

**MEALTIME EFFECTS ON PARENTAL OUTCOMES – ADOLESCENTS ON THE
AUTISM SPECTRUM AMONGST THE PANDEMIC**

by

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Abstract

Previous studies show that various challenging behaviors in autistic children are linked to negative mental health, relationship satisfaction, and perceived family functioning outcomes in their parents, namely mothers. Mealtimes are a notoriously challenging time for families with an autistic child due to behaviors that autistic children may display in these contexts. The current study examined the potential links between mealtime behaviors in autistic children and negative mental health outcomes in parents and whether the number of these challenging mealtime behaviors changed due to the onset of the COVID-19 pandemic. Results displayed a link between a high number of challenging mealtime behaviors in autistic children and a high reported amount of marital conflict in parents. When accounting for a moderator of parent gender, measures of parental acceptance and perceived family functioning significantly differed based on the number of reported challenging child mealtime behaviors. Finally, we found no significant differences in retrospectively reported measures of child mealtime behaviors from the onset of the COVID-19 pandemic and the last six months. These results suggest that higher numbers of child mealtime behaviors in autistic children may be linked to higher levels of marital conflict in their parents, and among children with a high number of challenging mealtime behaviors, fathers may show more acceptance and perceive higher levels of family functioning than mothers. Additionally, the results suggest that the disruption in routines caused by the onset of the COVID-19 pandemic did not lead to a significant increase in the number of mealtime behaviors in autistic children. Future directions for this study include recruiting a sample size with more fathers, using observational measures to measure challenging child mealtime behaviors, and developing interventions to decrease marital conflict for parents of autistic children at mealtimes and to increase mothers' acceptance shown toward their autistic children.

Keywords: autism spectrum disorder, mealtimes, family functioning, mental health, adolescents

Mealtime Effects on Parental Outcomes- Adolescents on the Autism Spectrum Amongst the Pandemic

Children on the autism spectrum experience various challenges that neuro-typically developing children do not encounter. For example, children on the autism spectrum often display challenging mealtime behaviors (Provost et al., 2010). These challenging behaviors may negatively impact the larger family system. For example, previous research has found that mothers of children on the autism spectrum experience negative mental health and family functioning outcomes (Liu et al., 2020), and the possibility exists that children's mealtime behaviors could be a contributing factor to these outcomes. However, no prior studies have examined whether mealtime behaviors directly contribute to negative mental health and family functioning in parents of autistic children. Additionally, much of our knowledge surrounding parents of children on the autism spectrum focuses exclusively on mothers and neglects to include fathers. Finally, existing studies have not examined whether the onset of the COVID-19 pandemic caused significant changes in children on the autism spectrum's mealtime behaviors. The current study addresses these critical gaps by focusing on the link between autistic children's problematic mealtime behaviors and mental health, marital functioning, and perceptions of family functioning in mothers *and* fathers. Additionally, the current study examines whether reported child mealtime behaviors differed at the onset of the pandemic versus the present day.

Autism Spectrum Disorder

Autism spectrum disorder (ASD) is a neurodevelopmental disorder that is identified by difficulties in social communication and often includes unchanging and confined interests (Hodges et al., 2020). The word spectrum means that autistic individuals can display a variety of different phenotypes that are characteristic of ASD. Generally, children often display some of the markers of ASD before age 3 (American Psychiatric Association, 2013). However, the average

age for an autism diagnosis is approximately 5 years of age (van't Hof et al., 2020). According to the Centers of Disease Control and Prevention (CDC), approximately 1% of individuals are on the autism spectrum (CDC, 2022). Specifically, approximately 1 in 44 individuals are diagnosed with ASD during their lifetime. ASD exists in all racial and ethnic classifications. However, ASD is more commonly diagnosed in White or European American individuals, most likely due to socioeconomic barriers and distrust that some groups may have toward medical professionals (Hodges et al., 2020). Boys are more than four times more likely to be diagnosed with ASD than girls (CDC, 2022).

Co-Occurring Challenges

In addition to the core symptoms of autism, individuals on the autism spectrum face challenges in various aspects of their lives. For example, many children on the autism spectrum have more difficulty regulating their emotions than their neuro-typically developing peers do (Cai et al., 2018). Some researchers (e.g., Mazefsky et al., 2013) have speculated that poor emotion regulation is a characteristic quality in autistic individuals. Additionally, when individuals on the autism spectrum attempt to regulate their emotions, they often employ ineffective strategies to do so (Cai et al., 2018). Unfortunately, the use of these ineffective strategies has been linked to maladaptive outcomes in autistic populations. Cai and colleagues (2018) found that when autistic participants reported using traditionally ineffective strategies such as emotion suppression, they reported higher measures of depressive symptoms.

Another challenge that children on the autism spectrum often experience are social difficulties. When Chamberlain and colleagues (2006) examined the experiences of autistic children in classrooms with neuro-typically developing peers, autistic participants scored lower on measures of companionship, friendship reciprocity, and peer acceptance than their neuro-typically developing peers. Interviewing a group of adolescent females on the autism spectrum,

Foggo and Webster (2017) found that participants reported a lack of understanding for their classmates' social expectations and a high amount of conflict in almost all friendships that they had. In a sample of both neuro-typically developing and autistic boys, Mendelson and colleagues (2016) discovered that though autistic participants reported having friends, their measures of friendship quality were lower than those of neuro-typically developing participants.

Many research studies have found that children on the autism spectrum have much higher rates of anxiety disorders than neuro-typically developing children. Upon reviewing existing literature examining anxiety in autistic children, van Steesel and colleagues (2011) found that approximately 40% of autistic participants reported or showed signs of an anxiety disorder. Specifically, 29.8% of autistic participants reported having at least one phobia, 17.4% of participants reported having obsessive compulsive disorder (OCD), and 16.6% reported having social anxiety disorder. When den Houting and colleagues (2018) surveyed parents of children on the autism spectrum, they found that 63% of these children showed significant symptoms of anxiety.

Mealtime Problems in Autistic Children

In addition to the aforementioned challenges, children on the autism spectrum often display challenging mealtime behaviors (Provost et al., 2010). Surveying parents of both young autistic children and neuro-typically developing children, Provost and colleagues (2010) discovered that parents of autistic children reported more taste preferences, texture preferences, and color preferences surrounding their children's food preferences than parents of neuro-typically developing children did. Additionally, they found that autistic children were more likely to engage in dangerous food-related behaviors, such as mouthing inedible items. Multiple studies have also shown that autistic children are often willing to eat only a limited variety of food. For example, Bandini and colleagues (2010) found that when parents of both neuro-

typically and autistic children submitted a 3-day food record of their children's eating, parents of autistic children reported an average of a 41.7% food refusal rate. Also, the autistic children's food logs showed a significantly more restricted food repertoire compared to the neuro-typically developing children did. Some of this food and limited variety may come from food neophobia, an intense fear of trying new foods. Surveying groups of both neuro-typically developing and autistic adolescents, Kushner and colleagues (2015) found that autistic participants were significantly more likely to score high on measures of food neophobia than neuro-typically developing participants. This high rate of food neophobia is likely to contribute to autistic children's high rate of food refusal and rigidity surrounding their food repertoire. Mealtime behaviors are not only challenging for autistic children, but they may also impact other family members. However, little is known about the impact that these mealtime behaviors have on other family members.

Mental Health, Relationship Satisfaction, and Perceived Family Functioning in Parents of Autistic Children

The mental health of mothers of children on the autism spectrum has been extensively studied (e.g., Sawyer et al., 2009). When Sawyer and colleagues (2009) reviewed mothers of autistic children's 24-hour logs of their daily activity, they found that these mothers reported spending an average of 6 hours taking care of their autistic child(ren) during weekdays and significantly longer during weekends. Interviewing mothers of autistic children about their caregiving roles, Fairthorne and colleagues (2014) found that multiple mothers resigned from their jobs and reported getting very little sleep due to the demands of their caregiving roles.

This substantial caregiving role that these mothers undertake has been linked with a variety of mental health issues. Reviewing existing studies, Bailey and colleagues (2007) found that mothers of autistic children showed higher rates of depressive symptoms and were at a

higher risk for having clinical depression than mothers of neuro-typically developing children. Additionally, mothers of autistic children have reported higher levels of anxiety and stress than mothers of neuro-typically developing children (Al Ansari et al., 2021). Significantly fewer research studies have examined the mental health effects of parenting autistic children in fathers. Existing studies have found that fathers of autistic children usually take on a less demanding caregiving role than mothers (e.g., Olsson & Hwang, 2008). Also, fathers typically have lower depression scores compared to mothers of autistic children. However, Olsson and Hwang (2008) found that fathers of autistic children displayed higher depression scores than fathers of neuro-typically developing children. When Hastings and colleagues (2005) examined stress and depression scores of parents of autistic children, they found that fathers' stress levels were higher when mothers scored high on measures of depression. Existing research seems to suggest that fathers of children on the autism spectrum experience less negative mental health outcomes than mothers, but they experience more negative mental health effects than fathers of neuro-typically developing children.

Certain factors have been shown to predict more negative mental health outcomes in parents of autistic children. For example, parents of autistic children with higher reported numbers of behavior problems, such as conduct problems and self-injuries, reported a higher number of negative mental health outcomes (Weiss et al., 2012). Herring and colleagues (2006) found that parents of autistic children with pervasive emotional problems reported higher levels of maternal stress and more negative mental health outcomes for both parents. Prior studies have not sought to examine possible links between autistic children's mealtime behaviors and parental mental health outcomes.

Several prior studies have examined marital functioning in parents of autistic children, and their findings have indicated that these parents may be at risk for negative outcomes in this

area. Comparing couples with and without autistic children's daily journals about their relationships, Hartley et al. (2017) found that couples with an autistic child described feeling less close to and having a smaller number of positive encounters with their partner than parents of neurotypically developing children. Brobst and colleagues (2009) found that parents of autistic children reported lower levels of marital satisfaction than parents of neurotypically developing children. There is limited research examining potential links between behaviors in autistic children such as mealtime behaviors that may exacerbate negative relationship outcomes in parents.

Previous research has looked at measures of family functioning in families with an autistic child. Jellett and colleagues (2015) examined factors that may significantly impact family functioning in families with an autistic child and found that parents who reported a higher number of behavior problems in their autistic child also reported lower measures of perceived family functioning. Additionally, prior studies have examined differences in perceptions of family functioning between mothers and fathers. When couples were asked to report their perceptions of family functioning separately, mothers reported a greater difference between what their family function should look like and what it actually looked like than fathers (Johnson et al., 2011). To date, no study has looked at how mealtime behaviors in autistic children may impact parent reports of family functioning or whether the link between the number of challenging mealtime behaviors in autistic children and perceived family functioning significantly differs in mothers and fathers.

COVID-19 Pandemic

The onset of the COVID-19 pandemic brought about many changes in families. For example, many working parents who had previously worked outside their homes were forced to work from home starting in March 2020 (Bick et al., 2021). Additionally, many children's

schools abruptly switched from an in-person to a remote learning format (Carpenter & Dunn, 2020). As a result of these major changes, both parents and children experienced disruptions in many of their routines, such as in their sleep schedules (Gupta et al., 2020). Due to their preference for routine and the pandemic's vast disruption of routines, many children on the autism spectrum experienced psychological and social challenges during the onset of the pandemic (Colizzi et al., 2020). Parents of autistic children reported experiencing challenges during both leisurely and organized activities during this time (Colizzi et al., 2020). However, studies have not looked at the specific challenges of mealtimes during the onset of the pandemic.

The Current Study

The current study had two primary goals. First, I sought to examine the links between mealtime behaviors in autistic children and negative mental health, relationship satisfaction, and perceived family functioning outcomes in mothers and fathers. Although prior research has found that autistic children exhibit various maladaptive mealtime behaviors and that parents of autistic children experience multiple negative mental health, relationship satisfaction, and family functioning outcomes (e.g., Provost et al., 2010; Al Ansari et al., 2021), no studies to my knowledge have examined the link between these variables. Additionally, many studies overlook mental health, relationship satisfaction, and family functioning outcomes in fathers of autistic children; thus, I included fathers as well as mothers to ameliorate this gap and to compare the aforementioned outcomes between mothers and fathers. My second goal was to examine whether the onset of the COVID-19 pandemic significantly changed the number of challenging mealtime behaviors in autistic children. Although existing research has examined other changes in autistic children's behaviors due to the pandemic (e.g., Colizzi et al., 2020), no studies to my knowledge have examined changes in the number of challenging mealtime behaviors.

For the first aim, based on previous research (e.g., Provost et al., 2010), I hypothesized that a greater number of challenging mealtime behaviors in autistic children would be related to more negative mental health, marital satisfaction, and family functioning perception outcomes in both parents; however, I expected that mothers' results would show more pronounced effects than fathers. For the second aim, I hypothesized that parents would report more negative child mealtime behaviors during the onset of the COVID-19 pandemic compared to their reports of present child mealtime behaviors.

Method

Participants

Parents of autistic children in the USA were recruited voluntarily via email to participate in the study. In the present study, 127 parents ($n = 101$ mothers) completed the study. Each parent completed the survey about only one child. Children were mostly male (79%) and between the ages of 6-17 years ($M_{\text{age}} = 14$, $SD = 3.16$). Most parents reported their ethnic/racial background as White, followed by Hispanic/Latino/Spanish American, followed by Black/African American. When asked to report their marital status, most parents reported that they were married (76%), followed by single. Parents were primarily college-educated (65%), currently employed for wages (64%), and had a yearly household income greater than \$150,000 (29%). Parents were asked if they had received a diagnosis of ASD, and the majority responded that they had not (98%).

Procedure

Upon expressing interest in the study, participants completed a short, online eligibility questionnaire ensuring that their child was between the ages of 6 and 17 years of age and had received an autism diagnosis from a professional in the community (e.g., doctor, psychologist, or someone in the education system). Participants who met eligibility requirements were sent an

online survey that took approximately 30-45 minutes to complete. They were asked demographic questions, questions about their mental health, about family and relationship functioning, and about their autistic child's mealtime behaviors. Parents were compensated with a \$20 e-gift card for their time.

Measures

Parental Wellbeing. Parental wellbeing was measured using the wellbeing subscale of the Inventory of Depression and Anxiety Symptoms (IDAS; Watson, 2007). The subscale consisted of 8 statements such as "I was proud of myself," "I felt optimistic," and "I looked forward to things with enjoyment" and asked participants to rate how much they had felt that way in the past two weeks. Participants reported their answers using a 5-point Likert scale (1 = not at all to 5 = extremely). The items were summed together, and because all items were reverse coded, low scores signified higher measures of wellbeing. The subscale demonstrated good reliability in the current study ($\alpha = .90$).

Parenting Behaviors. Parenting behaviors were measured using the cohesion subscale of the Family Environment Scale (FES; Moos, 1990) and the acceptance subscale of the Parental Bonding Instrument (PBI; Parker et al., 1979). The cohesion subscale consisted of 9 statements such as "family members really help and support one another," "we often seem to be killing time at home," and "we put a lot of energy into what we do at home" and asked participants to report each statement as true or false for their family. The items were summed together, and higher scores denoted higher measures of cohesion. The acceptance subscale consisted of 10 statements such as "I make my child feel better after he/she worries," "I smile at my child very often," and "I make my child feel better when he/she is upset" and asked participants to rate how well each statement described their parenting on a Likert scale (not like to a lot like). The items were summed together, and higher scores indicated higher amounts of parental acceptance. The subscale displayed good reliability in the present study ($\alpha = .80$).

Relationship Satisfaction. Relationship satisfaction was measured using the total scores of the Couples Satisfaction Index (CSI-16; Funk & Rogge, 2007) and the O’Leary Porter Scale (OPS; O’Leary & Porter, 1980). The CSI-16 consisted of 16 items divided into four sections. Within each section, participants rated statements (e.g., “our relationship is strong”) on that section’s Likert scale (e.g., not at all true to completely true). The items were summed together, and higher scores suggested higher levels of relationship satisfaction. The subscale exhibited good reliability in the current study ($\alpha = .98$). The OPS consisted of 10 items in which participants answered questions such as “Husbands and wives often disagree on the subject of discipline. How often do you and your spouse argue over discipline problems in your child’s presence?” on a Likert Scale (never to very often). The items were summed together, and higher scores signified higher levels of marital conflict. The subscale demonstrated good reliability in the present study ($\alpha = .80$).

Broad Autism Phenotype. The broad autism phenotype was measured using the total score of the Broad Autism Phenotype Questionnaire (BAPQ; Hurley et al., 2007). The BAPQ consisted of 36 items such as “I like being around other people,” “I find it hard to get my words out smoothly,” and “I am comfortable with unexpected changes in plans” and asked participants to rate how often they felt each statement applied to them. Participants reported their answers using a Likert scale (very rarely to very often). The items were averaged, with higher scores denoting higher measures of the broad autism phenotype. The scale exhibited good reliability in the current study ($\alpha = .94$).

Child Mental Health. Child mental health was measured using the total difficulties subscale of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). The subscale consisted of 20 statements such as “considerate of other people’s feelings,” “would rather be alone than with other youth,” and “often loses temper” and asked participants to rate how true

they felt each statement was of their child. Participants reported their answers using a Likert scale (not true to certainly true). The items were summed, with higher scores signifying a higher number of mental health problems. The subscale displayed good reliability in the current study ($\alpha = .73$).

Child Mealtime Behaviors. Child mealtime behaviors were measured using the total score of the Brief Autism Mealtime Behavior Inventory (BAMBI; Lukens et al., 2008). The BAMBI consisted of 18 statements such as “My child cries or screams during mealtimes,” “My child turns his/her face or body away from food,” and “My child remains seated at the table until the meal is finished” and asked participants to rate how often each statement described their child’s mealtime behavior. Participants took the survey twice, once to report their child’s present mealtime behaviors, and again to report their child’s mealtime behaviors at the onset of the COVID-19 pandemic in March 2020. They reported their answers using a 5-point Likert scale (1 = never/rarely to 5 = at almost every meal). The items were summed, with higher scores indicating a higher number of challenging mealtime behaviors. The results of the scale were reliable ($\alpha = .83$).

Analytic Procedure

To examine potential links between the number of challenging mealtime behaviors in autistic children and mental health, relationship satisfaction, and family functioning in mothers and fathers, a multivariate regression analysis was run. To see whether gender of the parent changed the strength of the effect of the potential links between the number of challenging mealtime behaviors in children and mental health, relationship satisfaction, and family functioning in parents, a series of moderated regression analyses were run. To investigate whether the number of challenging mealtime behaviors at the onset of the COVID-19 pandemic significantly differed from the present day, a paired samples t-test was run.

Results

Assumptions for Multivariate Regression and Moderated Regressions

In these both the independent variable, the total BAMBI scores, and the dependent variables, the wellbeing subscale of the IDAS, the cohesion subscale of the FES, the acceptance subscale of the PBI, the total score of the CSI, the total score of the OPS, and the total score of the BAPQ, were on a continuous scale. For the moderated regression analysis, the moderator of parent gender was a nominal variable. Therefore, the assumption for scale was met. The independence of cases for the model was measured using a Durbin Watson test for each subscale. All Durbin Watson values were between 0 and 3. Therefore, the assumption for independence was met. Linearity was measured with a scatterplot for each subscale. All scatterplots displayed linearity except for the FES cohesion subscale, which did not display linearity due to the truncated range (0-9). Therefore, the assumption for linearity was met. Homoscedasticity was measured with a normal probability plot for each measure. Overall, residuals appeared to be uniformly distributed and, thus, the assumption for homoscedasticity was met. The Central Limit Theorem, which assumes that sample sizes greater than 120 are normally distributed, was met ($n = 127$). Therefore, the assumption for normality was met. To ensure that there was no multicollinearity in the model, collinearity statistics were computed for each measure. Each tolerance score was above 0.2, and each VIF was less than 10. Therefore, the assumption for no multicollinearity was met. To ensure that there were no outliers, the frequency of values for each subscale was examined. None of the measures appeared to have scores that were outliers.

Assumptions for T-Tests

Normality was measured in two ways. First, skewness and kurtosis values were close to 0, which signified an approximately normal distribution. Additionally, the sample size ($n = 127$)

satisfied the conditions of the Central Limit Theorem, implying that the data had a normal distribution. Therefore, the assumption for normality was met. The variables used in this t-test were BAMBI scores where parents reported their child's mealtime behaviors from the past six months and BAMBI scores where parents retrospectively reported their child's mealtime behaviors from the onset of the COVID-19 pandemic in March 2020. Both variables were ratio level, so the assumption of interval or ratio level data was met. All participants took the survey independently. As a result, independence of scores could be assumed.

Multivariate Linear Regression

A multivariate linear regression examined whether participants' reports of the number of their child's challenging behaviors were associated with parents' mental health, relationship functioning, and perceived family functioning. The results for the dependent variable of marital conflict, were significant, $B = .11$, ($SE = .05$), $t = 2.19$, $p = .03$, $R^2 = .04$ (Table 1). These results indicate that higher numbers of challenging mealtime behaviors in autistic children were associated with greater marital conflict in parents. Additionally, the results for the SDQ total difficulties subscale, a measure of challenging behaviors displayed by the autistic child, were significant, $B = .20$, ($SE = .05$), $t = 4.17$, $p < .01$, $R^2 = .14$ (Table 1). When controlling for covariates of child gender and family income, the significance for the marital conflict outcome, but the significance for the SDQ total difficulties scale remained. These results suggest that children who display high numbers of challenging mealtime behaviors also display other challenging behaviors not related to mealtimes.

Moderated Linear Regressions

A series of moderated linear regression analyses examined whether the moderator of parent gender significantly strengthened or weakened the association between the number of

challenging mealtime behaviors in autistic children and parents' mental health, relationship functioning, and perceived family functioning. The results for parenting acceptance were significant, $F(5, 121) = 4.50, p = .009, R^2 = .16$ (Table 2, Figure 1). These results show that for children with less mealtime difficulties, mothers reported higher levels of acceptance than fathers, but for children with above average levels of mealtime difficulties, fathers reported higher levels of acceptance than mothers. The results for family cohesion were also significant, $F(5, 121) = 2.89, p = .018, R^2 = .11$ (Table 2, Figure 2). These results show that for children with below average mealtime difficulties, mothers reported higher family cohesion compared to fathers; in contrast, for children with above average mealtime difficulties, fathers reported greater family cohesion compared to mothers.

Paired Samples T-Test

A paired samples t-test was conducted to determine whether children's mealtime difficulties retrospectively reported from the onset of the COVID-19 pandemic versus child mealtime difficulties for the past six months differed. The results were not significant, $t(126) = .12, p = .45, \eta^2 = .95$, with participants reporting a similar number of challenging mealtime behaviors in their autistic children in the last 6 months ($M = 43.45, SD = 11.09$) than at the onset of the pandemic ($M = 43.41, SD = 11.24$).

Discussion

Previous studies have found that autistic children experience various difficulties in addition to the characteristic symptoms of ASD, including displaying challenging behaviors during mealtimes (Foggo & Webster, 2017; Provost et al., 2010). At the onset of the COVID-19 pandemic, previous research found that parents reported their children experienced difficulties engaging in many types of activities due to their disruption in routines (Colizzi et al., 2020).

Additionally, prior research has demonstrated that parents of autistic children, specifically mothers, report experiencing more negative mental health, marital satisfaction, and family functioning perception outcomes than parents of neuro-typically developing children (Al Ansari et al., 2021; Hartley et al., 2017; Jellett et al., 2015). Results of the current study revealed a positive association between the number of challenging mealtime behaviors shown by autistic children and parent reports of marital conflict. I also found that associations between the number of child mealtime behaviors and both parental acceptance and parental perceptions of family cohesion differed as a function of parent gender. In contrast to my hypotheses, there was not a significant difference between parent reports of challenging mealtime behaviors in their children at the onset of the COVID-19 pandemic and the present day. The design of this study was novel, and results partially aligned with prior research.

Partially consistent with my hypothesis, high numbers of challenging mealtime behaviors were associated with higher levels of at least one negative outcome in parents, marital conflict. Prior research has found that parents of autistic children report lower measures of marital satisfaction than parents of neurotypically developing children (Brobst et al., 2009) and the results from the current study highlights one potential reason for these differences. This link between greater challenging mealtime behaviors in autistic children and higher levels of marital conflict in parents reinforces the hypothesis that mealtimes are a potentially stressful activity for families with an autistic child. It is possible that in families with autistic children who display high numbers of challenging mealtime behaviors, parents often argue during mealtimes or about mealtimes themselves. However, there was no significant association between the number of mealtime behaviors displayed by autistic children and any other measures of negative mental health or family functioning outcomes in parents. This may be explained by the current study's

reliance on parent self-report measures for both child mealtime behaviors and parent measures of mental health, marital satisfaction, and perceived family functioning.

The results of the current study also show that mothers and fathers may differ in the extent to which their children's mealtime behaviors impact their parenting and views of the family. Among parents who reported a low number of challenging mealtime behaviors in their children, mothers reported showing significantly more acceptance toward their children and perceived greater family cohesion than fathers. On the other hand, among parents who reported a high number of challenging behaviors in their children, fathers reported showing significantly higher levels of acceptance toward their children and reported greater family cohesion than mothers. These effects may exist due to the primary caregiving role that mothers typically take within their families, particularly during mealtimes (Kotila et al., 2013). Since most mothers spend significantly more mealtimes with their children than fathers, they most likely interact with these challenging mealtime behaviors on a daily basis. In addition, mothers with children who display a high number of challenging mealtime behaviors may have a more accurate perception of the amount of family cohesion present daily than fathers, given that mothers often take the majority of the caregiving role. Finally, due to the stress and challenging behaviors that they present, mealtimes may be very salient for mothers and are driving their perception of family cohesion. On the other hand, the less salient role of mealtimes for fathers may not drive their perception of family cohesion.

Inconsistent with my hypothesis, the number of retrospectively reported mealtime behaviors from the onset of the COVID-19 pandemic did not significantly differ from the present day. These results do not support prior studies that have found that the onset of the COVID-19 pandemic led to a disruption in autistic children's ability to complete tasks and engage in

activities (Colizzi et al., 2020). This result could mean multiple things for families. First, because I did not have any data on the number of mealtime behaviors shown in this sample before the onset of the COVID-19 pandemic, this lack of a difference in mealtime behaviors between the onset of the COVID-19 pandemic and the present day may suggest that autistic children have not fully recovered from the unexpected shifts in routine that occurred due to the pandemic. This lack of a difference in numbers of mealtime behaviors could also mean that autistic children did not experience as many difficulties adjusting to the pandemic's shift in mealtime routines as was expected. This possibility is encouraging, considering that autistic children struggled with adjusting to the shift in routines in other areas of their lives at the onset of the pandemic (Colizzi et al., 2020). Although this lack of a significant difference between the number of challenging mealtime behaviors in autistic children at the onset of the COVID-19 pandemic and the present day was not consistent with my hypothesis, this result has the potential to have optimistic and informative implications.

Limitations and Future Directions

The current study had several limitations. First, the sample consisted of mostly higher income, college educated, White/European American women and was not representative of the general population. Second, the study consisted of self-report measures from parents, creating the potential for biases in responses. Specifically, parents were asked to retrospectively report their children's mealtime behaviors from the onset of the COVID-19 pandemic almost three years later, generating the potential for errors in memory when responding. Additionally, parents who were struggling with their mental health may have had perceptions of their children as displaying more difficult mealtime behaviors, to single reporter bias about the number of these behaviors.

There are several future directions for this area of research. First, future studies should recruit sample that are more representative of all parents of autistic children, specifically by recruiting a higher number of fathers. Second, future studies should use other types of measures that are more objective in nature, such as observational measures, in addition to the self-report measures that were used in this study. For example, a future study could observe families with an autistic child's mealtimes and collect observational data about mealtime behaviors. Third, I hope that the results of this study lead to the future development of interventions that aim to decrease marital conflict for parents of autistic children during mealtimes. I also hope that future interventions in this area aim to increase the level of acceptance shown by mothers toward their autistic children who display high numbers of challenging behaviors, particularly at mealtimes.

The current study aimed to investigate the potential links between challenging mealtime behaviors in autistic children and measures of mental health, marital satisfaction, and family functioning in their parents. This study also sought to examine whether retrospective parent reports of mealtime behaviors at the start of the COVID-19 pandemic differed from parent reports of mealtime behaviors during the present day. My results showed that there was a significant link between the number of challenging mealtime behaviors displayed by autistic children and the level of marital conflict reported by their parents and that gender served as a significant moderator between the number of mealtime behaviors shown and the amount of acceptance and perceived family functioning reported by mothers and fathers. Also, I found that parent reports of the number of mealtime behaviors displayed by their autistic children at the onset of the COVID-19 pandemic did not significantly differ from the present day. These findings further support the contention that mealtimes are often an especially challenging time for families with an autistic child and that a high number of challenging mealtime behaviors is

related to multiple negative outcomes in parents. Although this study had several limitations, these results have significant implications for future research and the development of interventions.

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Table 1

Multivariate linear regression of the association between children's challenging mealtime behaviors and parent outcomes

Variable	B	SE	t	p
Broad Autism Phenotype	.01	.01	1.11	.268
Marital Conflict	.11	.05	2.19	.031*
Acceptance	.01	.03	0.42	.674
Couple Satisfaction	.08	.17	0.46	.649
Difficult Child Behaviors	.20	.05	4.17	<.001*
Perceived Family Cohesion	.01	.02	0.03	.032
Wellbeing	-.06	.06	-1.05	.052

*Note: * p < .05*

Table 2

Moderated Linear Regression of the association between children's challenging mealtime behaviors and parent outcomes as a function of gender

Variable	R^2	<i>coeff</i>	<i>p</i>
Broad Autism Phenotype		-.02	.389
Broad Autism Phenotype X Gender	.05	-.90	.263
Marital Conflict		-.09	.676
Marital Conflict X Gender	.08	-7.08	.129
Acceptance		.27	.006
Acceptance X Gender	.16	8.73	<.001*
Couple Satisfaction		14.34	.678
Couple Satisfaction X Gender	.02	22.99	.824
Child Difficulties		.06	.768
Child Difficulties X Gender	.20	-2.21	<.001*
Perceived Family Cohesion		.16	.016
Perceived Family Cohesion X Gender	.11	-.60	.017
Wellbeing		-.47	.045
Wellbeing X Gender	.04	-10.36	.450

Note: * $p < .05$. Models were run separately for each dependent variable.

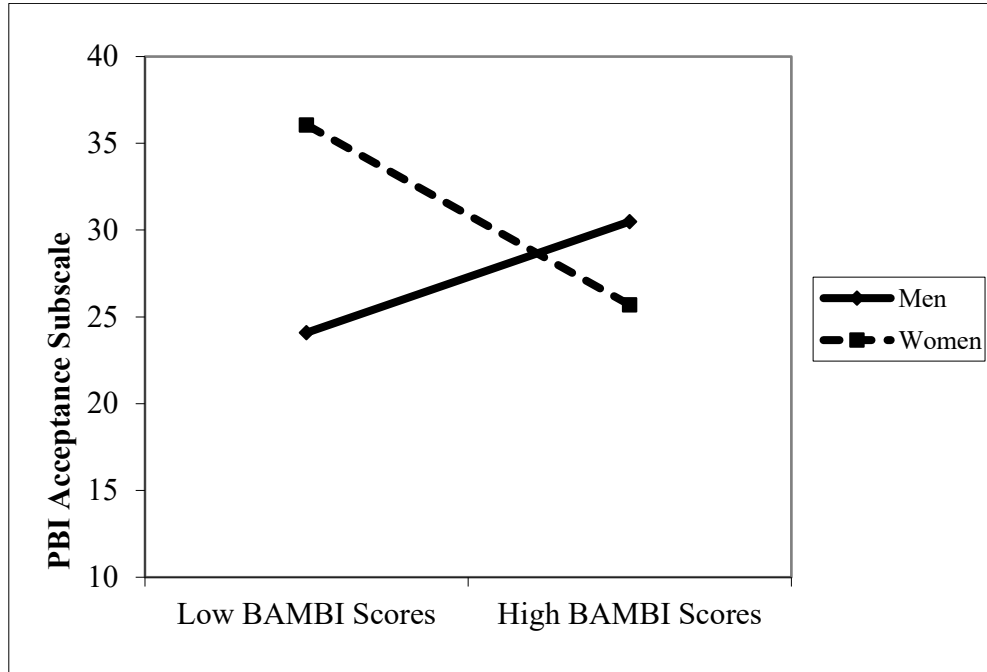
Table 3*Correlations between measures of mealtime behaviors, mental health, marital satisfaction, and perceived family functioning*

Variable	1	2	3	4	5	6	7	8
1. Current Child Mealtime Behaviors	-							
2. COVID-19 Child Mealtime Behaviors	.92**	-						
3. Broad Autism Phenotype	.12	.09	-					
4. Marital Conflict	.21*	.23*	.15	-				
5. Acceptance	-.01	-.05	-.21*	-.34**	-			
6. Couple Satisfaction	.04	.02	-.02	-.62**	-.38**	-		
7. Child Difficulties	.40**	.42**	.09	.27**	-.04	-.13	-	
8. Perceived Family Cohesion	.01	.07	-.19*	.45**	-.40**	.47**	-.09	-
9. Wellbeing	-.05	.02	.39**	-.31**	.19*	.26**	.21*	-.45**

Note: * correlation is significant at the 0.01 level (2-tailed), ** correlation is significant at the 0.05 level (2-tailed)

Figure 1

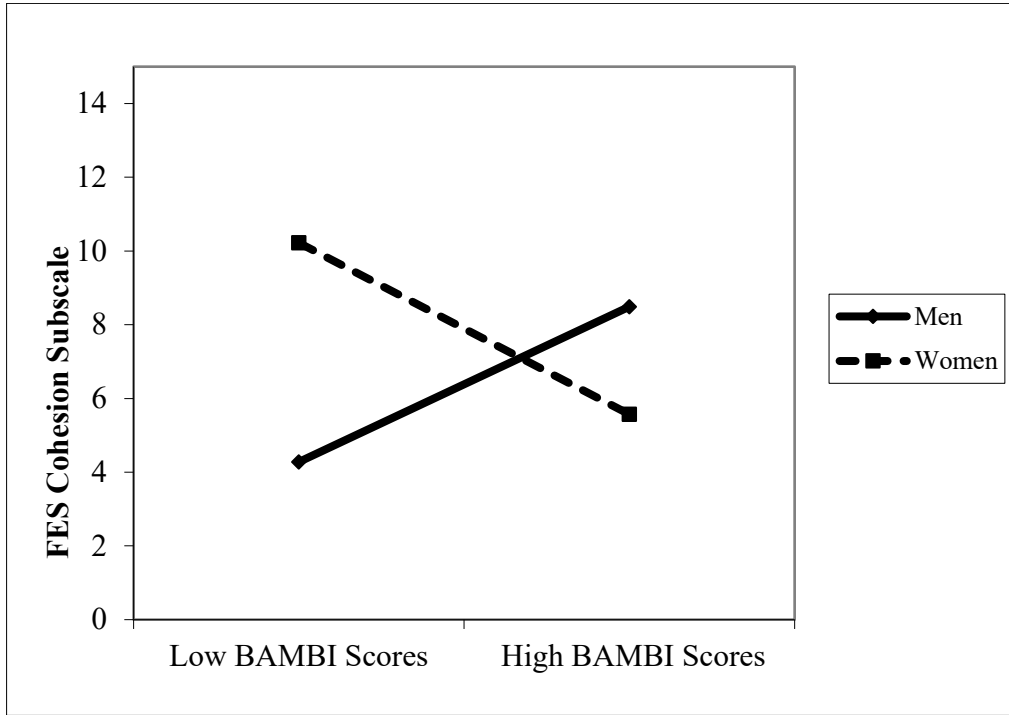
Associations between Child Mealtime Behaviors and Parental Acceptance Moderated by Parent Gender



Note: BAMBI = Brief Autism Mealtime Behavior Inventory

Figure 2

Associations between Child Mealtime Behaviors and Perceived Family Cohesion Moderated by Parent Gender



Note: BAMBI = Brief Autism Mealtime Behavior Inventory