

PARENTAL BURNOUT IN
MOTHERS AND FATHERS OF CHILDREN WITH AND WITHOUT
AUTISM SPECTRUM DISORDER DURING THE COVID-19 PANDEMIC

by

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A DISSERTATION

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ABSTRACT

Objective: This project aimed to identify if and how experiences and functioning differ for mothers and fathers of typically developing (TD) children and mothers and fathers of children with autism spectrum disorder (ASD) in the midst of the COVID-19 pandemic. The primary focus is on parental burnout and associated mental health problems, parenting behaviors, and child behavior problems. An exploratory aim examined the differences in parental resilience.

Method: The sample was comprised of 185 parents of children with and without ASD ages 4 and 16 years. Parents self-reported on measures of psychological functioning, parental burnout, behaviors, and resilience, and child behaviors.

Results: The ASD group was found to have higher levels of depression, anxiety, and all types of parental burnout. Fathers in the ASD group reported higher levels of anxiety, depression, and burnout than mothers. No differences were found between mothers and fathers or between groups in level of acceptance, but group and gender differences were found in use of psychological and firm control. Fathers in both groups reported lower levels of resilience related to knowledge of their child's characteristics relative to mothers. Fathers in the ASD group also reported lower levels of social support than mothers in the ASD group and fathers in the TD group. However, no differences were found between groups or between mothers and fathers in positive perception of parenting.

Conclusions: This study sheds light on how parents' experiences of children with and without ASD differed during the COVID-19 pandemic. Given the high percentage of parents of children with ASD who reported parental burnout, it is essential for clinicians to assess parents' level of functioning and feelings related to their parenting role. This study also suggest that fathers are struggling more

psychologically and are more severely burned out than mothers, which highlights the importance of the inclusion of fathers in both research and clinical services.

DEDICATION

This dissertation is dedicated to my grandmother, Karen Reynolds. You have been my most influential idol and inspiration during my graduate school journey. Thank you for being the strong, independent, self-confident woman that you are, for showing me what it truly means to persevere, and for helping to foster my growth and transformation during these past five years. Your advice, counsel, and perspective always shed a unique light and I am eternally grateful for your unwavering support. Thank you for being everything that you are and continue to be.

LIST OF ABBREVIATIONS AND SYMBOLS

α	Cronbach's index of internal consistency
F	Computed value of ANOVA and MANOVA tests
M	Mean: the sum of a set of measurements divided by the number of measurements in the set
n	Subset sample size
p	Probability associated with the occurrence under the null hypothesis of a value as extreme as or more extreme than the observed value
r	Pearson product-moment correlation: a measure of the strength of the linear relationship between two variables
SD	Standard Deviation: the amount of variation or dispersion of a set of data values
t	Computed values of t test
$<$	Less than
$=$	Equal to

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CHAPTER 1. INTRODUCTION

COVID-19, a novel coronavirus, spread across the world and over thirty million people were infected leading to over 554,000 deaths in the United States alone (as of April 7th, 2021; CDC, 2020). Additionally, over 96% of Americans experienced orders to shelter in place (CDC, 2020) which the U.S Department of Homeland Security (2020) defined as remaining indoors as much as possible and leaving home only for essential reasons such as grocery shopping, visiting the gas station, and accessing healthcare. Although individuals were allowed to engage in outdoor activities, such as physical exercise, they were required to maintain six feet of distance from others to reduce the spread of the virus.

According to Pew Center Research (2020), about 40% of working-age adults (individuals between 18 and 64 years) reported that they worked from home as a result of the novel coronavirus and almost three-quarters (73%) of working adults with postgraduate degrees stated they worked at home. Research showed that those adults with a higher income were more likely to work from home than adults with a lower income with 61%, 41%, and 27% of individuals in the upper-, middle-, and lower-income tiers indicating that they worked from home, respectively (Pew Center Research, 2020). Additionally, those who continued to work in their original work environment were likely working in environments that placed them at high levels of risk for contracting the virus, such as clinics, grocery stores, hospitals, and pharmacies (Griffith, 2020). About one-third (33%) of Americans also reported that the coronavirus led to someone in their household receiving a pay cut or losing their job (Pew Center Research, 2020)

In addition to the aforementioned increased levels of unemployment, the rise in remote work situations, and widespread financial insecurity, COVID-19 presented families with a unique situation related to traditional social supports from their extended family and friend networks. Many families rely on extended family members for childcare or help with parent-related activities (Parkes et al., 2015). As a result of social distancing requirements, these extended family and friends were no longer available for in-person support or childcare assistance. Furthermore, grandparents, who are often relied upon by parents to help with child-rearing burdens, fell overwhelmingly in the category of “high risk” for COVID-19, which limited their ability to provide respite for parents (Aronson, 2020). In addition, many parents no longer had access to the leisure activities in which they engaged pre-pandemic. The closure of community centers, gyms, bars, and restaurants, and limited childcare options led to reduced opportunities to take breaks outside their homes without their children (Griffith, 2020).

With this reduced access to support and limited breaks, parenting responsibilities increased drastically as some children were home 24 hours, seven days a week. Concerning parents of children younger than 12 years, 37% of women and 32% of men reported that handling childcare was somewhat to very difficult during the coronavirus outbreak (Pew Research Center 2020). Whereas some parents experienced job loss, others worked from home while simultaneously assisting children with virtual schooling or homeschooling (Griffith, 2020). Many parents were not able to work as efficiently and therefore engaged in work activities beyond their typical working hours. Davis and Green (2020) reported on data collected from NordVPN, a network that supports teleconference and distance working platforms, which found that some employees spent up to three extra hours working per day and many individuals worked once schooling ended or once children had gone to bed. Questions related to how COVID-19

impacted gender equality arose as a result of the overlap between work hours and parenting. On one hand, there were reports of large numbers of working mothers who had to reduce their working hours or stop working altogether because of the increased childcare needs. There were opposing views, though, that suggested COVID-19 may promote greater gender equality given many fathers were forced to take on more primary caregiving responsibilities (Alon et al., 2020).

The majority of U.S. adults (nearly nine-in-ten) indicated that their lives changed to at least some degree as a result of COVID-19. Forty-four percent of individuals reported that their lives changed in a major way due to increased stress levels related to health, financial strain, childcare, homeschooling, changes in employment, and limited social support (Pew Research Center, 2020). As the COVID-19 pandemic yielded higher levels of psychological distress among the general population (Lima et al., 2020), of particular concern, were those individuals who fell into the category of vulnerable populations. Specifically, there was great concern for those who suffered from pre-existing mental health problems or neurodevelopmental disorders like autism spectrum disorder (ASD), as the pandemic reportedly caused exacerbated symptoms for many (Yao et al., 2020).

This project aimed to identify if and how experiences and functioning differ for mothers and fathers of typically developing (TD) children and mothers and fathers of children with ASD in the midst of the COVID-19 pandemic. The primary focus is on parental burnout and associated mental health problems, parenting behaviors, and child behavior problems. Additionally, an exploratory aim of this study was to examine the differences in parental resilience among mothers and fathers of TD children and children with ASD and the relations between parental resilience, parental burnout, and psychological functioning in the context of the global pandemic. Together, this study aims to highlight ways service providers may be able to

better individualize services and support for mothers and fathers of children with ASD, particularly those who may have experienced parental burnout related to the unique circumstances of the COVID-19 pandemic.

COVID-19 Impact on ASD

Children with ASD fall within the category of vulnerable populations (CDC, 2020). ASD is a neurodevelopmental disorder characterized by impairments in social communication and restricted and repetitive behaviors and interests (American Psychiatric Association, 2013). Most recent estimates have suggested that ASD is the nation's most rapidly growing developmental disability with 1 in 54 children receiving a diagnosis (Maenner et al., 2020). Individuals diagnosed with ASD experience persistent difficulties interacting and communicating with others across home, school, and community environments. Individuals with ASD often have associated verbal and nonverbal language impairments (APA, 2013). For example, individuals may have difficulty integrating their verbal and nonverbal communication, exhibit echolalia, and struggle to understand others' unique points of view (APA, 2013; Baron-Cohen, 2000). Symptom severity ranges from mild to severe and the degree to which a child's day-to-day functioning is impacted varies.

Individuals with ASD often exhibit the need for routines and rituals (Stoppelbein et al., 2016) and may feel stressed, anxious, or confused when in unpredictable situations or when experiencing complex change (Baron-Cohen, 2006). Given the shelter at home orders, closings of restaurants, stores, and schools, the COVID-19 outbreak undoubtedly resulted in rapid and sweeping change, which potentially increased the difficulties that individuals with ASD faced during this time. Colizzi and colleagues (2020) conducted a survey of parents and guardians of children with ASD in Italy and found that 93.9% of caregivers rated the period of COVID-19 as

challenging or very challenging and 77% reported that it was more challenging than before the outbreak. Specifically, Colizzi et al. (2020) found that parents had difficulties managing child meals (23%), free time (78.1%), and structured activities (75.7%).

Up to 70% of children with ASD receive a diagnosis of one comorbid psychiatric disorder and 41% receive a diagnosis of two or more additional disorders (Kim et al., 2000; Siminoff et al., 2008). Children with ASD often experience problems regulating their emotions and mood (Loveland, 2005), exhibit inattention and hyperactivity (Bradley & Isaacs, 2006), experience heightened levels of anxiety (White et al., 2009), have specific sensory interests or aversions (Tomchek & Dunn, 2007), and can exhibit aggression and/or irritability (Farmer & Aman, 2011). As high emotional environments (i.e., highly stressful situations, overstimulating settings) have been associated with increased levels of maladaptive behaviors in individuals with ASD over time (Greenberg et al., 2006), there was concern for increased externalizing and internalizing behaviors during COVID-19. In the same aforementioned survey conducted by Colizzi and colleagues (2020), child behavior problems were reported as more intense by 35% of guardians and more frequent by 45% of guardians during the pandemic. Moreover, compared to individuals with ASD without preexisting behavior problems, individuals with ASD with preexisting behavior problems were shown to be 2.16 times more likely to exhibit more intense behavior problems and 1.67 times more likely to exhibit more frequent behavior problems during the COVID-19 outbreak. Increasing age was shown to reduce the likelihood of exhibiting more intense behavior problems (Colizzi et al., 2020). These findings illustrated the potential negative impact of COVID-19 on children with ASD and the challenges that many families were facing. Because the characteristics of ASD and common comorbid disorders are thought to influence the child's functioning and quality of life, and that of their parents (Davis & Carter, 2008; Dumas et

al., 1991; Ingersoll & Hambrick, 2011), it is important to also examine the experiences and psychological functioning of parents of children with ASD during the unprecedented time of the coronavirus pandemic.

History of ASD and Parenting

There is a complex history related to parenting a child with ASD. Beginning with Kanner (1943), a theory was posited that blamed mothers for their child's autism; these "refrigerator mothers," were said to be unemotional and cold (Bettleheim, 1972). This theory has since been criticized heavily and rejected with no empirical support for the notion that mothers cause their child's ASD or that they are insensitive to their child's needs (Deslauriers, 1967). Over time, and as ASD became viewed as a biological disorder rather than a result of parenting, there was a shift in research to better understand the biological bases (e.g., neural systems, genetics) of ASD. Ventola et al. (2017) argued that for a period of time, as a result of this shift in research focus from psychosocial factors to biological factors, researchers steered away from examining parenting and ASD. Over the last two decades, however, research on parents of children with ASD has made notable strides (Coolican et al., 2010; Minjarez et al., 2010), although there are still important gaps where continued research is needed.

Gender and Parenting

In Western societies, motherhood is often thought of as a central life goal through which mothers can achieve full social status and be initiated into womanhood (Chrisler, 2013). Furthermore, norms of being a mother often involve being the main caretaker while putting the children's needs before her own (Hays, 1998; Newman & Henderson, 2014). Although there have been societal shifts in caregiver responsibilities (LaRossa, 1988), parenthood continues to remain one of the most gender-typed social roles in adulthood (Koivunen et al., 2009; Nentwich

2008). Nentwich (2008) discussed that even in couples who identify their relationship as egalitarian, men are described as “active caring fathers” in contrast to women who are described as “active working mothers.” Biological reasons largely account for the sex-typed roles from pregnancy to the end of breastfeeding. However, the persistence of such roles can be explained by social reasons, including gender-role socialization (Eccles et al., 2000, as cited in Roskam & Mikolajczak, 2020) and earning potential in the job market (Mandel & Semyonov 2005). Roskam and Mikolajczak (2020) also point out that other psychological motives such as maternal gatekeeping (i.e., beliefs and attitudes of the mother that limit father involvement; Koivunen et al., 2009), essentialism in parenting (i.e., the belief that women are inherently better at parenting than men; Liss et al., 2013), and the dominant societal beliefs that mothers should strive for perfection in their parenting role contribute to how current society defines the roles of mothers and fathers (Hays, 1996; Henderson et al., 2016).

Father Involvement

To better understand the societal shift in parenting responsibilities, Bianchi and colleagues (2006) conducted a study examining time spent on various daily activities in parents of TD children in 16 countries between 1964 and 2000. Interestingly, they found that fathers spent increasing amounts of time with their children, but mothers still spent more time with children, whether mothers were or were not employed. Another study found that fathers and mothers were spending more equal amounts of time with their children, but mothers continued to oversee homework, discipline, and fun- and care-related activities more than fathers (Renk et al., 2003). With the increase of father involvement in childcare, there has also been a rise in focus on the father-child relationship. Research on paternal involvement has shown a variety of positive outcomes as a result of increased father involvement including greater academic achievement

(Deutsch et al., 2001) and educational and economic attainment (Flouri & Buchanan, 2004), higher self-esteem and well-being (Harris et al., 1998), and fewer delinquent behaviors (Nord & West, 2001).

Although paternal involvement and the father-child relationship have received more attention in relation to typical child development, there continues to be an underrepresentation of fathers in investigations of child psychopathology (Cassano et al., 2006; Phares et al., 2005) and developmental disabilities (DD; Flippin & Crais, 2011). The limited involvement of fathers of children with ASD is underscored by the discrepancies in the level of involvement of mothers and fathers. Specifically, Hartley and colleagues (2014) found that fathers spent 26% less time on childcare than mothers. Although fathers of children with DD may be less involved than fathers of TD children (Bristol et al., 1988), other literature has indicated that fathers desire to increase their involvement in their children's lives (Meadan et al., 2013) and that fathers believe involvement in their children's education is important (League & Ford, 1996). Furthermore, due to the aforementioned daily struggles children with ASD face (e.g., behavior problems, communication difficulties, sensory aversion), an increase in paternal involvement may be especially important for these children and families. Given the societal shifts in parent responsibility and the increase in father involvement, but the continued discrepancy between mothers' and fathers' time spent related to caregiving, it is essential to better understand the similarities and differences in mothers' and fathers' experiences and psychological functioning related to their parenting role of children with ASD.

Parental Stress and Mental Health Symptoms

Parents in general experience stress throughout their parenting roles including daily demands (e.g., homework, driving), acute stressors (e.g., sibling conflict, accidents), and often

more chronic stressors (e.g., developmental disabilities, adolescence-related difficulties; Crnic & Low, 2002; Deater-Deckard, 2008). Due to difficulty with social communication skills, academic challenges, and the increased risk for other psychiatric disorders in children with ASD, their parents often experience even more demands in their parenting roles than parents of TD children (Krakovich et al., 2016). As a result, parents of children with ASD may experience an increased strain in their parenting role and burden because of the time and effort necessary to care for a child with ASD (Brobst et al., 2008). It should be noted, however, that the majority of research pertaining to parenting stress and mental health was conducted before the COVID-19 global pandemic. The levels of stress and mental health problems may be different and/or exacerbated in the midst of this pandemic, and it is difficult to know how the previous findings summarized below translate to these circumstances.

Research prior to the pandemic showed that parents of children with ASD experience higher levels of stress than parents of TD children and parents of children with other DDs (Hayes & Watson, 2012). Furthermore, the lifetime prevalence of major depressive disorder and anxiety may be higher in parents of children with ASD than parents of children with other disabilities, such as Down Syndrome (DS; Rezendez & Scarpa, 2011). Studies have also shown that although the levels of stress, depression, and anxiety may be higher compared to groups of other parents, there may be important differences in mental health presentation and stress levels between mothers and fathers. For example, numerous studies have shown that mothers of children with ASD experience higher levels of mental health problems compared to fathers (Gray & Holden, 1992; Hastings et al., 2005; Sharpley et al., 1997). Another study comparing mothers and fathers of children with ASD showed lower mean scores of depression, anxiety, and stress on the Depression, Anxiety, and Stress Scale-21 (DASS-21) in fathers than mothers, but scores for all

parents of children with ASD fell in the moderate category (Falk et al., 2014). Contrary to other studies, in an examination of 18 couples of children with autism, mothers and fathers did not differ in their level of stress, but mothers reported higher levels of anxiety than fathers (Hastings, 2003). Given the heightened levels of stress and mental health problems and the inconsistencies across studies related to mothers and fathers, research has examined a variety of possible contributing factors as explained below.

Child Factors and Parent Mental Health

Researchers across multiple studies have argued that autism symptom severity is the primary contributing factor to parental stress and mental health problems in parents of children with ASD (e.g., Konstantareas & Papageorgiou, 2006; Phetrasuwan, 2003; Tobing & Glenwick, 2006). In a study comparing mothers of children with ASD and mothers of TD children, Duarte and colleagues (2005) found that autism symptom severity significantly correlated with maternal stress. In a different study of parents (92% mothers) of children with ASD enrolled in a home-based intervention, autism symptom severity was a positive, significant predictor of parental stress (Hastings & Johnson, 2001). Other studies, however, have shown that other key predictors should be considered.

Several studies have shown that behavior problems significantly predict parental stress and mental health symptoms in parents (e.g., Civick 2008; Gray 2003; Lecavlaier et al., 2006; Tomanik et al., 2004), and some have shown that child behavior problems are more predictive of parental stress than autism symptom severity (Davis & Carter, 2008; Brei et al., 2015). Specifically, in a study of parents (parent gender not reported) of children referred by a physician for concern of ASD, child behavior problems accounted for the largest proportion of variance in

parenting stress. Autism spectrum severity did not contribute unique variance over and above child behavior problems (Brei et al., 2015).

Although internalizing, externalizing, and repetitive behaviors have all been shown to correlate with parenting stress, Zaidman-Zait and colleagues (2017) found that only externalizing behaviors in children with ASD are found to significantly predict maternal stress when all variables are considered simultaneously. Further, Civick (2008) found that child externalizing behaviors positively predicted stress for mothers and fathers of children with ASD. Another study found that child behavior problems and parental stress have a bidirectional relationship in that behavior problems resulted in parenting stress, and parenting stress resulted in greater behavior problems (Baker et al., 2005). A study conducted in 2005 by Lecavalier et al. showed a positive correlation between child behavior problems and parental stress in parents of children with ASD. However, other studies have shown that child behavior problems do not affect mothers and fathers in the same way (e.g., Davis & Carter, 2008; Fiske, 2009).

Davis and Carter (2008) found in a sample of mothers and fathers of toddlers newly diagnosed with ASD that fathers' stress was significantly impacted by their child's externalizing behaviors whereas mothers' stress was related to practical and time management problems. Fiske (2009) found contradicting results that child externalizing behaviors equally affected mothers' and fathers' perceived stress, but reminders of their child's long-term diagnosis increased general and parenting stress for fathers, but not mothers. Moreover, in the late 1980s and 1990s, studies found that fathers were less affected by child behavior problems than mothers (Essex et al., 1999; Sloper et al., 1991) and it was hypothesized that these results may be because fathers were reported to be less involved in the care of their child with disabilities (Bristol et al., 1988). Given the more recent trends of increased paternal involvement, it is unclear if these findings are still

applicable. Thus, with the potential change in levels of involvement and the inconsistencies related to how parents are affected by child behavior problems in general, but especially with regard to how mothers and fathers may be differentially impacted, more research is warranted. Furthermore, as COVID-19 and shelter in place orders forced many parents to work from home, therefore increasing the amount of time spent interacting with their child, it was important to reexamine the association between child behavior problems and parental mental health symptoms during this unprecedented time.

Partner's Mental Health and Involvement

As children with ASD often require an array of supports and treatments, decision-making and selection of treatment often involves negotiation between parents (Johnson & Simpson, 2013). In some cases, mothers and fathers may have differing opinions on their child's needs and dissimilar perspectives can be a source of stress for parents, can cause unease, and may lead to arguments (Johnson et al., 2011; Kanfl & Deatrck, 2003). Furthermore, divorce rates have been shown to be higher and marital satisfaction lower in couples with children with ASD (Hartley et al., 2010).

Given the literature that supports the need for strong co-parenting in couples with children with ASD, studies have also examined how the psychological functioning and involvement of a spouse may be important for their partner's mental health. Rogers (2008) found that fathers of children with ASD tend to be unaffected by their child's symptoms and behaviors and instead, they are affected by their spouse's level of stress and disposition. Hastings (2003) conducted a study with a sample of 18 couples of children with ASD and partial correlations revealed that child behavior problems and fathers' mental health were related to mothers' stress, but child behavior problems and mothers' mental health were not related to fathers' stress levels.

In a longitudinal study conducted by Laxman and colleagues (2015), findings indicated that fathers' involvement during the child's infancy was related to lower levels of depressive symptoms for mothers of children with ASD when the child was 4 years old. In addition to the increased time, many parents were spending with their children, many mothers and fathers were also spending increased amounts of time with each other during the global pandemic. The previously mentioned findings provide support for further investigation of the psychological functioning of mothers and fathers of children with ASD during the COVID-19 pandemic.

Social Support and Parental Mental Health

As mentioned previously, social support is another area that was significantly affected by the COVID-19 pandemic. Previous literature has shown that a lack of social support is a key predictor of parental stress and mental health symptoms in parents of children with ASD (e.g., Falk et al., 2014; Lamminen, 2008). Gray and Holden (1992) found lower levels of depression, anxiety, and anger in mothers and fathers of children with ASD who reported more social support. Another study that examined parents of children with ASD found a significant negative relationship between social support and perceived parental stress (Lamminen, 2008). In an examination of mothers and fathers, social support was found to be a significant negative predictor of maternal and paternal depression and stress and of paternal anxiety (i.e., the lower the level of social support, the higher the reported depression, anxiety, and stress; Falk et al., 2014). Notably, other researchers have found that fathers of children with ASD perceive that they receive less support from family and friends than their partners (Altiere & von Kluge, 2009). Taken together, these findings supported the reexamination of parental stress and the mental health presentations of mothers and fathers of children with ASD during a time of limited access to social support.

Parental Age and Mental Health

In some studies, parental age has been shown to relate to parenting stress and mental health symptoms in parents of children with ASD, although the direction of findings has been inconsistent. For example, with a sample of 134 mothers of children with ASD, Rezendes and Scarpa (2011) found a small significant positive relation between maternal stress and age such that older mothers reported more stress. Yet, in another study, parental age was a significant negative predictor of stress for both mothers and fathers and a significant negative predictor of maternal anxiety (Falk et al., 2014). Older parents may find it more difficult to handle the demands of a child with ASD (Rezendes & Scarpa, 2011), whereas younger parents may be less secure in their relationship with their partner, less financially secure, and have more emotional difficulty coping with their child's needs (Falk et al., 2014). Taken together, it may be important to consider sociodemographic variables, such as parental age, when examining parenting stress and mental health symptoms.

Other Parenting Factors and Gender Differences in Mental Health

Falk and colleagues (2014) not only found gender differences in levels of depression and anxiety in parents of children with ASD, but they also found different contributing factors for different mental health problems for mothers and fathers. Specifically, maternal anxiety was predicted by maternal age, perceived ability to set limits for their children, and ASD symptom severity, whereas maternal depression was predicted by child behavior problems, perceived lack of social support, and externalized locus of control. In contrast, paternal anxiety was predicted by perceived ability to set limits, perceived lack of social support, and child externalizing behavior and paternal depression was predicted by perceived lack of social support, perceived ability to set limits, and satisfaction with parenting.

Not only do these findings highlight the difference in contributing factors between mothers and fathers, but they demonstrate the importance of parents' perceived success in parenting and their satisfaction in their parenting role. Falk et al. (2014) pointed out that because children with ASD exhibit difficulty with communication and increased behavior problems compared to TD children, assessing effective and consistent parenting of a child with ASD may be more difficult. Further, parents who are setting appropriate limits and utilizing effective parenting strategies with their child with ASD may observe fewer positive changes in their child's behavior than parents of a TD child. As a result, parents may feel inadequate or ineffective in their parenting role. In such a case, providing parents with additional ways to manage their child's behavior still may not have the most significant impact for families and may not alter a parent's perception of themselves as ineffective (Falk et al., 2014). Another previous study found that parents who perceive themselves as ineffective in their parenting role and who suffer from anxiety and depression as a result may not exhibit motivation to comply with behavioral management recommendations (Schieve et al., 2007). In summary, the above findings suggest that with a better understanding of the different experiences of mothers and fathers of children with ASD, clinicians may be better suited to provide appropriate and effective supports and services to parents and families. Further, these results emphasize the importance of not only considering how the child's behavior impacts the parent, but also the benefit of understanding the parents' perceptions, parents' satisfaction with their role as a parent, and their overall experiences independent of their child (Falk et al., 2014).

Parental Resilience

Parental resilience is defined as “the capacity of parents to deliver competent, quality parenting to children despite adverse personal, family, and social circumstances” (Gavida-Payne

et al., 2015 p. 113). Gavida-Payne and colleagues (2015) proposed a theoretical framework of parenting resilience that involves both protective (e.g., social connectedness, self-efficacy) and risk factors (e.g., poor psychological functioning, children with behavior problems) that lead to the development and maintenance of resilience related to the parenting role. Parenting resilience has received much less attention in the literature in comparison to other types of resilience and other constructs such as parenting stress.

Although research has increased in the past few years, the investigation of parental resilience in parents of children with ASD has been especially limited. Pastor-Cerezeula and colleagues (2016) examined a group of parents of children with ASD and found that a) parental resilience negatively correlated with the global index of parenting stress, b) stress related to competence in the parenting role, and c) stress related to depressive symptoms. Overall, parents of children with ASD perceived themselves as moderately resilient to adversity (Pastor-Cerezeula et al., 2016). Two separate studies examined levels of parental resilience in parents of children with ASD, DS, and TD children and found comparable levels of resilience across the three groups (Pastor-Cerezeula et al., 2021; Sinha et al., 2016). These findings indicate that despite the greater difficulties faced and higher levels of stress parents of children with ASD and DS reported, they still perceived themselves to be moderately able to overcome adversity in their parenting role. Sinha and colleagues (2016) also examined the relation between parenting styles and parenting resilience and found that authoritarian parenting negatively correlated with resilience scores and authoritative parenting positively correlated with resilience scores. The Pastor-Cerezeula et al. (2021) study also found that parents who reported that they were more resilient in the ASD group reported that they had less stress related to their child's characteristics (behavior problems).

Although the aforementioned research has shown some consistency across findings related to resiliency in the parenting role, this research is still considered to be in its infancy. Furthermore, there is no research to my knowledge that has previously examined the differences in resiliency levels between mothers and fathers of children with ASD and TD and, generally, there has been minimal examination of more specific components of parental resilience (i.e., parental resilience related to child characteristics, social support, and positive perception of parenting) in this population. Given that some studies have shown that resilience buffers the effects of parental stress, even in small amounts (Bitsika et al., 2013), more research was needed to explore a) different types of parenting resilience, b) the factors that lead to greater resiliency, and c) the potential buffering effects of resilience on parents who are experiencing more chronic stress, or parental burnout.

Parental Burnout

For most parents, stress related to parenting is short term and does not have a lasting impact on their life. However, 5-20% of parents report that parenting-related stress can intensify to the level of parental burnout (Roskam et al., 2018; Séjourné et al., 2018). Mikolajczak and colleagues (2019) reported that parental burnout is similar to parenting-related stress and is a stress-related disorder, but the authors have indicated that parental burnout extends beyond what is categorized as typical parenting stress. Specifically, they define parental burnout as “a prolonged response to chronic and overwhelming parental stress” (Mikolajczak et al., 2019 p. 1319). Physical and mental exhaustion, increased somatic complaints, decreased sleep quality, emotional distancing from children, a sense of incompetency in their parenting role, and a feeling of being trapped in a situation without a way out are symptoms associated with parental burnout (Hubert & Aujoulat, 2018; Mikolajczak et al., 2018b; Roskam et al., 2018).

Although a myriad of research has examined parenting stress, research focused on parental burnout is relatively new. For many years, research related to parental burnout focused almost exclusively on parents of severely ill children (e.g., children with brain tumors, diabetes; Lindal Norberg, 2007, 2010; Lindström et al., 2010), but has recently expanded to include parents of TD children and parents of children with other disabilities. The construct has gained attention (Mikolajczak et al., 2019), with research increasing significantly over the past two years across multiple countries (Aunola et al., 2020; Chen et al., 2020; Van Bagel et al., 2018). Together, research has shown that burnout affects both mothers and fathers and the prevalence ranges between 8% and 36% depending on the population of parents studied (Lindström et al., 2011; Roskam et al., 2017).

Distinction from Job Burnout

Although some research has viewed burnout as context-free and a phenomenon that is evident in all spheres of life (Pines & Arson, 1981), more recently, others have viewed it as a context-bound construct (Bakker et al., 2000; Schaufeli et al., 2009). Studies have shown that the dimensions of parental burnout are similar to those of job burnout, but what differs is the context (Mikolajczak et al., 2020). In a study conducted by Mikolajczak and colleagues (2020) job burnout and parental burnout were found to be factorially distinct from each other indicating that these constructs are context-related rather than context-free. That is, the context in which burnout takes place has a unique impact and differing consequences based on the sphere of life (e.g., work, parenting).

Interestingly, researchers have found that parental burnout actually increases job satisfaction as those parents who are experiencing burnout invest increasingly more time in their job (Mikolajczak et al., 2020). However, over time, because parents spend more time devoted to

their job, they may become more vulnerable to job burnout, especially if parental burnout is not addressed. The seriousness of burnout and the length of time an individual has experienced symptoms of burnout are also important. Thus, job burnout and parental burnout may be more easily distinct at the onset, but over time, spillover effects may occur (from one type of burnout to another) increasing the difficulty in distinguishing between the two types of burnout. As a consequence of COVID-19, many parents were not able to keep their work and child-rearing roles separate, which potentially increased the likelihood of burnout.

Parental Burnout Theoretical Framework

The Balance Between Risks and Resources theory posits that a perceived mismatch between parent-related demands and the availability of resources to meet those demands and expectations results in parental burnout (Holly et al., 2019; Mikolajczak & Roksam, 2018). Demands are risk factors that increase levels of parental stress and resources are protective factors that can alleviate stress. All parents experience fluctuating demands and varying access to resources, therefore resulting in individualized experiences that vary from parent to parent. Mikolajczak and Roksam (2018) indicated that in situations where there is a chronic mismatch between demands and resources, with greater or longer exposure to demands compared to access to resources, parental burnout may arise.

Measurement and Dimensions of Parental Burnout

Two new measures were created as a result of the increase in research and establishment of parental and job burnout as independent phenomena. The Parental Burnout Inventory (PBI; Roskam et al., 2017) and Parental Burnout Assessment (PBA; Roskam et al., 2018) are the two measures currently available to assess parental burnout. Both measures continue to be in the early stages of validation, but each has already demonstrated the ability to identify parents

experiencing or who are at risk for parental burnout. They also have demonstrated promise in differentiating between parental burnout and other types of burnout. As cited in Griffith (2020), the authors of the measures suggest that the PBI is more appropriate for research comparing burnout across contexts (i.e., work and family), but the PBA is better used for all other situations (i.e., diagnostic purposes).

Roskam and colleagues (2018) identified three distinct dimensions of parental burnout: (1) emotional exhaustion related to parenting; (2) emotional distancing from their children; and (3) loss of parental accomplishment. The primary symptom of parental burnout is emotional exhaustion related to parenting that results in parents feeling overwhelming amounts of fatigue at the thought of facing another day with their children. A second symptom is emotional distancing, which results in mothers' and fathers' decreased involvement and a reduced number of interactions with their children such that their parenting becomes primarily functional rather than emotional. The third symptom is loss of accomplishment related to their parenting role. Specifically, parents no longer enjoy their role as a parent, they feel "fed up" with parenting, and they no longer enjoy spending time around their children (Roskam et al., 2018).

Parental Burnout Risk Factors and Consequences

Prior research that examined the factors and conditions in which parental burnout may ensue suggests that circumstances of the COVID-19 pandemic were particularly relevant and warranted concern. Paralleling the conditions that significantly increased as a result of sheltering in place requirements, unemployment, financial strain, reduced levels of social support from family and friends, and a lack of leisure time have all been associated with an increased risk for parental burnout (Lindstrom et al., 2011; Parkes et al., 2015; Sorkkila & Aunola, 2020). Research has also shown that parents who have a child with a behavioral, emotional, or learning

disorder or who have a child with a disability or chronic illness are at increased risk for parental burnout (Blanchard et al., 2006; Norberg, 2007, 2010). Parents of children with ASD may face all or many of the aforementioned concerns which merits heightened consideration and further examination. Furthermore, it should be noted that each parent experiences their own unique risk factors leading up to the feeling of parental burnout and, therefore, further understanding of the contributing factors for different parent populations and between mothers and fathers is essential (Mikolajczak et al., 2018).

There are mixed findings concerning how sociodemographics relate to parental burnout. Mikolajczak and colleagues (2018) found that sociodemographic factors explained very little variance in parental burnout. On the contrary, another study found that there was a pattern among parent and child age and different dimensions of parental burnout (Le Vigouroux & Scola, 2018). In particular, Le Vigouroux and Scola (2018) found that parent and child age were negatively related to parental accomplishment and exhaustion, whereas the number of children in the home was positively related to the emotional distance between parents and their children (Le Vigouroux & Scola, 2018). More research is necessary to better understand how sociodemographic variables relate to parental burnout, especially in the United States given that the majority of studies have collected samples of parents in European countries.

Minimal research has focused on the subsequent outcomes of parental burnout. What is known suggests that the condition is pervasive, with significant effects on parents who experience burnout (e.g., increases in addictive behaviors, sleep disorders, and family escapes), on the couple (e.g., conflicts, adultery), and on the children (e.g., neglect, violence; Mikolajczak, Brianda, et al., 2018; Mikolajczak et al., 2019). When demographic variables including education, income level, and presence of addiction were considered, associations between

parental burnout and child abuse and neglect were maintained, suggesting that for any type of family, parental burnout can have significant consequences for children and parent-child interactions (Mikolajczak et al., 2019). Further, parents who obtained higher scores on measures of parental burnout simultaneously scored higher on measures of escape and suicidal ideation. A longitudinal study provided evidence that parental burnout increases escape ideation, child neglect, and parental violence rather than the reverse (Mikolajczack et al., 2019). A great deal remains unknown about the outcomes of parental burnout for parents, children, and families, especially for parents of children with disabilities, warranting further investigation.

Gender Differences in Parental Burnout. Given the results that support continued gender inequality in parenting, it is perplexing that parental burnout has been found to impact mothers and fathers in equal proportion (Roskam et al., 2017). Research, though, has suggested that there are differences in the risk factors for and consequences of parental burnout in mothers and fathers. Mothers were found to experience a higher average level of exhaustion and emotional distancing in comparison to fathers (Roskam et al., 2017). Additionally, although an imbalance between demands and resources seems to play a role in both mothers and fathers, women were seen to burnout when their imbalance between the two was negative (demands clearly outweighed resources), whereas men were found to burnout earlier, even before their resources were not yet outweighed by demands (Roskam & Mikolajczack, 2020). Although studies have shown that fathers are less exposed to parenting responsibilities due to their more limited involvement in childcare, fathers actually appeared to be more vulnerable to parental demands in the Roskam and Mikolajczack (2020) study. One possible explanation is that mothers may resist the parenting stress they are exposed to better than fathers, who are less exposed but more vulnerable. Based on the gender socialization process, fathers may be less

prepared to cope with tasks related to caring for their children than mothers and, therefore, the parenting tasks are less automatic and come at a higher cost because they require more effort (Saling & Phillips, 2007).

Parenting Behavior and Parental Burnout. A link between parental burnout and child abuse and neglect has been established in previous literature. In the Roskam et al. (2017) study, parental burnout was found to relate to child neglect, parental violence toward their children, and escape and suicidal ideation (i.e., thoughts of leaving their parenting role and all of the related stressors). Fathers reported greater levels of parental neglect while mothers reported more escape and suicidal ideations and more parental violence. Parents have also endorsed fear for the safety of their children when they are caring for their children alone (Mikolajczak, Brianda, et al., 2018).

Findings from Meeussen and Van Laar (2018) showed that mothers who felt pressure to be perfect experienced increased prevention focus (i.e., aiming to avoid mistakes as a mother) and increased behavioral regulation (i.e., maternal gatekeeping behaviors such as taking over childcare behaviors from their partner) highlighting how parental burnout may impact parenting behaviors both in childcare behaviors and behavior toward others (e.g., their spouse). Thus, in some instances, the pressure of being a perfect mother may result in the intent to increase involvement and improve the well-being of their children (Repetti et al., 2002; Sutherland, 2010), but in reality, these intents may lead to negative impacts on the child and family. Negative outcomes of a mother feeling pressured to be perfect may include increased child depressive symptoms and lower overall life satisfaction for the child (Randall et al., 2015). Additionally, a mother's perfectionistic tendencies may result in decreased father involvement and fewer opportunities for fathers to invest in childcare-related tasks (Gaunt, 2008). As mentioned

previously, lower father involvement negatively impacts children's development (Marsiglio et al., 2000).

Parental Burnout and ASD

Varghese and Venkatesan (2013) conducted a study in India utilizing a measure created for their study called the Maternal Burnout Scale. With a sample of 60 Indian mothers, half with a child with ASD and half with a hearing impairment, findings showed that mothers of children with ASD reported significantly higher levels of maternal burnout than mothers of children with a hearing impairment. Additionally, maternal burnout in mothers of children with 'mild autism' was lower compared to children with 'moderate' or 'severe' autism (Varghese & Venkatesan, 2013), which affirms that similar to the findings above related to parenting stress (e.g., Civick 2008; Konstantareas & Papageorgiou, 2006), child autism symptom severity and child behavior may contribute to a parent's level of burnout. Further, the authors distinguished between physical and psychological burden and their results showed that mothers of children with ASD suffered from physical and psychological burnout whereas mothers of hearing-impaired children largely suffered from psychological burden alone. Overall, there has been very little research examining the risk factors and outcomes of parental burnout in parents of children with ASD. Moreover, no study to date has examined the differences in the level of parental burnout between mothers and fathers of children with ASD in the United States.

Parenting Style

Parenting style also plays a central role in the dynamics of the parent-child relationship. Work conducted by Baumrind (1968) illustrated that the use of parental control mirrors what parents view as important for integrating their child into societal and cultural contexts. As such, parental control can be divided into three different dimensions of parenting style: (1) acceptance

versus rejection, or the extent to which a parent expresses appreciation and value toward their child; (2) psychological control versus autonomy, the degree to which a parent promotes child independence; and (3) firm control versus lax control, which relates to the use of appropriate discipline (Baumrind, 1967).

A few previous studies have examined the different parenting styles across parents of TD children and parents of children with ASD. Gau and colleagues (2010) conducted a study with Chinese mothers and fathers of children with ASD and TD controls and found that, based on parent report, children with ASD received less affection and more psychological control than TD children. Furthermore, a study in Indonesia of parents of TD children and parents of a child with ASD found that parents of children with ASD reported that they were more authoritarian in their parenting styles and that the parent-child relationships in the ASD group had less warmth, positive personal relationship qualities, and disciplinary warmth, and more power assertion than the parent-child relationships in the TD group (Riany et al., 2017). In a study conducted by van Steijn et al. (2013) in Norway, children with ASD and their unaffected sibling rated their mother's and father's level of acceptance (e.g., warmth, support, protection). Children with an ASD diagnosis reported lower acceptance compared to their unaffected siblings, with fathers receiving lower scores of acceptance than mothers. In contrast, a study of parents of children with ASD and parents of TD children in the United States found no differences between the two groups in the levels of psychological control, acceptance, or firm control that parents used (Ventola et al., 2017). Although these findings were initially surprising given the results from other studies (Gau et al., 2010; Riany et al., 2017; van Steijn et al., 2013), cultural context may explain this variability. Parenting style is culturally embedded and thus, an emphasis on different parenting behaviors across cultures may contribute to different findings.

Although the study conducted by Ventola and colleagues (2017) did not find differences between TD and ASD parents, they did find significant positive relations between parental use of psychological and firm control and child externalizing symptoms in the ASD group. This suggests that parents of children with more maladaptive behaviors may be more controlling and provide less opportunity for autonomy. Although children with ASD in this sample also demonstrated heightened levels of internalizing symptoms, these symptoms were not associated with a particular parenting style. Furthermore, Ventola et al. (2017) examined how parents' mental health problems related to parenting style in the ASD and TD groups. Symptoms of anxiety and depression in parents were not associated with any particular parenting style in either group.

Parents have increasingly played an active and prominent role in treatment delivery for children with ASD including behaviorally-based treatments (e.g., Coolican et al., 2010; Minjarez et al., 2010) and social skills-based treatments (e.g., Green et al., 2010; Laugeson et al., 2008). It is therefore essential to understand differences in and factors that contribute to mothers and fathers parenting behaviors because these behaviors may directly influence parent-child interactions and, in turn, affect long-term treatment outcomes. When working with a family of a child with ASD, clinicians often provide recommendations for changes within the home environment (e.g., increased structure, increased rewards/motivation; Koegel & Egel, 1979; Welterlin et al., 2012) that parents implement. Therefore, it is important for clinicians to better understand how parents interact with their children before making recommendations. This greater understanding of parenting behavior in this population will allow clinicians to individualize psychoeducation prior to implementation to ensure the most optimal outcome. Given previous studies have found differences across gender and that there are few studies that

have examined the relation between parenting style and associated child characteristics in families of children with ASD, future research is necessary to further explore these questions.

Other Theoretical Frameworks and Rationale for Current Study

In addition to the Balance Between Risks Theory that was previously mentioned, several other theoretical frameworks provide rationale for examining stress, burnout, and psychological symptoms in parents of children with ASD during this time of limited resources and increased uncertainty. Theories support the investigation of differences and similarities between mothers and fathers and the examination of behaviors across family members (e.g., parents and children).

Stress and Coping

As previously reviewed, parents of children with ASD experience heightened levels of stress compared to parents of TD children and children with DD (Hayes & Watson, 2012). Successful coping strategies may therefore be of extreme importance for parents of children with ASD. Psychological distress was defined by Lazarus and Folkman (1984) as a “particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” (Lazarus & Folkman, 1984, p. 19). In the Transactional Model of stress and coping, two types of appraisals have been proposed. First, primary appraisals are a cognitive evaluation of the positive or negative consequences of a situation. Secondary appraisals are an assessment of the resources an individual has access to in order to cope with the situation (Lazarus & Folkman, 1984). Researchers have also suggested that three key variables that determine if a situation is stressful in families: (1) the stressor; (2) the resources that a family has available to deal with the stress; and (3) the family’s perception of the stressor. The combination of these three variables produces the stress response for the family (Hill, 1949; McCubbin & Patterson, 1983). Together, these two

frameworks highlight the importance of examining the levels of, the factors that contribute to, and the outcomes of parental burnout in parents of children with ASD. Factors that relate to heightened levels of stress may include autism symptom severity and child behavior problems. Parenting style may also be a key factor in how families react to stressful situations. Finally, both theoretical frameworks emphasize the importance of resources, which also underscores the benefit of assessing parents' experiences during the COVID-19 pandemic in which these resources may have been limited or nonexistent.

Family Systems Theory and Ecological Systems Theory

Bowen's family systems theory postulates that families function as a system. Within the system, each member plays a unique role in the overall functioning of the family and in turn affects the other members of the family (Bowen, 1966; 1974). Bowen also highlights that family members are connected emotionally and impact each other's thoughts, feelings, and behaviors. As such, change in one member of the family leads to change in the other members of the unit and the system as a whole (Bowen, 1966). Beyond the unit of the family, the ecological systems theory, which Bronfenbrenner (1979) originated, can be used to understand children's functioning. Bronfenbrenner identified four ecological systems outside of the person that help to shape a child's development over time: (1) the microsystem, which consists of the child's interpersonal relationships including family and peers; (2) the mesosystem, the interaction of two or more microsystems; (3) the exosystem, the child's broader context which he or she does not engage in direct interaction (e.g., parents' work environment); and (4) the macrosystem, the broader social context. Taken together, these two theoretical frameworks underscore the importance of studying the individual perspectives and experiences of mothers and fathers as well as how parent and child behaviors relate to one another, while also considering the

environmental and family factors that may influence each individual's functioning. Though all four of Bronfenbrenner's systems play a significant role in everyday life for families, each may have been enhanced, shifted, or diminished by factors related to the family's abrupt change in lifestyle during the COVID-19 pandemic.

Social Learning Theory and Social Role Theory

The research discussed above indicates there continues to be discrepancies in the amount of time mothers and fathers are spending on parenting-related tasks, especially in families of children with ASD (Hartley et al., 2014). The results of studies examining parental burnout also show that fathers may be more vulnerable to stress-related to parenting than mothers (Roskam & Mikolajczack, 2020). Social learning theory, coined by Bandura and Walters (1977), postulates that from early childhood girls and boys learn how to behave as women and men through observation, modeling, and imitation. Children tend to pay more attention to and imitate those individuals that he/she sees as similar to himself/herself. Caregivers, siblings, and peers generally steer children in the direction of gender-typed activities and interests. Through positive or negative reinforcement or punishment, the child learns what types of behavior and interests are appropriate or accepted. Because mothers are still viewed as the primary child caregiver, women may be better prepared to cope with demands in the context of parenting than men.

The social role theory is also relevant to the roles of mothers and fathers as parents and child caregivers (Eagly, 1987). This theory argues that gender differences and similarities in society develop as a result of the division of labor and the expectations that society differentially places on men and women. The theory describes three patterns commonly seen: women take on more childcare and domestic responsibilities, women and men pursue different career paths, and when women and men are in the same occupation, women tend to have lower status. This theory

provides additional support for examining the experiences of mothers and fathers across different parent-related constructs.

Current Study

Previous literature showed that the COVID-19 global pandemic was a distressing experience for families in the general population and led to significant changes related to status of employment, employment environment, social support, and schooling (Griffith, 2020). With regard to families of children with ASD, a survey study conducted in Italy found that families experienced significant negative change and guardians reported observing more frequent and more severe child behavior problems in their child with ASD (Colizzi et al., 2020). Research across multiple studies has also illustrated that parents of children with ASD experience heightened levels of stress, depression, and anxiety compared to parents of TD children (Hayes & Watson, 2012; Rezendes & Scarpa, 2011). Child characteristics (especially externalizing behavior problems), level of social support, and the age of the parent have been shown to contribute to parenting stress and mental health problems in parents of children with an ASD diagnosis (Civick, 2008; Laminnen, 2008; Falk et al., 2014). Although gender differences have been identified in levels of mental health problems in parents of children with ASD (Falk et al., 2014), findings have been inconsistent across studies and samples are often overwhelmingly comprised of mothers. Additionally, previous research has shown that different factors contribute to anxiety and depression in mothers and fathers of children with ASD (e.g., Falk et al., 2014) which underscores how further investigation into the different experiences of parents may provide clinicians with a clearer understanding of how to individualize services. Finally, both parents' perceptions of their abilities and their satisfaction with their role as a parent predicted mental health problems in mothers and fathers of children with ASD (Falk et al., 2014).

Together, these findings support further exploration into constructs that expand beyond stress, anxiety, and depression, especially during the COVID-19 pandemic.

In the past five years, research focused on parental burnout has grown significantly. Two measures were developed to assess the construct (Roskam et al., 2017; Roskam et al., 2018) and other research has demonstrated that parental burnout is distinct from other types of burnout (e.g., job burnout; Mikolajczak et al., 2020). Further, the results of shelter in place orders during the COVID -19 pandemic paralleled the risk factors found to contribute to burnout in parents (e.g., financial strain, limited social support, limited free time; Lindström et al., 2011; Parkes et al., 2015) and findings have shown that parental burnout affects mothers and fathers equally in the general population (Roskam et al., 2017). However, there are important limitations to consider related to these recent studies focused on parental burnout. Similar to previous research on parents of children with ASD and related psychological functioning, the parental burnout literature has primarily focused on mothers. Additionally, a significant proportion of the latest research on parental burnout is focused on parents in the general population of Europe. To date, only one study has examined maternal burnout in parents of children with ASD. The study compared Indian mothers of children with ASD and mothers of children with hearing impairment (Varghese & Venkatesan, 2013). No studies, to date, have compared parental burnout in mothers and fathers of children with ASD and TD children. The previously summarized literature points to the unique parenting experiences of mothers and fathers of children with ASD in comparison to parents of TD children, and the extent to which current findings related to parental burnout in parents of TD children generalize to parents of children with ASD is not well understood. Given increased levels of stress and mental health problems, there is support for the hypothesis that parental burnout might be more pronounced in parents of children with ASD.

Furthermore, initial findings indicated parents in the general population were experiencing heightened levels of stress (Pew Research Center, 2020) and that children with ASD were experiencing more frequent and more intense behavior problems during the COVID-19 pandemic (Colizzi et al., 2020). Taken together, there is reason to believe that parents of children with ASD may have been particularly vulnerable to parental burnout during these unusual circumstances.

Lastly, there is evidence that highlights the importance of parenting behavior in the parent-child relationship (Baumrind, 1968). There are previous studies that have found different parenting styles in parents of children with ASD and parents of TD children (Gau et al., 2010; Riany et al., 2017; van Steijn et al., 2013). However, parenting style is largely entrenched in culture, and, thus far, the majority of studies that have examined these constructs have been conducted in Asia or Europe. One study that was conducted in the U.S. did not find differences between ASD and TD parents but found that externalizing problems related to a specific type of parenting style (Ventola et al., 2017). The Ventola et al. (2017) study, however, did not report parent gender and did not examine gender differences. Parents often play a prominent role in implementing treatment for their children with ASD and, therefore, parenting behavior may significantly impact the child's long-term treatment outcomes (Coolician et al., 2010; Welterlin et al., 2012). With a greater understanding of the differences between the parenting behaviors of mothers and fathers and across groups of parents of children with and without ASD, clinicians may be better equipped to provide individualized supports for families, which in turn, may increase the effectiveness of treatment.

This study aimed to address some of these gaps in the existing literature during a unique time in history. The overarching goal of this study was to better understand the prevalence,

severity, and contributing factors of total parental burnout, as well as the four different subtypes of burnout, in parents of children with and without ASD. First, this study examined group differences in parents of children with ASD and parents of TD children in levels of five types of parental burnout (total; emotional distancing; exhaustion in the parental role; contrast in parental self; feelings of being fed up), anxiety and depression, three dimensions of parenting style (acceptance vs. rejection; psychological control vs. psychological autonomy; firm control vs. lax control), during the COVID-19 pandemic. Gender differences across the aforementioned constructs were also surveyed. Next, this study investigated how child externalizing and internalizing behavior problems and parents' symptoms of anxiety and depression related to parenting style and parental burnout. Differences in the relations between child characteristics and parent characteristics and behaviors were also examined among mothers and fathers. Next, this study aimed to understand the relations between levels of parental burnout, COVID-19-related-stress, and different parenting styles in mothers and fathers across and between groups of parents of children with ASD and parents of TD children. Finally, exploratory analyses were conducted to examine the differences in the levels of three types of parental resilience (knowledge of child's characteristics, perceived social supports, and perception of positive parenting) between groups and between mothers and fathers. The relations between resilience and parental burnout and symptoms of anxiety and depression were also investigated.

Hypotheses

Based on the information above, the following hypotheses were proposed for parents of children with ASD and parents of TD children:

1. The following group differences (ASD versus TD) were hypothesized: 1a) parents in the ASD group would report higher levels of anxiety and depression than parents in the TD

group; 1b) parents in the ASD group would report higher levels of psychological and firm control and lower levels of acceptance relative to parents in the TD group; 1c) all five levels of parental burnout would be higher in parents of children with ASD than parents of TD children.

2. The following gender differences were proposed in the ASD group and the TD group: 2a) mothers in the ASD group would report higher levels of anxiety and depression symptoms relative to parents in the other three groups (i.e., mothers in the TD group and fathers in both groups) and fathers in the ASD group would report greater levels of anxiety and depression than mothers and fathers in the TD group; mothers in the TD group would report higher levels of anxiety and depression than fathers in the TD group; 2b) fathers in the ASD group would report lower levels of acceptance than fathers in the TD group and fathers in both groups would report lower levels of acceptance relative to mothers; mothers in the ASD group would report lower levels of acceptance compared to mothers in the TD group. No gender differences would be observed in the use of psychological and firm control, but there would be a main effect for group (as noted in Hypothesis 1b); 2c) mothers in the ASD group would report greater levels of emotional distancing, exhaustion in their parenting role, and feelings of being fed up relative to mothers in the TD group and to fathers in both groups; fathers in the ASD group would report higher levels of emotional distancing, exhaustion in their parenting role, and feelings of being fed up than fathers in the TD group. There would not be gender differences in the level of contrast in parental self, but there would be a main effect for group (as noted in Hypothesis 1c).

3. The following significant bivariate correlations were hypothesized in the *ASD group*: 3a) child externalizing behavior problems would positively relate to mothers' and fathers' use of psychological and firm control and all five types of parental burnout; child externalizing behavior problems would relate more strongly to mothers' use of psychological and firm control and levels of parental burnout than fathers'; 3b) anxiety and depression symptoms in mothers and fathers would be positively related to all five types of parental burnout; 3c) anxiety and depression symptoms would be negatively associated with mothers' and fathers' level of acceptance and firm control (i.e., parents who experience higher levels of anxiety and depression would express less care and appreciation and utilize fewer appropriate discipline strategies).
4. The following significant bivariate correlations were proposed for *both* groups: 4a) COVID-19-related-stress would positively relate to all five types of parental burnout, but the association between COVID-19-related-stress and each type of parental burnout would be stronger for mothers than fathers and stronger in the ASD group than the TD group.
5. The following significant bivariate correlations were proposed for the *ASD group*: 5a) parental acceptance and firm control would negatively relate to all five types of parental burnout for mothers and fathers and the associations would be stronger for fathers than mothers.

CHAPTER 2. METHODOLOGY

Participants

The current sample is comprised of 185 parents. Parents were not couple dyads, and all resided in different households. Eligible participants included parents of children between the ages of 4 and 16 years. Their child was required to reside in the home of the parent completing the survey at least 50% of the time. Additionally, inclusion criteria were a diagnosis of ASD by a professional for parents of children in the ASD group and, for parents of children in the TD group, their child had not received a previous mental health diagnosis.

In total, the ASD group included 88 parents and the TD group included 97 parents. The ASD group included 48 females ranging in age from 23 to 65 years ($M = 40.83$, $SD = 9.85$), 38 males ranging in age from 22 to 73 years ($M = 39.26$, $SD = 7.00$), one non-binary parent, and one parent who preferred not to report their gender. The TD group included 55 females ranging in age from 20 to 76 years ($M = 41.87$, $SD = 12.74$), 41 males ranging in age from 25 to 75 years ($M = 42.22$, $SD = 10.50$), and one parent who preferred not to report their gender. See Table 1 for parent demographics by group and Table 2 for parent demographics by group and gender. Table 3 includes child demographics by group.

Table 1*Sample Characteristics: Parent Demographics by Group*

Characteristic	ASD Group		TD Group	
	<i>n</i>	%	<i>n</i>	%
Gender				
Male	38	43.2	41	42.3
Female	48	54.5	55	56.7
Third Gender/Non-Binary	1	1.1	--	--
Prefer Not to Say	1	1.1	1	1.0
Marital Status				
Married/Cohabiting	81	92	79	81.4
Separated	2	2.3	1	1.0
Divorced	3	3.4	7	7.2
Widowed	--	--	4	4.1
Single	2	2.3	8	6.2
Education Level				
< High School Diploma	--	--	2	2.1
High School Diploma	5	5.7	17	17.5
Some College	8	9.1	13	13.4
Associate Degree	5	5.7	10	10.3
Bachelor's Degree	25	28.4	20	20.6
Master's Degree	35	39.8	30	30.9
Professional Degree	10	11.4	5	5.2
Family Income				
< \$20,000	4	4.5	9	9.3
\$20,000 - \$34,999	4	4.5	10	10.3
\$35,000 - \$49,999	4	4.5	13	13.4
\$50,000 - \$74,999	15	17	14	14.4
\$75,000 - \$99,999	24	27.3	13	13.4
\$100,000 - \$149,999	24	27.3	17	17.5
\$150,000 - \$199,999	14	15.9	10	10.3
\$200,000 +	8	9.1	11	1.3

Table 1 (continued).

Race					
	American Indian or Alaska Native	2	2.3	1	1.0
	Asian	--	--	3	3.1
	Black or African American	7	8.0	6	6.2
	Native Hawaiian or Pacific Islander	--	--	1	1.0
	White	80	90.9	89	91.8
Ethnicity					
	Spanish	3	3.4	--	--
	Hispanic	8	9.1	5	5.2
	Other	--	--	1	1.0
Pre-COVID-19 Work Status					
	Worked in-person	50	56.8	56	57.7
	Worked partially out of home/partially in home	26	29.5	12	12.4
	Worked solely at home	6	6.8	9	9.3
	Not employed	6	6.8	17	17.5
	Disabled	--	--	1	1.0
	Retired	--	--	2	2.0
Post-COVID-19 Work Status					
	Continued work in-person	35	33	35	36.1
	Working partially out of home/partially in home	29	33	16	16.5
	Working solely at home	22	25	23	23.7
	Not currently employed	9	10.2	23	23.7
	Not working as a result of COVID-19	4	4.5	2	2.1

Table 1 (continued).

Partner Pre- COVID-19 Work Status					
	Worked in-person	47	53.4	48	49.5
	Worked partially out of home/partially in home	21	23.9	11	11.3
	Worked solely at home	7	8.0	7	7.2
	Not Employed	4	4.5	13	13.4
Partner Post- COVID-19 Work Status					
	Continued work in-person	37	42.0	36	37.1
	Working partially out of home/partially in home	26	29.5	20	20.6
	Working solely at home	18	20.5	15	15.5
	Not currently employed	3	3.4	11	11.3
	Not working as a result of COVID-19	2	2.3	11	11.3
COVID-19 Judgement					
	Very Challenging	61	69.3	42	42.3
	Challenging	24	27.3	45	46.4
	Not Challenging	3	3.4	11	11.3
COVID-19 Comparison					
	More Challenging	53	60.2	41	42.3
	Equally Challenging	34	38.6	45	46.4
	Less Challenging	1	1.1	11	11.3

Note. ASD = Autism Spectrum Disorder; TD = Typically Developing.

Table 2*Sample Characteristics: Parent Demographics by Group and Gender*

Characteristic	ASD Group				TD Group				
	Mothers		Fathers		Mothers		Fathers		
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Marital Status									
Married/Cohabiting	43	89.6	37	97.4	43	78.2	36	87.8	
Separated	2	4.2	--	--	--	--	--	--	
Divorced	2	4.2	--	--	5	9.1	2	4.9	
Widowed	--	--	--	--	3	5.5	1	2.4	
Single	1	2.1	1	2.6	4	7.3	2	4.9	
Partner Gender									
Male	33	66.8	19	50.0	39	70.9	4	9.8	
Female	11	22.9	18	47.4	4	7.3	31	75.6	
Education Level									
≤High School Diploma	2	4.2	3	7.9	17	30.9	2	4.9	
Some College	8	16.7	--	--	12	21.8	1	2.4	
Associate Degree	4	8.3			7	12.7	3	7.3	
Bachelor's Degree	17	35.4	8	21.1	12	21.8	7	17.1	
Master's Degree	15	31.3	19	50.0	6	10.9	24	58.5	
Professional Degree	2	4.2	8	21.1	1	1.8	4	9.8	
Family Income									
< \$20,000	3	6.3	1	2.6	8	14.5	1	2.4	
\$20,000 - \$34,999	3	6.3	--	--	7	12.7	3	7.3	
\$35,000 - \$49,999	3	6.3	1	2.6	12	21.8	1	2.4	
\$50,000 - \$74,999	12	25.0	3	7.9	12	21.8	2	4.9	
\$75,000 - \$99,999	7	14.6	8	21.1	7	12.7	6	14.6	
\$100,000 - \$149,999	10	20.8	13	34.2	4	5.5	13	31.7	
\$150,000 - \$199,999	7	14.6	7	18.4	3	5.5	7	17.1	
\$200,000 +	3	6.3	5	13.2	3	5.5	8	19.5	

Table 2 (continued).

Race									
	American Indian or Alaska Native	2	4.2	--	--	1	1.8	--	--
	Asian	--	--	--	--	3	5.5	--	--
	Black or African American	6	12.5	1	2.6	3	5.5	2	4.9
	Native Hawaiian or Pacific Islander	--	--	--	--	--	--	--	--
	White	41	85.4	37	97.4	49	89.1	39	95.1
Ethnicity									
	Spanish	1	2.1	2	5.3	--	--	--	--
	Hispanic	5	10.4	2	5.3	4	7.3	1	2.4
	Other	--	--	--	--	1	1.8	--	--
Pre-COVID-19 Work Status									
	Worked in-person	27	56.3	23	60.5	27	49.1	28	68.3
	Worked partially out of home/partially in home	13	27.1	12	31.6	5	9.1	7	17.1
	Worked solely at home	2	4.2	3	7.9	5	9.1	4	9.8
	Not Employed	6	12.5	--	--	16	29.1	1	2.4
	Disabled	--	--	--	--	1	1.8		
	Retired	--	--	--	--	1	1.8	1	2.4
Post-COVID-19 Work Status									
	Continued Work In-Person	12	25.0	23	60.5	19	34.5	16	39.0
	Working partially out of home/partially in home	15	31.3	13	34.2	3	5.5	13	31.7
	Working solely at home	14	29.2	8	21.1	12	21.8	10	24.4
	Not currently employed	8	16.7	--	--	20	36.4	3	7.3

Table 2 (continued).

	Not working as a result of COVID-19	3	6.3	1	2.6	2	3.6	--	--
Partner Pre-COVID-19 Work Status									
	Worked in-person	25	52.1	21	55.3	28	50.9	20	48.8
	Worked partially out of home/partially in home	11	22.9	10	26.3	5	9.1	6	14.6
	Worked solely at Home	3	6.3	4	10.5	4	7.3	3	7.3
	Not employed	3	6.3	1	2.6	6	10.9	7	17.1
Partner Post-COVID-19 Work Status									
	Continued work in-person	19	39.6	18	47.4	21	38.2	15	36.6
	Working partially out of home/partially in home	13	27.1	12	31.6	6	10.9	14	34.1
	Working solely at home	9	18.8	9	23.7	7	12.7	8	19.5
	Not currently employed	2	4.2	1	1.6	11	20.0	--	--
	Not working as a result of COVID-19	2	4.2	--	--	--	--	--	--
COVID-19 Judgement									
	Very Challenging	31	64.6	29	76.3	20	36.4	22	53.7
	Challenging	15	31.3	8	21.1	27	49.1	14	34.1
	Not Challenging	2	4.2	1	2.6	8	14.5	5	12.2
COVID-19 Comparison									
	More Challenging	29	60.4	23	60.5	20	36.4	20	48.8
	Equally Challenging	18	37.5	15	39.5	27	49.1	18	43.9
	Less Challenging	1	2.1	--	--	8	14.5	3	7.3

Note. ASD = Autism Spectrum Disorder; TD = Typically Developing.

Table 3*Sample Characteristics: Child Demographics by Group*

Characteristic		ASD Group		TD Group	
		<i>n</i>	%	<i>n</i>	%
Gender					
	Male	54	61.4	58	59.8
	Female	33	37.5	38	39.2
	Third Gender/Non-Binary	1	1.1	--	--
	Prefer Not To Say	--	--	1	1.0
Age					
	4	5	5.7	6	6.2
	5	4	4.5	5	5.2
	6	6	6.8	8	8.2
	7	6	6.8	12	12.4
	8	6	6.8	4	4.1
	9	7	8.0	4	4.1
	10	12	13.6	10	10.3
	11	7	8.0	8	8.2
	12	13	14.8	9	6.2
	13	9	10.2	7	7.2
	14	4	4.5	10	10.3
	15	7	8.0	8	8.2
	16	2	2.3	6	6.2
Number of Siblings					
	0	51	58	34	34.0
	1	10	11.4	26	26.8
	2	18	20.5	23	23.7
	3	6	6.8	8	8.2
	4	--	--	4	4.1
	5	1	1.1	1	1.0
	6+	2	2.3	1	1.0

Table 3 (continued).

Sibling with ASD					
	Yes	48	54.5	--	--
	No	40	45.5	97	100
Current School Situation (during COVID-19 pandemic)					
	100% Virtual School	50	56.8	40	41.2
	Partial Virtual School, Partial In-Person	25	28.4	32	33.0
	Full Time In-Person	11	12.5	23	23.7
	Homeschool	1	1.1	1	1.0
	Other	1	1.1	1	1.0
School Usefulness					
	Very Useful	44	50.0	32	33.0
	Useful	28	31.8	38	39.2
	Sufficiently Useful	10	11.4	16	16.5
	Not Very Useful	4	4.5	9	9.3
	Not At All Useful	2	2.3	2	2.1
Additional Mental Health Diagnoses					
	ADHD	38	43.2	--	--
	GAD	21	23.9	--	--
	Depression	26	29.5	--	--
	OCD	7	8.0	--	--
	Learning Disorder	19	21.6	--	--
	Other	3	3.4	--	--
Private-Therapy					
	In-Person	67	76.1	--	--
	Via Telehealth	19	21.6	--	--
	None	6	6.8	--	--
Change in Therapy Services Due to COVID-19					
	All Services Stopped	16	18.2	--	--

Table 3 (continued).

	Some Services Stopped	57	64.8	--	--
	None Have Stopped	15	17.0	--	--
Type of Private Therapy					
	Speech	50	56.8	--	--
	Occupational	26	29.5	--	--
	Physical	32	36.4	--	--
	Behavioral	40	45.5	--	--
	Psychotherapy/Counseling	19	21.6	--	--
Therapy Frequency					
	Contact Daily	37	42.0	--	--
	Contact Weekly	32	36.4	--	--
	Contact Bi-Weekly	10	11.4	--	--
	No Contact	1	1.1	--	--
Therapy Usefulness					
	Very Useful	39	44.3	--	--
	Useful	29	33.0	--	--
	Sufficiently Useful	11	12.5	--	--
	Not Very Useful	2	2.3	--	--
	Not At All Useful	1	1.1	--	--
Child's Language Level					
	Fluent Speech	50	56.8	--	--
	Phrase Speech	37	42.0	--	--
	No Phrase Speech	1	1.1	--	--
Behavior Problems Pre-COVID					
	Yes	70	79.5	11	11.3
	No	18	20.5	86	88.7
Behavior Problem Intensity					
	More Intense	49	55.7	20	20.6
	Equally Intense	35	39.8	64	66.0

Table 3 (continued).

	Less Intense	4	4.5	13	13.4
Behavior Problem Frequency	More Frequent	53	60.2	18	18.6
	Equally Frequent	32	36.4	61	62.9
	Less Frequent	3	3.4	18	18.6
Pharmacological Treatment	Yes	68	77.3	--	--
	No	20	22.7	--	--
Meal Difficulties	Yes	65	73.9	21	21.6
	No	23	26.1	76	78.4
Greater Meal Difficulties	Yes	64	72.7	19	19.6
	No	24	27.3	78	80.4
Sleep Difficulties	Yes	67	76.1	28	28.9
	No	21	23.9	69	71.1
Greater Sleep Difficulties	Yes	66	75.0	25	25.8
	No	22	25.0	72	74.2
Routine Difficulties	Yes	62	70.5	41	42.3
	No	26	29.5	56	57.7
Greater Routine Difficulties	Yes	62	70.5	38	39.2
	No	26	29.5	59	60.8
Free Time Difficulties	Yes	63	71.6	41	42.3
	No	25	28.4	56	57.7

Table 3 (continued).

Greater Free-Time Difficulties					
	Yes	58	65.9	35	36.1
	No	30	34.1	62	63.9
Structured Activities Difficulties					
	Yes	67	76.1	39	40.2
	No	21	23.9	58	59.8
Greater Structured Activity Difficulties					
	Yes	65	73.9	31	32.0
	No	23	26.1	66	68.0

Note. Greater difficulties refers to whether difficulties were greater in each domain compared to pre-COVID-19. ASD = Autism Spectrum Disorder; TD = Typically Developing; ADHD = Attention-Deficit/Hyperactivity Disorder; GAD = Generalized Anxiety Disorder; OCD = Obsessive Compulsive Disorder.

Measures

Demographics Questionnaire

Prior to completing the other measures listed below, parents completed a questionnaire to collect sociodemographic information. Specifically, parents were asked information about themselves, their target child, and their family. Parents reported on information related to their age, race, ethnicity, level of education, and working situation (i.e., change in work environment as a result of COVID-19). In both groups, information collected about their target child included age, current school situation (e.g., attending in-person school, virtual school, homeschooling, etc.), usefulness of school supports, if the child exhibited behavior problems before COVID-19, and the change in frequency and intensity of behavior problems since COVID-19. Additionally, parents of children with ASD reported on their target child's diagnoses, language level, services child received at the time of participation, usefulness of their current services, pharmacological treatment, and confirmation that ASD diagnosis was made by a professional. Family demographic information included marital status, household income, number of other children living in the home and if any of the siblings of the target child also had a diagnosis of ASD, and the working situation of their spouse (if the spouse lives in the home).

COVID-19 Challenges

Two questions about COVID-19-related-stress were asked as part of the demographics questionnaire. Adapted from a survey conducted by Collizi et al. (2020), parents were asked to rate their “judgement on this period of change and restrictions as a result of COVID-19” on a scale of (0) “*Not Challenging*,” (1) “*Challenging*,” and (2) “*Very Challenging*,” and “judgement on this period of change and restrictions as compared to before COVID-19” on a scale of (0) “*Less Challenging*,” (1), “*Equally Challenging*,” (2) “*More Challenging*.”

Depression, Anxiety, and Stress Scale – 21 (DASS-21)

The DASS-21 is a refined version of the original 42-item self-report DASS questionnaire (Lovibond & Lovibond, 1995). The DASS-21 consists of three subscales comprised of seven items each: Depression (e.g., “I felt life was meaningless”), Anxiety (e.g., “I felt scared without any good reason”), and Stress (e.g., “I found myself getting agitated;” Antony et al., 1998). Parents rated the frequency and severity of the item on a scale of (0) “*Did not apply to me at all*” to (3) “*Applied to me very much, or most of the time*” (Lovibond & Lovibond, 1995). The three subscales have shown adequate internal consistency: depression ($\alpha = .94$), anxiety ($\alpha = .87$), and stress ($\alpha = .91$; Antony et al., 1998). Higher scores indicate greater difficulty with a range of 0 to 63 for the total score on the DASS-21 and a score from 0 to 21 for each subscale (Antony et al., 1998; Lovibond & Lovibond, 1995). To directly compare the DASS-21 to the 42-item DASS, the total score and total subscale scores on the DASS-21 may be doubled (Antony et al., 1998). Parents were asked to self-report on the DASS-21. The DASS-21 anxiety and depression subscale scores were used in analyses as a measure of the level of anxiety and depression symptoms parents were experiencing at the time of participation. In the current sample, alpha coefficients ranged from 0.87 to 0.94 on the Depression scale and 0.89 to 0.93 on the Anxiety scale.

Children’s Social Behavior Questionnaire (CSBQ)

The CSBQ (Hartman, et al., 2006) is a 49-item parent-report measure of autism symptom severity, which is a shorter version of the original 96-item version (Luteijn et al., 1998; Luteijn et al., 2000). The CSBQ yields six subscales: Behavior/emotions not optimally tuned to the social situation (e.g., “Quickly gets angry”), Reduced contact and social interest (e.g., “Makes little eye contact”), Orientation problems in time, place, or activity (e.g., “Does things without realizing

the aim”), Difficulties in understanding social information (e.g., “Takes things literally”), Stereotyped behavior (e.g., “Flaps arms/hands when excited”), and Fear of and resistance to changes (e.g., “Opposes change;” Hartman et al., 2006). Parents rated their agreement with each item regarding their child’s behavior over the previous two months as (0) “*does not apply*,” (1) “*sometimes or somewhat applies*,” or (2) “*clearly or often applies*.” Scores range between 0 and 98 with higher scores signifying greater ASD symptomatology (Hartman et al., 2006). Hartman et al. (2006) indicated that each of the six subscales, in addition to the total scale of the CSBQ, demonstrated satisfactory internal consistency, inter-rater reliability, and test-retest reliability: total scale ($\alpha = .94$, ICC = .86, $r = .90$), “behavior/emotions not optimally tuned to the social situation” ($\alpha = .90$, ICC = .89, $r = .89$), “reduced contact and social interest” ($\alpha = .85$, ICC = .79, $r = .88$), “orientation problems in time, place, or activity” ($\alpha = .84$, ICC = .81, $r = .82$), “difficulties in understanding social information” ($\alpha = .85$, ICC = .87, $r = .80$), “stereotyped behaviors” ($\alpha = .76$, ICC = .75, $r = .80$), and “fear of and resistance to changes” ($\alpha = .85$, ICC = .80, $r = .83$; Hartman et al., 2006). Parents completed the CSBQ on their target child and, while not used in primary analyses, this measure served as an assessment of autism symptom severity, a validation of reported ASD diagnosis, and confirmed low ASD symptoms in the TD group. The total score yielded excellent reliability in the current sample with an alpha coefficient of 0.95 for the ASD group and 0.98 for the TD group.

Strengths and Difficulties Questionnaire (SDQ)

Goodman (1997) developed the SDQ, a 25-item parent- and self-report measure of child behavior. In this study, only the parent-report version was used. There are three separate forms for parents based on the child’s age: forms for children between the ages of 3 and 4, ages 4 to 10, and ages 11 to 17. Parents rated their agreement with statements about their child’s behavior over

the past six months as 0) “*Not True*,” (1) “*Somewhat True*,” or (2) “*Certainly True*.” The SDQ yields five subscales, each comprised of five items: Hyperactivity-Impulsivity (e.g., “Constantly fidgeting or squirming”), Emotional Symptoms (e.g., “Many fears, easily scared”), Conduct Problems (e.g., “Steals from home, school or elsewhere”), Peer Problems (e.g., “Has at least one good friend”), and Prosocial Behavior (“Considerate of other people’s feelings”). Each of the subscale scores can be achieved by summing the five items of that subscale resulting in a score ranging in value from 0 to 10 (Goodman, 1997). The hyperactivity-impulsivity, emotional symptoms, conduct problems, and peer problems subscales can be added together to create a total difficulties score, ranging from 0 to 40, with higher scores indicating greater emotional and behavioral problems (Goodman, 1997). Goodman (2001) reported that the SDQ has adequate reliability for the parent-report forms for all subscales and the total difficulties score:

Hyperactivity-Inattention ($\alpha = .77$), Emotional Symptoms ($\alpha = .67$), Conduct Problems ($\alpha = .63$), Peer Problems ($\alpha = .57$), Prosocial Behavior ($\alpha = .65$), and Total Difficulties (parent $\alpha = .82$; Goodman, 2001). Mothers and fathers completed the SDQ about their target child. This measure served as a broad measure of emotional and behavioral functioning of the children and the Total Difficulties, Internalizing, and Externalizing scales were used in analyses. The Chronbach’s alphas in the current sample for the Total Difficulties score ranged from .0.87 to 0.91 in the TD sample and 0.51 to 0.82 in the ASD sample. The alphas for mothers in the ASD group were significantly lower (0.51 and 0.65 for the child and adolescent versions, respectively) than fathers (0.74 and 0.82, respectively).

Parental Burnout Assessment (PBA)

The PBA (Roskam et al., 2018) is a 23-item self-report measure of parental burnout. The PBA yields a global score and four subscales: Exhaustion in Parental Role (e.g., I feel

completely run down by my role as parent), Contrast in Parental Self (e.g., I tell myself that I'm no longer the parent I used to be), Feelings of Being Fed Up (e.g., I can't take being a parent anymore), and Emotional Distancing (e.g., I do what I'm supposed to do for my children, but nothing more). Parents rated how often they experience each statement on a scale between (0) "*A few times a year or less*" and (6) "*Every day.*" The global and subscale scores can be calculated by summing all items or the items within that subscale. Higher scores indicate higher burnout. Additionally, the PBA demonstrates adequate reliability with Cronbach's alphas ranging from 0.81 to 0.93 on the four subscales (Roskam et al., 2018). Parents completed this measure about themselves and the global and subscale scores were used in analyses as a measure of overall parental burnout and the four different dimensions of parental burnout. Internal consistency for the PBA Total score ranged from $\alpha = 0.96$ to $\alpha = 0.98$. Alpha coefficients ranged from 0.90 to 0.95 on the Exhaustion in Parental Role scale, from 0.87 to .95 on the Contrast in Parental Self scale, from 0.91 to 0.95 on the Feelings of Being Fed Up scale, and from 0.67 to 0.84 on the Emotional Distancing scale.

Parent Report of Parent Behavior Inventory (PRPBI)

The PRPBI (Morton, 1991) is an adaptation of the 30-item Child Report of Parent Behavior Inventory (CRPBI-30; Schludermann & Schludermann, 1988). Morton (1991) modified the wording of each question was modified to reflect the perspective of a parent's behavior toward his or her target child. The scale measures three dimensions of parenting behavior: Acceptance vs. Rejection (e.g., "I smile at my child very often"), Psychological Control vs. Autonomy (e.g., "I want to control whatever my child does"), and Firm Control vs. Lax Control (e.g., "I give my child as much freedom as he/she wants"). Parents responded to items with how they *usually* are with their child. They rated each statement on how much it

describes someone (0) “*Not Like You,*” (1), “*Somewhat Like You*” and (2) “*A Lot Like You.*” Subscale scores were calculated by summing items in that particular scale and higher scores indicate greater levels of acceptance, psychological control, and firmness. The PRPBI has been used successfully in multiple studies (e.g., Martin et al., 2017; Ventola et al., 2017). Polfuss and Frenn (2012) found that the PRPBI demonstrated sufficient reliability with Cronbach’s alphas of 0.81, 0.82, and 0.67 for the Acceptance vs. Rejection, Psychological Control vs. Autonomy, and the Firm vs. Lax Control, respectively. Parents completed the PRPBI about their own behavior toward their target child and subscale scores were used in analyses. Internal consistency was good to excellent across the three scales in the current sample. Chronbach’s alphas ranged from 0.79 to 0.91.

Parenting Resilience Elements Questionnaire (PREQ)

The PREQ (Suzuki et al., 2015) is most often used to assess resilience in parenting children with developmental disorders. The questionnaire is comprised of 16-items, all rated on a 7-point scale from (1) “Strongly Disagree” to (7) “Strongly Agree.” The questionnaire yields three subscale scores: Knowledge of the Child’s Characteristics, Perceived Social Supports, and Positive Perception of Parenting. Suzuki and colleagues (2015) reported alpha coefficients of .81, .84, and .81 for each of the subscales, respectively. The subscale scores of the PREQ were not used in main analyses, but were used in exploratory analyses. In the current sample, internal consistency ranged from 0.68 to 0.88 on the Knowledge of Child’s Characteristics scale, from 0.62 to 0.87 on the Perceived Social Supports scale, and 0.77 to 0.86 on the Positive Perception of Parenting scale.

Procedures

Recruitment

Mothers and fathers of children with ASD and TD children were recruited through Qualtrics Panels, an online recruitment service, that uses panels representative of the general population. Participants are recruited to be a part of panels from a variety of sources including website intercept recruitment, member referrals, targeted email lists, gaming sites, customer loyalty portals, permission-based networks, social media, and more. Qualtrics Panels recruits participants for specific studies through the double ‘opt-in for market research’ process. First, individuals complete an initial registration form. Then, Qualtrics Panels uses the profiles of potential respondents to identify appropriate studies. Participants must then reconfirm that they want to participate once an opportunity has been identified. The majority of samples stem from this double-opt-in process, but there are occasions in which social media or other sources are used to target a specific group. In this study, mothers and fathers who were recruited in the ASD group previously indicated that they have a child with ASD. Mothers and fathers in the TD group previously indicated that they have a child without any mental health problems.

Data Collection

Data were collected for this study during the COVID-19 pandemic from March 8, 2021 to March 26, 2021. Participation in the proposed study was voluntary and confidential. Approval was obtained from The University of Alabama’s Institutional Review Board for the Protection of Human subjects prior to the collection of data. Potential participants were notified of the survey via an email, an in-app, or an SMS notification. Survey invitations included that the survey was for research purposes only, the expected length of time of the survey, and the available

incentives. Survey invitations did not include specific details about the purpose of the survey to avoid self-selection bias.

Those individuals who chose to participate first consented electronically and then completed a survey of the above-mentioned questionnaires. Mothers and fathers in the ASD group were instructed to respond to items based on a single child with ASD (if the parent had more than one child with a diagnosis of ASD) and parents in the TD group were asked to respond about a single child who had no mental health diagnoses. To help ensure that mothers and fathers were from separate households, Qualtrics Panels confirmed that each participant had their own unique IP address. Participants were asked to respond with the same child in mind throughout the survey to ensure consistency across measures. Each parent completed the demographic form on their family, the Strengths and Difficulties Questionnaire (SDQ) and the Children's Social Behavior Questionnaire (CSBQ) on his/her child, and the Depression, Anxiety, and Stress Scale (DASS), the Parent Burnout Assessment (PBA), and the Parents' Report of Parent Behavior Inventory (PRPBI) on themselves. After completing the survey, participants received compensation in the form of cash, airline miles, gift cards, redeemable points, sweepstakes entrance, or vouchers. The fair market value of each type of compensation was equal for all participants. Compensation was based on a variety of factors including their panelist profile and the difficulty in acquiring the specific type of participant. In order to provide quality data, Qualtrics Panels replaced participants who responded in half the median completion time. Furthermore, the researcher could request that a participant be replaced if there were other quality concerns.

Data Analytic Plan

Preliminary Analyses

All analyses were conducted in IBM SPSS Statistics 25 (IBM Corp., 2017). Data were first screened for outliers and missing data, and descriptive analyses were then conducted to examine means, standard deviations, skewness, and kurtosis of all study variables. Assumptions of analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA) were also examined. Demographic variables (e.g., family income, parent/child age) were correlated with variables of interest to examine potential covariates. None of the demographic variables were found to relate to variables of interest (i.e., types of parental burnout, Anxiety and Depression symptoms, types of parenting behaviors) at the $p < .05$ level across groups and, therefore, no covariates were entered in the main analyses.

Main Analyses

Hypothesis 1a. In order to examine the group differences in levels of Anxiety and Depression between parents of children with ASD and TD children, two independent samples t -tests were conducted.

Hypothesis 1b and 1c. To further investigate differences between the ASD and TD group, two separate one-way MANOVAs were planned with group (ASD and TD) as the independent variable and the three types of parenting behaviors or five types of parental burnout as the dependent variables (Hypotheses 1b & 1c). However, when examining whether assumptions were met for the one-way MANOVA for parenting behavior, it was determined that Acceptance did not significantly correlate with Firm Control and Psychological Control. Therefore, because MANOVA requires dependent variables to be at least moderately related, differences in group levels of Acceptance were examined via an independent samples t -test and

differences in Firm Control and Psychological Control between groups were examined via a one-way MANOVA (Hypothesis 1b). The Wilks' Lambda multivariate test was used to examine the main results of the one-way MANOVA for Hypothesis 1b because the assumption of homogeneity of covariance matrices was met. When assumptions were examined for the one-way MANOVA examining the five types of parental burnout, multicollinearity was found between Total Parental Burnout and the other four types in both the TD and ASD groups. Therefore, Total Parental Burnout was removed from the one-way MANOVA analysis and only the four types of parenting burnout were examined. The Pillai's Trace multivariate test was used to examine the main results of the one-way MANOVA for Hypothesis 1c because the homogeneity of covariance matrices was violated for this analysis. The difference between the ASD and TD groups in Total Parental Burnout was then examined via an independent samples *t*-test (Hypothesis 1c).

Hypothesis 2a. Differences in Anxiety and Depression in mothers and fathers were explored via two two-way ANOVAs. Specifically, group (ASD and TD) and gender were the two independent variables and Anxiety or Depression was the dependent variable in order to assess the differences in mental health problems between mothers and fathers of ASD and TD children. When a significant interaction between group and gender emerged, simple main effect analyses were conducted. When a significant interaction was not found between group and gender, significant main effects were examined. Following significant simple main effects and significant main effects, pairwise comparisons were conducted with Bonferroni adjustments.

Hypothesis 2b. A two-way MANOVA was planned with group (ASD and TD) and gender as the two independent variables and types of parenting behavior as the three dependent variables to examine whether each parenting behavior differed between mothers and fathers of

children with and without ASD. As in Hypothesis 1b, the lack of a relation between Acceptance and Psychological and Firm Control signified that two separate analyses were required. Therefore, a two-way ANOVA was conducted to examine the differences in Acceptance between mothers and fathers in the ASD and TD groups. A two-way MANOVA was then conducted with firm control and psychological control as the two dependent variables. The Wilks' Lambda multivariate test was used to examine the main results of the two-way MANOVA as the assumption of homogeneity of covariance matrices was met.

Hypothesis 2c. A two-way MANOVA was proposed with group (ASD and TD) and gender as the two independent variables and the five types of parenting burnout as the five dependent variables to examine whether levels of parenting burnout differ between mothers and fathers of children in these two groups. However, due to the multicollinearity described in Hypothesis 1c, Total Parental Burnout was removed from the two-way MANOVA analysis and examined via a two-way ANOVA. Similar to Hypothesis 1c, the Pillai's Trace multivariate test was used to examine the main results of the two-way MANOVA as the homogeneity of covariance matrices was violated. Statistically significant multivariate interaction effects did not emerge, and therefore, post hoc analyses were conducted (i.e., univariate interaction effects for each dependent variable followed by simple main effects).

Hypotheses 3, 4, and 5. Bivariate correlations were conducted to investigate the strength and direction of the relations between variables of interest. Specifically, correlations for Hypotheses 3a, 3b, and 3c, examined the relations between child Externalizing and Internalizing behavior problems and Anxiety and Depression levels with levels of parental burnout and types of parenting behaviors in mothers and fathers in the ASD group. Bivariate correlations for Hypothesis 4a examined the relations between COVID-19-related-stress and levels of parental

burnout in mothers and fathers in both groups. Lastly, correlations for Hypothesis 5a examined the relations between levels of parental burnout and different parenting behaviors in the ASD group. In order to examine the significance of the difference between two correlation coefficients (Hypothesis 3a, 4a, & 5a), Fisher r -to- z transformations were used when correlations were statistically significant in both groups (i.e., for mothers and fathers).

Exploratory Analyses

To examine the differences in three types of parenting resilience (Knowledge of Child's Characteristics, Perceived Social Supports, and Positive Perception of Parenting) in mothers and fathers in the ASD and TD Groups, a two-way MANOVA was performed. Gender and group were entered as the independent variables and types of resilience were entered as the three dependent variables. The Wilks' Lambda multivariate test was used to examine the main results of the two-way MANOVA. Bivariate correlations were also conducted to examine the relations between types of resilience, levels of parental burnout, parents' psychological functioning, and parenting behaviors.

Power Analysis. An a priori power analysis using the G*Power program (Faul et al., 2007) was completed using a medium effect size of $f^2 = .0625$, an alpha significance level of $p = .05$, a power level of .80, four groups, two predictors, and five response variables for the proposed two-way MANOVAs. These levels were chosen based on a previous study's findings (Ventola et al., 2017) and resulted in a recommended sample size of 135 total participants. A second a priori power analysis was conducted for an ANCOVA, in the case that demographic variables significantly related to variables of interest and were included as covariates. The power analysis used the following parameters: an estimated moderate effect size ($f = .25$), an alpha of .05, four groups, and five possible covariates. The recommended sample size was 179.

Therefore, the collected sample of 185 total participants should yield adequate power for the conducted analyses.

CHAPTER 3: RESULTS

Preliminary Analyses

Data were first screened for missing data and CSBQ outliers were examined. One case was removed due to missing data on the CSBQ. Two cases were removed for poor data quality (i.e., same responses for all question items). The total score on the CSBQ was then examined for each participant to confirm presence of ASD symptoms in the ASD group and lack of ASD symptoms in the TD group. Hartman et al. (2006) previously indicated that greater than or equal to a total score of 23 on CSBQ represents presence of symptoms at the clinically significant level of ASD. Five cases in the ASD group were removed for reporting no or very few ASD symptoms for their target child. Sixty of the 98 TD participants reported CSBQ total scores greater than 23. To account for this unexpected finding, scores that fell two or more standard deviations above the mean in the TD group (1 case) and scores that fell two or more standard deviations below the mean in the ASD group (3 cases) were removed. After the removal of these outliers, 185 cases remained and were included in final analyses. Although the mean on the CSBQ in the TD group was higher than expected ($M = 27.65$, $SD = 23.97$) and slightly greater than the cut-off score for clinically significant symptoms of ASD reported by Hartman and colleagues (2006), the ASD group reported significantly higher scores ($M = 64.70$, $SD = 16.77$) than the TD group, $t(183) = 12.066$, $p < .001$.

Descriptive analyses were then conducted to examine means, standard deviations, skewness, and kurtosis of all study variables (see Table 4 and Table 5). In the ASD group, mothers and fathers both reported Anxiety symptoms in the Extremely Severe range ($M = 11.21$,

$SD = 6.19$; $M = 13.89$, $SD = 4.71$), while mothers reported Depression symptoms in the Severe ($M = 11.39$, $SD = 6.36$) and fathers in the Extremely Severe range ($M = 14.61$, $SD = 4.55$).

Mothers and fathers in the TD group reported Mild symptoms of Anxiety ($M = 4.84$, $SD = 5.32$; $M = 4.68$, $SD = 5.54$), and their reported symptoms of Depression ($M = 5.80$, $SD = 5.85$; $M = 4.95$, $SD = 5.81$) fell in the Mild and Normal ranges, respectively. With regard to child behavior problems, the Total Difficulties mean score fell in the Abnormal range in the ASD group ($M = 22.65$, $SD = 5.25$) and in the Normal range in the TD group ($M = 12.37$, $SD = 7.95$).

Table 4

Descriptives of Variables of Interest By Group

	ASD Group			TD Group		
	<i>M (SD)</i>	Skewness	Kurtosis	<i>M (SD)</i>	Skewness	Kurtosis
PBA						
Exhaustion	26.76 (15.47)	0.01	-0.87	10.87 (11.23)	1.17	0.75
Contrast Parental Self	16.32 (11.01)	0.05	-1.09	5.28 (6.96)	1.51	1.51
Feelings of Being Fed Up	12.57 (9.39)	0.16	-1.19	3.38 (6.17)	2.13	4.49
Emotional Distancing	7.97 (5.47)	0.04	-0.97	2.21 (3.55)	1.86	3.12
Total	63.61 (38.97)	0.07	-0.83	21.73 (24.86)	1.46	1.71
DASS-21						
Anxiety	12.36 (5.68)	-0.51	-0.65	4.76 (5.36)	1.10	0.39
Depression	12.81 (5.84)	-0.54	-0.67	5.52 (5.84)	1.09	0.33
PRPBI						
Acceptance	15.44 (3.52)	-0.37	-1.04	16.15 (4.01)	-1.09	0.51
Psychological Control	12.41 (5.30)	-0.62	-0.32	7.51 (4.87)	0.31	-0.61
Firm Control	12.35 (4.92)	-0.22	-0.80	8.05 (4.20)	0.84	-0.05
SDQ						
Total Difficulties	22.65 (5.25)	-0.25	-0.57	12.37 (7.95)	0.30	-0.98

Table 4 (continued).

Externalizing Problems	11.09 (2.62)	-0.24	-0.63	6.64 (4.15)	0.19	-0.71
Internalizing Problems	11.56 (3.28)	-0.30	-0.43	5.73 (4.42)	0.44	-1.04
CSBQ						
Total Symptoms	64.70 (16.77)	-0.25	-0.57	27.65 (23.97)	0.44	-1.21
PREQ						
Knowledge of Child Characteristics	14.33 (6.61)	0.83	0.60	15.28 (5.71)	0.46	-0.48
Perceived Social Supports	14.90 (6.58)	0.61	-0.08	18.93 (5.87)	0.08	-0.20
Positive Perception of Parenting	8.90 (4.27)	0.98	0.21	8.03 (3.69)	1.33	1.76

Note. ASD = Autism Spectrum Disorder; TD = Typically Developing; PBA = Parental Burnout Assessment; DASS-21 = Depression, Anxiety, and Stress Scale – 21; PRPBI = Parent Report of Parent Behavior Inventory; SDQ = Strengths and Difficulties Questionnaire; CSBQ = Children’s Social Behavior Questionnaire; PREQ = Parental Resilience Elements Questionnaire.

Table 5

Means and Standard Deviations of Variables of Interest By Group and Gender

	ASD Group		TD Group	
	Mothers	Fathers	Mothers	Fathers
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
PBA				
Exhaustion	25.71 (16.13)	27.76 (14.99)	10.93 (10.87)	10.56 (11.88)
Contrast Parental Self	14.83 (11.31)	17.79 (10.66)	6.31 (7.14)	3.85 (6.63)
Feelings of Being Fed Up	10.81 (9.59)	14.34 (8.82)	3.05 (5.29)	3.61 (7.19)
Emotional Distancing	6.67 (5.57)	9.42 (5.09)	1.75 (3.16)	2.85 (4.00)
Total	58.02 (39.73)	69.32 (38.09)	22.04 (23.65)	20.88 (26.82)
DASS-21				
Anxiety	11.21 (6.19)	13.89 (4.71)	4.84 (5.32)	4.68 (5.54)
Depression	11.39 (6.36)	14.61 (4.55)	5.80 (5.85)	4.95 (5.81)
PRPBI				
Acceptance	15.65 (3.53)	15.24 (3.61)	16.18 (4.23)	16.24 (3.69)

Table 5 (continued).

Psychological Control	10.97 (5.82)	14.16 (4.12)	6.71 (4.76)	8.51 (4.92)
Firm Control	11.00 (5.31)	13.95 (3.98)	7.51 (3.90)	8.60 (4.47)
SDQ				
Total Difficulties	22.21 (4.79)	23.18 (5.85)	12.82 (7.82)	11.46 (8.00)
Externalizing Problems	11.00 (2.41)	11.24 (2.94)	6.96 (4.29)	6.07 (3.91)
Internalizing Problems	11.21 (3.31)	11.95 (3.27)	5.85 (4.34)	5.39 (4.47)
CSBQ				
Total Symptoms	62.88 (16.10)	66.89 (17.94)	26.05 (24.76)	28.93 (22.70)
PREQ				
Knowledge of Child Characteristics	15.42 (6.93)	12.76 (6.01)	16.53 (6.10)	13.41(4.56)
Perceived Social Supports	16.08 (7.13)	13.01 (5.30)	19.57 (5.42)	17.79 (6.18)
Positive Perception of Parenting	9.65 (4.84)	8.02 (3.37)	8.15 (3.50)	7.65 (3.73)

Note. ASD = Autism Spectrum Disorder; TD = Typically Developing; PBA = Parental Burnout Assessment; DASS-21 = Depression, Anxiety, and Stress Scale – 21; PRPBI = Parent Report of Parent Behavior Inventory; SDQ = Strengths and Difficulties Questionnaire; CSBQ = Children’s Social Behavior Questionnaire; PREQ = Parental Resilience Elements Questionnaire.

Demographic variables (e.g., family income, parent education level, parent/child age, number of children in the home) were correlated with variables of interest in each group (i.e., mothers and fathers in the ASD group and mothers and fathers in the TD group; see Table 6). In the ASD group, fathers’ Depression was positively correlated with their age, $r = .34, p = .04$, and their child’s age, $r = .46, p = .004$. Mothers’ Depression was positively related to their education level, $r = .38, p = .008$, and family income, $r = .52, p < .001$, and negatively related to the number of children in their home, $r = -.33, p = .023$. Anxiety symptoms for fathers in the ASD group were significantly positively related to their child’s age, $r = .56, p < .001$ and Anxiety symptoms for mothers in the ASD group were positively related to family income, $r = .49, p < .001$ and their education level, $r = .35, p = .016$. Depression and Anxiety symptoms for parents in

the TD group were not significantly related to any demographic variables.

Additionally, child age was significantly positively correlated with all five types of parental burnout for fathers in the ASD group ($p < .01$). Education level and financial income were significantly positively related to mothers' Feelings of Being Fed Up ($r = .31, p = .04; r = .29, p = .04$, respectively) and Emotional Distancing ($r = .39, p = .01; r = .41, p = .004$, respectively) in the ASD group. Child age was also significantly positively related to mothers' Feelings of Being Fed Up, $r = .35, p = .02$, in the ASD group. None of the demographic variables related significantly to mothers or fathers' levels of parental burnout in the TD group (see Table 6).

Family income was negatively correlated to levels of resilience related to their knowledge about their child for mothers in the ASD group, $r = -.41, p = .004$, and fathers in the TD group, $r = -.35, p = .02$. Demographic variables were not significantly correlated with resilience related to knowledge of child characteristics for fathers in the ASD group or mothers in the TD group. Resilience related to social support was negatively related to education level and family income for mothers in both the ASD group ($r = -.29, p < .05; r = -.38, p = .01$) and the TD group ($r = -.33, p = .02; r = -.38, p = .02$). Child age negatively related to fathers' reported level of social support, $r = -.46, p = .004$, in the ASD group. However, no demographic variables related to social support for fathers in the TD group. With regard to resilience related to positive perceptions of parenting, child age was negatively correlated in the ASD group for fathers, $r = -.40, p = .01$, and family income was negatively correlated in the ASD group for mothers, $r = -.29, p = .049$ (see Table 6).

For fathers in the ASD group, child age was positively related to their level of Acceptance, $r = .37, p = .02$, use of Psychological Control, $r = .38, p = .02$, and Firm Control, $r =$

.47, $p < .01$. Family income was positively related to fathers' level of Acceptance, $r = .35$, $p = .03$, and use of Psychological Control, $r = .32$, $p = .046$, in the TD group. Mothers' age positively related to their level of Acceptance, $r = .34$, $p = .01$, and their use of Psychological Control positively related to their education level, $r = .36$, $p = .01$, and family income, $r = .29$, $p = .03$, in the TD group. Education level and family income were both positively related to use of Firm Control for mothers in the TD group ($r = .29$, $p = .03$; $r = .29$, $p = .03$, respectively) and the ASD group ($r = .37$, $p = .01$; $r = .58$, $p < .001$, respectively). Use of Psychological Control was positively associated with education level, $r = .40$, $p = .01$, and family income, $r = .52$, $p < .001$, and negatively associated with number of children in the home, $r = -.30$, $p = .04$, for mothers in the ASD group. No demographic variables were related to fathers' use of Firm Control in the TD group or mothers' level of Acceptance in the ASD group (see Table 6). Although some of the demographic variables were significantly correlated with variables of interest, none of the demographic variables were associated with variables of interest in all four groups. Therefore, per Frigon and Laurencelle (1993), no covariates were entered into main analyses.

Before conducting my planned analyses, independent-samples t -tests were conducted to compare continuous demographic variables (e.g., child and parent age) across the ASD and TD groups. No statistically significant differences were found between the ASD and TD groups for child age, $t(183) = -.18$, $p = .859$, or parent age, $t(183) = -1.21$, $p = .229$. Additionally, there was no difference in the number of children reported in the household between the ASD and TD groups, $t(183) = -1.79$, $p = .075$.

Table 6

Pearson's r Statistics for Sociodemographic Variables and Variables of Interest in Mothers and Fathers in the ASD and TD Groups

	Parental Anxiety		Parental Anxiety	
	ASD Group		TD Group	
	Mothers (n = 48)	Fathers (n=38)	Mothers (n = 55)	Fathers (n=41)
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Parent Age	.03	.29	-.05	-.21
Child Age	.13	.56***	-.04	.01
Education Level	.35*	-.07	-.08	.11
Family Income	.49***	.09	.02	.02
Number of Siblings	-.20	-.02	.08	-.08
	Parental Depression		Parental Depression	
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Parent Age	.01	.34*	-.06	-.24
Child Age	-.04	.46**	.03	.00
Education Level	.38**	.03	-.03	.08
Family Income	.52***	.16	.05	-.01
Number of Siblings	-.33*	-.02	.04	-.03
	Exhaustion		Exhaustion	
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Parent Age	.15	.22	-.09	-.01
Child Age	.16	.66***	-.11	-.01
Education Level	.07	-.04	.01	-.15
Family Income	.08	.00	.04	-.06
Number of Siblings	-.06	-.002	.03	.13
	Contrast in Parental Self		Contrast in Parental Self	
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Parent Age	.01	.20	-.15	.03
Child Age	.20	.60**	-.05	.20
Education Level	.22	-.01	-.02	.04
Family Income	.26	.01	-.04	.17
Number of Siblings	-.04	.00	-.08	.01

Table 6 (continued).

	Feelings of Being Fed Up		Feelings of Being Fed Up	
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Parent Age	-.04	.13	-.11	.04
Child Age	.36*	.54**	-.07	-.01
Education Level	.31*	-.17	.22	-.08
Family Income	.29*	-.12	.13	-.07
Number of Siblings	-.16	.02	-.13	-.02
	Emotional Distancing		Emotional Distancing	
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Parent Age	.04	.18	-.21	-.07
Child Age	.27	.52**	-.19	.002
Education Level	.39**	-.08	.20	.03
Family Income	.41**	-.03	.13	.11
Number of Siblings	-.24	-.12	-.10	.04
	Total Parental Burnout		Total Parental Burnout	
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Parent Age	.06	.19	-.14	.01
Child Age	.24	.62***	-.10	.01
Education Level	.22	-.07	.08	-.07
Family Income	.24	-.03	.05	.02
Number of Siblings	-.12	-.01	-.05	.06
	Acceptance		Acceptance	
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Parent Age	.22	.14	.34*	-.02
Child Age	-.12	.37*	.15	.11
Education Level	.04	-.08	-.14	.19
Family Income	.15	-.12	-.03	.35*
Number of Siblings	-.06	-.04	.17	.06
	Psychological Control		Psychological Control	
	Mothers (<i>n</i> = 48)	Fathers (<i>n</i> =38)	Mothers (<i>n</i> = 48)	Fathers (<i>n</i> =38)
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Parent Age	-.13	.02	-.25	-.36*
Child Age	.18	.38*	-.11	.14
Education Level	.40**	-.30	.36**	.33*
Family Income	.52***	-.23	.29*	.32*

Table 6 (continued).

Number of Siblings	-.30*	-.06	-.16	-.16
	Firm Control		Firm Control	
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Parent Age	-.07	.12	-.19	-.07
Child Age	.18	.47**	-.15	.24
Education Level	.37*	-.17	.29*	.26
Family Income	.58***	-.10	.29*	.29
Number of Siblings	-.22	-.03	.04	-.22
	Knowledge of Child's Characteristics		Knowledge of Child's Characteristics	
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Parent Age	-.08	-.07	-.03	.04
Child Age	-.12	-.12	.04	-.17
Education Level	-.26	.24	-.17	-.19
Family Income	-.41**	.14	-.11	-.35
Number of Siblings	.06	-.05	-.11	.14
	Perceived Social Supports		Perceived Social Supports	
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Parent Age	-.18	-.02	.01	.14
Child Age	.03	-.46**	-.02	-.24
Education Level	.29*	.26	-.33*	-.14
Family Income	-.38**	.18	-.30*	-.20
Number of Siblings	.16	.08	-.21	.12
	Positive Perception of Parenting		Positive Perception of Parenting	
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Parent Age	-.15	-.10	-.12	-.08
Child Age	.12	-.40*	-.17	-.20
Education Level	-.13	.15	-.10	-.14
Family Income	-.29*	.09	-.04	-.27
Number of Siblings	.12	.09	-.12	.16

Note. ASD = Autism Spectrum Disorder; TD = Typically Developing.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Hypothesis Testing: Preliminary Analyses

This section describes test of assumptions for main analyses used to test each hypothesis including examination of outliers, normality, homogeneity of variance, and multicollinearity. Although discussed in more detail below, multiple variables were considered by the Shapiro-Wilk's test to violate the assumption of normality. However, skewness for all variables of interest fell below an absolute value of two without transformations, which is considered acceptable for analyses (West et al., 1996). Therefore, when the assumption of normality was violated, analyses were conducted as planned without transformation unless otherwise noted. Additionally, when outliers were identified, unless indicated differently, they were included in final analyses. There were no reasons to suspect these data were not an accurate representation of the participant's experience (i.e., no reason to believe these outliers were a result of poor data quality). Additionally, including these outliers in analyses was a more conservative approach as variables of interest were elevated and brought the means between the ASD and TD group closer together rather than farther apart.

Hypothesis 1a. There was one elevated outlier in the TD group for both Anxiety and Depression, as assessed by inspection of a boxplot, in which the box represents the interquartile range of the middle 50%. Although the Shapiro-Wilk's test determined that Anxiety and Depression for the ASD group and the TD group were not normally distributed ($p < .01$), skewness was slightly negative in direction in the ASD group and slightly positive in direction for the TD group. Given the opposite directionality, transformations did not correct the violation of normality, but resulted in greater skew. Therefore, analyses were conducted without transformation. There was homogeneity of variance for Anxiety and Depression scores for the ASD group and the TD group, as assessed by Levene's test for equality of variances ($p = .473$

and $p = .661$, respectively).

Hypothesis 1b. Boxplots were examined and there were no univariate outliers in either the ASD group or the TD group for Firm Control or Psychological Control. There were three elevated outliers for Acceptance in the TD group and none in the ASD group. There were no multivariate outliers in the data, as assessed by Mahalanobis distance ($p > .001$). The Shapiro-Wilk's test ($p < .05$) indicated that data violated the assumption of normality. However, skewness was slight (less than an absolute value of 1.5) and in opposing directions indicating that transformation would fail to correct the violation. Scatterplots were inspected to determine that there was a linear relationship between Firm Control and Psychological Control in both groups. Levene's test indicated that there was homogeneity of variance for all three dependent variables ($p > .05$) and there was homogeneity of variance-covariances matrices, as examined by Box's test of equality of covariances matrices ($p = .44$). Multicollinearity was not detected between Firm and Psychological Control ($p < .90$).

Hypothesis 1c. There were no univariate outliers for any of the types of parental burnout in the ASD group. However, there were between three and 11 elevated outliers in the TD group for each type of parental burnout and six multivariate outliers. The assumption of normality was violated in the TD group, as measured by Shapiro-Wilk's test ($p < .05$), but not in the ASD group. Given the skewness in the TD group was considered acceptable (West et al., 1996) and the data in the ASD group were normally distributed, transformations were not conducted. There was a linear relationship between all four types of parental burnout. The Levene's test determined that the assumption of homogeneity of variances was violated ($p < .05$) for Total Parental Burnout and all four types of parental burnout. It was also determined that the assumption of homogeneity of variance-covariances matrices, as assessed by Box's test ($p <$

.001), was violated. There was a linear relationship between all four types of parental burnout. As mentioned previously, the Welch's test and Pillai's Trace multivariate test were used to interpret results to correct for the violations of homogeneity of variances.

Hypothesis 2a. Measured via Shapiro-Wilk's test, in the ASD group, fathers' Depression and Anxiety symptoms were both normally distributed. Depression and Anxiety symptoms were not normally distributed for mothers in the ASD group or for mothers and fathers in the TD group. Similar to Hypothesis 1a, analyses were conducted without transformation as a result slight degree of skewness (West et al., 1996) and of the opposite directionality of skewness. There was homogeneity of variances for Depression and Anxiety, as examined by Levene's test for equality of variances ($p > .05$).

Hypothesis 2b. As in Hypothesis 1b, the Shapiro-Wilk's test showed that data were not normally distributed for any of the three types of parenting behaviors ($p < .05$). However, the skewness was considered acceptable (West et al., 1996). Although there was one elevated univariate outlier in the father TD group for Acceptance, three elevated univariate outliers in the mother TD group for Acceptance, and one elevated univariate outlier in the mother TD group for Firm Control, there were no multivariate outliers in the data, as assessed by Mahalanobis distance ($p < .001$). The Levene's Test determined that Acceptance and Psychological Control met the assumption of homogeneity of variance ($p > .05$), but not Firm Control ($p < .05$). Homogeneity of covariances was examined via Box's Test of Equality of covariance matrices and findings indicated homogeneity of covariances was met ($p = .474$). Scatterplots were used to assess the linearity of the dependent variables and all dependent variables were found to have a linear relationship.

Hypothesis 2c. As assessed via Shapiro-Wilks', the assumption of normality was violated for all five types of parental burnout for mothers and fathers in the TD group, four out of the five types for mothers in the ASD group, and one type for fathers in the ASD group ($p < .05$). Consistent with Hypothesis 1c, transformations were not conducted given skewness fell within the acceptable range (West et al., 1996). There was a linear relationship between the dependent variables as assessed via scatterplot. Mahalanobis distance ($p < .001$), determined that there were six elevated multivariate outliers. As these outliers brought the means between groups closer together rather than farther apart, the more conservative approach was taken, and outliers remained in analyses. As in Hypothesis 1c, the Levene's test showed that there was not homogeneity of variance ($p < .05$) and a Box's M Test indicated that homogeneity of covariance matrices was violated ($p < .001$). Pillai's Trace multivariate test was used interpret results as a result of these violations.

Exploratory Preliminary Analyses

Shapiro-Wilks' determined that data were not normally distributed for Knowledge of Child's Characteristics except for mothers in the TD Group, were not normally distributed for Perceived Social Supports in the ASD group, but were in the TD group, and were not normally distributed for any of the groups for Perception of Positive Parenting. However, skewness was slight (less than an absolute value of 1.5; West et al., 1996) and no transformations were conducted. There was one outlier for Knowledge of Child's Characteristics, three for Perceived Social Supports, and six for Positive Perception of Parenting. As with the other analyses, the more conservative approach was taken and elevated outliers remained in analyses There was homogeneity of covariance matrices, as assessed by Box's M text ($p = .002$) and there was no evidence of multicollinearity, as assessed by Pearson correlations ($r < 0.9$).

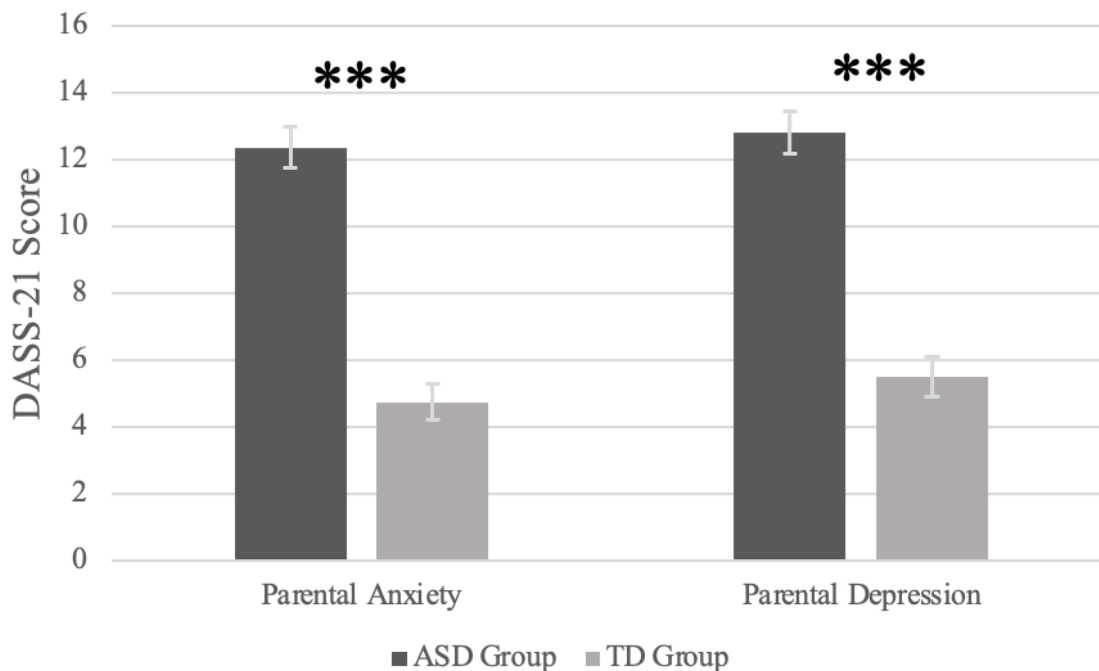
Main Hypothesis Testing

Hypothesis 1a: Differences in Anxiety and Depression Across Groups

The independent samples *t*-test indicated that Hypothesis 1a was supported as there was a statistically significant difference in mean Anxiety scores with the ASD group reporting higher levels than the TD group, $t(183) = 9.36, p < .001$ (see Figure 1). Hypothesis 1a was further supported as there was a statistically significant difference in mean Depression scores with higher levels in the ASD group than the TD group $t(183) = 8.48, p < .001$ (see Figure 1).

Figure 1

Hypothesis 1a: Parental Anxiety and Depression Symptoms by Group



Note. Differences in mean Anxiety and Depression as measured by the Depression, Anxiety, and Stress Scale-21 in the ASD and TD groups including all parents in each group.

*** $p < .001$

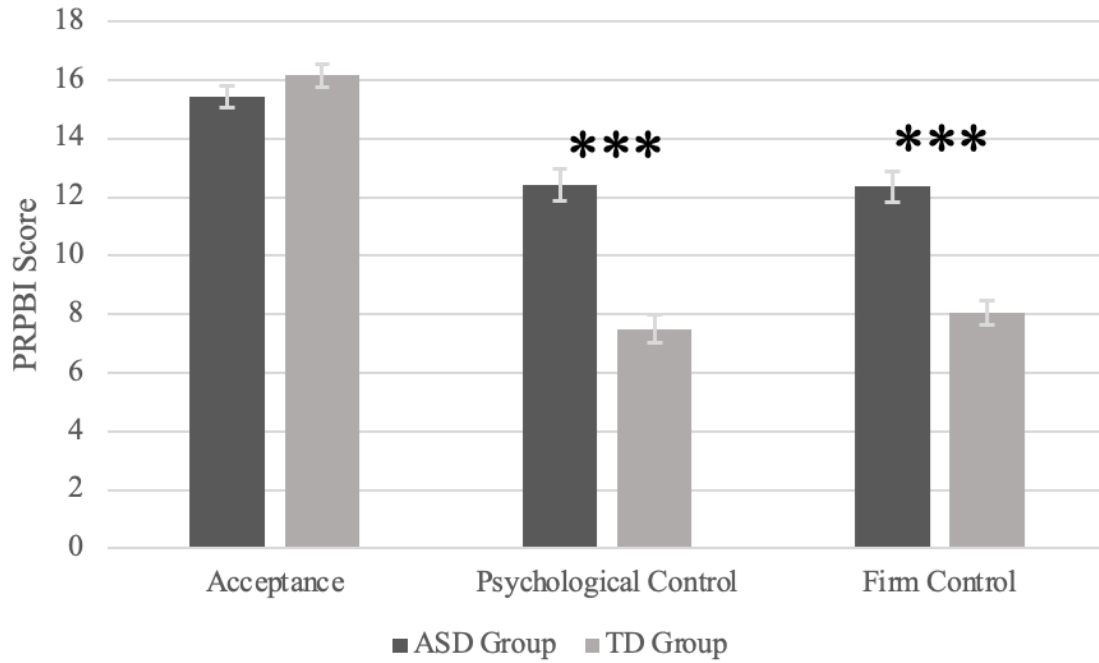
Hypothesis 1b: Differences in Parenting Behaviors Across Groups

Hypothesis 1b was partially supported. With regard to Acceptance, the independent-samples *t*-test showed no significant difference between the TD group and ASD groups, $t(183) = -2.08, p = .203$ (see Figure 2).

The one-way MANOVA examining Psychological and Firm Control indicated that Hypothesis 1b was partially supported in that there was a statistically significant difference between the ASD and TD group, $F(2, 182) = 22.71, \text{Wilks' } \Lambda = .800, \text{partial } \eta^2 = .20$. Follow-up univariate ANOVAs using a Bonferroni adjustment showed that there was a statistically significant difference in both Psychological Control, $F(1, 183) = 43.025, p < .001, \text{partial } \eta^2 = .190$, and Firm Control, $F(1, 183) = 41.05, p < .001, \text{partial } \eta^2 = .183$, between the parents in the ASD and TD group. Tukey's post-hoc tests showed that parents in the ASD group reported higher levels of Psychological Control ($p < .001$) and Firm Control ($p < .001$) in comparison to the TD group (see Figure 2).

Figure 2

Hypothesis 1b: Acceptance, Psychological Control, and Firm Control by Group



Note. Differences in mean Acceptance, Psychological Control, and Firm Control on the Parent Report of Parent Behavior Inventory in the ASD and TD groups, including all parents in each group.

*** $p < .001$

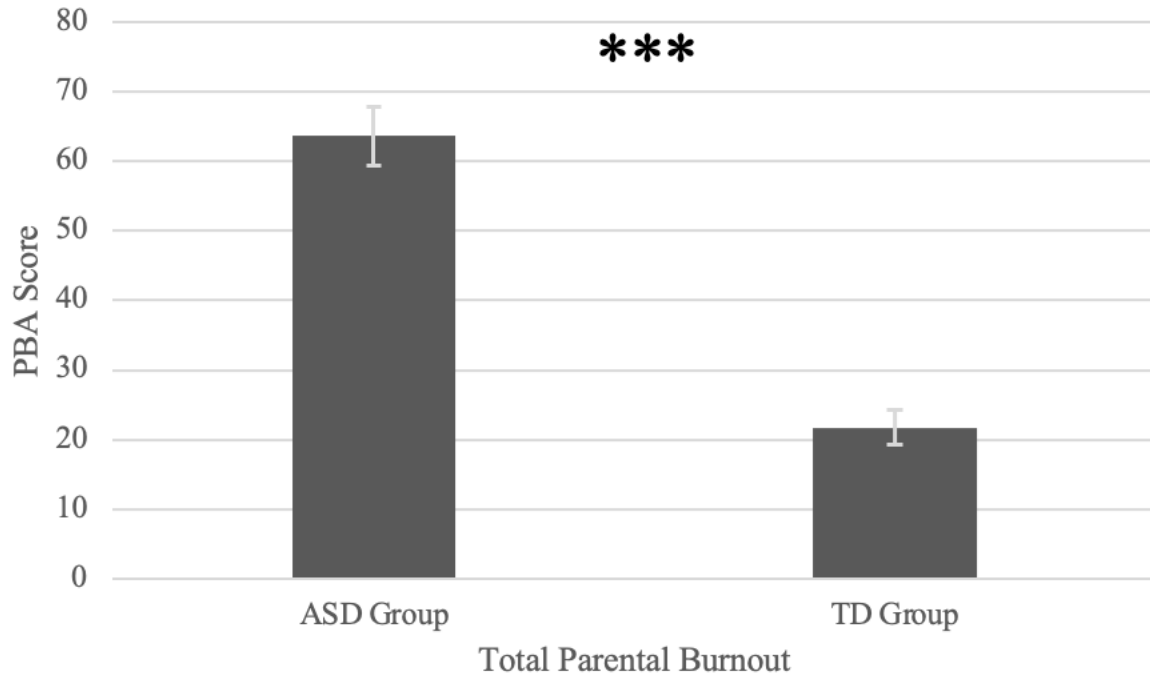
Hypothesis 1c: Differences in Parental Burnout Across Groups

The results of an independent-samples *t*-test supported Hypothesis 1c as there was a statistically significant difference between the ASD and TD group in levels of Total Parental Burnout. Specifically, parents in the ASD group reported higher levels of Total Burnout than parents in the TD group, $t(145.158) = 8.62, p < .001$ (see Figure 3).

Hypothesis 1c was further supported as the one-way MANOVA examining the four subtypes of parental burnout showed a significant difference between groups, $F(4, 180) = 19.88, p < .001$, Pillai's Trace = .306, partial $\eta^2 = .306$. Follow-up independent samples *t*-tests were conducted for each of the dependent variables and the Welch's *t*-test, or the unequal variances *t*-test, was used to examine all results due to the violation of homogeneity of variances. Parents in the ASD group reported higher levels of Exhaustion, $t(157.496) = 7.93, p < .001$, Contrast in Parental Self, $t(144.370) = 8.058, p < .001$, Feelings of Being Fed Up, $t(147.997) = 7.78, p < .001$, and Emotional Distancing, $t(146.703) = 8.40, p < .001$, than parents in the TD group (see Figure 4).

Figure 3

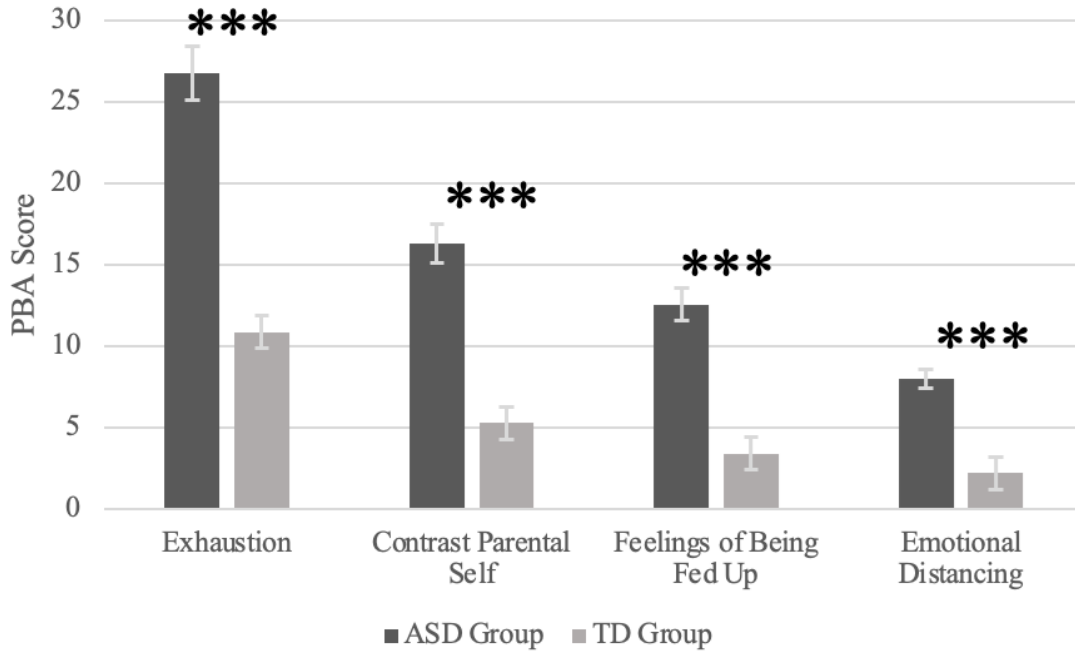
Hypothesis 1c: Total Parental Burnout by Group



Note. Differences in mean Total Parental Burnout on the Parental Burnout Assessment in the ASD and TD groups, including all parents in each group.
*** $p < .001$

Figure 4

Hypothesis 1c: Four Types of Parental Burnout by Group



Note. Differences in mean Exhaustion, Contrast in Parental Self, Feelings of Being Fed Up, and Emotional Distancing on the Parental Burnout Assessment in the ASD and TD groups, including all parents in each group.

*** $p < .001$

Hypothesis 2a: Differences in Anxiety and Depression Across Groups and Gender

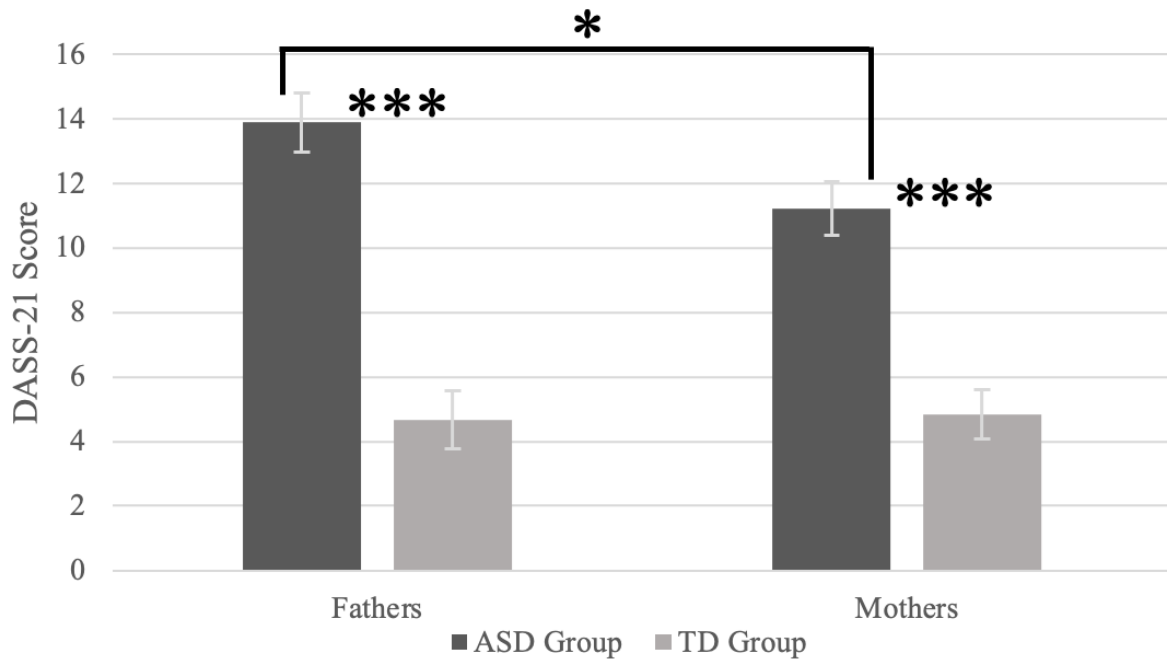
The two-way ANOVA revealed that Hypothesis 2a was partially supported as there was a statistically significant interaction between gender and group in level of Depression symptoms, $F(1, 178) = 5.57, p = .019, \text{partial } n^2 = .030$. Therefore, an analysis of simple main effects for gender and group were performed with statistical significance receiving a Bonferroni adjustment. There was a significant difference in mean Depression symptoms between mothers and fathers in the ASD group, $F(1, 178) = 6.63, p = .011, \text{partial } n^2 = .036$. There was also a significant difference in mean Depression symptoms between fathers in the ASD and TD groups, $F(1, 178) = 55.74, p < .001, \text{partial } n^2 = .238$ and mothers in the ASD and TD groups, $F(1, 178) = 24.34, p < .001, \text{partial } n^2 = .120$ (see Figure 5).

All pairwise comparisons were run for each simple main effect with p -values Bonferroni-adjusted within each simple main effect. Fathers reported Depression symptoms that were higher than mothers in the ASD group. Fathers in the ASD group reported higher than fathers in the TD group and mothers in the ASD group reported Depression symptoms that were higher than mothers in the TD group (see Figure 5).

The second two-way ANOVA showed that Hypothesis 2a was partially supported as there was no statistically significant interaction between gender and group for level of Anxiety symptoms, $F(1, 178) = 2.98, p = .086, \text{partial } n^2 = .016$. Therefore, an analysis of the main effect for gender and group was performed, which revealed that there was a statistically significant main effect of group on Anxiety $F(1, 178) = 89.62, p < .001, \text{partial } n^2 = .335$. However, there was no statistically significant main effect of gender in Anxiety symptoms, $F(1, 178) = 2.37, p = .126, \text{partial } n^2 = .013$. Hypothesis 1a details the group difference in Anxiety symptoms (see Figure 1).

Figure 5

Hypothesis 2a: Parental Depression in Mothers and Fathers in the ASD and TD Groups



Note. Differences in mean Depression in mothers and fathers in the ASD group and the TD groups as measured by the Depression, Anxiety, and Stress Scale-21.

* $p < .05$; *** $p < .001$.

Hypothesis 2b: Differences in Parenting Behaviors Across Groups and Gender

The two-way ANOVA examining Acceptance indicated that there was no statistically significant interaction between gender and group, $F(1, 178) = .17, p = .680$, partial $\eta^2 = .001$, and therefore, Hypothesis 2b was not supported.. An analysis of main effect for group and gender was conducted with Bonferroni adjusted p -values. There was no significant main effect of gender, $F(1, 178) = .09, p = .761$, partial $\eta^2 = .001$, or group, $F(1, 178) = 1.83, p = .178$, partial $\eta^2 = .010$, on Acceptance scores (see Figure 6).

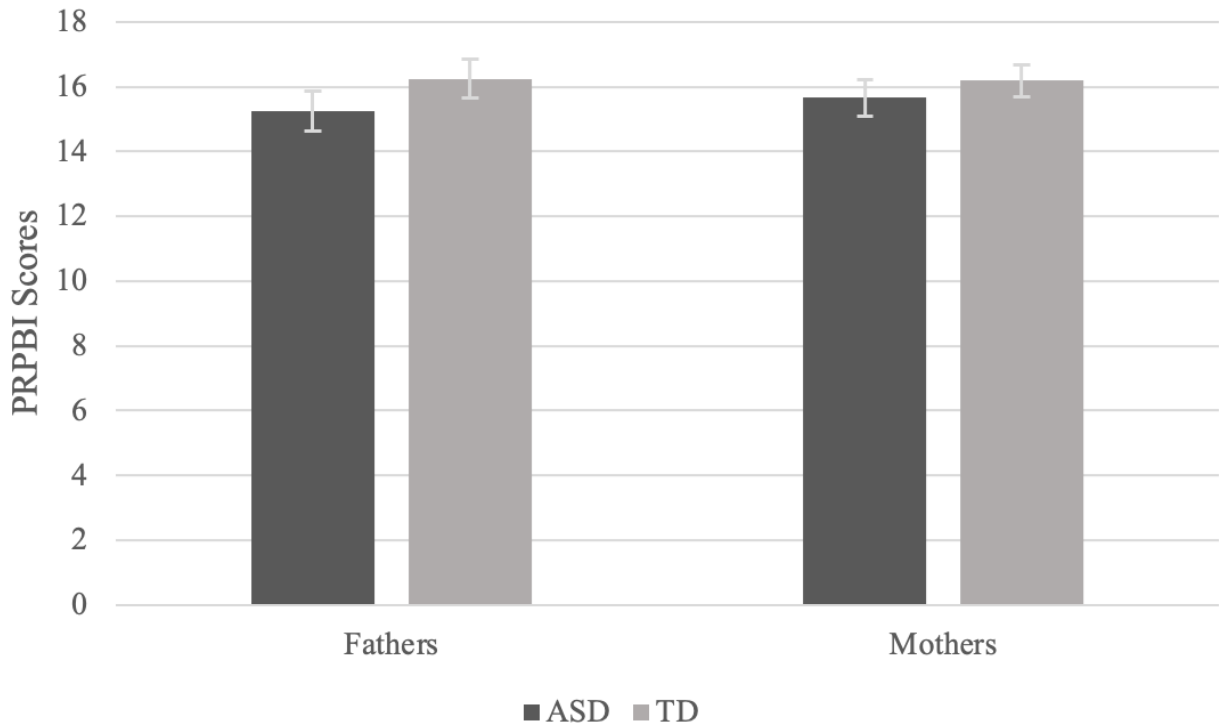
The two-way MANOVA revealed the interaction effect between gender and group on Firm Control and Psychological Control was not statistically significant, $F(2, 177) = 1.05, p = .352$, Wilks' $\Lambda = .988$, partial $\eta^2 = .012$. However, there was a statistically significant gender effect, $F(2, 177) = 5.64, p = .004$, Wilks' $\Lambda = .940$, partial $\eta^2 = .060$, and a statistically significant group effect, $F(2, 177) = 23.79, p < .001$, Wilks' $\Lambda = .788$, partial $\eta^2 = .212$. Follow-up univariate two-way ANOVAs were performed and the main effect of gender and group were considered. There was a statistically significant main effect on gender for Psychological Control $F(1, 178) = 11.15, p = .001$, partial $\eta^2 = .059$. and Firm Control, $F(2, 178) = 9.21, p = .003$, partial $\eta^2 = .049$. There was also a statistically significant main effect on group for Psychological Control, $F(1, 178) = 44.18, p < .001$, partial $\eta^2 = .199$, and Firm Control $F(1, 178) = 43.81, p < .001$, partial $\eta^2 = .198$.

As such, Tukey's pairwise comparisons were conducted for the differences in mean Psychological and Firm Control. Psychological Control and Firm Control were higher for fathers in the ASD group than mothers in the ASD group. Mothers and fathers in the TD group did not differ on Psychological Control or Firm Control. Fathers in the ASD group reported higher on Psychological Control and Firm Control than fathers in the TD group and mothers in the ASD

group reported higher levels of Psychological Control and Firm Control than mothers in the TD group (see Figure 7 and Figure 8).

Figure 6

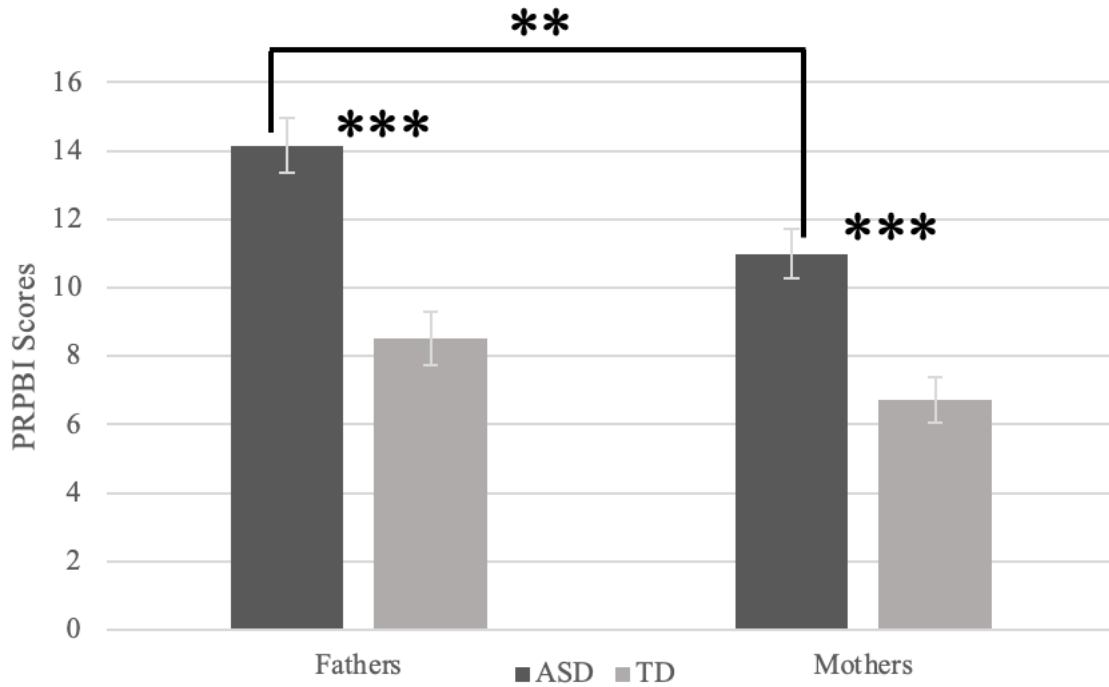
Hypothesis 2b: Levels of Acceptance Between Mothers and Fathers in the ASD and TD Groups



Note. Differences in mean Acceptance on the Parent Report of Parent Behavior Inventory in mothers and fathers in the ASD and TD groups.

Figure 7

Hypothesis 2b: Levels of Psychological Control Between Mothers and Fathers in the ASD and TD Groups

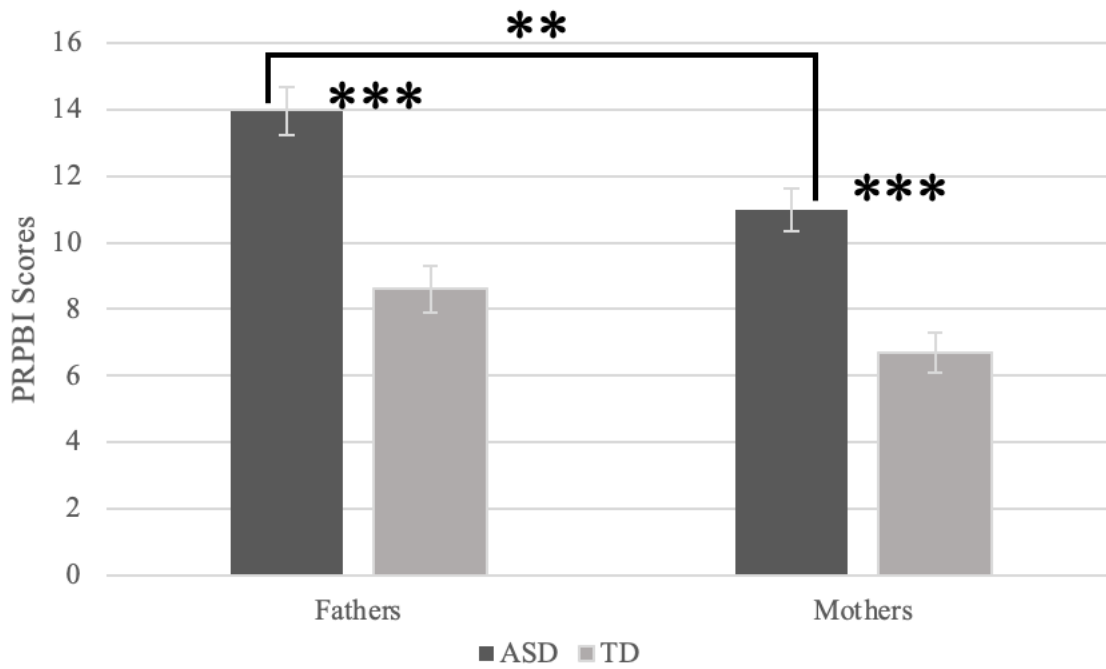


Note. Differences in mothers' and fathers' levels of Psychological Control in the ASD and TD groups as measured by the Parent Report of Parent Behavior Inventory.

** $p < .01$. *** $p < .001$.

Figure 8

Hypothesis 2b: Levels of Firm Control Between Mothers and Fathers in the ASD and TD Groups



Note. Differences in mean mothers' and fathers' level of Firm Control in the ASD and TD groups on the Parent Report of Parent Behavior Inventory.

** $p < .01$. *** $p < .001$.

Hypothesis 2c: Differences in Parental Burnout Across Groups and Gender

Hypothesis 2c was partially supported. Results of the two-way ANOVA indicated that there was no significant interaction effect between gender and group in Total Parental Burnout, $F(1, 178) = 1.65, p = .201, \text{partial } \eta^2 = .009$. There was a significant main effect of group, $F(1, 178) = 75.68, p < .001, \text{partial } \eta^2 = .298$, but not of gender, $F(1, 178) = 1.09, p = .298, \text{partial } \eta^2 = .006$ (see Figure 9). Hypothesis 1c above details the difference by group in total parental burnout.

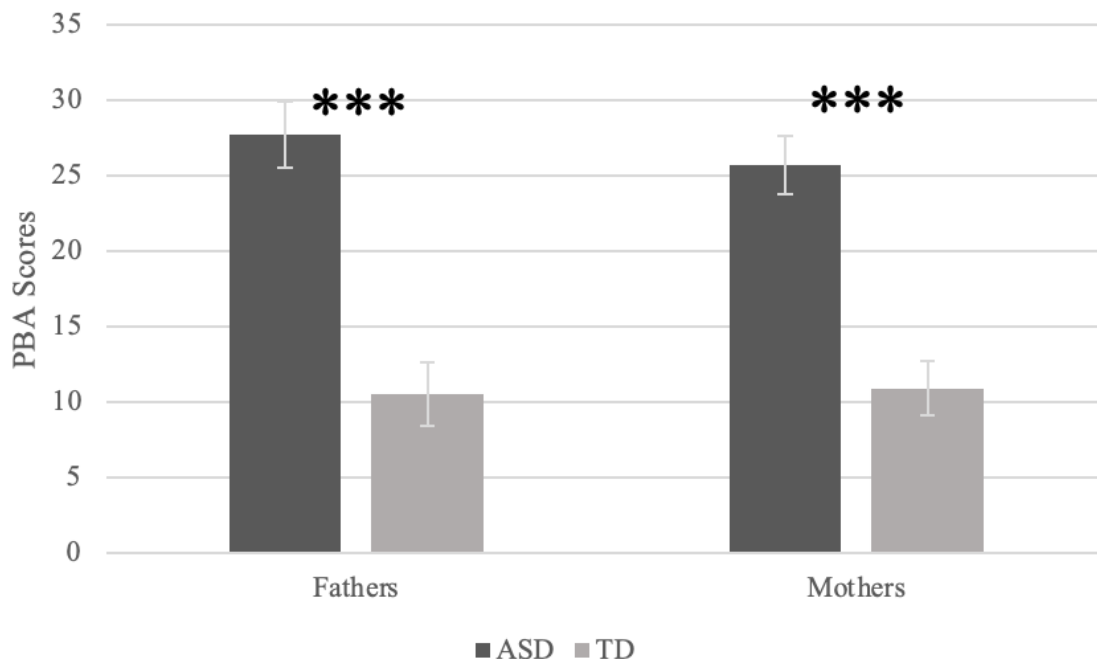
The two-way MANOVA revealed that the interaction effect between gender and group on the dependent variables (Exhaustion, Contrast to Parental Self, Feelings of Being Fed Up, Emotional Distancing) was not statistically significant, $F(4, 175) = 1.79, p = .133, \text{ Pillai's Trace} = .039, \text{partial } \eta^2 = .039$. There was a significant gender effect, $F(4, 175) = 5.774, p < .001, \text{ Pillai's Trace} = .117, \text{partial } \eta^2 = .117$, and a significant group effect, $F(4, 175) = 19.51, p < .001, \text{ Pillai's Trace} = .308, \text{partial } \eta^2 = .308$.

As such, follow up univariate two-way ANOVAs were performed to examine the main effects of gender and group. There was a significant main effect of gender for Emotional Distancing, $F(1, 178) = 8.23, p = .005, \text{partial } \eta^2 = .044$, but not for Exhaustion, $F(1, 178) = .17, p = .677, \text{partial } \eta^2 = .001$, Contrast in Parental Self, $F(1, 178) = .03, p = .854, \text{partial } \eta^2 = .001$, or Feelings of Being Fed Up, $F(1, 178) = 3.07, p = .081, \text{partial } \eta^2 = .017$. There was a significant main effect of group for all four types of parental burnout: Exhaustion, $F(1, 178) = 62.30, p < .001, \text{partial } \eta^2 = .259$, Contrast to Parental Self, $F(1, 178) = 67.59, p < .001, \text{partial } \eta^2 = .276$, Feelings of Being Fed Up, $F(1, 178) = 62.92, p < .001, \text{partial } \eta^2 = .261$, and Emotional Distancing, $F(1, 178) = 72.83, p < .001, \text{partial } \eta^2 = .290$.

Tukey’s pairwise comparisons were conducted with Bonferroni adjusted p -values to identify the differences in mean emotional distancing scores in the ASD group. Fathers in the ASD group reported higher levels of Emotional Distancing than mothers in the ASD group (see Figure 12). Additionally, Tukey’s pairwise comparisons were performed to examine the differences in mean scores between mothers in each group and fathers in each group. With regard to all four subtypes of parental burnout, fathers in the ASD group reported higher levels than fathers in the TD group and mothers in the ASD reported higher levels than mothers in the TD group (see Figure 10). See Figures 9, 10, 11, and 12 for differences between mothers and fathers in Exhaustion, Contrast in Parental Self, Feelings of Being Fed Up, and Emotional Distancing, respectively.

Figure 9

Hypothesis 2c: Exhaustion Between Mothers and Fathers in the ASD and TD groups

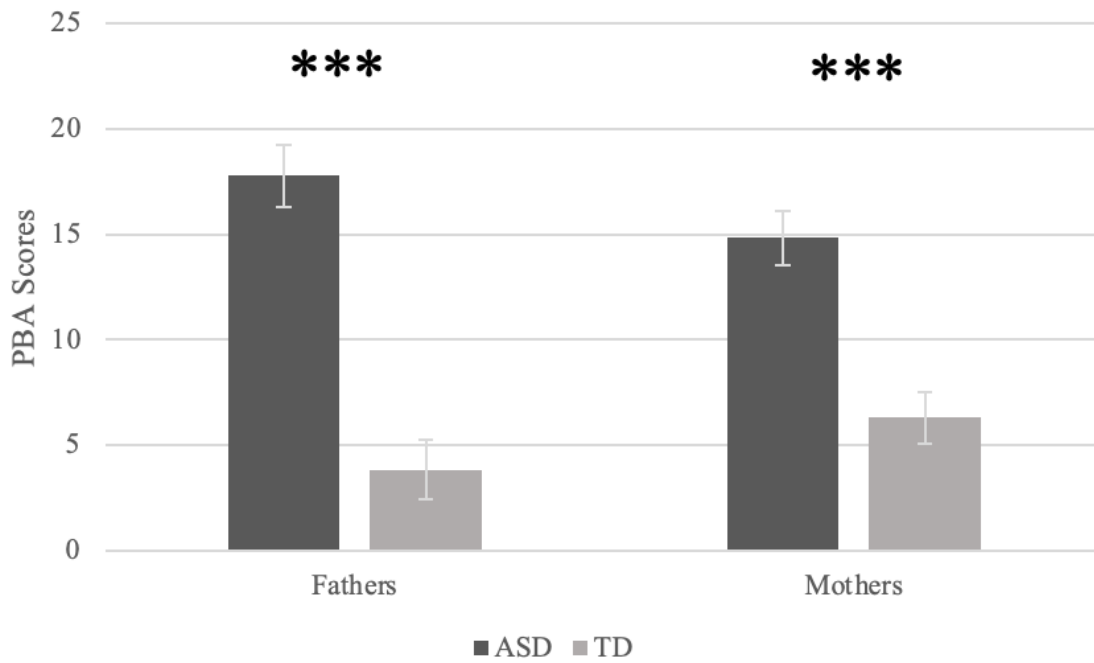


Note. Differences in mean mothers’ and fathers’ levels of Exhaustion in the ASD and TD groups as measured by the Parental Burnout Assessment.

*** $p < .001$.

Figure 10

Hypothesis 2c: Contrast in Parental Self Between Mothers and Fathers in the ASD and TD groups

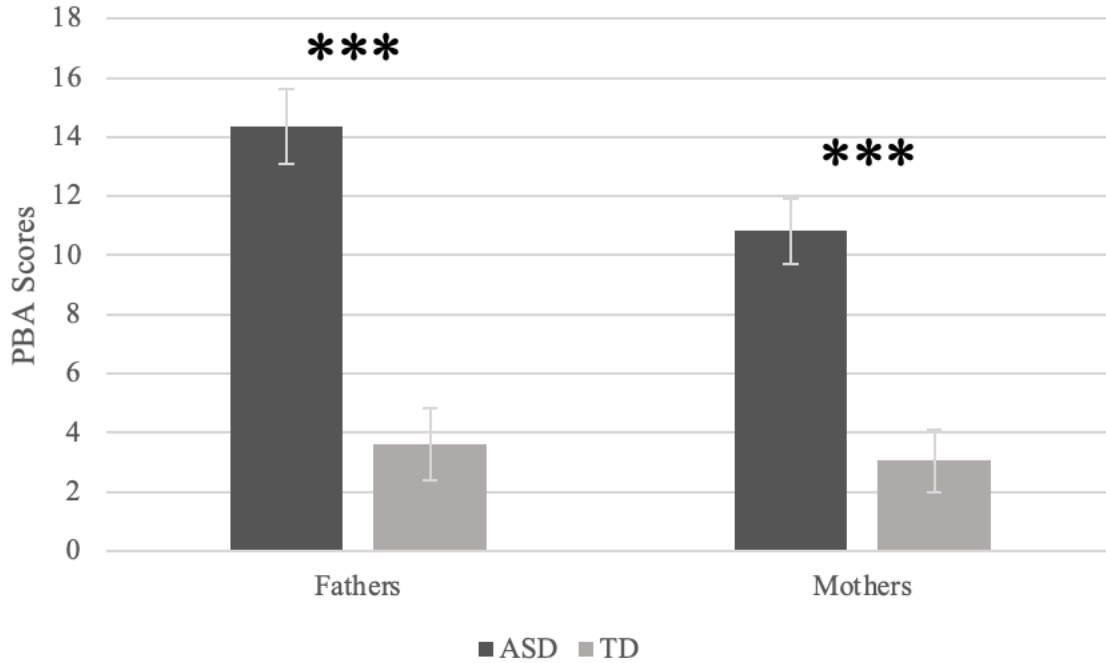


Note. Differences in mean level of Contrast in Parental Self on the Parental Burnout Assessment in mothers and fathers in the ASD and TD groups.

*** $p < .001$.

Figure 11

Hypothesis 2c: Feelings of Being Fed Up in Mothers and Fathers in the ASD and TD Groups

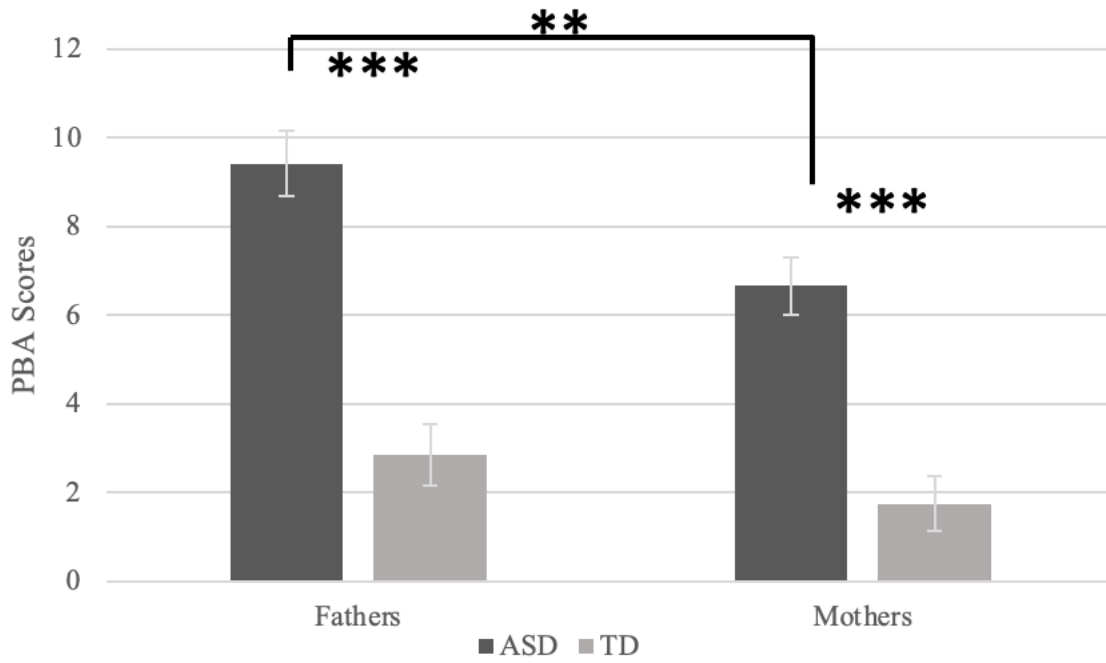


Note. Differences in mean levels of Feelings of Being Fed Up between mothers and fathers in the ASD and TD groups as measured by the Parental Burnout Assessment.

*** $p < .001$.

Figure 12

Hypothesis 2c: Emotional Distancing in Mothers and Fathers in the ASD and TD Groups



Note. Differences in mean levels of Emotional Distancing between mothers and fathers in the ASD and TD groups on the Parental Burnout Assessment.

** $p < .01$. *** $p < .001$.

Hypothesis 3a: Child Behaviors and Parenting Behaviors and Burnout in the ASD Group

Hypothesis 3a (that there would be positive relations between child Externalizing behaviors and mothers' and fathers' use of Psychological Control and Firm Control and the five types of parental burnout in the ASD group) was partially supported. Child Externalizing behaviors was positively correlated with fathers' use of Psychological and Firm control. For fathers, child Externalizing behaviors was also positively associated with all five types of parental burnout (see Table 7). Mothers' Exhaustion, Contrast in Parental Self, Emotional Distancing, and Total Parental Burnout were also positively related to child Externalizing behaviors, but mothers' Feelings of Being Fed Up was not related to child Externalizing behaviors. Mothers' use of Psychological control and Firm control did not significantly relate to child Externalizing behaviors (see Table 7). Furthermore, it was predicted that child Externalizing behaviors would more strongly relate to mothers' parenting behaviors and mothers' levels of burnout than fathers. Of those relations that were significantly related for both mothers and fathers (i.e., child Externalizing behaviors and four types of parental burnout), there were no significant differences in the strength of the correlations (see Table 7).

Although specific predictions were not made about the relation between parental level of Acceptance and child Externalizing behaviors, fathers' Acceptance levels positively correlated with child Externalizing behaviors. Mothers' levels of Acceptance did not relate to child Externalizing behaviors. Further, the associations between child Internalizing symptoms and parenting behaviors and parental burnout were examined. Child Internalizing symptoms were positively related to fathers' level of Acceptance and use of Psychological Control and Firm Control. Mothers' use of Psychological Control was positively related to child Internalizing behaviors, but their Acceptance and Firm control were not significantly related. Child

Internalizing behaviors were positively related to all five types of parental burnout for both mothers and fathers in the ASD group (see Table 7).

Table 7.

Pearson's r and z Statistics for Child Externalizing and Internalizing Behaviors, Parenting Behaviors, and Types of Parental Burnout in Mothers and Fathers in the ASD Group

	Child Externalizing Behaviors			
	Mothers (<i>n</i> = 48)		Fathers (<i>n</i> = 38)	
	<i>r</i>	<i>r</i>	<i>z</i>	<i>p</i>
Acceptance	.15	.45**	--	--
Psychological Control	.10	.49**	--	--
Firm Control	-.04	.52**	--	--
Exhaustion	.35**	.42**	-.036	.72
Contrast Parental Self	.40**	.45**	-.027	.79
Feelings of Being Fed Up	.25	.43*	--	--
Emotional Distancing	.34*	.32*	0.10	.92
Total Burnout	.36**	.43**	-0.37	.71
	Child Internalizing Behaviors			
	Mothers (<i>n</i> = 48)		Fathers (<i>n</i> = 38)	
	<i>r</i>	<i>r</i>	<i>z</i>	<i>p</i>
Acceptance	.14	.68***	--	--
Psychological Control	.36*	.64***	-1.69	.09
Firm Control	.27	.69***	--	--
Exhaustion	.43**	.46**	-0.17	.87
Contrast Parental Self	.35*	.48**	-0.7	.48
Feelings of Being Fed Up	.41**	.54**	--	--
Emotional Distancing	.52***	.40*	0.68	.50
Total Burnout	.45**	.50**	-0.29	.77

Note. The listed *p*-values pertain to the *z* statistics.

p* < .05. *p* < .01. ****p* < .001.

Hypothesis 3b: Anxiety, Depression, and Parental Burnout in the ASD Group

Hypothesis 3b (Anxiety and Depression would significantly positively relate to mothers' and fathers' parental burnout) was partially supported. Fathers' levels of Anxiety and Depression positively related to all five types of parental burnout at the $p < .01$ level. Mothers' Depression and Anxiety levels positively correlated with their levels of Contrast in Parental Self, Feelings of Being Fed Up, Emotional Distancing, and Total Parental Burnout level. However, mothers' level of Exhaustion was not related to their symptoms of Depression or Anxiety (see Table 8). Fishers r -to- z transformations were examined for those variables that were significantly related to depression or anxiety in both mothers and fathers. However, there were no statistically significant differences in the strength of the correlations between mothers and fathers (see Table 8).

Hypothesis 3c: Anxiety, Depression, and Parenting Behaviors in the ASD Group

Hypothesis 3c (Anxiety and Depression symptoms would be negatively associated with mothers' and fathers' Acceptance and Firm Control) was not supported. Use of Firm Control was positively related to fathers' and mother's levels of Depression and Anxiety. Fathers' Depression and Anxiety symptoms were also positively related to their levels of Acceptance. Mothers' Depression and Anxiety symptoms were not related to their levels of Acceptance (see Table 8). Although a hypothesis was not proposed prior to analyses about the relation between use of Psychological Control and Depression and Anxiety symptoms, it should be noted that for both mothers and fathers, Psychological Control was positively related to Depression and Anxiety symptoms (see Table 8).

Table 8.

Pearson's r and z Statistics for Parental Anxiety and Depression and Types of Parental Burnout and Parenting Behaviors in Mothers and Fathers in the ASD Group

	Parental Anxiety		Parental Depression					
	Mothers ($n = 48$)	Fathers ($n=38$)			Mothers ($n = 48$)	Fathers ($n=38$)		
	r	r	z	p	r	r	z	p
Exhaustion	.28	.54***	--	--	.23	.54**	--	--
Contrast Parental Self	.31*	.53**	-1.52	0.12	.32*	.52**	-1.09	.27
Feelings of Being Fed Up	.32*	.55***	-1.27	0.20	.29*	.58***	-1.61	.10
Emotional Distancing	.50***	.46**	0.23	0.81	.41**	.49**	-0.45	.65
Total Burnout	.35*	.55***	-1.12	0.26	.31*	.55***	-1.32	.19
Acceptance	-.02	.49**	--	--	.05	.49**	--	--
Psychological Control	.63***	.51***	0.79	0.42	.58***	.50***	0.5	.61
Firm Control	.57***	.62***	-0.34	0.73	.58***	.58***	0	1

Note. The listed p -values pertain to the z statistics.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Hypothesis 4: COVID-19-Related-Stress and Parental Burnout in Both Groups

Hypothesis 4 (COVID-19-related-stress would positively relate to the five types of parental burnout in both TD and ASD groups and for mothers and fathers) was partially supported. At the group level, COVID-19-related-stress in the ASD group was positively related to Exhaustion, Feelings of Being Fed Up, Emotional Distancing, and Total Parental Burnout, but not related to Contrast in Parental Self. In the TD group, COVID-19-related-stress was positively associated with Contrast in Parental Self and Emotional Distancing, but not Exhaustion, Feelings of Being Fed up, or Total Parental Burnout (see Table 9). Emotional distancing was the only type of burnout significantly positively related to COVID-19-related-stress in both groups; however, there was no significant difference in the strength of the relation (see Table 9).

In the ASD group, mothers' levels of COVID-19-related-stress positively related to Exhaustion, Feelings of Being Fed Up, Emotional Distancing, and Total Parental Burnout, but not Contrast in Parental Self. In the TD group, mothers' level of COVID-19-related stress was positively associated with Exhaustion, but not the four other types of parental burnout (see Table 9). In the ASD group, fathers' levels of COVID-19-related-stress was not correlated with any type of parental burnout and, in the TD group, fathers' levels of COVID-19-related-stress was positively related to Emotional Distancing, but not the other four types. Differences in the strength of correlations was not assessed as there was no overlap in significant associations between mothers and fathers in either group. As Exhaustion was significantly related to COVID-19-related-stress in both groups of mothers, the difference in strength of relation was examined and there was no significant difference (see Table 10).

Table 9.

Pearson's r and z Statistics for COVID-19-Related-Stress and Types of Parental Burnout in the ASD Group and TD Group

	ASD Group (n = 88)	TD Group (n = 97)		
COVID-19 Related Stress				
	<i>r</i>	<i>r</i>	<i>z</i>	<i>p</i>
Exhaustion	.29**	.20	--	--
Contrast Parental Self	.20	.20*	--	--
Feelings of Being Fed Up	.33**	-.01	--	--
Emotional Distancing	.30**	.24*	0.43	.67
Total	.29**	.18	--	--

Note. The listed *p*-values pertain to the *z* statistics.

p* < .05. *p* < .01.

Table 10.

Pearson's r Statistics for COVID-19-Related-Stress and Types of Parental Burnout in the Mothers and Fathers in the ASD and TD Groups

	COVID-19 Related Stress		COVID-19 Related Stress			
	ASD Group		TD Group			
	Mothers (n = 48)	Fathers (n = 38)	Mothers (n = 55)	Fathers (n = 41)		
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>z</i>	<i>p</i>
Exhaustion	.35**	.17	.27*	.13	0.44	.65
Contrast Parental Self	.20	.20	.21	.28	--	--
Feelings of Being Fed Up	.34*	.28	-.02	.01	--	--
Emotional Distancing	.34*	.19	.10	.35*	--	--
Total	.33*	.20	.19	.18	--	--

Note. The listed *p*-values pertain to the *z* statistics. The *z* statistic is a comparison of mothers' Exhaustion in each group.

p* < .05. *p* < .01.

Hypothesis 5: Parenting Behavior and Parental Burnout in the ASD Group

Hypothesis 5 (Acceptance and Firm Control would negatively relate to all five types of parental burnout for mothers and fathers and the associations would be stronger for fathers than mothers in the ASD group) was not supported. For both mothers and fathers in the ASD group, Acceptance did not significantly relate to any of the five types of burnout ($p > .05$) and Firm Control was positively related to all types of parental burnout ($p < .05$; see Table 11). There were no differences in the strength of the associations between mothers and fathers.

Hypotheses related to the association between Psychological Control and parental burnout were not proposed. However, fathers' use of Psychological Control was significantly positively related to all types of parental burnout except Emotional Distancing in the ASD group. Mothers' use of psychological control in the ASD group was positively related to all types of parental burnout. ($p < .05$; see Table 11).

Table 11

Pearson's r and z Statistics for Parenting Behaviors and Types of Parental Burnout in the Mothers and Fathers in the ASD and TD Groups

	Acceptance ASD Group				Acceptance TD Group			
	Mothers (n = 48)	Fathers (n = 38)	z	p	Mothers (n = 55)	Fathers (n = 41)	z	p
	r	r			r	r		
Exhaustion	.16	.27	--	--	-.34*	-.11	--	--
Contrast Parental Self	.13	.24	--	--	-.35*	-.23	--	--
Feelings of Being Fed Up	.10	.21	--	--	-.55***	-.28	--	--
Emotional Distancing	.10	.14	--	--	-.53***	-.11	--	--
Total Burnout	.14	.24	--	--	-.46***	-.20	--	--
	Firm Control				Firm Control			
	r	r	z	p	r	r	z	p
	r	r			r	r		
Exhaustion	.34**	.50**	--	--	.38*	.35*	0.16	.87
Contrast Parental Self	.50***	.46**	-0.87	0.38	.26	.56***	--	--
Feelings of Being Fed Up	.56***	.50**	0.37	0.71	.44**	.40*	0.23	.81
Emotional Distancing	.57***	.44**	0.78	0.44	.41**	.53***	-0.72	.47
Total Burnout	.49***	.50**	-0.06	0.95	.36**	.48**	-0.68	.49
	Psychological Control				Psychological Control			
	r	r	z	p	r	r	z	p
	r	r			r	r		
Exhaustion	.36*	.38*	-0.1	0.92	.30*	.20	--	--
Contrast Parental Self	.53***	.38*	0.84	0.40	.22	.47**	--	--
Feelings of Being Fed Up	.61***	.45**	0.99	0.32	.46***	.17	--	--
Emotional Distancing	.62***	.30	--	--	.39**	.47**	-0.46	.65
Total Burnout	.53***	.40*	--	--	.36**	.32*	0.21	.83

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Exploratory Analyses

Gender and Group Differences in Resilience

The two-way MANOVA examining differences in types of parental resilience (Knowledge of Child's Characteristics, Perceived Social Supports, and Positive Perception of Parenting) revealed the interaction effect of gender and group was not statistically significant $F(3, 176) = .88, p = .455$, Wilks' $\Lambda = .985$, partial $\eta^2 = .015$. However, there was a significant main effect of gender, $F(3, 176) = 3.62, p = .014$, Wilks' $\Lambda = .42$, partial $\eta^2 = .058$, and a significant main effect of group, $F(3, 176) = 15.66, p < .001$, Wilks' $\Lambda = .789$, partial $\eta^2 = .211$.

Follow up univariate two-way ANOVAs were conducted and the main effect of gender and the main effect of group were considered. There was a significant main effect of gender on Knowledge of Child's Characteristic, $F(1, 178) = 10.26, p = .002$, partial $\eta^2 = .054$, and Perceived Social Supports, $F(1, 178) = 7.10, p = .008$, partial $\eta^2 = .038$, but not Positive Perception of Parenting, $F(1, 178) = 3.21, p = .075$, partial $\eta^2 = .018$. Additionally, there was a significant main effect of group on Perceived Social Supports, $F(1, 178) = 20.78, p < .001$, partial $\eta^2 = .105$, but not Knowledge of Child's Characteristics, $F(1, 178) = .96, p = .329$, partial $\eta^2 = .005$, or Positive Perception of Parenting, $F(1, 178) = 2.53, p = .114$, partial $\eta^2 = .014$.

As such, Tukey's pairwise comparisons were run for the differences in Knowledge of Child's Characteristics and Perception in Social Supports between mothers and fathers. There was a significant mean difference between mothers and fathers in the ASD group and the TD group in resilience related to Knowledge of Child's Characteristics. Fathers in the ASD group reported lower levels than mothers in the ASD group, and fathers in the TD group reported scores lower than mothers in the TD group (see Figure 13). There was also a significant mean difference in Perceived Social Supports in the ASD group with fathers scoring lower than

mothers. There was no significant mean difference in the TD group in Perceived Social Supports (see Figure 14).

Tukey's pairwise comparisons were also conducted for the differences in Perceived Social Supports between groups. There were significant mean differences between both mothers and fathers. Mothers in the ASD group reported lower levels than mothers in the TD group, and fathers in the ASD group reported lower levels than fathers in the TD group (see Figure 14). See Figure 15 for Positive Perception of Parenting.

Relations Between Resilience and Variables of Interest

Bivariate correlations were conducted to examine the relations between the three types of parenting resilience and the five types of parental burnout, Anxiety and Depression, and the three types of parenting in mothers and fathers in both the ASD and TD group (Table 12).

With regard to fathers in the ASD group, their Knowledge of Child's Characteristics negatively related to Contrast in Parental Self, Feelings of Being Fed Up, Total Parental Burnout, Depression and Anxiety symptoms, and Acceptance ($p < .05$; i.e., fathers who reported a greater understanding of their child's characteristics reported less burnout in those three areas, less anxiety and depression, and less acceptance). Perceived Social Supports was negatively related to all five types of parental burnout, Anxiety and Depression symptoms, and all three types of parenting behavior ($p < .05$). Parental burnout was not significantly related to Positive Perception of Parenting in fathers of children with ASD. However, Positive Perception of Parenting was negatively related to Depression and Anxiety symptoms and Acceptance and Psychological Control for fathers in the ASD group ($p < .05$; see Table 12). As such, fathers who reported more positive perceptions of their parenting also reported less depression, anxiety, and acceptance and that they used less psychological control.

In mothers of children with ASD, Knowledge of Child's Characteristics negatively related to Exhaustion, Feelings of Being Fed Up, Emotional Distancing, Total Parental Burnout, and Anxiety symptoms ($p < .05$), but not Contrast in Parental Self or Depression symptoms. Acceptance and use of Psychological and Firm Control were also negatively related to Knowledge of Child's Characteristics in mothers in the ASD group ($p < .01$). In summary, mothers with a reported greater Knowledge of their Child's Characteristics also reported less parental burnout in four areas and less symptoms of anxiety. Similar to fathers in the ASD group, Perceived Social Supports was negatively related to all five types of parental burnout, Depression and Anxiety symptoms, and the three types of parenting behaviors in mothers of children with ASD ($p < .05$). Positive Perception of Parenting was negatively associated with Acceptance ($p < .001$), but none of the other variables of interest (see Table 12).

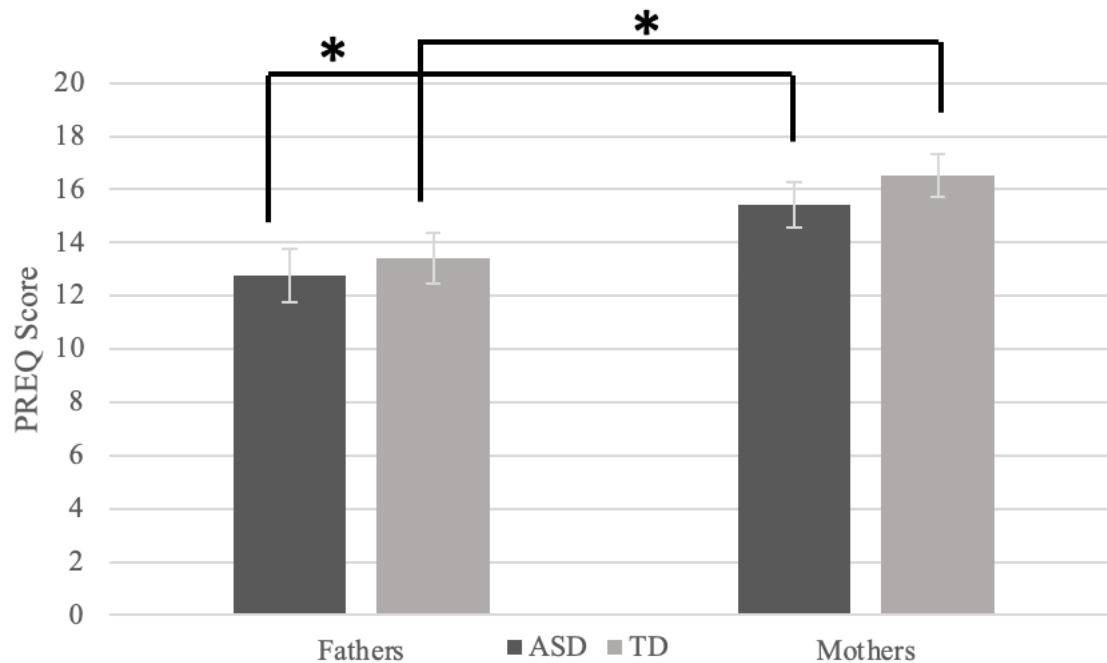
In the TD group, fathers' five types of parental burnout and Anxiety and Depression symptoms did not relate to Knowledge of Child's Characteristics. However, Acceptance, Psychological, and Firm control were negatively related to Knowledge of Child's Characteristics ($p < .05$). Perceived Social Supports was negatively associated with Contrast in Parental Self, Depression and Anxiety symptoms, and Psychological and Firm Control in fathers in the TD group ($p < .05$). Fathers' Positive Perception of Parenting in the TD group was positively related to Feelings of Being Fed Up ($p < .01$; i.e., fathers who reported more positive perceptions also reported greater feelings of being fed up). Positive Perceptions of Parenting was also negatively related to levels of Acceptance in fathers in the TD group ($p < .001$; i.e., fathers with more positive perceptions were also less accepting; see Table 12).

In contrast to the negative relation in mothers and fathers in the ASD group, mothers in the TD group reported levels of Knowledge of Child's Characteristics that positively related to

Exhaustion, Feelings of Being Fed Up, Emotional Distancing and Total Parental Burnout ($p < .05$; i.e., mothers who reported greater Knowledge of their Child's Characteristics also reported higher levels of the four types of parental burnout). Contrast in Parental Self, Emotional Distancing, and Total Parental Burnout was also positively related to Perceived Social Supports in mothers in the TD group. Use of Psychological Control was negatively related to Perceived Social Supports for mothers in the TD group ($p < .05$). Lastly, the five types of parental burnout positively related to Positive Perception of Parenting in TD mothers (see Table 12).

Figure 13

Resilience: Knowledge of Child's Characteristics in Mothers and Fathers in the ASD and TD Groups

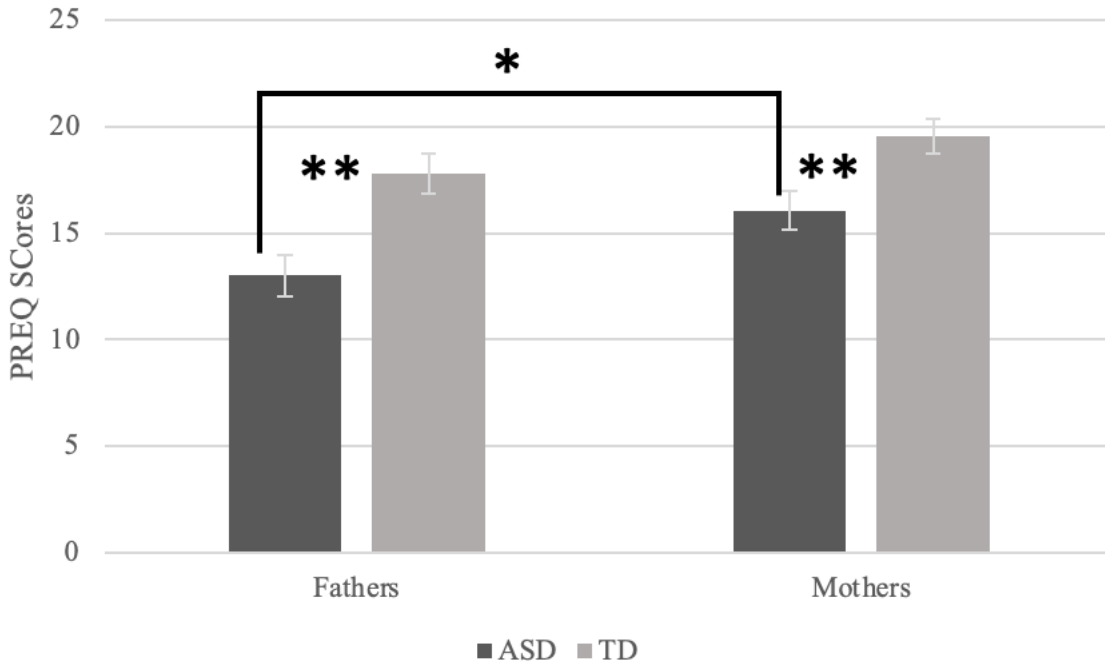


Note. Differences in mean levels of Knowledge of Child Characteristics between mothers and fathers in the ASD and TD groups as measured by the Parental Resilience Elements Questionnaire.

* $p < .05$.

Figure 14

Resilience: Perceived Social Supports in Mothers and Fathers in the ASD and TD Groups

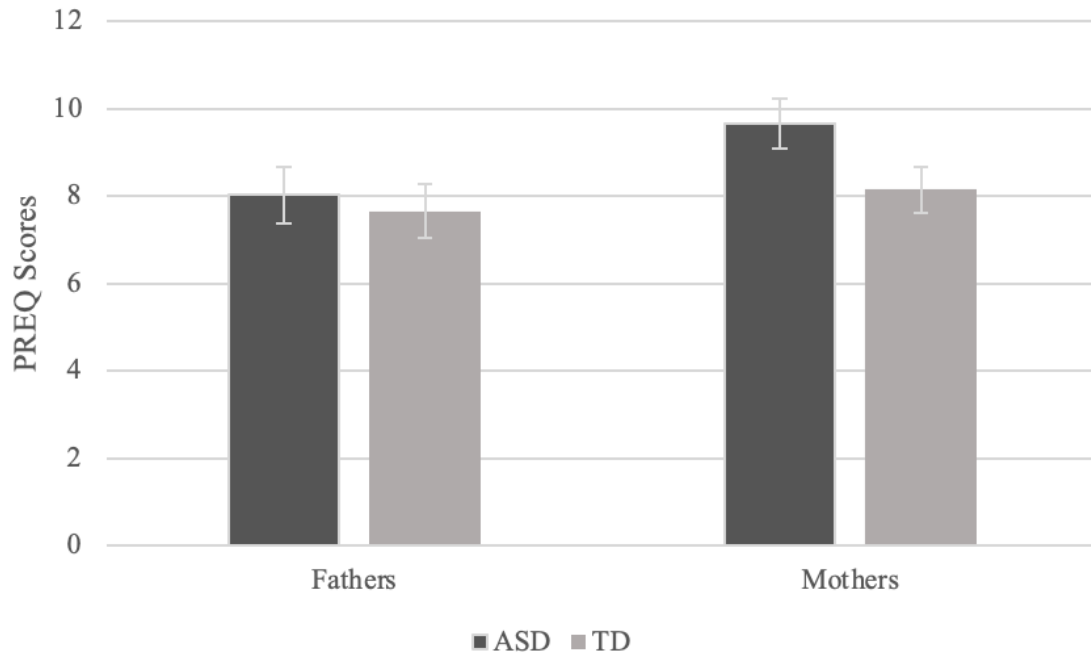


Note. Differences in mean levels Perceived of Social Supports between mothers and fathers in the ASD and TD groups as measured by the Parental Resilience Elements Questionnaire.

* $p < .05$. *** $p < .01$.

Figure 15

Resilience: Positive Perception of Parenting in Mothers and Fathers in the ASD and TD Groups



Note. Differences in mean levels of Positive Perception of Parenting between mothers and fathers in the ASD and TD groups as measured by the Parental Resilience Elements Questionnaire. No significant differences were found.

Table 12*Pearson's r for Types of Resilience and Variable of Interest by Group and Gender*

	Knowledge of Child's Characteristics		Knowledge of Child's Characteristics	
	ASD Group		TD Group	
	Mothers (<i>n</i> = 48)	Fathers (<i>n</i> = 38)	Mothers (<i>n</i> = 55)	Fathers (<i>n</i> = 41)
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Exhaustion	-.32*	-.25	.37**	.09
Contrast Parental Self	-.25	-.37*	.24	-.07
Feelings of Being Fed Up	-.38**	-.39*	.37**	.25
Emotional Distancing	-.37*	-.22	.45**	-.10
Total Burnout	-.34*	-.32*	.39**	.08
Parental Depression	-.25	-.39*	-.23	.07
Parental Anxiety	-.29*	-.34*	-.22	.14
Acceptance	-.57***	-.34*	-.20	-.61***
Psychological Control	-.45**	-.32	-.06	-.38*
Firm Control	-.52***	-.28	.00	-.32*
	Perceived Social Supports		Perceived Social Supports	
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Exhaustion	-.41**	-.40*	.21	-.05
Contrast Parental Self	-.37**	-.44**	.29	-.43**
Feelings of Being Fed Up	-.41**	-.46**	.24	-.03
Emotional Distancing	-.50***	-.34*	.29*	-.28
Total Burnout	-.44**	-.43**	.28*	-.18
Parental Depression	-.33*	-.53**	.05	-.32*
Parental Anxiety	-.32*	-.52**	.07	-.33*
Acceptance	-.47**	-.40*	0.07	-.10
Psychological Control	-.48**	-.49**	-.27*	-.62***
Firm Control	-.53***	-.50**	-.13	-.40**

Table 12 (continued).

	Positive Perception of Parenting		Positive Perception of Parenting	
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Exhaustion	-.14	-.29	.45**	.26
Contrast Parental Self	-.06	-.29	.43**	-.02
Feelings of Being Fed Up	-.11	-.29	.41**	.42**
Emotional Distancing	-.21	-.20	.41**	-.10
Total Burnout	-.13	-.29	.48***	.22
Parental Depression	-.13	-.56***	.09	.17
Parental Anxiety	-.01	-.48**	.11	.19
Acceptance	-.62***	-.39**	-.51***	-.55***
Psychological Control	-.08	-.36*	.20	-.25
Firm Control	-.22	-.31	.29*	-.09

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

CHAPTER 4. DISCUSSION

The current study assessed differences in anxiety and depression symptoms, parenting behaviors, and levels of parental burnout in mothers and fathers of children with and without ASD during the COVID-19 global pandemic. This study also examined the relations between child externalizing and internalizing behavior problems, parent psychological functioning (e.g., depression, anxiety, and burnout), and behaviors in parents of children with ASD, as well as relations between COVID-19-related-stress and parenting behaviors and burnout among both groups of parents. Exploratory analyses examined differences in three types of parental resilience in mothers and fathers of children with and without ASD and the relation between resilience and parent psychological functioning, burnout, and behaviors. Moreover, this study sought to fill an important gap in current literature. When examining parent factors, particularly among parents of children with ASD, fathers have rarely been included in research relative to mothers. Previously, when fathers have been included, there has often been a large discrepancy in the number of mothers versus fathers in study samples. As such, this study aimed to include a more equal number of mothers and fathers of children with and without ASD.

An important contextual factor to be underscored is that this study was completed during the COVID-19 global pandemic of 2020 to 2021, with data collected in March of 2021, nearly one year since the beginning of the pandemic. At the time of data collection, many individuals continued to face unemployment or financial strains, children continued to attend school entirely or partially via virtual means, a large percentage of adults continued to work partially or entirely at home, and social distancing and mask mandates remained in effect across the United States.

Recent research has shown that individuals felt that their lives had changed in a major way as a result of COVID-19 (Pew Research Center 2020), and individuals in the general population reported increased psychological distress (Lima et al., 2020). Moreover, Colizzi et al. (2020) found that nearly 94% of parents of children with ASD surveyed in their study reported that the global pandemic was challenging or very challenging, and 77% indicated that life was more challenging than life prior to the pandemic. Consistent with these previous findings, current data showed that 96.6% of parents in the ASD group and 88.7% of parents in the TD group reported that life during the pandemic was challenging or very challenging. Similarly, about 60% of parents in the ASD group and 42% in the TD group indicated that the period of COVID-19 was *more* challenging than previous times. Nearly equal percentages of mothers and fathers in the ASD group (60.4% and 60.5%, respectively), but more fathers than mothers (48.8% and 36.4%, respectively) in the TD group, reported that this period of time was more challenging. In both the ASD and TD groups, more fathers than mothers reported the COVID-19 time period to be very challenging (76.3% of fathers compared to 64.6% of mothers in the ASD group; 53.7% of fathers compared to 36.4% of mothers in the TD group). As mentioned previously, the Transactional Model of stress and coping and the Family Adjustment and Adaptation Response model emphasize that two key variables in determining if an event is stressful are the perception of the stressor and the resources available to cope (Hill, 1949; Lazarus & Folkman, 1984; McCubbin & Patterson, 1983). The findings in this study align with these theories in that the combination of COVID-19 (the stressor), the reduced resources available during this time (e.g., minimal access to childcare, financial strain), and parents' perceptions that COVID-19 was a more challenging period yielded heightened levels of distress. Given these challenges related to COVID-19

reported by parents, it is important that the current study's findings be interpreted within this pandemic context.

Group Differences in Anxiety and Depression Symptoms

As expected, and in support of Hypothesis 1a, this study found that parents of children with ASD reported more depression and anxiety symptoms than parents of TD children. This finding is consistent with previous literature that has shown that the lifetime prevalence of depression and anxiety disorders is higher in parents of children with ASD than parents of TD children (Rezendez & Scarpa, 2011). Furthermore, child behavior problems have been shown to relate to parenting stress and psychological functioning in previous literature (e.g., Civick 2008; Gray 2003; Lecavlaier et al., 2006). In the current sample, 79.5% of parents in the ASD group reported that their child had behavior problems pre-COVID-19 compared to only 11.3% in the TD group. Furthermore, relative to before the pandemic, 56% and 60.2% of parents in the ASD group reported that their child's behavior problems were more intense and more frequent, respectively, compared to 20.6% and 18.6% of parents in the TD group. The increase in frequency and intensity of behavior problems is not surprising given the significant changes in family routine, mode of schooling and/or therapy services, and limited social interactions with friends and extended family during the pandemic. As behavior problems have been shown to impact parents' psychological functioning (e.g., Lecavlaier et al., 2006) in pre-pandemic times, this exacerbation of behavior problems may have contributed, at least in part, to the differences in anxiety and depression symptoms parents in the ASD and TD groups experienced during COVID-19.

Gender Differences in Anxiety and Depression Symptoms

In contrast to my prediction in Hypothesis 2a and to other research (e.g., Falk et al., 2014; Hastings et al., 2005), this study found that fathers in the ASD group reported significantly higher levels of depression than mothers in the ASD group, with fathers' symptoms in the extremely severe range and mothers' symptoms in the severe range. Whereas fathers' average anxiety symptom level was higher than that of mothers, this difference was not statistically significant (symptoms fell in the extremely severe range for both mothers and fathers). Parents in the TD group, on the other hand, had anxiety and depression symptoms that ranged from normal to mild, and levels did not differ between mothers and fathers.

As mentioned previously, fathers of children with ASD have infrequently been included in research, and when they have been included, they are usually significantly outnumbered by mothers. This may, in part, explain the unsupported hypothesis and surprising findings related to gender differences. A second explanation for these findings is the higher percentage of fathers than mothers who rated the COVID-19 period as "very challenging." COVID-19-related-stress positively related to fathers' anxiety and depression symptoms in the ASD group, but did not relate to mothers' psychological functioning. Alon and colleagues (2020) indicated that during the pandemic, many fathers were forced to take on greater primary caregiving activities as a result of reduced childcare. The social learning theory and social role theory both postulate that fathers are potentially less prepared to cope with the demands of parenting. In agreement with these theories, the increased number of demands and difficulty balancing work and parenting during the COVID-19 pandemic may explain why fathers in the ASD group viewed this period as so challenging and experienced higher levels of anxiety and depression than mothers in this sample. Furthermore, fathers' anxiety and depression symptoms positively related to child

characteristics including internalizing and externalizing behavior problems, autism symptom severity, and child age. Bowen's family systems theory suggests that members of a family impact one another's thoughts, feelings, and behavior and a change in one family member leads to change in other family members and the function of the whole unit (Bowen, 1966; 1974). With fathers' increased involvement in parenting, exposure to their child's behavior problems and symptoms of ASD relative to pre-pandemic times likely increased. In turn, this elevated exposure to these challenges and increased need to balance their responsibilities, in conjunction with all the other stressors that accompanied the pandemic (i.e., health-related stress, limited access to leisure activities), may explain these heightened levels of depression and anxiety.

Although mothers' anxiety and depression were positively related to autism symptom severity and maternal anxiety was related to internalizing behaviors, mothers' psychological functioning was also related to their own education and family income. Consistent with social learning theory and social role theory, previous studies have found that mothers often carry more of the parenting responsibilities (Newman & Henderson, 2014) and spend more time with their children than fathers (Bianchi et al., 2006). Aligning with these theories and previous research, the mothers in this sample who were working solely at home reported higher levels of anxiety and depression than mothers who were working in-person, working partially in-person and partially at-home, or who were not working at all. Perhaps mothers, on average, experienced less drastic changes, relative to fathers, following the COVID-19 related restrictions and changes because they were already the primary caregivers. Those mothers who were working at home and balancing the primary caregiving activities struggled more compared to other mothers, but because they were already habituated to their stress, they were more resilient to these changes, and therefore, did not exhibit the rise in psychological symptoms to the degree seen in fathers.

Group Differences in Parenting Behaviors

Part of Hypothesis 1b was not supported as this study did not find significant differences in level of acceptance between parents of children with and without ASD. Consistent with findings from Ventola and colleagues (2017), this indicates that although parents in the ASD group are more depressed and anxious and have children with more behavior problems, they are similarly accepting of their children. The second part of Hypothesis 1b was supported as there were differences in the ASD and TD group with regard to use of parenting practices associated with psychological control and firm control. Similar to previous studies (Gau et al., 2010; Riany et al., 2017), parents in the ASD group reported more psychological and firm control than parents in the TD group. In the ASD group, psychological control was positively associated with both child externalizing and internalizing behavior problems and firm control was positively related to child externalizing behaviors. Ventola and colleagues (2017) also found this relation between externalizing behaviors and parenting behaviors. Together, these findings suggest that parents of children who have more maladaptive behaviors (both internalizing and externalizing) may be more controlling and allow for less autonomy and those parents of children with more externalizing behaviors may be firmer in their parenting practices. The relation between parent behaviors and child behaviors aligns with the Bowen's family systems theory in that family members are thought to influence each other's behaviors. Additionally, these findings are consistent with Bronfenbrenner's ecological theory (Bronfenbrenner, 1979), specifically concerning the microsystem, in that interpersonal relationships within families impact a child's development over time.

Gender Differences in Parenting Behaviors

In the current sample, there were no significant differences between mothers and fathers in the ASD or TD groups with regard to level of acceptance which did not support part of Hypothesis 2b. This is inconsistent with one study that found lower levels of acceptance in fathers of children with ASD compared to mothers (van Steijn et al., 2013). However, this study was conducted in Norway. Previous research has shown differences in the quality of parent-child interactions between parents in the United States and parents in Europe (Kirchoff et al., 2019), which indicates that cultural differences may be an explanation for these findings. To my knowledge, no other studies have examined differences in acceptance levels between mother and fathers of children with and without ASD in the United States.

Although there was not a significant difference between mothers' and fathers' levels of acceptance, there was a difference in which demographic and child characteristics related to this type of parenting behavior in the ASD group. Child age and externalizing and internalizing behavior problems positively related to fathers' level of acceptance whereas mothers' level of acceptance was only related their own age. This suggest that both fathers and mothers tend to be more accepting of older children, but fathers are also accepting of children who have more maladaptive externalizing and internalizing problems. Some research has shown that fathers tend to be more involved in their children's lives as they get older (Bruce & Fox, 1999). Therefore, they may exhibit more empathy and acceptance for their child's difficulties (Almeida & Galambos, 1991). Alternatively, older mothers may be more accepting as they have had longer to seek support and more time to understand their child's diagnosis and difficulties.

There were not differences in the use of psychological and firm control between mothers and fathers in the TD group, but differences were found in use of firm and psychological control

between mothers and fathers in the ASD group, which partially supported Hypothesis 2b. Fathers used significantly more psychological and firm control than mothers. Similar to acceptance, this is the first known study to examine gender differences in parents of children with ASD with regard to these two parenting behaviors.

Hypothesis 3a was partially supported as fathers' use of psychological and firm control were positively related to child externalizing behavior problems. Fathers' use of psychological and firm control was also positively related to child age and internalizing behavior problems. That is, fathers of children with ASD allowed for less autonomy and were firmer with their older children who exhibited more maladaptive behaviors. Given the natural change in level of independence that occurs during adolescence, parents often need to set stricter limits and provide more protection of their children. This need to set limits and provide protection may be even more pronounced for children with ASD (e.g., to maintain safety, provide ample social supports), which may explain this finding.

In contrast to my Hypothesis 3a, child externalizing behavior problems did not positively relate to mothers' use of psychological and firm control in the ASD group. However, education level and family income were positively related to use of psychological and firm control in mothers of children with ASD. Additionally, internalizing behavior problems were positively related to use of psychological control, whereas number of children in the household was negatively related. These findings suggest that mothers of children with ASD who are more educated, more financially secure, have fewer children at home, and are parents of children who exhibit internalizing problems use more psychological control. Allowing children to make decisions on their own and/or learn from their mistakes, often takes more time than making decisions *for* children. Differences in the mean levels of psychological and firm control in

mothers in the ASD group who were and were not working revealed that mothers who worked entirely in-person reported higher levels of psychological and firm control than mothers who worked partially in-person/partially at-home. Mothers who worked partially in-person/partially at-home reported higher levels of psychological and firm control than mothers who worked solely at home, and mothers who were not currently employed reported about half the use of psychological and firm control than mothers who were working. These findings indicate that those mothers who are employed, and especially those mothers who worked in-person, may have less time to allow their children to develop autonomy, and therefore, they use more psychological control and more firmness.

Research has also shown a positive relation between parents' education and income and parents' educational expectations of their children (i.e., expectations for a child's education achievement; Davis-Kean, 2005). Previous literature has also shown a relation between parental expectations and parenting behaviors (Davis-Kean, 2005). Taken together, mothers in the ASD group who are more educated and have higher income may also have higher expectations of their children. When their children do not meet their expectations, potentially as a result of ASD, they may use parenting behaviors that are firmer and controlling. This may be especially true for those mothers with fewer children as they may be more attentive to their child's behaviors. Additionally, when children are experiencing internalizing problems, communication between the parent and child can be poor, especially in individuals with ASD (Kern et al., 2015). With more limited communication, mothers may become frustrated and resort to more manipulative and controlling parenting behaviors to try and evoke better communication.

Parenting Behaviors and Psychological Functioning

The relation between parent psychological functioning and parenting behaviors was also examined and my prediction that anxiety and depression would be negatively associated with acceptance and firm control (Hypothesis 3c) was not supported. The current study found that mothers and fathers in the ASD group who were more anxious and more depressed used more psychological and firm control. Anxiety and depression are associated with irritability, fatigue, and loss of interest in activities. Parents experiencing these symptoms may not feel they have the time and/or energy to allow their child more autonomy and instead resort to more controlling behaviors. Furthermore, these parents who are more anxious and more depressed also reported less leniency with their child and more strictness in their parenting. Fathers who were more anxious and more depressed were also more accepting of their child. As a result of their own difficulties, fathers may potentially have less energy to be critical of their child's behaviors or struggles and/or as a result of their own struggles, they are more accepting and understanding of their child's struggles. These findings also emphasize Bowen's family systems theory as they show how parents' feelings and levels of functioning might impact their parenting behaviors, which thereby might have impacts on their children.

Group Differences in Parental Burnout

As predicted in Hypothesis 1c, results showed that overall burnout and each of its four subtypes were significantly higher in the ASD group than the TD group. Compared to TD parents, parents in the ASD group reported experiencing more exhaustion and feelings of being fed up related to their parenting role, more emotional distancing between themselves and their child, and more of a difference between the parents they used to be and the parents they are currently. This is unsurprising given the extensive literature showing parents of children with

ASD experience heightened levels of stress, strain, and burden related to their parenting as a result of the time and effort spent in the parenting role (Brobst et al., 2008; Hayes & Watson, 2012). To date, only three other studies have examined parental burnout in parents of children with ASD (Ardic, 2020; Kütük et al., 2021; Varghese & Venkatesan, 2013). Although the current findings parallel findings in these three other studies, this is first known study to examine and compare these constructs in a population of parents of children with and without ASD in the United States.

Gender Differences in Parental Burnout

Hypothesis 2c was partially supported as there were gender differences in levels of emotional distancing; however, there were not gender differences in total parental burnout or the other three subtypes. Interestingly, this study found that fathers reported higher levels of emotional distancing in the ASD group than mothers. The questions on the PBA related to emotional distancing assess a parent's ability to go beyond the daily routines (e.g., bedtimes, meals) and provide emotional support for their child. The underlying Balance Between Risks Theory related to parental burnout posits that burnout results from an imbalance between demands and resources (Mikolajczak & Roksam, 2018). Research has found, though, that fathers tend to burn out earlier, even before their resources are outweighed by demands (Roskam & Mikolajczack, 2020). Furthermore, as fathers typically have less exposure to parenting responsibilities, they tend to be more vulnerable to parental demands (Roskam & Mikolajczack, 2020), which supports the current study's findings. During COVID-19, many fathers have experienced more parenting demands and resources have been limited. As a result, they may have reached burnout more quickly and are unable to currently provide for their child beyond what is necessary, resulting in greater emotional distancing. Although there was not a

statistically significant difference between mothers and fathers in the ASD group in level of exhaustion, contrast in parental self, feelings of being fed up, and total overall burnout, the average levels were higher for fathers than mothers across all types of burnout. This suggests that both mothers and fathers of children with ASD reported struggling with burnout, but the burnout for fathers was more severe.

Child and Sociodemographic Factors and Parental Burnout

In line with Hypothesis 3a, child behavior problems (both externalizing and internalizing) related to all five types of parental burnout in fathers and most types of burnout in mothers in the ASD group. Child age was positively related to all five types of parental burnout for fathers and was significantly positively related to mothers' feelings of being fed up. Family income and education were also positively related to emotional distancing and feelings of being fed up for mothers. Feelings of being fed up assesses how a parent is coping in their parenting role and the extent to which they dislike their role as a parent. These findings suggest that fathers of older children with ASD who are experiencing more maladaptive behaviors are experiencing greater burnout. Generally, mothers of children with externalizing and internalizing problems are also more burnout and mothers who are more highly educated and more financially secure are more emotionally distanced and more fed up with their role as a parent (likely because they are trying to balance their caregiving and work responsibilities). Additionally, mothers of children who are older are more fed up with their role as a parent.

For some parents, the support older children require (i.e., driving back and forth to activities, planning for college, pubertal changes) may be more draining than the support younger children require. This may be even more true for children with ASD (Smith et al., 2010). As children with ASD get older, parents may begin to think about their child's future,

which may increase stress levels, and social deficits can become more prominent and problematic throughout middle and high school, causing more distress and worry in parents (Fong et al., 1993). These unique stressors that come with ASD, coupled with typical changes during adolescence, may result in increases in paternal involvement children age. As such, this may increase demands on fathers, resulting in more burnout. Because mothers of children who are older have been parenting for longer, they may feel especially overwhelmed and frustrated with their role.

Furthermore, children exhibiting more internalizing and externalizing problems likely require more time, effort, and attention from their parents, ultimately leading to a greater mismatch in demands and resources. This mismatch may have been exacerbated during the COVID-19 pandemic. A large majority of children were engaged in virtual schooling from home and resources such as private therapy and extracurricular activities either stopped/paused or moved to virtual modalities, potentially requiring increased parental involvement. Whereas these activities typically provide parents with respite or support, these changes in delivery may have resulted in increased burden. Additionally, parents' inability to take breaks from their parenting role may have exacerbated their burnout, and this was likely even more pronounced for parents of children with behavioral challenges.

Parenting Behaviors and Parental Burnout

Hypothesis 5 was not supported as there was not a negative relation between acceptance and firm control and parental burnout. Interestingly, this study found that level of acceptance was not significantly related to any type of burnout in mothers and fathers in the ASD group. For mothers and fathers in the ASD group, nearly all types of parental burnout were positively related to psychological and firm control. That is, parents who reported experiencing more

burnout reported use of more controlling practices, reported allowing for less autonomy, and reported being firmer in their parenting. This parallels previous findings that parents with high burnout are more likely to engage in negative parenting behaviors (Mikolajczak, Brianda, et al., 2018; Roskam et al., 2017).

Psychological Functioning and Parental Burnout

Hypothesis 3b was partially supported as fathers' levels of all five types of parental burnout were positively related to their depression and anxiety levels in the ASD group. Four of the five types of parental burnout (not exhaustion) were related to depression and anxiety in mothers in the ASD group. These results align with previous literature that has shown a positive relation between poor psychological functioning and levels of stress in parents of children with ASD (e.g., Falk et al., 2014).

Hypothesis 4 was partially supported as some types of parental burnout related to COVID-19-related-stress in the ASD and TD groups. Although a higher percentage of fathers in the ASD group indicated that the period of COVID-19 was very challenging, their COVID-19-related-stress did not relate to any type of burnout. Yet, for mothers in the ASD group, COVID-19-related-stress positively related to all but one type of burnout. When examining anxiety and depression symptoms, fathers' symptoms related to COVID-19-related-stress whereas mothers' symptoms did not. These results may indicate that although fathers' anxiety and depression was strongly related to COVID-19-specific stressors, fathers' experience of parental burnout may have been less directly tied to the global pandemic. For mothers, on the other hand, their burnout seemed more closely tied to the pandemic, albeit at lower levels relative that of fathers, and their anxiety and depression were less tied to the pandemic. Together, these results suggest that, although both mothers and fathers are struggling across domains of psychological functioning,

the factors that relate to different areas of psychological functioning may differ for mothers and fathers. Although not predicted in the current study, this aligns with results from Falk et al. (2014) wherein factors that predicted depression, anxiety, and stress differed for mothers and fathers of children with ASD.

Parental Resilience

As expected, current results also yielded differences between mothers and fathers in parental resilience across both the ASD and TD groups. Specifically, fathers in the ASD and TD groups reported significantly less knowledge of child's characteristics than mothers in the ASD and TD groups. Previous literature has shown that mothers spend more time with their children than fathers (Bristol et al., 1988; Hartley et al., 2014) and that mothers are more involved in child-related activities (Renk et al., 2003) which supports the lower levels of resilience related to knowledge of their child reported by both groups of fathers.

Additionally, there were findings related to perceived social support that align with previous literature. Altieri and von Kluge (2009) found that fathers of children with ASD have reported lower perceived support from family and friends than their partners and multiple studies have found social support to be a key predictor of parental stress and mental health symptoms in parents of children with ASD (e.g., Falk et al., 2014; Lamminen, 2008). The current study found that, relative to mothers in the ASD group and fathers in the TD group, fathers in the ASD group perceived significantly lower levels of social support. Additionally, mothers in the ASD group perceived lower social support than mothers in the TD group, but there were no significant differences in perceived social support between mothers and fathers in the TD group. This study also found that mothers and fathers with lower levels of both knowledge of child's characteristics

and perceived social support reported higher levels of parental burnout and depression and anxiety symptoms in the ASD group.

No differences in levels of positive perception of parenting were found between groups or between mothers and fathers. Similar to levels of acceptance, parents in the ASD and TD groups reported near equal levels of positive perceptions. Levels of positive parent perceptions, although similar across the two groups, were quite low. Although parents in the TD group reported less anxiety and depression symptoms, reported experiencing lower levels of parental burnout, and reported having more social support than parents in the ASD group, it appears that both groups of parents struggled with a positive perception of their role as parents. This could potentially be a direct result of the increase in time spent with their children due to working from home and children not attending school, coupled with the decrease in outside childcare and/or time spent engaging in other activities during COVID-19. It may be that even though parents in the TD group are experiencing a negative perception of parenting, their social support is serving to buffer against negative impacts on their psychological functioning in comparison to parents of children with ASD. Furthermore, their negative perception does not develop into anxiety or depression symptoms and/or they do not reach the level of parental burnout because they may have more protective factors (i.e., more social support) or fewer risk factors (i.e., children with fewer behavior problems, fewer daily stressors), relative to parents of children with ASD.

Limitations and Future Directions

This study has important limitations that warrant consideration. First, this study was conducted during the COVID-19 global pandemic. Although collecting these data provides important information about parents' level of psychological functioning and behaviors during this important and difficult time in history, it is unclear how these findings will generalize to

non-pandemic times. Additionally, the sample size, although adequately powered, was relatively small. Homogeneity of the sample and sampling bias also warrant mention. This sample was primarily comprised of middle to upper middle class White parents, and access to internet was required to participate. Therefore, this sample is lacking racial diversity, and may also be missing families of lower socioeconomic status (i.e., those who do not have access to internet). A majority of the parents reported on target children who were at least somewhat verbal, indicating that more severely impacted children with ASD may not have been captured in this sample. Furthermore, self-selection bias is a limitation as only those parents who had time to complete this study participated. Parents who did not have time to complete the study and/or parents who are not part of online panels may have different parenting experiences than those found in this study. Future studies should not only examine the differences in and relation between parental burnout, parenting behaviors, and psychological functioning in mothers and fathers post-pandemic, but studies should aim to collect larger sample sizes with more diverse participants both with respect to sociodemographics and range in functioning level of the children. Although surveys can yield rapid data collection, more qualitative data (i.e., open-ended questions, semi-structured interviews) may provide more depth and greater understanding of mothers' and fathers' experiences and how they might differ.

Some important measurement issues should also be noted. The presence of ASD diagnoses (in the ASD group) and the lack of mental health diagnoses (in the TD group) were based on parent-report. However, the CSBQ was used to verify ASD symptoms in the ASD group and lack thereof in the TD group. In this sample, a large portion of the parents in the TD group reported levels of ASD symptomatology for their child above the ASD cut-off established by Hartman et al. (2006). This indicates that the CSBQ may not adequately measure a lack of

ASD symptoms. Alternatively, these heightened levels in the TD group may reflect the increase in problematic behaviors in TD children associated with the COVID-19 pandemic. Future studies may benefit from conducting more comprehensive assessment of children to independently verify ASD diagnoses. Similarly, a measure created to confirm lack of ASD symptoms rather than presence of ASD symptoms should be used to confirm that children are accurately considered TD. Additionally, based on the percentage breakdown of the number of total siblings and the number of siblings with ASD, there is concern that the demographic question about number of siblings with ASD may have been confusing or misunderstood by some participants.

COVID-19-related-stress was assessed on a 3-point Likert scale which allowed for little variability in responses. This may have impacted how COVID-19-related-stress related to other variables of interest (i.e., parental burnout) and these findings should be interpreted with caution. This study also utilized only parent self-report measures. Although it is important to understand parents' psychological functioning and their perception of their experiences and behaviors, it is also useful to understand how children, spouses, and other family members perceive parents' behaviors. Future studies should consider including child and spousal ratings of parent behaviors to examine differences in how children perceive their mothers and fathers behaviors and how spouses differ in their perceptions of burnout, behavior, and resiliency. Furthermore, there were differences found in parenting behaviors between the ASD and TD group. This component of this study was limited and did not examine the effectiveness of these specific parenting behaviors. It is possible that children with ASD require a different set of parenting behaviors than TD children as a result of autism symptoms, maladaptive behavior problems, or comorbid intellectual disabilities, among other potential challenges. Future research should consider further exploration of parenting behaviors to gain a better understanding of the effectiveness of

these parenting behaviors with different child populations and the underlying factors that lead parents to develop certain parenting styles and behaviors.

Finally, the current study did not ask parents if they perceived themselves to be a primary or secondary caregiver. Similarly, this study did not collect information about the amount of time spent engaging in caregiving activities and/or the types of caregiving activities each parent engaged in. Future studies should examine how types of activities and the amount of time spent engaged in caregiving activities relates to parental burnout. Additionally, it would be valuable to examine if certain caregiving activities are more strongly related to certain types of burnout and if there are differences between mothers and fathers.

Conclusion and Practical Relevance

This study sheds light on how parents' experiences of children with and without ASD differed during the COVID-19 pandemic. Overall, it is apparent from findings that both mothers and fathers of children with ASD reported experiencing significant levels of depression and anxiety and severe levels of parental burnout. Often, clinical services for families of children with ASD focus on the child's behaviors and skills. Although parents are frequently involved in parent training with a focus on helping the child, parents' feelings and experiences are often neglected. The findings of this study support the importance of clinicians providing parents of children with ASD with increased support, especially during times of extreme stress such as the global pandemic.

Given the high percentage of parents of children with ASD who reported parental burnout, and the previous literature that has shown the potential negative outcomes of burnout for children and families (Mikolajczak, Brianda, et al., 2018; Mikolajczak et al., 2019), it is essential for clinicians to assess parents' level of functioning and feelings related to their parenting role. In particular, clinicians should pay special attention to mothers and fathers of children who are older (i.e., adolescents) and who exhibit more externalizing and internalizing behavior problems. Parents who are anxious and depressed may also be at particular risk for parental burnout. Acknowledgement of the aforementioned risk factors may allow clinicians to implement preventive supports, thereby reducing the prevalence of burnout in parents of children with ASD.

The findings in this study also suggest that during the COVID-19 pandemic, fathers are struggling more psychologically and are more severely burned out than mothers. Although there has been more research focused on father involvement in recent years, this study highlights the

importance of the inclusion of fathers in both research and clinical services. As fathers are reporting lower levels of knowledge related to their child's characteristics and less perceived social support, clinicians may find it useful to increase psychoeducation, connect fathers to other social supports, and provide coaching on effective coping strategies.

Furthermore, differences were found in the types of parenting strategies used between parents in the TD and ASD groups and between mothers and fathers. Parent behaviors play an important role in the parent-child relationship and the family dynamic as a whole (Baumrind, 1967; Bowen, 1966). Although understanding how a child's behaviors may affect his or her parents is important for understanding the family dynamic, it is also vitally important to study how parents' behaviors influence the family dynamic. Since parents are often an integral part of the treatment that children with ASD receive, and often implement treatment strategies themselves, it is important to understand the behaviors that parents are already engaging in naturally in order to best tailor their intervention approach. It may be useful for clinicians to spend time gaining insight into parents' behaviors, especially with those parents who are presenting as anxious, depressed, or burnt-out, before providing parenting recommendations and developing new parenting strategies.

In sum, families across the world faced extreme challenges of all kinds during the COVID-19 pandemic. Despite the exacerbated levels of stress, burden, and poor psychological functioning parents of children with ASD experienced during this time, participants in this sample exhibited resilience in their parenting role and acceptance of their children. Although there is much work that still remains in how to best support these parents and families, COVID-19 presented a unique opportunity to examine how parenting experiences differed during a time of heightened stress for everyone. As we continue to delve deeper into parents' unique

experiences, we will be able to better understand how to promote positive long-term outcomes for children with ASD and their families.

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February 22, 2021

Courtney Paisley
Department of Psychology
College of Arts and Sciences
Box 870348

Re: IRB # 20-12-4198: "Parenting During COVID-19: Experiences and Functioning of Mothers and Fathers of Children With and Without Autism Spectrum Disorder"

Dear Ms. Paisley,

The University of Alabama Institutional Review Board has granted approval for your proposed research. Your application has been given expedited approval according to 45 CFR 46. You have also been granted a waiver of written documentation of consent. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

The approval for your application will lapse on February 20, 2022. If your research will continue beyond this date, please submit the annual report to the IRB as required by University policy before the lapse. Please note, any modifications made in research design, methodology, or procedures must be submitted to and approved by the IRB before implementation. Please submit a final report form when the study is complete.

Please use reproductions of the IRB-approved informed consent form to obtain consent from your participants.

Sincerely,



Carpantato T. Myles, MSM, CIM, CIP, EXCS™
Director & Research Compliance Officer

cc: Dr. Ted Tomeny