4-2020

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Journal of Child and Family Studies, Vol. 29, No. 4 (April 2020): 1108-1122. DOI.

Family Functioning in Latinx Families of Children with ADHD: The Role of Parental Gender and Acculturation.

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Abstract

Objectives:

It has been well-established that parents of children with ADHD report significantly higher levels of parenting stress and home chaos, and lower levels of parental efficacy than parents of children without ADHD. Unfortunately, most of the extant ADHD literature has focused on European American children

and families, resulting in a paucity of research focusing on ethnic minority families of children with ADHD. The current study aimed to expand what is known about Latinx parents of children with ADHD by exploring contextual and cultural factors, such as parental gender and acculturation, which may account for variations in parenting experiences within this population.

Methods:

The present study utilized secondary data analysis to analyze ratings of parenting stress, home chaos, and parental efficacy among a sample of Latinx mothers and fathers of children with ADHD (n= 46 dyads).

Results:

Results indicated that Latinx mothers of children with ADHD reported higher levels of parenting stress than Latinx fathers of children with ADHD; however, no significant parental gender differences were found in ratings of parental efficacy or home chaos. Additionally, several significant relationships were found between parental acculturation and family functioning variables.

Conclusions:

Latinx families of children with ADHD are an understudied and underserved population within the field of clinical psychology. The current study provides critical information on Latinx family functioning within the context of ADHD treatment, specifically pertaining to the complex interplay of parenting and acculturation variables.

Keywords:

ADHD, Latinx families, Parental gender, Acculturation, Mental health disparities

It has been well-established that the type, frequency, and severity of a child's Attention-Deficit/Hyperactivity Disorder (ADHD) symptoms can be a significant source of stress for parents, particularly for parents of children who exhibit more disruptive, externalizing behaviors (Graziano et al. [45]; Theule et al. [86]). To date, much of the literature on ADHD has focused on European American families, resulting in a paucity of research on ethnic minority families of children with ADHD, specifically among Latinxs (Huey and Polo [59]). This is concerning from a public health perspective, given the most current U.S. Census projections indicate that Latinx children will comprise one-third of all U.S. children by the year 2035 and approximately 28% of the total U.S. population by 2050 (Colby and Ortman [27]). Research demonstrates that Latinx children are diagnosed with ADHD at rates that are significantly lower than those of European American children (Alegría et al. [4]; Bauermeister [14]; Morgan et al. [75]). Furthermore, recent findings have suggested that in comparison to their European American counterparts, Latinx children's ADHD symptoms may have a greater impact on their families due to a variety of sociodemographic factors (Hinojosa et al. [54]; Hinojosa et al. [55]).

As defined in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM–5*; American Psychiatric Association [7]), ADHD is a mental health disorder characterized by persistent, pervasive, impairing, and developmentally excessive levels of hyperactivity, impulsivity, and/or inattention. Epidemiological research demonstrates that ADHD is one of the most commonly diagnosed mental health disorders among children (Merikangas et al. [73]). While estimates vary, the 2016 National Survey of Children's Health (NSCH) indicated that 8.4% of U.S. children aged 4–17 in the U.S. have a

diagnosis of ADHD (Danielson et al. [30]). When left untreated, children with ADHD continue to experience symptoms of the disorder, as well as significant academic, occupational, social, and familial difficulties throughout the course of their childhood and adolescence and into adulthood (Biederman et al. [20]).

Parent management training continues to be considered the preeminent evidence-based psychosocial treatment for ADHD, a treatment where parents are taught specific skills and behavior modeling techniques in order to better manage their child's behaviors (Evans et al. [37]; Martinez and Eddy [71]). It is notable that understanding different family contexts and their impact on developmental trajectories for children with ADHD is pivotal to the success of behavioral interventions, given that parents are considered to be the agents of their children's behavioral change (Deault [33]; Haack et al. [52]; Heath et al. [53]). Therefore, it is critical to understand patterns of pre-treatment parental/family functioning to ensure that parents are able to maximize benefits of treatment and to optimally tailor behavioral interventions to meet parents' needs.

As Johnston and Mash ([61]) contend, one well-accepted sequela of ADHD in children is increased parenting stress. Abidin ([1]) conceptualized parenting stress as the mismatch between perceived demands of parenting and available resources to meet those demands. In accordance with this conceptualization, a wealth of research over the past twenty-five years consistently finds that parents of children with ADHD report significantly higher levels of parenting stress than parents of children without ADHD (Anastopoulos et al. [8], [9]; Heath et al. [53]; Johnston and Mash [61]; Theule et al. [86]). According to Abidin ([2]), parenting stress is theorized to originate from the interactions between parent, child, and environmental characteristics. Although all parents experience parenting stress to some degree, parents who experience parenting stress at consistently elevated levels may suffer psychologically and be less able to implement interventions to help their children (Heath et al. [53]; Kazdin [64]; Theule et al. [86]). With regard to parental gender differences in parenting stress, a meta-analysis by Theule et al. ([86]) concluded that mothers and fathers of children with ADHD report the same amount of parenting stress overall. However, the meta-analysis indicated that relative to fathers, mothers tend to endorse experiencing greater stress related to factors within their child (e.g., "My child turned out to be more of a problem than I expected"), in addition to total life stress. Greater severity of ADHD symptomatology and ADHD subtypes involving hyperactive and/or impulsive behaviors also have been found to be associated with greater levels of parenting stress (Theule et al. [86]; Weinberger et al. [89]).

There is limited existing research on the sociodemographic correlates of parenting stress among parents of children with ADHD (i.e., parental ethnicity, age, family size). It has been found that parents of children with ADHD from lower socioeconomic status (SES) groups consistently report greater levels of parenting stress than parents of children from higher SES backgrounds (Baldwin et al. [12]); however, this is a relationship that remains unclear and merits further exploration (see Johnston and Mash [61]). In comparison to European American parents of children with ADHD, ethnic minority parents of children with ADHD have been shown to experience greater parental strain, a construct similar to parenting stress (Hinojosa et al. [54]). It also is notable that parenting stress is a particularly important construct to study among Latinx parents in light of the host of additional environmental stressors that they may be facing, such as acculturative stress and discrimination (Lorenzo-Blanco et al.

[69]; Parra-Cardona et al. [77]). However, given the lack of research that has been conducted with Latinx parents of children with ADHD, it is unknown if Latinx parents report similar rates of parenting stress to those of other ethnicities, particularly among those from lower SES backgrounds.

Another key component of family functioning is parental efficacy, which has been broadly defined as a parent's beliefs about their confidence and competence in carrying out parenting tasks (Cohen et al. [26]; Heath et al. [53]). Previous research has established that parents of children with ADHD have a lower sense of parental efficacy and consistently report feeling more frustrated, worried, upset, worn out, and helpless than parents of children without ADHD (Primack et al. [80]). Given that parents are considered to be the primary agents of change in behavioral parent training interventions for ADHD (Haack et al. [52]), it is critical to understand the role of parental efficacy in these interventions (Gerdes et al. [40]). Past research in this area has indicated that parental efficacy poses a significant influence on parents' perceived ability to implement skills learned in an ADHD parent training intervention into their parenting practices, which in turn enables a parent to promote positive behavior changes for their children (Heath et al. [53]). Moreover, parental efficacy has been found to be an important moderator of treatment success for behavioral parent training for ADHD (Primack et al. [80]). Taken together, these findings underscore the need for collecting pre-treatment ratings of parental efficacy, in addition to positively improving and maintaining efficacy in parents of children with ADHD throughout treatment.

A small body of research has examined the sociodemographic correlates of parental efficacy. With regard to differences based on ethnicity, mothers of ethnic minority children with ADHD were found to report greater parental efficacy than mothers of European American children with ADHD within a treatment-seeking sample (Weinberger et al. [89]). Previous research has also noted significant parental gender differences in reports of parental efficacy, with mothers of children with ADHD reporting lower parental efficacy than fathers of children with ADHD (Gerdes et al. [40]). A review by Jones and Prinz ([62]) suggested that parental efficacy may act as a compensatory factor for mothers and as a protective factor for fathers of children with mental health disorders. More specifically, the authors theorized that among fathers who face parenting a child with challenging behaviors, fathers with higher perceived self-efficacy are protected against experiencing more anxiety than fathers who are less confident in their parenting abilities. However, it is possible that the gender differences noted in this domain also may be due to a potential third variable, such as the degree of parental involvement with the child. This confound may be particularly relevant to Latinx families, given research findings that Latinx mothers tend to be more involved in their school-aged children's daily lives than Latinx fathers (Hossain et al. [58]). To date, no research has examined pre-treatment perceptions of parental efficacy in a clinical sample of Latinx parents of children with ADHD.

Home chaos is a multidimensional construct that is typically characterized by features such as high levels of noise and distractions in the home setting, human crowding and traffic, low levels of predictability in the environment, and lack of family routines (Matheny et al. [72]). Chaos is a component of family functioning that is associated with a variety of negative cognitive and developmental outcomes for children, particularly when there is a lack of routine and structure in the home setting (Deater-Deckard et al. [32]; Dush et al. [35]; Martin et al. [70]; Valiente et al. [87]). With regard to its influence on parenting, past research indicates an association between more negative

parenting practices and parenting stress among parents residing in environments high in home chaos (Dumas et al. [34]; Valiente et al. [87]). Furthermore, findings from a study by Deater-Deckard et al. ([31]) suggest that the negative consequences of chronic home chaos on cognitive regulation of attention and memory may not be limited to children, and likely extend to mothers and fathers, particularly those from lower SES backgrounds. Recent studies have found that families of children with ADHD report greater levels of chaos in the home than families of children without ADHD and that chaos in the home is related to problem behavior in children, over and above inefficacious parenting (Coldwell et al. [28]; Mokrova et al. [74]; Wirth et al. [91]).

Although it has been reported that ethnic minority and immigrant children are more likely to experience chaos in the home, the conceptualization and influence of home chaos may vary substantially across ethnic groups (Weisner [90]). Indeed, environments that are deemed developmentally deleterious and chaotic based on Eurocentric criteria may not necessarily be understood as such for Latinx families. The extant literature in this area suggests that Latinx families may experience differing pathways to the development of home chaos than those of other ethnic minority groups. For instance, results from a study by Haack et al. ([49]) demonstrated that Latinx families who were more acculturated to Anglo culture experienced greater acculturation stress, which is theorized to lead to more conflict and chaos within the family. Furthermore, the same study found that Latinx parents who reported higher levels of chaos in the home were more likely to report clinically elevated levels of externalizing behaviors in their children. However, there is no research to date that examines chaos in the home within a sample of Latinx families of children with ADHD.

Acculturation is a key component in understanding experiences of Latinx parents. For most immigrants, a process of acculturation occurs upon arrival in a new country or cultural context (Schwartz et al. [83]). One of the most widely cited theories of acculturation is Berry's bi-dimensional model, which focuses on acculturation at the individual level (Berry [15]). According to this model, an individual's level of acculturation can be measured according to two dimensions: their orientation toward their own group and maintenance of their heritage culture, and their orientation toward other groups and preference for engaging with the new culture (Berry [18]). Importantly, these dimensions are not static, nor are they mutually exclusive from one another. As Berry ([17]) contends, individuals who maintain their native cultural identity through language, behavior, and cognitions while simultaneously developing a positive relationship and involvement with the culture of the receiving society would be considered bicultural. Biculturalism is a construct formally conceptualized by LaFromboise et al. ([67]), and a wealth of research over the past several decades has deemed it to be the most adaptive and "optimal" phase of the acculturation process as it pertains to mental health outcomes for youth and adults (Berry [16], [19]). Ultimately, it is important to recognize that acculturation is a multifaceted process that is affected by multiple variables, such as one's socio-economic status, geographic location, macro-level events (e.g., immigration-related legislation, political climate) that can compromise, alter, or accelerate the acculturation process (Lopez-Class et al. [68]).

Recent research has led to mixed findings with regard to the impact of parental acculturation status on children's mental health treatment outcomes (Ho et al. [56]; Kim et al. [65]) and treatment engagement (Kapke and Gerdes [63]). A few studies have examined family functioning, incidence of psychopathology, and mental health problem recognition as a correlate of acculturation among youth

from immigrant families. While findings are not consistent, most studies demonstrate that higher child U.S. acculturation and/or greater discrepancies in U.S. acculturation between children and parents (generally reflecting greater child acculturation compared to parent acculturation) are associated with compromised parent-child relationships (Schwartz et al. [83]). Additionally, preliminary data from a study by Haack et al. ([51]) found that Latinx parents' ratings of increased heritage culture retention and low mainstream U.S. acculturation were predictive of the occurrence of psychopathology among Latinx youth.

With regard to the influence of acculturation on mental health problem recognition, a study by Schmitz and Velez ([82]) found that Latinx mothers of children with ADHD at varying levels of acculturation differentially assess specific symptoms of ADHD. Their findings demonstrated that Latinx mothers of children with ADHD who were more oriented to mainstream U.S. culture endorsed greater hyperactivity in their children, and that these differences varied based on Latinx origin. Specifically, Mexican American and Puerto Rican mothers were more likely than Mexican mothers to report that their children demonstrated impulsive behaviors. However, no research to date has explored the role of parental acculturation on parenting/family functioning in a sample of Latinx parents of children with ADHD.

The current study seeks to build upon recent research on ADHD among Latinx children and their families by exploring contextual and cultural factors, such as parental gender and acculturation, which may account for variations in parenting experiences among Latinx parents of children with ADHD. The study makes a new contribution to what is known about family functioning within families of children with ADHD, as little research has examined these variables within an exclusively Latinx sample. The current study first aims to contribute to the limited knowledge base by examining descriptive statistics for parenting/family functioning and acculturation variables among a sample of treatment-seeking Latinx families of school-aged children who have been clinically diagnosed with ADHD (Aim 1). Similar to findings from research on European American and other ethnic minority parents of children with ADHD (Baker [11]; Jones and Prinz [62]; Theule et al. [86]), it is hypothesized that Latinx mothers will report higher levels of parenting stress and lower parental efficacy relative to Latinx fathers. The role of parental gender on ratings of home chaos will be explored as there is insufficient previous research to support a prediction at this time (Aim 2). Finally, the current study aims to explore the relationships among parental acculturation and maternal and paternal ratings of parenting stress, parental efficacy, and home chaos, which have not yet been explored in the extant literature (Aim 3).

Method

Participants

The current study utilized a secondary data analysis of 46 families who participated in a larger research study comparing parent training interventions for Latinx families of school-aged children with ADHD in a moderate-sized, urban, Midwestern city (see Gerdes et al. [41]). Inclusion criteria for the larger study included child age between 5–13 years, ADHD diagnosis, child and parent self-identification as Latinx. Parents were also required to speak Spanish, currently live with the child and agree to participate in an eight-week parent training intervention. Exclusion criteria included child behaviors consistent with

Intellectual Disability, Autism Spectrum Disorder, and/or a psychotic disorder. Participants were recruited from local schools, community centers, and via word-of-mouth referrals.

Forty-six mothers and 46 fathers (*n* = 92) completed measures utilized in the present study at the time of the initial assessment. The majority of parents in the sample were born outside of the continental United States (91% of mothers and 96% of fathers) and most had obtained a secondary school education (41% of fathers; 33% of mothers). Among parents who were born outside of the continental U.S., a majority had resided in the country for over ten years (67% of mothers, 89% of fathers). As measured on the Hollingshead Four Factor Index of Social Status (Hollingshead [57]), the majority of families fell in the lower end of SES (*M* = 23.03, SD = 9.75). With regard to child demographic characteristics, all children self-identified as Latinx and were diagnosed with ADHD by a research team of clinical psychology graduate students and a faculty expert on childhood ADHD as a part of the larger study. Thirty-four children were male and 12 were female; all ranged in age from 5–13 years (*M* = 8.13, SD = 2.68). See Table 1 for further parent/child demographic and diagnostic information.

Table 1. Child and parent demographic variables

Child age, M (SD)	8.13 (2.68)
Child gender, n (%)	
Male	34 (73.9%)
Female	12 (26.1%)
Child ADHD subtype, n (%)	
Inattentive	22 (47.8%)
Hyperactive-Impulsive/Combined	24 (52.2%)
Mother age, M (SD)	35.43 (5.37)
Father age, M (SD)	39.48 (7.69)
Mother time in US, n (%)	
Born in U.S.	4 (8.7%)
6–10 years in U.S.	11 (23.9%)
More than 10 years in U.S.	31 (67.4%)
Father time in US, n (%)	
Born in U.S.	2 (4.3%)
6–10 years in U.S.	3 (6.5%)
More than 10 years in U.S.	41 (89.1%)
Mother country of origin, n (%)	
Mexico	37 (80.4%)
Puerto Rico	1 (2.2%)
Other	8 (17.4%)
Father country of origin, n (%)	
Mexico	38 (82.6%)
Puerto Rico	4 (8.7%)
Other	4 (8.7%)
Mother educational attainment	
Middle school (4–6th grade)	8 (17.4%)
Secondary school (7th–9th grade)	15 (32.6%)
Some high school (10th or 11th grade)	4 (8.7%)

Graduated high school or completed GED	9 (19.6%)
Some college or specialized training	8 (17.4%)
Standard college or university graduation	2 (4.3%)
Father educational attainment[a]	
Less than 4th grade	3 (6.5%)
Middle school (4–6th grade)	5 (10.9%)
Secondary school (7th–9th grade)	18 (39.1%)
Some high school (10th or 11th grade)	5 (10.9%)
Graduated high school or completed GED	9 (19.6%)
Some college or specialized training	4 (8.7%)
Family SES, M (SD)	23.03 (9.75)
Marital status, n (%)	
Married or cohabitating	37 (80.4%)
Single, separated, divorced, or widowed	9 (19.6%)

n= 138 (46 mothers, 46 fathers, 46 children) [a]Missing data for 2 fathers

Procedure

After gaining institutional review board approval to conduct the larger study, the study's team screened potential families to determine their eligibility in accordance with the aforementioned inclusion/exclusion criteria. Once eligibility was determined, a comprehensive, multimodal, multi-informant ADHD assessment was conducted at a university-based clinic or local cultural community center, depending on the family's preference. Consent from parents and teachers and assent from children was obtained prior to beginning the assessment.

During the assessment, a graduate student clinician conducted a clinical interview with the child, parent(s), and primary teacher; interviews were conducted in Spanish or English depending on the interviewee's preference. The primary parent and teacher also completed the Disruptive Behavior Disorder (DBD) Rating Scale (Pelham et al. [79]), a parent and teacher-report measure of the DSM symptoms of ADHD, Oppositional Defiant Disorder, and Conduct Disorder, and the ADHD-FX Scale (Haack et al. [48]), a parent and teacher-report measure of functional impairment commonly experienced by youth with ADHD. Additionally, the Spanish translation of the Disruptive Behavior Disorders (DBD) Structured Parent Interview, a diagnostic interview aimed at diagnosing ADHD and common comorbid disorders in children, was administered to parents (Gerdes et al. [42]; Pelham [78]). Final diagnostic decisions were made by a licensed clinical psychologist and graduate student clinicians based on all assessment information.

As part of the assessment, parents also completed measures in Spanish assessing their baseline parenting/family functioning and level of acculturation, which are described in more detail below and comprise the analyses of the present secondary data analysis. Each family and teacher received a gift card as compensation following completion of the process described above.

Measures

Demographic Form

Parents completed a demographic form in Spanish that served to gather demographic information about participating children and parents.

DBD Rating Scale

The DBD Rating Scale was completed by the primary caregiver and primary teacher as a part of each child's ADHD assessment (Gerdes et al. [42]; Pelham et al. [79]). It consists of 45 items that are rated on a 4-point scale, ranging from 0 = "not at all present" to 4 = "very much present." For purposes of the current study, a mean was computed for the nine inattentive items and the nine hyperactive/impulsive items, with higher scores representing greater symptomatology in those domains. Previous research demonstrates sound psychometrics for the original English version (completed by teachers; Pelham et al. [79]) and the Spanish translation of the measure (completed by parents; Gerdes et al. [43]). In the current study, the measure displayed excellent reliability for parent reports of inattention and hyperactivity/impulsivity (Cronbach's αs = 0.93 and 0.90, respectively) and good reliability for teacher reports of inattention and hyperactivity/impulsivity (Cronbach's αs = 0.82 and 0.83, respectively).

ADHD-FX Scale

The Spanish version of the ADHD-FX Scale, a parent and teacher-report measure of functional impairment commonly experienced by youth with ADHD, was completed by the primary caregiver and primary teacher as a part of the assessment (Haack et al. [48]). The parent portion consists of 32 items across the domains of home and school (e.g., "Doesn't pay attention to, follow, and/or obey parental instructions"), and the teacher portion consists of 19 items in the school setting (e.g., "Doesn't participate in his/her surroundings, appears as if in his/her own world"). Items are rated on a 4-point scale, ranging from 0 = "not at all" to 4 = "a lot." The measure is normed for youth aged 5 to 15 years and has demonstrated high levels of internal consistency, test–retest reliability, convergent construct validity, and universal cultural properties (Haack et al. [48], [46], [50]). In the current study, the measure displayed excellent reliability for parent-reported home impairment (α = 0.97) and teacher-reported school impairment (α = 0.93).

DBD Structured Parent Interview

The Spanish version of this semi-structured interview consists of 44 items based on ADHD, ODD, and CD symptoms from the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV-TR*; APA [6]; Gerdes et al. [42]; Pelham [78]). As a part of the intake process, parents were asked to rate their child's typical behavior in regard to the individual symptoms broken down by setting or situation by using a rating scale of 0 = "not a problem" to 3 = "severe problem." Past research demonstrates sound psychometric properties for the Spanish translation of this measure (Gerdes et al. [42]).

Parenting Stress Index-4-Short Form

The Spanish version of the PSI-4-SF, a parent-report measure of parenting stress, was completed by mothers and fathers individually at pre-treatment (**PSI-4-SF**; Abidin [3]). It consists of 36 items (e.g., "My child makes more demands on me than most children") rated on a 5-point Likert scale, ranging from "strongly agree" to "strongly disagree." The total parenting stress score was examined, with higher scores indicating greater levels of parenting stress (i.e., scores falling in the ≥85th–89th

percentile range indicate an elevated level of parenting stress; scores falling in the ≥90th percentile range indicate a clinically significant level of parenting stress). Sound psychometrics have been reported for the Spanish translation (Kim et al. [65]). The PSI demonstrated excellent reliability for mothers (α = 0.91) and fathers (α = 0.93) in the present study.

Parenting Sense of Competence Scale

Mothers and fathers completed the Spanish version of the Parenting Efficacy subscale of the PSOC, a parent-report measure of parental efficacy, at pre-treatment (**PSOC**; Johnston and Mash [60]). Parents rated the seven items (e.g., "I honestly believe I have all the skills necessary to be a good parent to my child") that comprise this subscale on a 6-point Likert scale, ranging from "strongly agree" to "strongly disagree." A mean score was computed, with higher scores suggesting higher perceived parental efficacy (i.e., total score of ~1-2 = "not efficacious," total score ~3-4 = "efficacious," total score ~5-6 = "very efficacious"). Good internal consistency and validity have been reported for the Spanish translation (Haack et al. [49]), and the PSOC demonstrated good reliability for mothers (α = 0.82) and acceptable reliability for fathers (α = 0.77) in the current study.

Confusion, Hubbub, and Order Scale

The Spanish version of the CHAOS, a parent-report measure of chaos in the home, was completed by mothers and fathers at pre-treatment (**CHAOS**; Matheny et al. [72]). Parents rated 15 items (e.g., "The atmosphere in your home is calm") on a 6-point scale, ranging from 1 ("strongly agree") to 6 ("strongly disagree"). All items were summed, with higher scores indicating greater reported chaos in the home (i.e., total score ~15–30 = low level of chaos, total score ~31–54 = mild level of chaos, total score ~55–74 = moderate level of chaos, total score ~75–90 = high level of chaos). Haack et al. ([49]) reported good reliability and validity for the Spanish translation of this measure. In the current study, the CHAOS demonstrated acceptable reliability for mothers (α = 0.79) and good reliability for fathers (α = 0.82).

Acculturation Rating Scale for Mexican Americans-II

The Spanish version of the ARSMA-II is a 30-item self-report measure completed individually by mothers and fathers at pre-treatment (**ARSMA-II**; Cuéllar et al. [29]). The ARSMA-II measures an individual's level of behavioral acculturation by measuring their Mexican orientation (Mexican Orientation Scale [MOS]) and Anglo orientation (Anglo Orientation Subscale [AOS]). The measure consists of items that assess for language preference and use as well as ethnic identification; each item is rated on a 5-point Likert scale, with higher scores indicating greater orientation to either Anglo or Mexican/Latinx culture. The MOS and AOS subscales have demonstrated good internal reliabilities (α = 0.88 and 0.83, respectively) (Cuéllar et al. [29]). In an effort to make the measure more appropriate for use with a wider Latinx population, researchers have modified the ARSMA-II by substituting "Latino" for "Mexican" or "Mexican American" and have demonstrated that the adapted measure maintains its original psychometric properties (Steidel and Contreras [84]). In the current study, the measure displayed acceptable reliability for the MOS subscales for mothers (α = 0.77) and fathers (α = 0.75). The measure also demonstrated good reliability for the AOS subscales for mothers (α = 0.86) and fathers (α = 0.83).

Mexican American Cultural Values Scale for Adolescents and Adults

The Spanish version of the MACVS, a 50 item self-report measure of cultural value orientation and cognitive acculturation, was completed individually by mothers and fathers at pre-treatment (**MACVS**; Knight et al. [66]). It is comprised of two subscales: Mainstream Values (MV) and Mexican American Values (MAV; hereafter referred to as LV, Latinx Values). Items are rated on a 5-point Likert scale, ranging from 1 "not at all" to 5 "completely believe," with higher scores indicating greater orientation to Mainstream cultural values (e.g., material success, independence and self-reliance) or traditional Latinx cultural values (e.g., *familismo, respeto*, religiosity). Strong psychometrics for the Spanish translation have been demonstrated (Knight et al. [66]). Similar to the ARSMA-II, the MACVS was originally developed for Latinxs of Mexican American heritage; however, researchers have since modified the measure to widen its applicability by substituting "Latino" or "Latino American" for "Mexican," which demonstrated convergent validity based on factor structure (Calzada et al. [23]; Santiago et al. [81]). In the current study, the MV subscale demonstrated adequate reliability for mothers ($\alpha = 0.66$) and good reliability for fathers ($\alpha = 0.88$). Additionally, the LV subscale demonstrated good reliability for mothers ($\alpha = 0.85$) and fathers ($\alpha = 0.89$).

Data Analyses

During data collection, all parent and child measures were completed and returned to research staff who were present during completion; therefore, missing data were minimal. If an item was unintentionally left blank, the measure was promptly returned to the parent/child for completion.

Prior to conducting the primary analyses regarding parental gender differences, a series of preliminary correlations were conducted between key demographic variables (i.e., child age and gender, family SES), outcome variables (i.e., parenting variables) and potential correlates (i.e., acculturation variables) to determine if any covariates needed to be controlled for in the primary analyses. To explore Aim 1, means and standard deviations for maternal and paternal reports of parenting/family and acculturation variables were examined, in addition to key demographic variables from parents and children in the sample (e.g., parent educational background, SES, ADHD subtype). In order to examine parental gender differences on ratings of parenting/family functioning variables (Aim 2), a series of paired samples t-tests were conducted. Next, a series of correlations were conducted to explore the associative relationships between parenting/family functioning and parental acculturation (Aim 3). Finally, the authors planned to conduct as many follow-up multivariate regression analyses as possible given two or more statistically significant correlations between each respective parental acculturation and parenting/family functioning variable.

Results

Preliminary Analyses

A series of preliminary correlations were conducted between demographic and outcome variables in order to determine the necessity of controlling for demographic variables in the primary analyses. A few significant correlations emerged. Specifically, family SES was negatively correlated with maternal ratings of Latinx orientation, ($r = -0.35$, $p = 0.02$) and positively correlated with maternal ratings of Anglo orientation, ($r = 0.48$, $p = 0.001$), which were controlled for in subsequent analyses. No significant relationships emerged for child age or gender.

Descriptive Analyses of Parenting/Family Functioning and Parental Acculturation (Aim 1)

In accordance with the first aim of the present study, descriptive analyses were conducted to examine mothers' and fathers' reports of parenting/family functioning and acculturation experiences. With regard to parenting/family functioning experiences, both mothers and fathers in the current sample reported moderate levels of parenting stress (*M* = 87.11; *M*= 80.02, respectively), indicated feeling efficacious as parents, (*M* = 4.12; *M*= 4.31, respectively), and reported mild levels of chaos in the home (*M* = 42.48; *M*= 41.91, respectively). With respect to ratings of acculturation, both mothers and fathers in the current sample were more oriented to traditional Latinx culture (*M* = 4.38; *M*= 4.16, respectively) than Anglo culture (*M* = 2.45; *M*= 2.61, respectively). Similarly, both mothers and fathers rated their cultural values as being more aligned with traditional Latinx values (*M* = 3.93; *M*= 4.05, respectively) than mainstream U.S. values (*M* = 2.85; *M*= 3.15, respectively). See Table 2. Follow-up correlational analyses revealed one significant relationship; specifically, family SES was positively correlated with paternal ratings of parental efficacy, (*r*= 0.30, *p*= 0.04). No significant relationships emerged for child age or gender.

Table 2 Parenting/family and acculturation variables: descriptive statistics and paired-samples T-tests

Parenting	**M (SD)**	**Range**	**t**
Parenting stress			
Mother	87.11 (18.12)	50.00–130.00	3.15**
Father	80.02 (20.26)	37.00–124.00	
Parental efficacy			
Mother	4.12 (0.79)	1.86–5.43	−1.51
Father	4.31 (0.78)	2.43–5.57	
Home chaos			
Mother	42.48 (10.37)	20.00–65.00	0.38
Father	41.91 (11.41)	19.00–66.00	
Acculturation			
Latinx orientation			
Mother	4.38 (0.52)	2.75–5.00	2.82**
Father	4.16 (0.55)	2.47–5.00	
Anglo orientation			
Mother	2.45 (0.85)	1.31–4.77	−1.05
Father	2.61 (0.83)	1.62–5.00	
Latinx values			
Mother	3.93 (0.40)	3.14–4.78	−2.03*
Father	4.05 (0.44)	3.08–5.00	
Mainstream U.S. values			
Mother	2.85 (0.50)	2.00–3.93	−2.56*
Father	3.15 (0.74)	1.43–4.71	

n= 92 (46 mothers; 46 fathers) *$p \leq 0.05$; **$p \leq 0.01$

Parental Gender Differences on Parenting/Family Functioning Variables (Aim 2)

A series of paired-samples t-tests were conducted in order to examine differences in ratings of parenting stress, parental efficacy, and home chaos according to parental gender. A significant difference was found between maternal (*M* = 87.11, SD = 18.12) and paternal (*M* = 80.02, SD = 20.26) ratings of parenting stress, $t(45) = 3.15$, $p = 0.003$. In accordance with guidelines set by Cohen ([25]), the effect size of this difference was medium (Cohen's $d = 0.37$). No significant parental gender differences emerged in ratings of parental efficacy, $t(45) = -1.51$, $p = 0.14$. This pattern of findings remained the same after controlling for family SES as a potential covariate. A paired-samples t-test also was conducted to examine the relationship between parental gender and ratings of home chaos, which was not found to be significant, $t(45) = 0.38$, $p = 0.70$. See Table 2.

Relationships between Parental Acculturation and Parenting/Family Functioning Variables (Aim 3)

In order to examine the final exploratory question regarding the relationship between parental acculturation and parenting/family functioning variables, a series of correlational analyses were conducted. Maternal ratings of Latinx values were significantly correlated with paternal ratings of home chaos ($r = 0.36$, $p = 0.01$). Additionally, paternal ratings of Latinx orientation, Latinx values, and mainstream U.S. values were significantly correlated with maternal ratings of home chaos ($r = 0.37$, $p = 0.01$; $r = 0.38$, $p = 0.008$; $r = 0.34$, $p = 0.02$, respectively). See Table 3.

Table 3 Correlations of parental acculturation with parenting/family functioning variables

	Maternal parenting stress	**Maternal parental efficacy**	**Maternal home chaos**	**Paternal parenting stress**	**Paternal parental efficacy**	**Paternal home chaos**
Maternal						
Latinx orientation	−0.03	−0.10	0.00	−0.07	−0.06	0.02
Anglo orientation	−0.04	0.01	0.17	0.00	0.01	−0.11
Latinx values	0.06	0.13	0.18	0.21	−0.27	0.36*
Mainstream U.S. values	0.02	−0.02	0.14	−0.04	−0.14	0.14
Paternal						
Latinx orientation	0.11	−0.19	0.37**	−0.07	−0.05	0.08
Anglo orientation	−0.02	0.15	−0.26	−0.06	0.27	−0.15
Latinx values	0.20	0.05	0.38**	0.17	0.02	0.16
Mainstream U.S. values	0.17	0.14	0.34*	0.20	0.15	0.20

$n = 46$ *$p \leq 0.05$; **$p \leq 0.01$

Based on these significant correlations, a multiple linear regression analysis was conducted to predict maternal chaos ratings based the aforementioned significant paternal acculturation variables. Indeed, maternal ratings of home chaos was the only outcome variable that had more than one significant

predictor; thus, it was the only outcome that was able to be analyzed utilizing a regression analysis. The overall regression was significant, $F(3, 42 = 4.27$, p =0.01), R^2 = 0.234. To assess the contributions of individual predictors, the t-statistics for the partial regression slopes were examined. The proportions of variance uniquely explained by each of these predictors were as follows: sr^2 = 0.26 for paternal Latinx orientation, sr^2 = 0.16 for paternal Latinx cultural values, and sr^2 = 0.11 for paternal mainstream U.S. values. None of the predictors were significantly predictive of maternal ratings of home chaos; however, paternal Latinx orientation was found to be approaching significance, t(45) = 1.96, p = 0.06. See Table 4.

Table 4 Summary of multiple linear regression analysis predicting maternal perceptions of home chaos

Source	B	SE (B)	β	t	p	sr^2
Paternal Latinx orientation	5.20	2.66	0.28	1.96[a]	0.06	0.26
Paternal Latinx values	4.93	4.16	0.21	1.19	0.24	0.16
Paternal mainstream U.S. values	2.01	2.45	0.14	0.82	0.42	0.11

n = 46 [a]$p \leq 0.10$

Discussion

The goals of the current study were to explore cultural and contextual factors (i.e., gender and acculturation) that may affect parenting/family functioning among Latinx parents of children diagnosed with ADHD. With regard to parenting/family functioning variables, parents generally reported moderate parenting stress, feeling efficacious as parents, and mild home chaos. Descriptive statistics of the current sample indicated that the majority of participating families were from low-SES backgrounds, primarily of Mexican descent, and more acculturated to traditional Latinx culture than mainstream U.S. culture. Although significant gender differences emerged for ratings of parenting stress, there were no significant differences between maternal and paternal ratings of parental efficacy or chaos in the home. Several significant correlations emerged between acculturation and parenting/family functioning variables. Taken together, these findings highlight some of the unique experiences of Latinx families of children with ADHD that may affect experiences in mental health treatment and strategies for future interventions.

Descriptive analyses revealed that Latinx parents in the current study reported moderate parenting stress, feeling efficacious as parents, and mild levels of home chaos. These results are significant in that they extend what is known about Latinx families of children with ADHD, as the extant research in this area has primarily examined European American families. It appears that Latinx parents in the current study endorsed experiencing parenting stress at rates that were lower or similar to those of European American parents of children with ADHD (Theule et al. [86]). Given that most parents in the current sample were from low-SES backgrounds, this result contradicts past research findings, which have suggested that parents of children with ADHD from low-SES backgrounds are more likely to endorse experiencing greater parenting stress than those from families from middle or high-SES backgrounds (Baldwin et al. [12]).

Past research examining European American parents of children with ADHD has demonstrated that these parents tend to feel frustrated, worn out, and helpless as the result of their children's ADHD symptoms (Primack et al. [80]). Notably, as a group, the Latinx parents in the current study endorsed

feeling efficacious in their role as parents. This is consistent with Weinberger et al.'s ([89]) study finding that mothers of ethnic minority children with ADHD reported greater parental efficacy than mothers of European American children with ADHD. Lastly, as evidenced by the correlation between paternal reports of parental efficacy and family SES, there are likely additional contextual factors that played a role in the current sample of Latinx parents' ratings of parental efficacy, especially among fathers. Indeed, Jones and Prinz ([62]) theorized that among lower-SES families, a parent's sense of efficacy of may trigger those who feel more efficacious in their role as parents to act in more proactive ways to decrease potential negative effects of environmental risk on their children's development and well-being (e.g., seeking out mental health care services, community resources). Recent research has indicated that cultural values, such as *familismo* and *machismo*, remain important for Latinx fathers because they are linked to behaviors that encourage the fulfillment of family roles (Cabrera and Bradley [21]). Thus, it is plausible that among Latinx fathers, being gainfully employed and able to provide for their families would lead to a sense of satisfaction in fulfilling a culturally sanctioned gender role, which in turn may lead to greater parental efficacy. Indeed, these findings suggest that clinicians should aim to build upon Latinx families' strengths and resiliency to foster greater parental efficacy in the context of mental health treatment.

Finally, Latinx parents in the current sample endorsed experiencing mild levels of chaos in the home, which is partially supported by past research. While past research has demonstrated that parents of children with ADHD tend to endorse experiencing higher levels of chaos in the home (Wirth et al. [91]), it is important to note that much of this research has focused on European American and other non-Latinx ethnic minority families. In fact, the only study to date that aimed to explore home chaos among "ethnically diverse" parents of children with ADHD utilized a sample that was comprised of fewer than 5% Latinx families (Deater-Deckard et al. [31]). This is important to note as existing literature has suggested there may be differing pathways to the development of home chaos for Latinx families than families of other ethnic minority groups (Haack et al. [49]). It also is critical to reiterate that the negative impact and perceived influence of chaos in the home may not hold true for Latinx families, given the Eurocentric criteria that has been utilized to measure chaos in the home (Weisner [90]). Therefore, the fact that Latinx parents in the current study merely endorsed experiencing mild levels of home chaos largely fits with previous theory in this area. Nonetheless, the applicability and measurement of chaos in the home among culturally diverse individuals is an area of the literature that merits future explanation.

Descriptive data also demonstrated that Latinx parents in the current sample reported being more acculturated to Latinx culture than mainstream U.S. culture. More specifically, both mothers and fathers in the current sample reported greater traditional Latinx cultural orientation and greater identification with Latinx values relative to Anglo orientation and mainstream U.S. values on measures of behavioral and cognitive acculturation, respectively. These findings are interesting given results from a recent study which found that Latinx parents' heritage retention paired with low mainstream U.S. acculturation was predictive of the occurrence of child psychopathology (Haack et al. [51]). Therefore, the current study is an important extension of past findings, as it demonstrates the applicability of these findings specifically to Latinx parents of children with ADHD. Future research may consider comparing these acculturation variables between samples of Latinx parents of children with

and without ADHD, in addition to exploring child acculturation as a potential moderator of these relationships.

The primary hypothesis that Latinx mothers would report significantly higher levels of parenting stress relative to Latinx fathers was supported. This is an important extension of findings from the meta-analysis by Theule et al. ([86]), which concluded that mothers and fathers of children with ADHD report similar levels of total parenting stress; however, in comparison to fathers, mothers of children with ADHD tend to endorse experiencing greater life stress in addition to more stress related to parenting a difficult child. In the current sample, Latinx mothers reported greater levels of parenting stress when collapsed across domains (i.e., parental distress, parent-child dysfunction, difficult child) in comparison to Latinx fathers. This suggests that there may be differing pathways to the experience of parenting stress for Latinx mothers, especially for those who have limited financial and psychological resources to meet the needs of their child (Nomaguchi and House [76]).

Furthermore, in light of traditional Latinx cultural values that place a greater burden on mothers' caregiving responsibilities (Barker et al. [13]), it is unsurprising that Latinx mothers of children with ADHD would be more likely to report higher levels of parenting stress relative to Latinx fathers. Despite these important findings, many questions remain unanswered regarding the contextual underpinnings of parenting stress for Latinx parents of children with ADHD. Future research should not only continue to explore these relationships, but also should examine ways to mitigate the negative impacts of parenting stress for Latinx parents, particularly mothers, in a culturally-sensitive manner within a clinical context. With regard to broad implications for ADHD treatment, past research has suggested an inverse relationship between parenting stress and social support (Theule et al. [85]). Clinicians may consider facilitating social connections among parents participating in a group-based parent training intervention in order to foster greater social support within the group, and/or encourage parents to utilize existing support networks in an effort to lessen their overall parenting stress.

Surprisingly, the primary hypothesis that Latinx mothers would report significantly lower levels of parental efficacy than Latinx fathers was unsupported. This prediction was made based on a review by Jones and Prinz ([62]), which presented findings suggesting gender differences on ratings of parental efficacy among ethnic minority parents. There are several possible explanations for this non-significant finding. For instance, past research has argued that ethnic minority parents' sense of efficacy may be influenced by additional variables, such as parental involvement (Jones and Prinz [62]) and perceived marital support (Cohen et al. [26]). This is important to note given that the current sample was comprised of Latinx mothers and fathers who were jointly involved in their child's mental health treatment; therefore, it is logical that these parents would feel equally efficacious in their parenting roles and supported by one another. Additionally, it is important to note that no research to date has explored the potential influences of traditional cultural values (i.e., *machismo* and *marianismo*) on parental efficacy among Latinx parents, which also could have influenced the results of the current study (i.e., fathers who endorse high *machismo* may be more likely to endorse high parental efficacy); this is a relationship that merits future exploration.

The examination of parental gender differences in ratings of home chaos was exploratory given a lack of previous research in this area. No significant parental gender differences emerged in ratings of home chaos within the current sample. This is significant given the lack of past research on parental

gender differences in ratings of home chaos, and indicates that, at least in the current study, Latinx mothers and fathers are generally equally attuned to levels of chaos in the home setting. While this finding is inherently significant, future research should continue to explore the role of home chaos among Latinx families of children with ADHD, and clinicians should continue to discuss the role of the home setting within the context of parent training interventions. Furthermore, future investigators should consider evaluating the cultural salience and relevance of measuring chaos in the home for Latinx families, ideally with a larger sample size than the present study.

A few significant correlations emerged between acculturation and parenting/family functioning variables. Specifically, paternal ratings of Latinx orientation, Latinx values, and mainstream U.S. values were significantly positively correlated with maternal ratings of home chaos, suggesting that as fathers demonstrated greater bicultural orientation, mothers reported more chaos in the home. It is possible that the relationship between Latinx fathers' acculturation levels and Latinx mothers' ratings of chaos in the home could potentially be accounted for by considering the factors of paternal employment outside of the home, maternal childcare responsibilities, and the availability of additional family member caregiving support. As previously mentioned, the majority of Latinx fathers in the current sample were employed outside of the home, while significantly fewer Latinx mothers were employed outside of the home. When considering the influence of employment on Latinx mothers' parenting and acculturation, it is important to recognize that many of the Latinx mothers in the current sample may or may not have had additional caregiving support from other family members. Past research suggests that the number of individuals who are available to assist with childcare in the home influences perceived home chaos, a finding that is maintained cross-culturally (Wachs and Çorapçi [88]). Additionally, Haack et al. ([49]) posited that greater U.S. acculturation is related to higher home chaos in Latinx families, likely resulting from higher levels of other stressors in the home setting, such as acculturative stress. Thus, it is possible that greater levels of paternal biculturalism in the current sample is indirectly related to greater levels of maternal perceived chaos in the home via higher levels of acculturative stress. In sum, this is a relationship that remains somewhat unclear, and it is evident that more research is needed in this area.

Limitations and Future Research Directions

Several limitations of the current study should be noted. As illustrated in Table 1, the current study was comprised of a relatively small, homogenous sample of Latinx families from a mid-sized Midwestern city. The size and homogeneity of the current sample may in turn limit the generalizability of the findings to Latinx parents from other geographic areas, of varying SES backgrounds, and/or differing levels of acculturation. Therefore, future studies should aim to recruit samples that are larger and more representative of the composition of the U.S. Latinx population overall. Future research may also benefit from the inclusion of a non-Latinx comparison group to further contextualize findings. Another limitation of the current study relates to children's demographic characteristics; the low number of girls with ADHD who participated in the study limited the ability to analyze the role of child gender as a predictor of family functioning outcomes. Given the limited information on the effects of child gender on parental efficacy or home chaos, this is an area that merits further exploration in future research, especially as past research indicates child gender is a significant moderator of parenting stress and help-seeking behaviors among parents of children with ADHD (Eiraldi et al. [36]; Theule et al. [85]).

An additional limitation of the present study was that it exclusively utilized self-report measures of parenting/family functioning, which may be problematic for certain constructs that are socially stigmatized (e.g., low parental efficacy, high home chaos). Therefore, future studies should consider incorporating multimodal forms of assessing parenting/family functioning to determine if the current pattern of findings remains consistent. Future investigators could consider implementing cross-sectional reports within each dyad of Latinx parents of children with ADHD. Alternatively, future studies could utilize direct clinical observations of parenting behaviors and parent-child interactions to obtain more objective measures of parenting/family functioning.

A final factor that should be noted is the present study's utilization of a sample of Latinx parents who actively pursued mental health treatment for their child's ADHD, which can simultaneously be understood as a strength and limitation. As previously noted, the present study is the first of its kind to examine parenting/family functioning and acculturation variables in a treatment-seeking sample of Latinx parents, which is of utmost importance given past findings that contextual factors can moderate the success of behavioral interventions for ADHD (Deault [33]). However, many unknowns remain regarding Latinx parents of children with ADHD who do not actively seek out mental health treatment for their child. It is plausible that parenting/family functioning and acculturation may differ among these families who are not self-referred, given the degree of self-efficacy and understanding of formal mental health systems that is necessary to pursue and participate in parent training interventions for ADHD. This is important in light of past findings that Latinx parents are typically motivated to seek help for their child's ADHD, but relatively few possess adequate knowledge about effective treatments for the disorder and its etiology (Gerdes et al. [44]). Thus, more research is needed on Latinx parents who engage in mental health interventions based on different referral sources (i.e., self-referred, school-referred, court-mandated) to determine potential differences in acculturation and family functioning (see Cauce et al. [24]; Yeh et al. [92]). From a mental health disparity framework, developing a more a nuanced understanding of these relationships will likely improve recruitment strategies and treatment retention rates for Latinx families of children with ADHD, which has been identified as an area of needed research attention in previous literature (Haack et al. [47]). In turn, this will help mitigate existing cultural and contextual barriers that limit many Latinx families' ability to access and engage in treatment interventions.

Despite these limitations, the current study has several important implications for informing the existing body of research on Latinx family functioning. The current study is the first of its kind to provide descriptive statistics for parenting/family functioning and acculturation variables among a treatment-seeking sample of Latinx parents of children with ADHD; this serves as an important extension of Eiraldi et al. ([36]) model of help-seeking behaviors for ethnic minority families of children with ADHD. Additionally, the relatively large sample of Latinx fathers is an important strength of the current study, given that Latinx fathers are often underrepresented in mental health research (Cabrera et al. [22], [21]) and that fathers of children with ADHD are generally less likely than mothers to participate in behavioral parent training interventions (Fabiano [38]). Moreover, it is notable that the parents in the current sample brought several strengths to treatment, such as mild home chaos, relatively moderate parenting stress, and feeling efficacious in their parenting roles. This suggests that Latinx parents in the current sample possessed a great deal of resilience despite environmental adversities, which is a common theme demonstrated in past research among Latinx families; this has

been theorized to originate from traditional Latinx cultural values, such as *personalismo* and *familismo* (Fuller and García Coll [39]).

In light of the present study's findings, there are several ways that future clinical researchers may consider studying the importance of cultural and contextual factors within the context of mental health interventions for Latinx families. For instance, recent studies have noted preliminary evidence of beneficial treatment outcomes for Latinx families in parent training programs when clinicians explicitly incorporate discussions of stressors that many Latinx parents may experience related to their cultural experiences with raising their child in the United States (Alvarado and Modesto-Lowe [5]; Barker et al. [13]; Parra-Cardona et al. [77]). Indeed, the current study's findings suggest that future researchers should continue to systematically explore the treatment implications of various factors, such as Latinx mothers' elevated parenting stress, the potential discrepancies in acculturation between mothers and fathers, the relationship between economic stress, cultural values, and paternal parental efficacy, among others (i.e., immigration status, language barriers, gender norms; Araujo et al. [10]; Barker et al. [13]). Finally, the current study poses significant implications for future research that aims to mitigate existing Latinx mental health disparities. It is evident from years of research findings that the success of parent training interventions for ADHD is often highly dependent upon a variety of familial, cultural, and contextual factors. With a more holistic understanding of these parenting/family functioning variables, it is likely that researchers and clinicians will be more able to develop appropriate intervention strategies and adapt existing interventions to better meet Latinx families' mental health needs.

Compliance with Ethical Standards

Conflict of Interest

The authors declare that they have no conflict of interest.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the Institutional Review Board at Marquette University and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The present study is a secondary data analysis of a larger study which was approved by the Marquette University Institutional Review Board.

Informed Consent

Informed consent/assent was obtained from all individual participants included in the study.

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