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Child-rearing routines among Mexican-heritage children with autism spectrum disorder

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Abstract

This study examined the daily routines and activities of Mexican-heritage mothers and their children with autism spectrum disorder. Experienced sampling methods were used to capture families' current daily routines and activities, how parents valued those activities, and whether the activity was part of the child's autism spectrum disorder intervention. A total of 32 mothers were texted five times per day over five consecutive days for a total of 721 observations. Mothers frequently engaged in Self-Care (e.g. showering), General Caregiving (e.g. cooking), and House Chores (e.g. laundry). Children engaged in activities in which interventions could easily be integrated (e.g. Academics, Self-Care, and Playing with Others). Families spent less than one-third (26.1%) of their activities participating in interventions. Mothers and children jointly spent time in General Caregiving, Playing with Others, and Using Electronics. Practitioners should focus on integrating evidence-based interventions into daily joint routine activities.

Keywords

autism spectrum disorder, daily activities, experienced sampling methods, immigrant families, interventions

Autism intervention programs are designed to ameliorate deficits related to a child's autism spectrum disorder (ASD). ASD-related services may include speech and language instruction, occupational therapy, physical therapy, applied behavior analysis (ABA), and psychological evaluations (Autism Speaks, 2010). These therapies have been validated and found efficacious in the form of Naturalistic Developmental Behavioral Interventions (NDBIs) implemented in the child's natural environment (i.e. the home) with trained clinicians implementing child-led activities, utilizing natural rewards, and a variety of behavioral strategies and supports to teach children developmentally appropriate skills (Schreibman et al., 2015). Randomized trials of early intervention (EI) programs have shown that children who participate in quality autism interventions early make gains in social, communicative, and adaptive domains, and these gains last over time (Dawson & Burner, 2011; Estes et al., 2015; Sallows & Graupner, 2005; Vismara & Rogers, 2010). Children with ASD who do not receive early interventions, or who receive it later in development, have suboptimal outcomes (Rogers, 1996).

In order for NDBIs to be most effective in optimizing children's outcomes, parents must be active participants in the implementation of these treatments (Wallace & Rogers, 2010). In fact, recent randomized control studies of NDBIs have shown that including a parent coaching component to the intervention accelerates children's developmental trajectories (Dawson et al., 2010; Kasari et al., 2014; Wetherby et al., 2014). Although there is no consensus on the intensity of these interventions, the National Research Council recommends intervention 5 h a day, 5 days a week. Less intervention can be effective if parents actively participate as co-therapists (Zwaigenbaum et al., 2015). Little is known about how parent participation in NDBIs differs among immigrant Mexican-heritage families. In this study, we examined the daily routines and activities of Mexican-heritage families and their children with ASD. We utilized a strength-based perspective to identify mothers' and children's independent common daily routines and activities. We also explored the common joint activities of mothers and their children with ASD and how mothers valued those activities. The purpose of this descriptive analysis was to gain an emic

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understanding of the daily routines and activities that occupy the lives of Mexican-heritage families and their children with ASD. Researchers can use this information to adapt standardized NDBIs to be culturally responsive and individually meaningful to some Mexican-heritage families.

Parent involvement in ASD treatment

Although research has shown that parent participation in behavioral interventions promotes positive child outcomes and increases parental empowerment (Dunlap, Newton, Fox, Benito, & Vaughn, 2001; Magaña, Lopez, & Machalicek, 2017; Solish & Perry, 2008; Tincani, Travers, & Boutot, 2009), there exists a lack of consensus in the field regarding how parents should be involved in ASD treatment. Solish and Perry (2008) sought to understand how 48 diverse parents were involved in their child's ASD treatment. Parent engagement involved activities such as how effectively parents communicated and collaborated with intervention staff, how effectively they implemented the child's individual program, and how they managed the child's behavior to be consistent with the clinician's approach. Parents with a higher level of autism knowledge, more self-efficacy, and beliefs in the benefits of intensive behavioral intervention were more likely to be involved in their child's intervention. In another study, Zamora, Harley, and Hudson (2016) aimed to assess outcomes for the The Incredible Years parent intervention program among seven Latino families whose children have autism. They found that by adapting the intervention (e.g. providing live coaching, reinforcing social skills prior to discipline strategies), parents reported high levels of satisfaction with the training. Parent participation measures included engagement with materials, active participation in the program, and the ability to ask clarifying questions, all of which were highly employed by parents (Zamora et al., 2016). A review by Goldman and Burke (2017) examined parent training programs that measured parents' engagement in school (e.g. active involvement in the Individualized Education Program (IEP) meeting; (Goldman & Burke, 2017). Similarly, Zwaigenbaum et al. (2015) reviewed 24 studies of children with ASD aged 3 years or younger and enrolled in early intervention. Parents were involved in utilizing intervention techniques with the child and collaborating with clinicians.

Previous studies, examining parent involvement in their child's education, have found that ASD treatment protocols are more efficacious when parents actively participated as clinicians developing individualized goals, implementing interventions, or reinforcing skills outside of intervention hours (Burrell & Borego, 2012; Kasari, Gulsrud, Paparella, Hellemann, & Berry, 2015; Matson, Mahan, & Matson, 2009; McConachie & Diggle, 2007; Nevill, Lecavalier, & Stratis, 2018; Smith & Iadarola, 2015; Zwaigenbaum et al., 2015). For example, parent involvement in ASD treatment improved the generalizability of skills and increased the amount of intervention the child received (Burrell & Borego, 2012). Less is known about how parent- and caregiver-mediated interventions are implemented within the homes of families from diverse racial, ethnic, and socioeconomic backgrounds. In one randomized control trial (RCT), Kasari and colleagues (2014) tested the efficacy of two interventions—caregiver-mediated module (CMM) and caregiver education module (CEM)—on a diverse sample of low-resourced families who cared for toddlers with ASD; 14.3% of the 112 participants in both intervention groups identified as Latino. The CMM provided 12 weeks of interventionist-modeled parent coaching sessions for 21 h per week. The CMM requires interventionists to help families create routines with the parents based on activities and routines already present in the home in order to create dyadic engagement. The CEM provided 2 h per week group sessions over 12 weeks of caregiver training in interventionist–parent sessions. Intervention topics included behavior management, communication skills, and routine building. Significant effects for joint engagement were found for both the CMM and the CEM; however, the CMM demonstrated higher levels of improvement and a significantly meaningful difference in joint engagement between the CMM and the CEM groups at the end of the study. In addition, both intervention groups showed significant improvements in initiating joint attention, with the CMM group exhibiting a small statistically significant effect size given their increase in initiating joint engagement. No significant racial or ethnic differences were found within the study sample. It is possible that sample sizes within racial and ethnic categories were too small in each treatment group to determine whether there were significant ethnic differences. More studies are needed to examine the specific types of ASD interventions that immigrant families utilize and the type of intervention activities that parents choose to facilitate.

There is reason to believe that Mexican-heritage families have distinct beliefs (Lopez & Magaña, 2018) about the parents' role in implementing ASD treatments for their children, which may impact intervention dosage (Lopez, Reed, & Magaña, 2019). For example, studies of Mexican-heritage families' socialization practices have shown that some Latino immigrant families have unique beliefs about the mother's role as compared to the teacher's role in educating the child (Chlebowski, Magaña, Wright, & Brookman-Frazee, 2018; Reese & Gallimore, 2000). The expectation is that parents assume the role of nurturer, whereas teachers assume the role of educator (Reese & Gallimore, 2000). Of the studies examining the efficacy of a parent coaching model in the implementation of NDBIs (Kasari et al., 2015; Kasari et al., 2014), there were too few

immigrant families included in the samples to examine parent coaching models by ethnicity. A Mexican-heritage mother may not feel comfortable educating her child with a standardized curriculum that utilizes scripts or requires a prescribed role as mediator. Research has signaled the need for strength-based intervention that capitalizes on Latina mothers' optimism toward developmental outcomes. In a study by Lopez and Magaña (2018), Latina mothers of children with autism experienced lower rates of pessimism concerning their child's future outcomes in comparison to White mothers. However, they posit that higher levels of optimism among Latina mothers, in addition to greater family burden (i.e. impact of disabilities on family), can lead to a larger amount of unmet need (i.e. services needed but not receiving; Lopez et al., 2019). Therefore, adapting intervention to capitalize on strengths within this community may aid in ameliorating the disproportionate levels of unmet need.

ASD treatment participation rates among Mexican-heritage families

Latino/Hispanic populations comprise 18% of the total US population, with 25% of the population under 18 years of age identified as Latino/Hispanic (U.S. Census Bureau, 2017). Within the Latino population, Mexican-heritage individuals make up the largest group (U.S. Census Bureau, 2010). Mexican-heritage children often have low ASD treatment participation rates and are at greater risk than White children for mental health problems such as more severe ASD symptoms (Zuckerman et al., 2017). In fact, race-based discrepancies persist in government spending of ASD-related services even 4 years after a State Senate Select Committee on autism was formed to address ethnic and racial spending discrepancies by the California Department of Developmental Services (CDDS). In the 2013 fiscal year, CDDS spent a total of US$9571 per Latino child, as compared to US$11,480 per White child (Leigh, Grosse, Cassady, Melnikow, & Hertz-Picciotto, 2016). These expenditure disparities are consistent with empirical studies showing that structural characteristics (e.g. socioeconomic status, race and ethnicity, and parents' education level) rather than symptom severity (e.g. behavioral problems) predict ASD service receipt (Durkin et al., 2010; Harstad, Huntington, Bacic, & Barbaresi, 2013).

Barriers to ASD services may include limited access to high quality diagnostic and referral programs such as developmental specialists (Liptak et al., 2008; Zuckerman et al., 2014), language barriers between service providers and families (Harstad et al., 2013; Lasky & Karge, 2011), and differences in parents' beliefs about how children learn and develop (Blacher, Cohen, & Azad, 2014; Cohen & Miguel, 2018). For example, a mother who describes her child as loving, affectionate, and empathic, characteristics that directly contradict traditional ASD definitions as per the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM*-V), may be apathetic to implementing ASD therapies that address symptoms of social and emotional reciprocity (Authors, 2018). These structural barriers and cultural differences are important to consider, given that the efficacy of autism interventions improve if treatments are implemented consistently over time, by knowledgeable, experienced, and trusted adults (Howard, Sparkman, Cohen, Green, & Stanislaw, 2005; Lovaas, 1987; Ramey & Ramey, 1999), and integrated into daily routines and family activities (Bernheimer & Weisner, 2007; Kashinath, Woods, & Goldstein, 2006; McWilliam, Casey, & Sims, 2009).

Understanding daily routines and activities

Historically, an ecocultural niche perspective has been used to observe the immediate social contexts and the daily interactions between children and their caregivers, including socioculturally diverse families and children with disabilities (Weisner, 1996, 2002; Weisner, Gallimore, & Jordan, 1988). According to Weisner (2002), "An ecocultural perspective takes account of ecological and institutional forces that impinge on the everyday activities of families by focusing on their impacts on the developmental niche and psychocultural worlds of parents and children" (p. 277). In the ecocultural niche, families' routines and activities serve to transmit their culture and measure how families adapt to various challenges (e.g. a child's disability). This framework also more broadly defines settings as the people involved in the child's life and how they relate to the child, the cultural models that dictate how one should behave in the setting, the specific tasks and activities present in the setting, and the cultural goals and beliefs of the participants.

Examining individuals' daily routines and activities introduces a measurable and observable process for understanding individuals' cultural beliefs about commonly vague phenomena (Weisner, 2002). For parents who rear children with an ASD, observing caregivers' daily behaviors—doing laundry, cooking dinner, and playing with their children—allows for the discovery of caregivers' cultural beliefs about unobservable phenomena like how children learn and develop or perceptions about the capacities of children with ASD. Considering daily routines and activities also allows researchers to understand the interdependence of children and parents within the family system (Bolger, Davis, & Rafaeli, 2003). In a study by Hughes-Scholes, Gavidia-Payne, Davis, and Mahar (2019), parents expressed concerns regarding how they might integrate interventions into their daily routines caring for their children with developmental disabilities. Caregivers found it difficult to carry out daily household tasks while also trying to integrate interventions into these daily activities (Hughes-Scholes et al., 2019). For sustainable implementation of naturalistic interventions, researchers and practitioners

must understand how family members work together within the daily household activities. Measuring daily routines and activities close to the moment in which they occur (e.g. a daily diary method) also avoids the problems associated with retrospection, because individuals are completing their diaries close to the actual time the event was experienced (Bolger et al., 2003).

For Mexican-heritage children and their families, limited research examines the daily routines and activities that support learning and development for children with ASD. Some studies have utilized cross-sectional research designs using survey data to examine the daily routines and activities that support Latino families who rear children with intellectual disabilities (Holloway, Domínguez-Pareto, Cohen, & Kuppermann, 2014). For example, Holloway and colleagues (2014) interviewed 145 Latino and non-Latino families who rear children with disabilities about the division of the household daily activities. Cluster analysis findings revealed that mothers from lower income families engaged in more child-centered activities (e.g. playing with the child) and household activities (e.g. cooking, cleaning) than their spouses. Other studies have examined the parenting practices of Mexican-heritage parents rearing typically developing children (Livas-Dlott et al., 2010). For example, Livas-Dlott and colleagues (2010) utilized daily ethnographic observations of 24 Mexican-heritage families to categorize parenting practices based on emotional warmth or harshness. Findings revealed that mothers typically used verbal commands rather than inductive reasoning to attain compliance with their children (Livas-Dlott et al., 2010). These compliance strategies were implemented in an affective tone within supportive activities (e.g. mom and child playing together). In another study from which the current sample is drawn, Mexican-heritage mothers described their use of *amor* (love) and empathy to emotionally connect to their children with ASD (Cohen & Miguel, 2018). All of these studies are limited by design given their cross-sectional, retrospective nature, and their focus on participant reports. Family routines are often impacted by children with disabilities, even though children are socialized into them (Kashinath & Yu, 2018). The more we know about the daily activities and routines of Mexican-heritage families, the more effective interventionists can be in matching the "values, beliefs, and practices of the families they are meant to benefit" (Kashinath & Yu, 2018, p. 210).

Research questions

This study utilizes a daily diary method to understand the constellation of daily activities occurring in Mexican-heritage households among mothers, children with ASD, and jointly. To understand the ecocultural niche of Mexican-heritage families rearing children with ASD, we identified three research aims. The first aim was to identify the most frequent daily activities that occurred for mothers and their children with ASD. We also identified the most frequent ASD intervention activities of Mexican-heritage mothers and their children with ASD. Previous studies have found that Latino caregivers who rear children with disabilities are commonly mothers, who engage in household (e.g. doing laundry, cooking, cleaning) and child-centered activities (e.g. playing with the child; Holloway et al., 2014). Given these findings, we expected the common daily activities to include similar household and child-centered activities.

The second aim was to examine the relationship between the proportion of time mothers engaged in a specific activity and their perceived value of that activity (e.g. the importance of the activity). With regard to caregivers' assessment of these activities, given previous studies showing that Latino families have more positive perceptions and experiences caring for a child with ASD (Hastings & Taunt, 2002), we expected these mothers to have similar positive outlooks regarding common caregiving activities.

The third aim was to identify specific daily activities that were more likely to occur during times of the day in which ASD intervention occurred. We specifically identified the daily routines and activities in which ASD interventions were most often integrated. Given previous studies demonstrating that ASD interventions are effective when implemented in the child's natural environment (Schreibman et al., 2015), we expected participants in this study to report integrating autism interventions in their natural environment during their daily routines and activities. Few studies have examined how NDBIs are integrated into the daily caregiving routines of Mexican-heritage mothers. This study aims to address this gap.

Method

Participants

Participants ($N = 38$) were drawn from a larger four-phase study of Mexican-heritage families who rear children with ASD. Participants were recruited from two sources: (1) a private, non-profit regional center and (2) a medical clinic that provides ASD diagnostic services to immigrant families, located in a border city between the United States and Mexico. Each institution utilizes its own diagnostic protocols. The regional center conducts the Autism Diagnostic Observation Schedule (ADOS) assessment with contracted psychologists (Lord, Rutter, DiLavore, & Risi, 2008), and the medical clinic hires developmental-behavioral pediatricians to diagnose ASD. Families were eligible for the study if they self-identified as Latino and had a child with ASD. After Human Research Protection Program approval, eligible families received recruitment packets with a university recruitment letter describing the study and an opt-in card for potential participants to complete (it included a

space for them to fill in their name, phone number, and the best times to reach them). Interested parents completed and returned the cards in the attached stamped envelope.

Upon receipt of the opt-in card, researchers called the interested parent, determined eligibility and interest, and described this phase of the study. Of the 53 opt-in cards received, 15 individuals did not participate due to limited availability, disconnected or incorrect phone number, or no response. Approximately, 87% of the sample came from the regional center, and 13% of the sample came from the medical clinic.

Of the 38 total participants, the final sample for this study included 32 caregivers of children with ASD. Three participants were ineligible (e.g. they did not own a cell phone), and an additional three participants were excluded from data analysis due to a low response rate (<13.33%).

Mothers ranged in age from 24 to 53 years ($M = 36.09$). Children ranged in age from 3 to 15 years ($M = 6.09$). A majority of the participants were Mexican-heritage immigrant mothers living near border communities in Southern California ($N = 28$ were born in Mexico). The remaining participants were born in the United States and had at least one parent who was born in Mexico. The majority of our sample ($N = 20$) reported an income under US$35,000 a year. For comparison, the median annual household income for Latinos in California is US$47,180 (California Senate Office of Research, 2014). Previous studies have shown that socioeconomic status makes a difference in access to ASD interventions (Chaidez, Hansen, & Hertz-Picciotto, 2012; Durkin et al., 2010; Harstad et al., 2013). As Table 1 indicates, over 70% of the respondents reported receiving less than an associate's degree.

Instruments

Researchers employed experienced sampling methods (ESM; Csikszentmihalyi & Larson, 1992) to examine the daily routines and activities of Mexican-heritage mothers rearing children with ASD. ESM is an ecologically valid method to reduce memory bias and enhance researchers' capacity to understand within-person processes (e.g. mood, feelings of EI; Smyth et al., 2014; Weller, 2007). ESM consists of repeated online surveys that utilize person-centered analysis in order to produce data that represent the immediate context of the participant.

Prior to ESM enrollment, the second author described the survey procedures to each mother, enrolled her in the anonymous texting program, and answered questions about the texting procedures. Participants received five texts per day, at random, between 7 am and 9 pm. Each text message contained a link to an online survey. Upon receipt of the text message, respondents were instructed to click the link immediately and reply to a set of questions asking them to identify what activity they were doing at the moment, what activity their child was doing, whether the activity was a part of the child's intervention, and to assess the value (e.g. importance, difficulty, enjoyability) of the activity for them. The responses to value questions were based on a 1–5 Likert-type scale (i.e. 1 = not enjoyable and 5 = very much enjoyable). If the parent did not respond after the initial text, a reminder text was sent 15 min after the initial text. Participant response rates ranged from 26.67% to 100.00% over the 5 days, and all data were reported in Spanish.

Analysis

The final corpus of data included 721 total observations (mean number of observations by participant = 22.53 (9.91) and range = 3–39). The data were first transferred to SPSS (version 25), translated to English, cleaned, and then coded by activity setting using an inductive method based on principles of grounded theory (Miles, Huberman, & Saldaña, 2014; Table 2). Given the range of responses from participants, proportion scores were created for standardization across participants (Kuriyan et al., 2013). Proportion scores were created in three steps. First, a dichotomous variable was created for each of the 15 activity settings (i.e. Academics: yes = 1, no = 0). Second, a summary score was created for each participant by their participation in each activity. This was done by adding all the yes responses for each participant, by each activity. Third, we divided each participant's summary score by their total number of responses. Proportion scores are reported below and in Table 3.

Results

Research Aim 1

Question 1a. To identify the most frequent daily activities that occurred for mothers and their children with ASD, each activity was analyzed by frequency of occurrence by participant. Of the 721 observations in which participants identified their activity settings, mothers' most prevalent daily activities included Self-Care (e.g. showering, sleeping; 22% of the total activities), General Caregiving (e.g. cooking dinner; 19% of the total activities), and House Chores (e.g. shopping, doing laundry; 13% of the total activities). Children's most common individual daily activities included Academics (28% of the total activities), Self-Care (27% of the total activities), and Playing with Others (13% of the total activities). The most frequent joint activities (mothers and children together) as reported by mothers included General Caregiving (21% of the total activities), Playing with Others (16% of the total activities), and Using Electronics (14% of the total activities). See Table 3 for the frequencies of all 15 activities.

Question 1b. To identify the most frequent ASD intervention activities among Mexican-heritage mothers and their children with ASD, researchers selected the daily activities

Table 1. Participant demographic characteristics ($n = 32$).

	Mean	Frequency	Percent
Target child			
Age	6.09 (2.37)		
Male		32	100.0
Autism diagnosis		27	84.4
Enrolled in EI[a]		20	62.5
1:1 ABA, <20 h/week		12	60.0
1:1 ABA, >20 h/week		6	30.0
School based (speech, motor skills)		15	75.0
Child in school		31	96.9
General education classroom		11	35.4
Special day class		16	51.6
Separate school		2	06.5
Homeschool		2	06.5
Clinic services (occupational, language)		9	28.1
Mother			
Age	36.09 (6.13)		
Female		32	100.0
Married/partner		25	78.1
Hispanic		30	93.8
Not born in the United States[a]		28	87.5
Spanish spoken at home		28	87.5
Associate degree or some college		23	71.9
Not currently working		24	75.0
US$35,000 or less		20	61.15

EI: early intervention; ABA: applied behavior analysis.
Mothers born outside the United States were born in Mexico; of the four mothers born in the United States, all had at least one parent who was born in Mexico.
[a]Percentages sum to more than 100% due to participants receiving more than one service at a time.

Table 2. Description of activities for coding.

	Activity	Example
Therapy specific	Participating in Therapy	Child or people in vicinity engaging in therapy
	Observing Therapy	Supervising, observing, or writing about therapy
	Talking with a therapist	Or talking about autism-related activities
	Preparing for Therapy	Setting up therapy area in home
Non-therapy specific	Playing with Others	Playing with children or family, inside or outside
	Academics	Reading, engaging in numeracy, or going to the museum
	General Caregiving	Making food, bathing/dressing children, or disciplining
	House Chores	House cleaning, shopping, doing laundry, or running errands
	Self-Care	Showering, sleeping, eating, doing "nothing," or exercising
	Working out(in)side house	Working, "serving," "preaching," or at a meeting
	Using Electronics	Use of iPad/smart phone, either alone or with peers/adults
	Traveling/crossing the border	Waiting at border crossing or on route to school/home
	Socialization	Socializing at meals, at least two people eating/talking
	Do not know/does not apply	Questions were not known or non-applicable
	Other	Observing/watching child, listening, or following instructions

in which the mother reported engaging in an ASD intervention activity. Of the 721 total activity settings reported, mothers identified 26.1% ($n = 188$) as part of the child's ASD intervention program. The most frequent ASD intervention activities for mothers were General Caregiving (17% of all intervention activities), Playing with Others (17% of all intervention activities), and Academics (13% of all intervention activities). The most frequent intervention activities for children as reported by their mothers included Academics (26% of all intervention activities),

Table 3. Proportion scores of daily activities, intervention activities, and perceived value of activities.

Activity	Values						
	% total activities	% intervention activities	Intervention versus non-intervention activities	Important	Interesting	Enjoyable	Difficult
	M (*SD*)	*M* (*SD*)	*t*†	*r*	*r*	*r*	*r*
Self-Care							
Mom	.22 (.13)	.11 (.21)	–4.05*	–.38*	–.42*	–.50**	–.04
Child	.27 (.18)	.16 (.21)					
Joint	.14 (.13)	.04 (.07)					
General Caregiving							
Mom	.19 (.13)	.17 (.27)	–.32	.42*	.25	–.12	.23
Child	.00 (.01)	.00 (.03)					
Joint	.21 (.18)	.17 (.29)					
House Chores							
Mom	.13 (.09)	.04 (.13)	–3.71***	.36	.34	.39*	.19
Child	.01 (.02)	.02 (.09)					
Joint	.03 (.05)	.03 (.11)					
Using Electronics							
Mom	.08 (.08)	.08 (.23)	–.03	–.20	–.09	–.23	.12
Child	.12 (.12)	.09 (.22)					
Joint	.14 (.21)	.09 (.24)					
Playing with Others							
Mom	.08 (.13)	.17 (.32)	2.28*	.07	.13	.07	.22
Child	.13 (.15)	.17 (.32)					
Joint	.16 (.19)	.20 (.34)					
Working out of house							
Mom	.07 (.11)	.03 (.11)	–1.62	.54	.72*	.14	–.49
Child	.00 (.00)	.00 (.00)					
Joint	.00 (.01)	.00 (.00)					
Engaging In Academics							
Mom	.07 (.17)	.13 (.18)	2.41*	.09	.11	–.13	–.09
Child	.28 (.22)	.26 (.31)					
Joint	.12 (.12)	.18 (.21)					
Traveling or Border Crossing							
Mom	.04 (.05)	.02 (.05)	–2.54**	.21	.43	.24	.11
Child	.04 (.05)	.03 (.06)					
Joint	.07 (.09)	.02 (.04)					
Socialization Activities							
Mom	.03 (.04)	.05 (.13)	.53	.27	.37	.30	.21
Child	.03 (.04)	.04 (.11)					
Joint	.03 (.05)	.05 (.14)					
Do not Know/NA							
Mom	.03 (.07)	.01 (.04)	–2.56**	.35	.43	.36	.60
Child	.02 (.03)	.01 (.04)					
Joint	.00 (.01)	.00 (.00)					
Participating in Therapy							
Mom	.02 (.04)	.08 (.18)	2.48***	.11	–.09	–.22	–.54
Child	.05 (.07)	.17 (.26)					
Joint	.05 (.10)	.16 (.31)					
Observing or Watching Children							
Mom	.02 (.05)	.01 (.04)	1.70	.42	–.21	.04	NA
Child	.01 (.02)	.01 (.04)					
Joint	.02 (.06)	.02 (.08)					

(Continued)

Table 3. (Continued)

Activity	Values						
	% total activities	% intervention activities	Intervention versus non-intervention activities	Important	Interesting	Enjoyable	Difficult
	M (*SD*)	*M* (*SD*)	*t*†	*r*	*r*	*r*	*r*
Observing Therapy							
Mom	.01 (.02)	.03 (.09)	2.31*	.37	.05	–.27	.31
Child	.00 (.00)	.00 (.00)					
Joint	.02 (.04)	.03 (.08)					
Preparing for Therapy							
Mom	.01 (.02)	.03 (.07)	1.72	–.02	–.41	–.14	–.28
Child	.00 (.01)	.00 (.00)					
Joint	.00 (.01)	.00 (.01)					
Talking with Therapist							
Mom	.01 (.02)	.03 (.10)	1.79	.80	.68	.29	.91
Child	.00 (.00)	.00 (.00)					
Joint	.01 (.04)	.02 (.08)					

NA: not applicable.
Table depicts results of Research Aim 1, 1b, and 2.
†Variances not assumed.
*$p < .05$; **$p < .01$; ***$p < .001$.

Playing with Others (17% of all intervention activities), and Self-Care (16% of all intervention activities). The most common joint intervention activities as reported by mothers included Playing with Others (20% of all intervention activities), Academics (18% of all intervention activities), and General Caregiving (17% of all intervention activities).

To further understand the likelihood of mothers identifying the reported activity as part of their child's intervention activities, a paired sample *t*-test was used to compare the frequency of each activity considered to be an intervention or non-intervention activity. Mothers reported being less likely to consider Self-Care activities for themselves ($t = -4.05$, $p < .05$, Cohen's $d = .61$), for their child ($t = -3.41$, $p < .01$, Cohen's $d = .50$), or for mother and child together ($t = -3.50$, $p < .05$, Cohen's $d = .91$) as part of an ASD intervention. Cohen's effect size values indicated moderate to high practical significance. Mothers were less likely to consider House Chores as part of an ASD intervention ($t = -3.71$, $p < .001$, Cohen's $d = .78$). Mothers were more likely to consider Playing with Others as part of their child's intervention ($t = 2.41$, $p < .05$, Cohen's $d = .38$). Mothers were more likely to consider Academics as part of their child's intervention (Mother: $t = 2.41$, $p < .05$, Cohen's $d = .48$; Joint: $t = 2.02$, $p < .05$, Cohen's $d = .31$). Mothers were less likely to consider Traveling or Border Crossing as part of their child's intervention (Mother: $t = -2.54$, $p < .01$, Cohen's $d = .52$; Joint: $t = -3.17$, $p < .01$, Cohen's $d = .71$). Mothers were more likely to consider Participating in Therapy as part of their child's intervention (Mother: $t = 2.48$, $p < .001$, Cohen's $d = .50$; Child: $t = 3.02$, $p < .001$, Cohen's $d = .60$; Joint: $t = 2.29$, $p < .05$, Cohen's $d = .46$). Mothers were more likely to consider Observing Therapy as part of their child's intervention ($t = 2.31$, $p < .05$, Cohen's $d = .35$; Table 3).

Research Aim 2

We examined the association between mothers' perceived value of the activity (e.g. the importance of the activity) and the proportion of time she engaged in the activity. Mothers' perceived value of the activity was measured on a 5-point Likert-type scale along four domains: Importance, Interest, Enjoyment, and Difficulty. Engaging in Self-Care activities was associated with lower ratings on importance ($r = -.38$, $p < .05$), interest ($r = -.42$, $p < .05$), and enjoyment ($r = -.50$, $p < .05$). Engaging in General Caregiving activities was associated with positive ratings on importance ($r = .42$, $p < .05$). Engaging in House Chores was associated with positive ratings on enjoyment ($r = .39$, $p < .05$). Engaging in Work out of the House was associated with positive ratings on interest ($r = .72$, $p = .05$; Table 3).

Research Aim 3

To examine how mothers integrated ASD intervention activities into daily routines, we compared the proportion of time each activity was identified as part of the child's

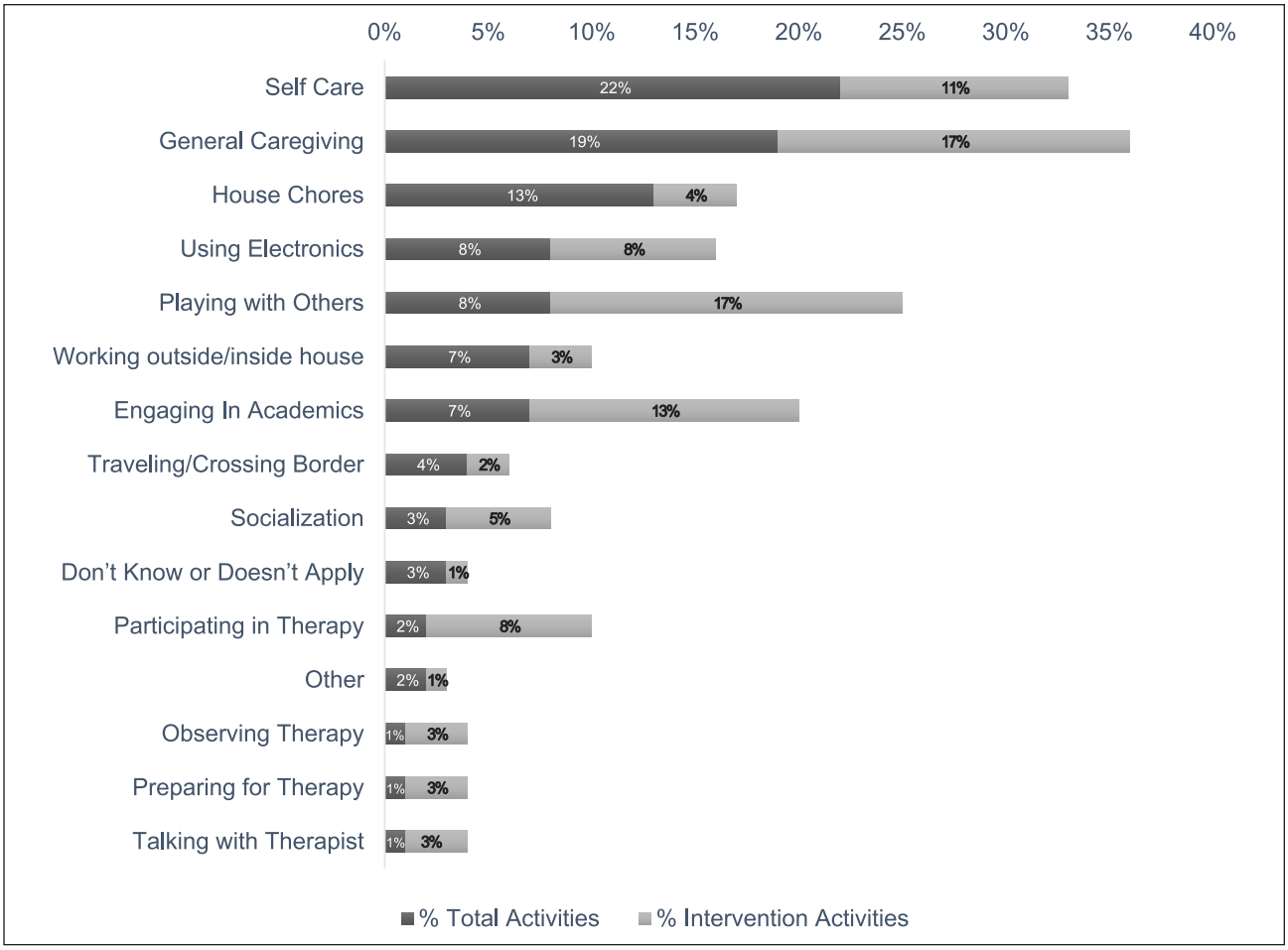

Figure 1. Comparison of intervention versus non-intervention by mother's activity.

intervention to the total number of times the mother reported engaging in each activity. Mothers identified 26% of their daily activities ($N = 187.5$) as part of the child's ASD intervention program. Intervention activities were commonly integrated into Participating in Therapy, Academics, Playing with Others, and General Caregiving. See Figure 1 to examine each activity differentiated by whether it was implemented during the child's intervention program or during non-intervention time.

Discussion

Previous research has proven the efficacy of NDBIs (Schreibman et al., 2015). These interventions allow for rapid skill generalization, natural language development, a decreased need for discreet instruction, a decreased reliance on physical or verbal adult prompts, and an increase in positive behavioral adaptations among young children in particular (McGee & Daly, 2007; Schreibman et al., 2015). NDBIs are the most promising interventions to be naturally integrated into families' daily routines. What is more, research has shown that parents are integral to the successful implementation of NDBIs (Hardan et al., 2015; Schreibman et al., 2015). Parents can learn to integrate these treatments into their natural environments, during daily activities such as mealtime, bathtime, and playtime (Brookman-Frazee, Stahmer, Baker-Ericzén, & Tsai, 2006; McGee, 2005). Although many studies describe the need for therapists and families to collaborate and co-develop pedagogies that support the child's needs (Brookman-Frazee et al., 2006), these manualized ASD treatments require a prescribed set of practices to be implemented with fidelity (Hardan et al., 2015; Ingersoll & Wainer, 2013; Kasari et al., 2015; Kasari et al., 2014; Wetherby et al., 2014).

Few studies have utilized a culturally informed approach based on families' emic perspectives of child development and their daily child-rearing activities to support the development of ASD treatments. Interventionists who are informed about how and when interventions are implemented at home may be able to individualize treatment protocols to be more meaningful for families. This study is one of the first to utilize an ecocultural framework (Weisner, 2002) that prioritizes understanding the daily routines and

practices of Mexican-heritage families and their children with ASD. We also examined how these mothers integrated ASD interventions into their families' routines.

The common independent activities for mothers included Self-Care, General Caregiving, and House Chores. Interestingly, although Self-Care was considered mothers' most frequent activity, it was also considered to be the least interesting, the least important, and the least enjoyable activity for mothers as compared to other daily activities. General caregiving activities, the second most frequent activity for mothers was described as more important than other types of daily activities. House Chores, the third most frequent activity for mothers was described as more enjoyable than other activities. In this study, we found mothers to engage in more frequent caregiving and household activities than child-centered activities. This could be due to participants' limited financial resources. Families with more financial resources may be able to purchase materials and services that allow them to spend more time engaging in child-centered activities.

Previous cross-sectional studies examining the common activities for mothers of children with developmental disabilities found that mothers from lower income families engaged in more child-centered activities (e.g. playing with the child) and household activities (e.g. cooking, cleaning) than their spouses; no ethnic/racial differences were found in the distribution of daily tasks (Holloway et al., 2014). In another study of 60 primarily low-to-middle-income White and Hispanic mothers of children with disabilities, Crowe and colleagues (2006) found that mothers spent most of their time in child-centered activities (e.g. child bathing, therapy, appointments), employment, and household chores (Crowe & Florez, 2006; Crowe, Salazar Sedillo, Kertcher, & LaSalle, 2015).

Beliefs about child development and the mother's caregiving role may also shape how immigrant mothers spend their days. Some Latino families have identified unique beliefs about the mother's role as a self-sacrificing nurturer as compared to the teacher's role as an educator for the child (Cauce & Domenech-Rodriguez, 2002; Reese & Gallimore, 2000). For example, Cauce and Domenech-Rodriguez (2002) identified the notion of *marianismo.* This belief is based on the ideal Latina woman, the Virgin Mary. It emphasizes the woman's role as mother and her willingness to sacrifice her own needs for those of her children (Cauce & Domenech-Rodriguez, 2002). Study findings align with this belief; mothers frequently engaged in nurturing activities (e.g. General Caregiving) as compared to child-centered activities. However, Self-care (e.g. showering, sleeping, eating) was the most frequent daily activity for mothers; this finding does not support this cultural belief.

Previous research shows a higher prevalence of stress and depression among Latina mothers who care for children with ASD as compared to non-Latina mothers and mothers who care for typically developing children (Blacher & McIntyre, 2006; Burke & Hodapp, 2014; Dabrowska & Pisula, 2010; Ekas & Whitman, 2011; Meadan, Halle, & Ebata, 2010). Other studies have shown that although Latina mothers experience more stress and depression, they also report more positive adaptations in rearing their child with disabilities as compared to non-Latino families. In one study, Latina mothers (as compared to non-Latina White mothers) reported that their child with intellectual disabilities had a positive impact on their own well-being (Blacher & Baker, 2007), showing that Latina mothers' reports of positive impact buffered the negative mental health effects of rearing their children with intellectual disabilities (Blacher & Baker, 2007). In this study, it is refreshing to see study participants choose to engage in self-care activities that may mitigate negative emotional states like stress and depression. Similar studies of low-income mothers experiencing postpartum depression have shown that mothers constantly strive to be good caregivers (Keefe, Brownstein-Evans, & Polmanteer, 2018).

The common independent activities for children included Academics, Self-Care, and Playing with Others. The most frequent child independent activity, Academics, included instances of mothers indicating that the child was reading, writing, or problem solving on their own. Previous studies have shown that children with ASD responded negatively to academic tasks, as they were difficult and frustrating (L. K. Koegel, Singh, & Koegel, 2010). L. K. Koegel and colleagues (2010) examined the effect of child-led activity selection and natural reinforcers on academic performance and disruptive behaviors. Results indicated that child-led activity selection and the use of natural reinforcers improved children's academic performance and decreased the quantity of disruptive behaviors for all five children. In our study, it is unknown who initiated the academic activity, but the high proportion of time spent engaging in academics by our sample indicates that children may be independently motivated and interested in academics. As L. K. Koegel and colleagues (2010) explain, clinicians can use academic motivation to create challenging yet supportive environments for future optimal learning experiences.

The second most frequent independent activity for children was Self-Care. This appeared to be an important activity for families, and it may be an indication that Self-Care is highly valued by the family. In an earlier study examining immigrant parents' beliefs about ASD and its causes with some of the same participants, we found that Mexican-heritage parents described their children as dependent on them for the coordination and completion of many daily activities (i.e. dressing, eating). These statements indicated that the completion of daily self-care activities are important to families and may explain why our study participants spent a lot of time engaging in independent self-care tasks with their children.

In a different study, Kellegrew (1998) examined how self-care activities promoted skill development. Kellegrew

examined the daily activities of the three families who reared children with disabilities to examine whether providing increased opportunities for independence during self-care activities promoted skill development. She found that after caregivers were provided with facilitation strategies to promote independent self-care, all three children were able to increase their levels of independence when engaging in self-care activities (Kellegrew, 1998). One child did not meet his self-care goal (e.g. self-feeding) because the grandmother who regularly cared for the child did not see this goal as important as compared to his parents, who highly valued this goal. Kellegrew acknowledged the potentially supportive role of caregivers in promoting independent self-care activities but also the importance of understanding the families' educational values when implementing interventions, as they may impact the implementation of intervention activities.

The third most frequent independent activity for children, Playing with Others, was also the second most frequent joint activity. The high frequency of these activities among our population was interesting given definitions of ASD include symptoms related to deficits in social-emotional reciprocity (American Psychiatric Association, 2013). Research by R. L. Koegel, Vernon, and Koegel (2009) explored social interactions among three children with ASD. Their study created two social interaction scenarios with each child, one utilizing non-embedded social reinforcement (i.e. a child is allowed to jump on a trampoline) and another utilizing an embedded social reinforcement (i.e. the child and adult must jump on the trampoline together). Results indicated that social engagement (e.g. mood, physical orientation) and non-verbal orienting (e.g. gaze) toward adults increased by over 40% for all three children and as high as 90%, dependent on the child, when embedded social reinforcement was used. Findings demonstrated the importance of engaging in joint social activities to increase social and non-verbal engagement (R. L. Koegel et al., 2009). These results can have positive implications for children's social coordination and lead to better socialization outcomes. Given that the children in our study engaged in play with others at a high frequency, practitioners might suggest integrating individualized socialization goals into these activities, especially those that embed social reinforcement.

In fact, evidence-based social skills interventions have been used to support children's pro-social development during daily activities. For example, Barnett (2018) details strategies, such as video modeling and scripts, that promote social skills among young children with ASD. Conversation scripts—written or verbal scenarios and prompts—can be used to support children with ASD to initiate conversations with peers. These scripts, created ahead of time and modeled by the caregiver or the interventionist, can be modified based on the families' routine socialization activities and the child's interests to promote appropriate peer interactions.

The common joint activities (mothers and children together) as reported by mothers included General Caregiving, Playing with Others, and Using Electronics. These activities were similar to the activities in which mothers reported integrating interventions: Academics, Playing with Others, and General Caregiving. Intervention is occurring during times when the mother and child are engaging in activities together. We also learned that less than one-third of the total activities documented were reported as intervention activities, signaling an opportunity for additional strategic integration of intervention activities into daily routines.

Intervention research has long made recommendations for integrating interventions into the daily routines and practices of families (Dawson et al., 2010; Schreibman et al., 2015). However, these standardized interventions require a prescribed set of practices that parents must learn and implement with fidelity. In this study, we capitalized on the daily diary methodology to first learn about the common activities that Mexican-heritage families are already engaging in daily. The next step is to use this information to modify standardized interventions to meet the needs of immigrant families. For example, in this study, one of the common joint activities, Using Electronics, was not an activity in which mothers reported integrating interventions. For this group of mothers, practitioners may consider exploring how they might integrate intervention goals and activities into the use of Electronics given that it was a common joint activity among this sample.

Limitations

This study captured a brief summary of the general types of activities that immigrant families engaged in and how they integrated interventions into their daily routines. Building from this strength-based approach examining families in context, more research is needed to examine the specific content and interactions that occur within families' daily activities, to provide a detailed picture of how interventions can be modified and integrated into typical daily routines. Future studies should develop more nuanced descriptive protocols using ethnographic observations and videotaping during daily routines to examine how parents are involved in rearing their children with ASD and how interventions can be modified to be seamlessly integrated into families' daily routines. Second, the small sample of Mexican-heritage families in this study limits the generalizability of the findings and explains some of the small effect sizes. Recent studies have called for within group examinations, particularly of immigrant families' daily routines and practices to better support children's learning (Fuller & Garcia Coll, 2010). Future studies might compare the daily activities and routines of different groups of culturally diverse families to identify how to adapt interventions and seamlessly integrate them into daily life.

Future studies might also explore how intervention shapes the daily routines of the family.

Third, the broad age range of children does not allow for detailed implications of the types of standardized interventions that could be modified. However, NDBIs are meant to build developmental knowledge and abilities in addition to being integrated into the families' daily routines. NDBIs are less focused on isolating discrete skills and abilities (Schreibman et al., 2015). Thus, a developmental approach to identifying the most effective NDBIs for each child, taking into account his age, is certainly feasible. In addition to capturing the home activities of families, future research should consider incorporating the child's school activities into similar descriptive analyses. In the United States, children spend an average of 6.64 h or 41.5% of their day in school (National Center for Education Statistics, 2008).

Conclusion

From this study, we learned that capturing the moment-to-moment experiences of immigrant families and their children with ASD provides an important insight into how parents and children are spending their time as a family. We also learned some important information about how mothers are integrating intervention activities into their daily routines and the opportunities that still exist for more comprehensive integration of interventions across all moments of the day. No other studies to date have documented the daily routines and activities of Mexican-heritage families rearing children with ASD. Future research must use this descriptive information to develop intervention protocols that align with families' daily child-rearing practices.

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References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author. doi:10.1176/appi.books.9780890425596

Autism Speaks. (2010). *How do I get the help my child needs? 100 day kit*. Retrieved from https://www.autismspeaks.org/tool-kit/100-day-kit-young-children

Barnett, E. H. (2018). Three evidence-based strategies that support social skills and play among young children with autism spectrum disorders. *Early Childhood Education Journal*, *46*, 665–672. doi:10.1007/s10643-018-0911-0

Bernheimer, L. P., & Weisner, T. S. (2007). "Let me just tell you what I do all day…": The family story at the center of intervention research and practice. *Infants & Young Children*, *20*, 192–201. doi:10.1097/01.IYC.0000277751.62819.9b

Blacher, J., & Baker, B. L. (2007). Positive impact of intellectual disability on families. *American Journal on Mental Retardation*, *112*, 330–348.

Blacher, J., & McIntyre, L. L. (2006). Syndrome specificity and behavioural disorders in young adults with intellectual disability: Cultural differences in family impact. *Journal of Intellectual Disability Research*, *50*, 184–198. doi:10.1111/j.1365-2788.2005.00768.x

Blacher, J., Cohen, S. R., & Azad, G. (2014). In the eye of the beholder: Reports of autism symptoms by Anglo and Latino mothers. *Research in Autism Spectrum Disorders*, *8*, 1648–1656.

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, *54*, 579–616. doi:10.1146/annurev.psych.54.101601.145030

Brookman-Frazee, L., Stahmer, A., Baker-Ericzén, M., & Tsai, K. (2006). Parenting interventions for children with autism spectrum and disruptive behavior disorders: Opportunities for cross-fertilization. *Clinical Child and Family Psychology Review*, *9*, 181–200. doi:10.1007/s10567-006-0010-4

Burke, M. M., & Hodapp, R. M. (2014). Relating stress of mothers of children with developmental disabilities to family-school partnerships. *Intellectual & Developmental Disabilities*, *52*, 13–23. doi:10.1352/1934-9556-52.1.13

Burrell, T. L., & Borego, J. (2012). Parents involvement in ASD treatment: What is their role? *Cognitive and Behavioral Practice*, *19*, 423–432. doi:10.1016/j.cbpra.2011.04.003

California Senate Office of Research. (2014). *A statistical picture of Latinos in California: Demographic, income, health, and other social characteristics*. Retrieved from http://latinocaucus.legislature.ca.gov/sites/latinocaucus.legislature.ca.gov/files/LatinosInCA.pdf

Cauce, A. M., & Domenech-Rodriguez, M. (2002). Latino families: Myths and realities. In J. M. Contreras, K. A. Kerns, & A. M. Neal-Barnett *(Eds.), Latino children and families in the United States: Current research and future directions* (pp. 3–25). Westport, CT: Praeger Publishers/Greenwood Publishing Group.

Chaidez, V., Hansen, R. L., & Hertz-Picciotto, I. (2012). Autism spectrum disorders in Hispanics and non-Hispanics. *Autism*, *16*, 381–397. doi:10.1177/1362361311434787

Chlebowski, C., Magaña, S., Wright, B., & Brookman-Frazee, L. (2018). Implementing an intervention to address challenging behaviors for autism spectrum disorder in publicly-funded mental health services: Therapist and parent perceptions of delivery with Latinx families. *Cultural Diversity and Ethnic Minority Psychology*, *24*, 552–563.

Cohen, S. R., & Miguel, J. (2018). Amor and social stigma: ASD beliefs among immigrant Mexican parents. *Journal of Autism and Developmental Disorders*, *48*, 1995–2009. doi:10.1007/s10803-017-3457-x

Crowe, T. K., & Florez, S. I. (2006). Time use of mothers with school-age children: A continuing impact of a child's disability. *The American Journal of Occupational Therapy*, *60*, 194–203.

Crowe, T. K., Salazar Sedillo, J., Kertcher, E. F., & LaSalle, J. H. (2015). Time and space use of adults with intellectual

disabilities. *The Open Journal of Occupational Therapy*, *3*(2), 2. doi:10.15453/2168-6408.1124

Csikszentmihalyi, M., & Larson, R. (1992). Validity and reliability of the experience sampling method. In M. W. Vries (Ed.), *The experience of psychopathology: Investigating mental disorders in their natural settings* (pp. 43–57). New York, NY: Cambridge University Press.

Dabrowska, A., & Pisula, E. (2010). Parenting stress and coping styles in mothers and fathers of preschool children with autism and Down syndrome. *Journal of Intellectual Disability Research*, *54*, 266–280. doi:10.1111/j.1365-2788.2010.01258.x

Dawson, G., & Burner, K. (2011). Behavioral interventions in children and adolescents with autism spectrum disorder: A review of recent findings. *Current Opinion in Pediatrics*, *23*, 616–620. doi:10.1097/MOP.0b013e32834cf082

Dawson, G., Rogers, S., Munson, J., Smith, M., Winter, J., Greenson, J., & . . .Varley, J. (2010). Randomized, controlled trial of an intervention for toddlers with autism: The Early Start Denver Model. *Pediatrics, 125*, e17–e23. doi:10.1542/peds.2009-0958

Dunlap, G., Newton, J. S., Fox, L., Benito, N., & Vaughn, B. (2001). Family involvement in functional assessment and positive behavior support. *Focus on Autism and Other Developmental Disabilities*, *16*, 215–221.

Durkin, M. S., Maenner, M. J., Meaney, F. J., Levy, S. E., DiGuiseppi, C., Nicholas, J. S., . . .Shieve, L. A. (2010). Socioeconomic quality in the prevalence of autism spectrum disorder: Evidence from a U.S. cross-sectional study. *PLoS ONE*, *5*, e11551. doi:10.1371/journal.pone.0011551

Ekas, N. V., & Whitman, T. L. (2011). Adaptation to daily stress among mothers of children with an autism spectrum disorder: The role of daily positive affect. *Journal of Autism and Developmental Disorders*, *41*, 1202–1213. doi:10.1007/s10803-010-1142-4

Estes, A., Munson, J., Rogers, S., Greenson, J., Winter, J., & Dawson, G. (2015). Long-term outcomes of early intervention in 6-year-old children with autism spectrum disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*, *54*, 580–589. doi:10.1016/j.jaac.2015.04.005

Fuller, B., & García Coll, C. (2010). Learning from Latinos: Contexts, families, and child development in motion. *Developmental Psychology*, *46*, 559–565.

Goldman, S. E., & Burke, M. M. (2017). The effectiveness of interventions to increase parent involvement in special education: A systematic literature review and meta-analysis. *Exceptionality*, *25*, 97–115. doi:10.1080/09362835.2016.1196444

Hardan, A. Y., Gengoux, G. W., Berquist, K. L., Libove, R. A., Ardel, C. A., Phillips, J., . . .Minjarez, M. B. (2015). A randomized controlled trial of Pivotal Response Treatment Group for parents of children with autism. *The Journal of Child Psychology and Psychiatry*, *56*, 884–892. doi:10.1111/jcpp.12354

Harstad, E., Huntington, N., Bacic, J., & Barbaresi, W. (2013). Disparity of care for children with parent-reported autism spectrum disorders. *Academic Pediatrics*, *13*, 334–339. doi:10.1016/j.acap.2013.03.010

Hastings, R. P., & Taunt, H. M. (2002). Positive perceptions in families of children with developmental disabilities. *American Journal on Mental Retardation*, *107*, 116–127. doi:10.1352/0895-8017(2002)107%3C0116:PPIFOC%3E2.0.CO;2

Holloway, S. D., Domínguez-Pareto, I., Cohen, S. R., & Kuppermann, M. (2014). Whose job is it? Everyday routines and quality of life in Latino and non-Latino families of children with intellectual disabilities. *Journal of Mental Health Research*, *7*, 104–125. doi:10.1080/19315864.2013.785617

Howard, J. S., Sparkman, C. R., Cohen, H. G., Green, G., & Stanislaw, H. (2005). A comparison of intensive behavior analytic and eclectic treatments for young children with autism. *Research in Developmental Disabilities*, *26*, 359–383. doi:10.1016/j.ridd.2004.09.005

Hughes-Scholes, C. H., Gavidia-Payne, S., Davis, K., & Mahar, N. (2019). Eliciting family concerns and priorities through the routines-based interview. *Journal of Intellectual & Developmental Disability*, *44*, 190–201. doi:10.3109/13668250.2017.1326591

Ingersoll, B., & Wainer, A. (2013). Initial efficacy of Project ImPACT: A parent-mediated social communication intervention for young children with ASD. *Journal of Autism and Developmental Disorders*, *43*, 2943–2952. doi:10.1007/s10803-013-1840-9

Kasari, C., Gulsrud, A., Paparella, T., Hellemann, G., & Berry, K. (2015). Randomized comparative efficacy study of parent-mediated interventions for toddlers with autism. *Journal of Consulting and Clinical Psychology*, *83*, 554–563. doi:10.1037/a0039080

Kasari, C., Lawton, K., Shih, W., Barker, T., Landa, R., Lord, C., . . .Senturk, D. (2014). Caregiver-mediated intervention for low-resourced preschoolers with autism: An RCT. *Pediatrics, 134*, e72–e79. doi:10.1542/peds.2013-3229

Kashinath, S., Woods, J., & Goldstein, H. (2006). Enhancing generalized teaching strategy use in daily routines by parents of children with autism. *Journal of Speech, Language, and Hearing Research*, *49*, 466–485. doi:10.1044/1092-4388(2006/036)

Kashinath, S., & Yu, B. (2018). Embedding intervention strategies within everyday family routines. In M. Siller & L. Morgan (Eds.), *Handbook of parent-implemented interventions for very young children with autism* (pp. 209–219). Cham, Switzerland: Springer International Publishing. doi:10.1007/978-3-319-90994-3_13

Keefe, R. H., Brownstein-Evans, C., & Polmanteer, R. S. (2018). The challenges of idealized mothering: Marginalized mothers living with postpartum. *Journal of Women and Social Work*, *33*, 221–235. doi:10.1177/0886109917747634

Kellegrew, D. H. (1998). Creating opportunities for occupation: An intervention to promote the self-care independence of young children with special needs. *American Journal of Occupational Therapy*, *52*, 457–465. doi:10.5014/ajot.52.6.457

Koegel, L. K., Singh, A. K., & Koegel, R. L. (2010). Improving motivation for academics in children with autism. *Journal of Autism and Developmental Disorders*, *40*, 1057–1066. doi:10.1007/s10803-010-0962-6

Koegel, R. L., Vernon, T. W., & Koegel, L. K. (2009). Improving social initiations in young children with autism using reinforcers with embedded social interactions. *Journal of Autism and Developmental Disorders*, *39*, 1240–1251. doi:10.1007/s10803-009-0732-5

Kuriyan, A. B., Pelham, W. E., Molina, B. S., Waschbusch, D. A., Gnagy, E. M., Sibley, M. H., . . .Kent, K. M. (2013). Young adult educational and vocational outcomes of children diagnosed with ADHD. *Journal of Abnormal Child Psychology*, *41*, 27–41. doi:10.1007/s10802-012-9658-z

Lasky, B., & Karge, B. D. (2011). Involvement of language minority parents of children with disabilities in their child's school achievement. *Multicultural Education*, *18*(3), 29–34.

Leigh, J. P., Grosse, S. D., Cassady, D., Melnikow, J., & Hertz-Picciotto, I. (2016). Spending by California's Department of Developmental Services for persons with autism across demographic and expenditure categories. *PLoS ONE*, *11*, e0151970. doi:10.1371/journal.pone.0151970

Liptak, G. S., Benzoni, L. B., Mruzek, D. W., Nolan, K. W., Thingvoll, M. A., Wade, C. M., & Fryer, G. E. (2008). Disparities in diagnosis and access to health services for children with autism: Data from the national survey of children's health. *Journal of Developmental & Behavioral Pediatrics*, *29*, 152–160. doi:10.1097/DBP.0b013e318165c7a0

Livas-Dlott, A., Fuller, B., Stein, G. L., Bridges, M., Mangual Figueroa, A., & Mireles, L. (2010). Commands, competence, and cariño: Maternal socialization practices in Mexican American families. *Developmental Psychology*, *46*, 566–578. doi:10.1037/a0018016

Lopez, K., & Magaña, S. (2018). Perceptions of family problems and pessimism among Latina and Non-Latina White mothers raising children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 1–15. doi:10.1007/s10803-018-3640-8

Lopez, K., Reed, J., & Magaña, S. (2019). Associations among family burden, optimism, services received and unmet need within families of children with ASD. *Children and Youth Services Review*, *98*, 105–112. doi:10.1016/j.childyouth.2018.12.027

Lord, C., Rutter, M., DiLavore, P. C., & Risi, S. (2008). *Autism diagnostic observation schedule: ADOS manual*. Los Angeles, CA: Western Psychological Services.

Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology*, *55*, 3–9. doi:10.1037/0022-006X.55.1.3

Magaña, S., Lopez, K., & Machalicek, W. (2017). Parents taking action: A psycho-educational intervention for Latino parents of children with autism spectrum disorder. *Family Process*, *56*, 59–74. doi:10.1111/famp.12169

Matson, M. L., Mahan, S., & Matson, J. L. (2009). Parent training: A review of methods for children with autism spectrum disorders. *Research in Autism Spectrum Disorders*, *3*, 868–875. doi:10.1016/j.rasd.2009.02.003

McConachie, H., & Diggle, T. (2007). Parent implemented early intervention for young children with autism spectrum disorder: A systematic review. *Journal of Evaluation in Clinical Practice*, *13*, 120–129. doi:10.1111/j.1365-2753.2006.00674.x

McGee, G. G. (2005). Incidental teaching. In M. Hersen, G. Sugai, & R. H. Horner (Eds.), *Encyclopedia of behavior modification and cognitive behavior therapy: Educational applications* (*Vol. 3*, pp. 1359–1362). Thousand Oaks, CA: SAGE.

McGee, G. G., & Daly, T. (2007). Incidental teaching of age-appropriate social phrases to children with autism. *Research and Practice for Children with Severe Disabilities*, *32*, 112–123. doi:10.2511/rpsd.32.2.112

McWilliam, R. A., Casey, A. M., & Sims, J. (2009). The routines based interview: A method for gathering information and assessing need. *Infants & Young Children*, *22*, 224–233. doi:10.1097/IYC.0b013e3181abe1dd

Meadan, H., Halle, J. W., & Ebata, A. T. (2010). Families with children who have autism spectrum disorders: Stress and support. *Exceptional Children*, *77*(1), 7–36. doi:10.1177/001440291007700101

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Thousand Oaks, CA: SAGE.

National Center for Education Statistics. (2008). *Average number of hours in the school day and average number of days in the school year for public schools, by state: 2007–08*. U.S. Department of Education. Retrieved from https://nces.ed.gov/surveys/sass/tables/sass0708_035_s1s.asp

Nevill, R. E., Lecavalier, L., & Stratis, E. A. (2018). Meta-analysis of parent-mediated interventions for young children with autism spectrum disorder. *Autism*, *22*, 84–98. doi:10.1177/1362361316677838

Ramey, S., & Ramey, C. T. (1999). Early experience and early intervention for children "at risk" for developmental delay and mental retardation. *Mental Retardation and Developmental Disabilities Research Reviews*, *5*(1), 1–10. doi:10.1002/(SICI)1098-2779(1999)5:1<1::AID-MRDD1>3.0.CO;2-F

Reese, L., & Gallimore, R. (2000). Immigrant Latinos' cultural model of literacy development: An evolving perspective on home-school discontinuities. *American Journal of Education*, *108*, 103–134. doi:10.1086/444236

Rogers, S. (1996). Brief report: Early intervention in autism. *Journal of Autism and Developmental Disorders*, *62*, 243–253. doi:10.1007/BF02172020

Sallows, G., & Graupner, T. D. (2005). Intensive behavioral treatment for children with autism: Four-year outcome and predictors. *American Journal on Mental Retardation*, *110*, 417–438. doi:10.1352/0895-8017(2005)110%5B417:IBTFCW%5D2.0.CO;2

Schreibman, L., Dawson, G., Stahmer, A. C., Landa, R., Rogers, S., McGee, G. G., . . .Halladay, A. (2015). Naturalistic developmental behavioral interventions: Empirically validated treatments for autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *45*, 2411–2428. doi:10.1007/s10803-015-2407-8

Smith, T., & Iadarola, S. (2015). Evidence base update for autism spectrum disorder. *Journal of Clinical Child & Adolescent Psychology*, *44*, 897–922. doi:10.1080/15374416.2015.1077448

Smyth, A. R., Bell, S. C., Bojcin, S., Bryon, M., Duff, A., Flume, P., & Sermet-Gaudelus, I. (2014). European Cystic Fibrosis Society standards of care: Best practice guidelines. *Journal of Cystic Fibrosis, 13*, S23–S42. doi:10.1016/j.jcf.2014.03.010

Solish, A., & Perry, A. (2008). Parents' involvement in their children's behavioral intervention programs: Parent and therapist perspectives. *Research in Autism Spectrum Disorders*, *2*, 728–738. doi:10.1016/j.rasd.2008.03.001

Tincani, M., Travers, J., & Boutot, A. (2009). Race, culture, and autism spectrum disorder: Understanding the role of diversity in successful educational interventions. *Research and Practice for Persons with Severe Disabilities*, *34*(3), 81–90.

U.S. Census Bureau. (2010). *2010 census: Race and Hispanic or Latino origin*. Washington, DC: Author.

U.S. Census Bureau. (2017). *American community survey*. Washington, DC: Author.

Vismara, L. A., & Rogers, S. J. (2010). Behavioral treatments in autism spectrum disorder: What do we know? *Annual Review of Clinical Psychology*, *6*, 447–468. doi:10.1146/annurev.clinpsy.121208.131151

Wallace, K. S., & Rogers, S. J. (2010). Intervening in infancy: Implications for autism spectrum disorders. *Journal of Child Psychology and Psychiatry*, *51*, 1300–1320.

Weisner, T. S. (1996). Why ethnography should be the most important method in the study of human development. In R. Jessor, A. Colby, & R. A. Shweder (Eds.), *Ethnography and human development: Context and meaning in social inquiry* (pp. 305–324). Chicago, IL: The University of Chicago Press.

Weisner, T. S. (2002). Ecocultural understanding of children's developmental pathways. *Human Development*, *45*, 275–281. doi:10.1159/000064989

Weisner, T. S., Gallimore, R., & Jordan, C. (1988). Unpackaging cultural effects on classroom learning: Native Hawaiian peer assistance and child-generated activity. *Anthropology & Education Quarterly*, *19*, 327–353.

Weller, S. C. (2007). Cultural consensus theory: Applications and frequently asked questions. *Field Methods*, *19*, 339–368. doi:10.1177/1525822X07303502

Wetherby, A. M., Guthrie, W., Woods, J., Schatschneider, C., Holland, R. D., Morgan, L., & Lord, C. (2014). Parent implemented social intervention for toddlers with autism: An RCT. *Pediatrics*, *134*, 1084–1093. doi:10.1542/peds.2014-0757

Zamora, I., Harley, E. K., & Hudson, B. O. (2016). The Incredible Years® parent training intervention for Latino children on the autism spectrum. *Good Autism Practice*, *17*(1), 6–14.

Zuckerman, K. E., Lindly, O. J., Reyes, N. M., Chavez, A. E., Macias, K., Smith, K. N., & Reynolds, A. (2017). Disparities in diagnosis and treatment of autism in Latino and non-Latino white families. *Pediatrics*, *139*(5), e20163010. doi:10.1542/peds.2016-3010

Zuckerman, K. E., Sinche, B., Mejia, A., Cobian, M., Becker, T., & Nicolaidis, C. (2014). Latino parents' perspectives on barriers to autism diagnosis. *Academic Pediatrics*, *14*, 301–308. doi:10.1016/j.acap.2013.12.004

Zwaigenbaum, L., Bauman, M. L., Choueiri, R., Kasari, C., Carter, A., Granpeesheh, D., & . . .Natowicz, M. R. (2015). Early intervention for children with autism spectrum disorder under 3 years of age: Recommendations for practice and research. *Pediatrics, 136*(Suppl. 1), S60–S81. doi:10.1542/peds.2014-3667E