995). Bringing order out of chaos: Psychometric characteristics of the Confusion, Hubbub, and Order Scale. *Journal of Applied Developmental Psychology, 16*, 429-444.
- US Department of Health and Human Services, & National Institutes of Health Outreach Notebook Committee. (2002). Principal Investigator's Outreach Notebook. For the inclusion, recruitment, and retention of women and minority subjects in clinical research.f
- Padilla A. M., Medina A. (2001). Issues in culturally appropriate assessment. In Suzuki L. A., Ponterotto J. G., Miller P. C. (Eds.), *Handbook of multicultural assessment: Clinical, psychological, & educational applications* (2nd ed., pp. 29-45). San Francisco, CA: Jossey-Bass.
- Pelham W. E., Fabiano G. A., Massetti G. M. (2005). Evidence-based assessment of attention deficit hyperactivity disorder in children and adolescents. *Journal of Clinical Child & Adolescent Psychology, 34*, 449-476.

- Pelham W. E., Gnagy E. M., Greiner A. R., Waschbusch D. A., Fabiano G. A., Burrows-MacLean L. (2010). Summer treatment programs for attention-deficit/hyperactivity disorder. In Weisz J. R., Kazdin A. E. (Eds.), *Evidence-based psychotherapies for children and adolescents* (2nd ed., pp. 277-294). New York, NY: Guilford Press.
- Rothe E. M. (2005). Considering cultural diversity in the management of ADHD in Hispanic patients. *Journal of the National Medical Association, 91*, 175-235.
- Schneider B. W., Gerdes A. C., Haack L. M., Lawton K. E. (2013). Treatment dropout in parent training interventions for families of school-aged children with ADHD. *Child & Family Behavior Therapy, 35*, 144-169.
- Shelton K. K., Frick P. J., Wootton J. (1996). Assessment of parenting practices in families of elementary school-age children. *Journal of Clinical Child Psychology, 25*, 317-329.
- Smith B. H., Barkley R. A., Shapiro C. J. (2006). Attention-deficit/hyperactivity disorder. In Mash E. J., Barkley R. A. (Eds.), *Treatment of childhood disorders* (3rd ed., pp. 65-136). New York, NY: Guilford Press.
- Steidel A. G. L., Contreras J. M. (2003). A New Familism Scale for use with Latino populations. *Hispanic Journal of Behavioral Sciences, 25*, 312-330.
- U.S. Census Bureau. (2010, November 24). *Ethnicity: Information on Hispanic subgroups* (Original work published March 2, 2004). Retrieved from https://ask.census.gov/app/answers/detail/a_id/308/*/ethnicity%3A-information-on-hispanic-subgroups
- Weeks A., Swerissen H., Belfrage J. (2007). Issues, challenges, and solutions in translating study instruments. *Evaluation Review, 31*, 153-165.
- Weisz J. R., Kazdin A. E. (2010). *Evidence-based psychotherapies for children and adolescents* (2nd ed.). New York, NY: Guilford Press.
- Willcutt E. G. (2012). The prevalence of DSM-IV attention-deficit/hyperactivity disorder: A meta-analytic review. *Neurotherapeutics, 9*, 490-499.
- Willcutt E. G., Nigg J. T., Pennington B. F., Solanto M. V., Rohde L. A., Tannock R., ... Lahey B. B. (2012). Validity of DSM-IV Attention Deficit/Hyperactivity Disorder Symptom Dimensions and Subtypes. *Journal of Abnormal Psychology, 121*, 991-1010.
- Yancey A. K., Ortega A. N., Kumanyika S. K. (2006). Effective recruitment and retention of minority research participants. *Annual Review of Public Health, 27*, 1-28.

Yeh M., McCabe K., Hough R. L., Lau A., Fakhry F., Garland A. (2005). Why bother with beliefs? Examining relationships between race/ethnicity, parental beliefs about causes of child problems, and mental health service use. *Journal of Consulting and Clinical Psychology, 73*, 800-807.