

# Co-Parenting Quality, Parenting Stress, and Feeding Challenges in Families with a Child Diagnosed with Autism Spectrum Disorder

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**Abstract** 113 parents of children aged 5–13 with ASD completed online surveys assessing co-parenting quality, parenting stress, and child feeding challenges. Results indicated that food selectivity was both the most frequently reported type of challenging feeding behavior and the most often reported as problematic but was also the only type of challenging feeding behavior that was not associated with parenting stress. Greater parenting stress was reported when co-parenting agreement and support were lower. Child disruptive behavior at mealtime was the only feeding challenge associated with quality of co-parenting. This paper points to the importance of addressing feeding challenges in addition to selectivity, such as disruptive mealtime behaviors, and doing so within the context of the family and home environment.

**Keywords** Parenting · Stress · Co-parenting · Feeding · Autism

## Introduction

Though some research has demonstrated that spousal support and cooperation can aid in stress management in the care of a child with a disability (Brobst et al. 2009; Norlin and Broberg 2013), relatively little work has addressed how

parents work together in caring for a child with ASD and how the quality of collaboration is associated with parents' experience of stress related to child care. One of the more prevalent challenges in parenting a child with ASD is managing challenges related to feeding and eating. Estimates of the frequency of feeding problems in children with ASD range from 46 to 89% of the population (Ledford and Gast 2006). Children with ASD have five times the odds of displaying feeding problems than children without ASD (Sharp et al. 2013). Feeding is an essential, daily component to caring for a young child; therefore the implications of feeding problems include both the health of the child and how parents and families function in this domain of caregiving. Despite the social nature of feeding, few studies have examined how feeding issues displayed by children with ASD fit within the broader family context. The goal of this paper is to integrate lines of research that have pointed to the parenting challenges related to feeding a child with ASD and those that have focused on feeding problems as behaviors separate from family context. Specifically we will use surveys sent to parents of children with ASD to examine associations between co-parenting quality, parenting stress, and challenging feeding behavior in families of children with ASD.

## Parenting Stress Related to ASD

Parents of children with ASD have been demonstrated to experience increased parental stress compared to parents of typically developing children and children with other disabilities including other developmental disorders (Estes et al. 2013; Hayes and Watson 2013; Tomanik et al. 2004). In addition to the personal and interpersonal toll that parenting stress can take on both mothers and fathers (Falk et al. 2014; Pisula and Kossakowska 2010; Saini et al.

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2015) high levels of parenting stress in parents of children with ASD can result in a decreased ability to implement important interventions that could benefit their child (Osborne et al. 2008). While there are many factors that contribute to the extent to which parenting is stressful (Derguy et al. 2016), common child-level factors that contribute to the degree of parenting stress in parents of children with ASD include the level of adaptive behaviors and severity of autistic symptoms (Davis and Carter 2008; Rivard et al. 2014) and the level of challenging behaviors (Davis and Carter 2008; Estes et al. 2013; McStay et al. 2014; Tomanik et al. 2004) displayed by the child.

### Feeding/Eating Issues in Children With ASD

Challenging behaviors related to eating among children with ASD is an area of growing clinical and research interest. Children with ASD often display restrictive or rigid behavioral patterns related to eating such as only eating specific foods, only eating under specific circumstances, and general problem behaviors around mealtimes (Beighley et al. 2013; Schreck et al. 2004; Sharp et al. 2013). Nutrition-related difficulties may arise as children with ASD often favor processed and carbohydrate-dense foods and avoid foods such as fruits, vegetables and proteins (Sharp et al. 2013) which limits the nutritional adequacy of their diet and leaves them prone to health problems (Ma et al. 2015; Mari-Bauset et al. 2015; Sharp et al. 2013). Additionally, this type of restrictive diet may interact with other gastrointestinal issues experienced by many children with ASD in ways that compound diagnosis-related symptoms (Mulle et al. 2013).

In addition to concern around potential nutritional deficits and health consequences, parents must also manage their child's challenging behaviors around mealtimes that are stressful while also impacting broader family functioning/routines (Curtin et al. 2015). Children with ASD not only display pickiness about what they will eat but can also have severe reactions to the texture, smell, and presentation (Rogers et al. 2012). Aversive behaviors related to feeding exhibited by many children with ASD make mealtimes stressful for multiple family members, sometimes require separate meals or mealtimes for different family members, and often result in an inability to eat outside the home with the child with ASD (Ausderau and Juarez 2013; Suarez et al. 2014).

### Co-Parenting

How parents relate to one another through the unique challenges of caring for a child with ASD also contributes to how challenges are managed and the level of stress experienced (Hock et al. 2012). A small but growing

literature has examined the ways that parental relationships influence and are influenced by the experience of caring for a child with ASD—pointing to concepts such as marital satisfaction, social support, and conflict as important for how parents manage the challenges associated with caring for a shared child with ASD (Saini et al. 2015).

Co-parenting refers to how parents relate to one another specifically in their roles as parents. Positive co-parenting is generally considered to include the presence of a cooperative alliance, mutual engagement, and consistent support among caregivers of a shared child (McHale 2007, 2011). This concept has been studied primarily in families with typically developing children, yet co-parenting is beginning to be applied to how parents of children with ASD work with one another in parenting. Given the high level of energy required on a daily basis to care for many children with ASD, the involvement of multiple caregivers is important not only to share the effort but for managing challenges in effective, efficient, creative ways (e.g., Maynard et al. 2016). Specifically among parents of children with ASD, greater quality of co-parenting (greater communication, teamwork, and respect for partner as a parent) has been found to be significantly associated with lower parenting stress in both mothers and fathers (May et al. 2015).

Another reason why co-parenting may be particularly important in families with a child with ASD is that most strategies communicated to parents for managing challenging behaviors or treatments around ASD are behaviorally-based and require work from the family. Although behavioral therapies have been shown to improve specific behaviors, challenges remain with implementing systematic behavior therapies in natural family settings (Sharp et al. 2014). The consistency required, over time and across caregivers, for effectively implementing behavioral strategies at home likely depends on parents' ability to manage stress and work together in maintaining a high level of care for these children. Therefore, it is important to move beyond what any one parent does related to the care provided to a child with ASD to understand the role of collaboration. May and colleagues (2015) also found that the negative association between parenting efficacy and parenting stress among mothers and fathers of children with ASD was largely mediated by co-parenting quality, suggesting that changes in parental efficacy may not translate to lower parenting stress unless supported by positive co-parenting experience. By focusing on the aspects of parent relations specifically related to parenting, future efforts at intervening may more effectively address parent stress and behaviors related to a shared interest in the child's well-being rather than trying to address more complex interpersonal issues (Feinberg 2002, 2003).

## Aims

As more and more families face the challenges of caring for a child with ASD it is increasingly important to invest in understanding more about the home- and family-level factors that can contribute to successful translation of clinical work with children with ASD into their home setting. Qualitative work has documented parents' stressful experiences in managing feeding challenges yet no study has empirically quantified the degree to which feeding challenges are a source of parenting stress. Additionally, research on how dynamics between parents are associated with parenting stress or perceptions of specific types of caregiving challenges are limited. Therefore, the aims of this paper are to (1) examine the associations between parenting stress and child feeding challenges, (2) examine the associations between parenting stress and co-parenting dynamics, and (3) examine the associations between co-parenting dynamics and child feeding challenges.

## Methods

### Sampling and Procedure

Following approval from the University of Missouri Health Sciences IRB, invitations were sent to 534 emails based on the following criteria: (1) the child was currently between the ages of 5 and 13 years old, (2) the child was diagnosed with ASD at an interdisciplinary research and treatment center that specializes in children with ASD with the ADOS or an ADOS was completed at the clinic as part of another evaluation or research project, (3) a parent or guardian agreed to be contacted for involvement in research at an earlier point in time, and (4) the primary parent or guardian was English speaking. Emails for primary contact person from families that met these criteria were pulled and if there was contact information for multiple people the email for the mother was selected.

113 individuals completed the survey between mid-July and the end of August 2015. Participants received a \$20 gift card for completing the survey. Study data were collected and managed using REDCap (Research Electronic Data Capture), a secure, web-based application designed to support data capture for research studies (Harris et al. 2009). The response rate was 21% which was comparable to response rates for similar studies using emailed surveys to parents that consented to being contacted for research studies. One case was dropped from these analyses because the participant reported not having a co-parent.

## Measures

Some basic demographic data was collected about the responding parent, the child, the nature of the co-parenting relationship and household. Participants provided their gender, age, race, highest education level, and employment status as well as the child's age and gender. In addition, participants were asked if they were married to the co-parent, co-residing with the co-parent, which (if either) of them had a biological relationship to the child, the total number of children in the household, and the number of children in the household with a developmental disability.

Parenting stress was measured through the Parenting Stress Inventory Fourth Edition Short Form (PSI-4-SF; Abidin 1990), a 36-item measure in which parents respond to items within the domains of (1) parental stress, (2) parent-child dysfunction interaction, and (3) child difficulty. Items across the domains ( $\alpha=0.94$ ) were summed yielding a total parenting stress score in which higher scores reflect greater parenting stress.

Co-parenting quality was assessed using The Coparenting Relationship Scale (CRS; Feinberg et al. 2012), a questionnaire designed to measure the quality of co-parenting in families. The subdomain of agreement (4 items,  $\alpha=0.81$ ) refers to the extent to which parents have similar views about how to parent their child (e.g., "My partner and I have the same goals for our child"). Support (6 items,  $\alpha=0.93$ ) refers perception of support received from the co-parent (e.g., "My partner appreciates how hard I work at being a good parent"). Satisfaction with labor (2 items,  $\alpha=0.54$ ) refers to satisfaction with the balance of childcare-related labor (e.g., "My partner does not carry his or her fair share of parenting work"). For the first three domains participants endorse items along the scale 0 (not true of us) to 6 (very true of us). Exposure to conflict (5 items,  $\alpha=0.83$ ) refers to overt, affectively-laden disagreement about parenting that could be observable to the child. For this domain, participants respond how frequently (1-never, 2-sometimes, 3-often, 4-very often) each item occurred when both coparents were in the presence of the child (e.g., "Argue with your partner about your child, in the child's presence"). Responses for all domains were averaged within domain so that higher scores reflect greater support, agreement, satisfaction with labor, and conflict. Feinberg, Brown, & Kan (2012) report some evidence of convergent and discriminant validity for the full measure and subscales for both mothers and fathers.

Perceptions of child feeding behaviors were assessed using the Brief Autism Mealtime Behavioral Inventory (BAMBI; Lukens and Linscheid 2008), an 18 item questionnaire that assesses the frequency of challenging feeding behaviors as well as ratings of behaviors as problematic or not problematic. The frequency of each item is rated on a

five-point scale: at almost every meal (5), often (4), occasionally (3), seldom (2), never/rarely (1). Four subscales have been demonstrated within this measure (DeMand et al. 2015): food selectivity (4 items,  $\alpha=0.87$ ; e.g., “Is willing to try new foods”), disruptive mealtime behaviors (5 items,  $\alpha=0.70$ ; e.g., “Is disruptive during mealtimes”), food refusal (3 items,  $\alpha=0.54$ ; e.g., “Turns his/her face or body away from food”), and mealtime rigidity (3 items  $\alpha=0.60$ ; e.g., “Prefers to have food served in a particular way”). Means across items for each subscale were calculated. For each item, participants indicated “yes” if they considered the behavior a problem or “no” if they do not consider it a problem. The numbers of items answered “yes” within each subscale were used to determine the number of problem behaviors within each subscale reported by parents. DeMand et al. (2015) report there is limited psychometric testing on this instrument but some evidence of good internal consistency, interrater reliability, and construct validity in prior studies.

### Analysis Plan

Basic descriptive statistics will be presented for the demographic variables and the primary study variables. For the primary study variables, Shapiro–Wilk’s test will be used to assess whether they are distributed normally. For those that are normal means and standard deviations will be reported. Those determined to be non-normally distributed medians and interquartile ranges will be reported. Second, correlations among the primary study variables will be presented. Pearson’s correlations will be used for all comparisons of variables that are normally distributed. Spearman’s Rho correlation will be used for any comparison in which at least one variable is not normally distributed. All analyses were conducted using SPSS v.22.

### Results

The mean age of respondents was 39.9 years ( $SD=6.8$ ), 90% were the child’s mother figure (biological, step-, grand-, or adoptive), and 86% were co-residing and married to the co-parent. The mean age of the child was 9.5 years ( $SD=2.5$ ) and 81% were male. Additional sample descriptives are displayed in Table 1. Table 2 provides descriptive data for the primary study variables. Food selectivity was the most frequently reported type of challenging behavior and the type most often reported as problematic. For the rating of behaviors as problematic, 62% of participants reported at least one food selectivity behavior was problematic, 44% of participants reported at least one disruptive mealtime behavior was problematic, 40% of participants reported at least one food refusal behavior was problematic,

and 37% of participants reported at least one mealtime rigidity behavior was problematic. Bivariate correlations among primary study variables are displayed in Table 3. Spearman Rho correlations were used for all bivariate tests due to non-normal distribution in all study variables other than parenting stress.

### Parenting Stress and Feeding Challenges

As expected, challenging feeding behaviors were associated with greater parenting stress. Though food selectivity was the most frequently reported type of challenging behavior and the type most often reported as problematic it was the only domain of the BAMBI that was not significantly associated with parenting stress. All three other domains, disruptive mealtime behavior, food refusal and mealtime rigidity, were positively associated with parenting stress. For all three, both the greater the frequency of the behaviors and the more behaviors rated as problematic the greater the parenting stress reported. Associations ranged from fairly strong between parenting stress and the frequency of disruptive mealtime behaviors to more modest or even weak between food refusal and parenting stress.

### Parenting Stress and Co-Parenting

Three of the four co-parenting domains were significantly associated with parenting stress demonstrating modest to moderate correlations. Greater parenting stress was reported when agreement was lower and when support was lower. Greater parenting stress was also reported when conflict was higher.

### Co-parenting and Feeding Challenges

Co-parenting quality was significantly associated with one particular type of challenging feeding behavior, though all significant correlations suggest weak associations. When parents reported greater frequency of disruptive mealtime behaviors they also reported exposing their child to more conflict. When parents reported a greater number of disruptive mealtime behaviors as problematic they reported exposing their child to more conflict, feeling less supported by their co-parent, and less satisfaction with the balance of labor.

### Discussion

Food selectivity is a common problem faced by parents of children with ASD that is further reflected in these findings. Yet, what this study also highlights is that other challenges related to feeding are in need of attention. While restrictive

**Table 1** Demographic data for parent respondents and target children in analytic sample

Variable	N	Range	n (%) or Mean (SD)
<b>Parent</b>			
Age	112	29–64	39.9 (6.8)
Gender = female	112		101 (90.3%)
Race	112		
White			104 (92.9%)
Hispanic or Latino/a			5 (4.5%)
Black or African American			3 (2.7%)
Asian or Pacific Islander			3 (2.7%)
Highest education level	112		
Graduate degree			25 (22.3%)
Bachelor's degree			41 (36.6)
Associates degree			13 (11.6%)
Some college, no degree			24 (21.4%)
Trade, technical, vocational training			4 (3.6%)
H.S. diploma or equivalent			3 (2.7%)
Some H.S., no diploma			2 (1.8%)
Current employment status	111		
Employed full-time			65 (58.0%)
Employed part-time			13 (11.6%)
Stay-at-home parent			30 (26.8)
Student			3 (2.7%)
Biological parent to child	112		
Both co-parents			89 (79.5%)
Neither co-parents			9 (8.0%)
One of co-parents			14 (12.5%)
Married to co-parent = yes	112		94 (83.9%)
Resides with co-parent = yes	111		95 (84.8%)
More than one child in household = yes	112		90 (80.4%)
More than one child in household with a disability = yes	112		22 (19.6%)
<b>Child</b>			
Age	111	4–13	9.5 (2.5)
Gender = male	112		91 (81.3%)

diets are an ongoing challenge for many parents of children with ASD there are behavioral challenges related to feeding that may not coincide with restricted diets. The importance of recognizing the other types of behavioral challenges related to feeding in families of children with ASD, in addition to challenges raised by strong preference or restriction, is highlighted in associations across the co-parenting, parenting stress, and feeding challenges variables.

### Parenting Stress and Feeding Challenges

Behaviors under the food selectivity domain on the BAMBI were the most frequently reported but food selectivity was the only domain on the BAMBI not positively associated with parenting stress. The idea that issues related to feeding go beyond “pickiness” or selectivity to include a range

of challenging and sometimes aversive behaviors, has been reported within qualitative studies (Ausderau and Juarez 2013; Rogers et al. 2012; Suarez et al. 2014). This study seems to be the first to demonstrate associations between parenting stress and other challenges related to feeding (rigidity, disruptive behavior, refusal) reflected in the subdomains on the BAMBI with disruptive mealtime behaviors particularly strong in association with parenting stress. Several studies have suggested that though parenting stress can be related to behavioral characteristics or functional limitations associated with ASD, challenging problem behaviors may be particularly stressful (Estes et al. 2013; McStay et al. 2014). The domains of disruptive mealtime behavior and mealtime rigidity on the BAMBI reflect more specific challenging behaviors exhibited by the child and observed/experienced by the parent than does the domain

**Table 2** Descriptive statistics for parenting stress, feeding challenges, and co-parenting quality

Variable	N	Range	Mean (SD)	Median	25th	75th
Parenting stress (PSI)	110	43–163	96.9 (23.2)			
Child feeding problems (BAMBI)—frequency						
Food selectivity	111	1–5	3.61 (1.0)	3.50	3.00	4.50
Disruptive mealtime behavior	111	1–5	1.71 (0.66)	1.60	1.20	2.00
Food refusal	110	1–5	1.91 (0.84)	1.67	1.00	2.67
Mealtime rigidity	112	1–5	2.57 (0.97)	2.67	1.67	3.33
Child feeding problems (BAMBI)—# of problems						
Food selectivity	109	0–4	2.0 (1.7)	2.00	0.00	4.00
Disruptive mealtime behavior	108	0–5	0.77 (1.1)	0.00	0.00	1.00
Food refusal	106	0–3	0.58 (0.85)	0.00	0.00	1.00
Mealtime rigidity	108	0–3	0.56 (0.85)	0.00	0.00	1.00
Co-parenting (CRS)						
Agreement	112	0–6	3.9 (1.5)	4.13	2.81	5.00
Support	111	0–6	3.9 (1.7)	4.50	2.67	5.33
Labor	111	0.5–6	3.7 (1.6)	4.00	2.50	5.50
Conflict	112	1–4	1.7 (0.51)	1.60	1.25	2.00

**Table 3** Correlations among co-parenting (CRS), child eating challenges (BAMBI), and parenting stress (PSI)

	PSI	BAMBI—frequency				BAMBI—# of problems				CRS		
	1	2	3	4	5	6	7	8	9	10	11	12
1 PSI total	–											
BAMBI— frequency												
2 Food selectivity	0.02	–										
3 Disruptive mealtime beh	0.57**	0.22*	–									
4 Food refusal	0.21*	0.42**	0.52**	–								
5 Mealtime rigidity	0.36**	0.50**	0.36**	0.33**	–							
BAMBI—# of problems												
6 Food selectivity	0.08	0.85**	0.25**	0.37**	0.42**	–						
7 Disruptive mealtime beh	0.49**	0.28**	0.77**	0.36**	0.29**	0.34**	–					
8 Food refusal	0.26**	0.38**	0.44**	0.57**	0.36**	0.40**	0.49**	–				
9 Mealtime rigidity	0.30**	0.52**	0.32**	0.22*	0.64**	0.53**	0.29**	0.33**	–			
CRS												
10 Agreement	–0.28**	0.08	–0.13	–0.03	–0.03	0.03	–0.09	–0.10	0.00	–		
11 Support	–0.34**	0.10	–0.16	–0.04	0.01	–0.04	–0.24*	0.01	0.06	0.64**	–	
12 Labor	–0.16	–0.09	–0.16	–0.07	–0.13	–0.17	–0.22*	–0.17	–0.05	0.38**	0.43**	–
13 Conflict	0.29**	–0.10	0.23*	0.10	–0.05	–0.04	0.24*	0.19	0.08	–0.48**	–0.47**	–0.15

\*p < 0.05, \*\*p < 0.01

of food selectivity which reflects more general behaviors related to preferences.

These findings do not demonstrate that food selectivity is not a source of stress for parents of children with ASD. There are several possible reasons why food selectivity was not found to be associated with parenting stress in this sample. The average age of the reference child in this sample was about 9 years old. By this age the parents may have had time to adapt to the range of foods and develop strategies for addressing health implication from restriction. On a

daily basis, a restricted diet may not be as stressful as ongoing aversive behaviors around eating. Also, food selectivity among children with ASD may decline over time (Beighley et al. 2013).

**Co-Parenting, Parenting Stress, and Feeding Challenges**

This study is one of the first to empirically demonstrate associations between specific dimensions of co-parenting and parenting stress and is consistent with the very limited

work looking at co-parenting in families of children with ASD (May et al. 2015). Greater agreement about caregiving, greater support received, and less overt conflict were all associated with lower parenting stress. These results further demonstrate the importance of giving attention to the relationships among parental caregivers of children with ASD for both their individual well-being and for their capacity to manage strain related to challenging aspects of caregiving.

This study is also the first to test the associations between co-parenting domains and challenging feeding behaviors. Disruptive mealtime behaviors were the only domain of feeding challenges that emerged as associated with co-parenting. Interestingly, this domain displayed the strongest association with parenting stress as well. The fact that mealtime disruptive behaviors are associated with conflict in particular is important because in this context conflict refers to overt, affective disagreement in the presence of the child and possibly other children in the family, not simply a lack of agreement. It is notable that the association between co-parenting and disruptive mealtime behavior is more evident based on parents' assessment of the degree to which the behavior is problematic (the number of behaviors rated as problematic) compared to their assessment of the frequency of the behaviors. The degree to which disruptive mealtime behaviors are experienced as problematic is associated with multiple domains of co-parenting. Though the weak associations limit the extent to which we can differentiate between how co-parenting is associated with the parents' subjective experience of the severity of the challenging behaviors versus the more objective count of frequency of challenging behaviors it may be important to continue to consider both these operationalization in future research.

## Implications

Our findings suggest that feeding issues, both selectivity or restriction and aversive behaviors associated with feeding, are an important area for further research and clinical advancement. Limited research has tested the effectiveness of engaging parents in home-based behavioral strategies to address feeding issues (Najdowski et al. 2010; Sharp et al. 2014). Traditionally the strategies used for treating feeding issues and those communicated to parents are behaviorally-oriented with a major challenge being translation from clinic setting with an expert to a home setting with parents. To aid this translation, it may be helpful to embed parent training in behavioral strategies within a broader parent support program that has multiple goals: (1) improve the child's feeding behaviors, (2) build parents' skills for managing feeding challenges together, and (3) reduce stress on parents related to feeding. Though there are mixed findings on the efficacy of parent-mediated intervention for other

types of child outcomes (Oono et al. 2013), a more naturalistic approach to intervention that links behavioral strategies to each child's unique challenging feeding behaviors as they are experienced within the natural home- and family-environment may be necessary (Schreibman et al. 2015).

Helping parents to be less conflictual and more coordinated in their management of disruptive mealtime behaviors may help reduce the behaviors and support their co-parenting efforts more broadly. Doing this likely requires an interdisciplinary, family-centered approach (Curtin et al. 2015) that takes into account not only the child's unique feeding challenges but also the parents' goals for mealtimes and values related to shared family time such as mealtimes. More specifically, findings here suggest that helping parents be less overtly conflicted may help with the management of disruptive mealtime behaviors and help alleviate some of the associated stress. Feeding challenges may persist or evolve over time but the effort to help parents address or manage these goals can have the secondary benefit of reducing stress (Sharp et al. 2014). Even if efforts or interventions to support or guide parents are not specifically focused on the co-parenting relationship, having both co-parents involved may also be helpful.

## Limitations and Future Work

There are some important limitations to this study. Generalizability is limited in several ways given the participants were mostly white, biological mothers co-residing and co-parenting with the child's biological father from one region of the U.S. First, consistent with the population surrounding the recruitment site this sample is a large majority white, non-Hispanic. National estimates are about 53% of families of children with ASD are white, non-Hispanic (Christensen et al. 2016). Second, in terms of family structure there are likely unique co-parenting challenges in non-coupled, non-residential co-parenting situations. The way that co-parenting is handled and how it is related to parent stress and the ability to manage challenges in caregiving for a child with ASD may be different across different types of co-parenting situations. Third, this study primarily reflects the experience and perspectives of mothers of children with ASD. Though mothers of children with disabilities are more likely to take more responsibility in childcare-related decision making than fathers (Bristol et al. 1988), including feeding aspects of childcare (Ausderau and Juarez 2013), it is important to follow this study up with further work to more explicitly target fathers. Fathers are not only less represented than mothers in research on families with a child with a disability (Flippin and Crais 2011) but the connections between feeding issues, parenting stress, and co-parenting may be different for fathers (Karst and Van Hecke 2012). Ideally, future studies would include both co-parents

so that a more holistic picture can be captured of the co-parenting context the parents and child are experiencing and how that may impact the child's challenging behaviors and the parents' experience of managing them. Finally, the extent to which there are important differences between individuals who participated the survey and individuals who were invited but did not participate was not addressed. Not only are there possible basic demographic differences that might be underlying these groups but also unobserved factors that both make an individual more likely to respond and influences their experience in caring for their child with ASD.

The nature of the associations observed in this study also leaves some limitations. First, with cross-sectional associations it remains unclear whether associations observed between co-parenting and parenting stress indicate that less parenting stress is experienced when co-parenting is better or whether co-parenting is easier to do well when parenting stress is lower. Both interpretations are feasible and it is likely they co-occur. Similarly, associations between disruptive mealtime behaviors and co-parenting could indicate that disruptive mealtime behaviors are less frequent or problematic when co-parenting is better or that co-parenting is easier when there are fewer or less problematic disruptive mealtime behaviors. Future research could parse out the directionality of these associations, but in practice it seems important to help parents with all three issues directly. Second, some of the smaller correlations in Table 3, such as those between the co-parenting dimensions and disruptive mealtime behavior, must be considered with caution and tested in future research. Given the smaller associations and sample size power is just above 50%.

## Conclusion

With increased attention on the challenges many parents of children with ASD face related to feeding, it is important to advance this area of research and clinical practice. This study highlights the importance of attending to the feeding challenges faced by parents in addition to food selectivity and demonstrates one way that feeding challenges other than food selectivity are interconnected with broader family dynamics. Greater consideration of the home or family contexts in which these behaviors naturally occur and supporting families ability to enact strategies to address them in that natural context will be critical to improve on the ability to help parents in this domain.

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**Author's Contribution** MT and AB conceptualized and designed the study. AB managed participant recruitment and data collection. MT conducted the statistical analyses and drafted the manuscript.

Both authors revised the manuscript and approved the final manuscript as submitted.

## Compliance with Ethical Standards

**Conflict of interest** Matthew Thullen declares that he has no conflict of interest. Aaron Bonsall declares that he has no conflict of interest.

**Ethical Approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed Consent** Informed consent was obtained from all individual participants included in the study.

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