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Parents on the autism continuum: Links with parenting efficacy

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ABSTRACT

The extent to which parental traits of autism are related to parenting efficacy has yet to be explored. Parents of children with Autism Spectrum Disorder (ASD) were studied in three groups: (a) families in which both the parent and the child had a DSM-IV-TR ASD diagnosis ($n = 109$); (b) families in which only the child had a DSM-IV-TR ASD diagnosis ($n = 128$); and (c) families in which no member had ASD ($n = 109$). Each subject completed the Autism Spectrum Quotient (AQ) and a measure of parenting efficacy. Fathers with ASD had the lowest parental efficacy, but mothers with ASD had comparable levels of parental efficacy to parents without ASD in the family. Results suggest that screening and intervention to build fathers parental efficacy may be a useful adjunct to therapy.

1. Parents on the autism continuum: self-perceived autistic traits and parenting efficacy

Parents of children with Autism Spectrum Disorder (ASD) have consistently reported higher parenting stress than those with typically developing (TD) children and children with other developmental disorders, and the effect sizes are large (see Hayes & Watson, 2013 for a review). To date, high parental stress in ASD populations has been attributed to the child's ASD symptomatology (e.g., Estes et al., 2009; Hall & Graff, 2012; Lecavalier, Leone, & Wiltz, 2006; Tomanik, Harris, & Hawkins, 2004). Previous studies suggest that characteristics of ASD may exacerbate challenging behaviours in children (Kleinhans, Akshoomoff, & Delis, 2005; McCrimmon, Schwean, Saklofske, Montgomery, & Brady, 2012; Ozonoff, Pennington, & Rogers, 1991; Semrud-Clikeman, Walkowiak, Wilkinson, & Butcher, 2010), and that child behaviour problems are the most common reason for referral of children with ASD to mental health services (Mandell, Walrath, Manteuffel, Sgro, & Pinto-Martin, 2005). Demand characteristics in children may not only cause stress to parents, but also influence parental sense of competency (Abidin, 1992). Indeed, in the ASD population, higher levels of parental stress have been associated with parents' negative perceptions of their own care-giving abilities (e.g., Hastings & Brown, 2002; Kuhn & Carter, 2006; Tomanik et al., 2004). For instance, mothers of children with ASD report a lower sense of efficacy in parenting than mothers of TD children (Giallo, Wood, Jellett, & Porter, 2013; Meirsschaut, Roeyers, & Warreyn, 2011). Hastings and Brown (2002) found lower parenting efficacy in parents of children with ASD compared to those with TD children, and that parenting efficacy mediated the association of child misbehavior and paternal anxiety, and maternal anxiety and depression. Similarly, Kuhn and Carter

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(2006) reported a negative correlation between maternal sense of efficacy and parenting stress and depression among those raising children with ASD. Not only can perceived self-efficacy in parenting buffer the stress of child rearing on parental psychological well-being (Bloomfield & Kendall, 2012), it is found to be amenable to brief parent-focused intervention

Table 1
Previous studies on parents of children with ASD using the Autism Spectrum Quotient (AQ).

Authors (year)	N (parents)	Gender distribution	Total AQ score	Significant Effect Child Diagnosis (in which subscales)	Significant effect parent gender (in which subscales)
Kose et al. (2013)	100 ASD	47 Fathers	19.08 (4.4)	ASD > TDC	Male = Female
Turkish sample		53 Mothers	18.85 (6.5)	(Social skills, communication)	
	100 TDC	48 Fathers	17.50 (4.8)		
		53 Mothers	17.15 (5.7)		
Ruta, Mazzone, Mazzone, Wheelwright, and Baron-Cohen (2012)	245 ASD	115 Fathers	18.90 (9.16)	ASD > TDC	Male > Female
Italian sample		130 Mothers	16.39 (7.30)	(Social skills, communication, imagination)	(Social skills, attention to details, communication, imagination)
	300 TDC	150 Fathers	16.77 (4.61)		
		150 Mothers	14.51 (5.17)		
Mohammadi, Zarafshan, and Ghasempour (2012)	204 ASD	96 Fathers	23.43 (5.46)	ASD > TDC	Male > Female
Iranian sample		108 Mothers	20.75 (4.11)	(Attention switching, communication)	(Attention to details, communication, imagination)
	210 TDC	108 Fathers	19.22 (2.13)		
		102 Mothers	18.25 (3.13)		
Wheelwright, Auyeung, Allison, and Baron-Cohen (2010)	2000 ASD	571 Fathers	19.2 (9.5)	ASD > TDC	Male > Female
UK sample		1429 Mothers	16.4 (9.5)	(Social skills, communication, imagination, attention switching)	(Social skills, attention switching, communication, imagination)
	1007 TDC	349 Fathers	17.7 (6.9)		
		658 Mothers	13.1 (6.3)		
Scheeren and Stauder (2008)	25 ASD	13 Fathers	102.6 (23.3)[a]	ASD > TDC	Male > Female
Netherlands sample		12 Mothers	90.0 (13.9)	(Attention to details)	(Communication)
	25 TDC	13 Fathers	96.1 (18.4)		
		12 Mothers	100.8 (14.8)		
Bishop et al. (2004)	121 ASD	52 Fathers	18.10	ASD > TDC	Male > Female
Australian sample		69 Mothers	13.80	(Social skills, communication)	(Social skills, communication, attention switching, imagination)
	89 TDC	37 Fathers	16.13		
		52 Mothers	13.17		

Note: ASD denotes parents of ASD; TDC denotes parents with typically developing children.
[a] Scored using 4-point Likert scale instead of the conventional scoring protocol proposed by Baron-Cohen et al. (2001).

(Sofronoff & Farbotko, 2002). Thus, improving our understanding of the links between parenting efficacy and ASD characteristics in parents may service to improve therapies for families experiencing these challenges.

2. Gender effects related to parental stress

Research on the experience of parenting children with ASD has predominantly sampled mothers. Lee (2013) reviewed 28 empirical studies examining the well-being of mothers of children with developmental disorders. Only 13 of the 28 studies specifically included subjects diagnosed with ASD and the age of participating children was wide ranging (1.5–50 years of age). Comparison groups were diverse, including parents of TD children, children with Down syndrome, Fragile X Syndrome, and developmental delay. Despite the heterogeneous sample, results generally indicated that mothers of children with ASD reported significantly higher parenting stress and more depressive symptoms than controls, including those with children with other developmental disabilities. Parenting efficacy was not a feature of most of these studies with one exception (Giallo et al., 2013). In this study, fatigue was found to be significantly related to lower parenting efficacy and lower satisfaction along with stress, anxiety and depression in mothers of children with ASD ($n = 50$).

Very few studies on parenting with ASD have included both genders in their samples. Available studies have found that mothers and fathers raising children with ASD are affected differently (Hartley & Sikora, 2009; Lee, 2009). For example, using a multivariate model, Kaniel and Siman-Tov (2011) analyzed parenting experience of 88 pairs of parents of children with ASD in Israel. Compared to fathers, mothers in their study felt more threatened and more stressed, which adversely impacted on their mental health and quality of marriage. Similarly, when Little (2002) examined parents of children with ASD and/or nonverbal learning disorders, it was found that mothers reported greater stress than fathers. In a more recent study (Kuusikko-Gauffin et al., 2013) investigating social anxiety among parents of children with ASD and parents with TD children, mothers ($n = 65$ in ASD group and $n = 368$ controls) reported significantly more anxiety symptoms than fathers ($n = 61$ in ASD group and $n = 229$) in both groups. Whilst mothers seemed more vulnerable to developing psychiatric symptoms, mothers correspondingly also appeared to possess more adaptive coping skills and to perceive higher degrees of consensus between the couples than did fathers (Lee, 2009). Taken as a whole, past findings about gender differences in parents of children with ASD are preliminary and contradictory. There is a scarcity of data on fathers. Furthermore, parenting sense of efficacy among mothers and fathers of children with ASD is yet to be directly explored.

Another issue to consider in studies of parenting efficacy is whether or not the parents themselves may have either a clinically confirmed ASD diagnosis or at least some milder ASD-like cognitive and personality traits characteristic of the "broader autism phenotype" (Bishop et al., 2004). There have been several studies of this topic ($N = 6$) using the AQ. Key findings are summarized in Table 1. Collectively, these studies indicate that parents of children with ASD are more likely to score highly in the ASD direction on the AQ than are parents with TD children. There is also a consistent gender difference in the listed (Table 1) studies, with fathers tending to report more ASD-like traits than mothers. Of note is the fact that between 7% and 18% of parents of children with ASD in Table 1 studies obtained AQ scores that were higher than the diagnostic cut-off recommended in the original validation study of the AQ (Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001). This implies that some of these parents might have met criteria for a clinical diagnosis of ASD had they been assessed via DSM A major caveat, however, was that none of these studies reported any information on clinical diagnoses of ASD.

Rarely has research paid attention to higher functioning adults with ASD who are in a long-term relationship. When Lau and Peterson (2011) compared marital quality and parenting sense of satisfaction between parents of children with Asperger's Syndrome who had a clinical diagnosis of ASD themselves, versus those who did not, only the diagnosis in the child was linked with significantly lower parental sense of satisfaction. Whether or not parenting sense of efficacy is also related to diagnosis of ASD in parents is yet to be explored. In addition, this exploratory study of Lau and Peterson (2011) took a categorical approach in measuring parental ASD tendencies, making replication with a continuous measure like the AQ desirable. Comparisons among parents who (a) meet the DSM diagnostic criteria for ASD, or (b) possess some traits of the broader autism phenotype though at a subclinical level, or (c) lack both (a) and (b) characteristics could well prove theoretically informative.

2.1. The present study

Based on the considerations above, the aim of the present study is to explore self-reported traits of autism as assessed on the AQ measure together with parenting efficacy in a sample of parents representing a broad continuum of autism, ranging from normative non-ASD patterns through subclinical broader phenotype to clinical levels of traits of autism. Three hypotheses were tested:

1. Parents who had themselves been diagnosed with ASD based on DSM-IV-TR criteria would have higher self-reported AQ scores than parents of children with ASD and no clinical diagnosis themselves, and the latter would have higher AQ scores than their counterparts in families having no members with ASD.
2. Males would have higher AQ scores than females across all three comparison groups.
3. Parents with high AQ scores would feel less efficacious in their parenting role.

To our knowledge, this is the first study to explore parenting efficacy among parents of children with a clinical diagnosis of ASD together with quantification of parental traits of autism using the AQ scale. This dimensional approach in understanding the effect of autism is in accordance with the current conceptualisation of ASD, i.e., autism is a continuum of severity in symptomatology (Baron-Cohen et al., 2001), and is in synchrony with the recent change in the diagnostic criteria for ASD latest edition *of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5;* American Psychiatric Association, 2013*).*

3. Methods

3.1. Participants

A total of 346 Australian parents of children aged 3–18 years participated in this study, with a questionnaire return rate of 62%. The sample consisted of three groups. These were based on patterns of ASD diagnosis in both generations of the family. Group 1 consisted of 109 parents (29 fathers and 80 mothers) with ASD clinically diagnosed in both parent and child. These parents all had a clinically-confirmed ASD diagnosis and at least one child who also had been diagnosed with ASD. Group 2 consisted of 128 neurotypical parents (31 fathers and 97 mothers) with ASD in the child only. Group 3 was a community sample without a diagnosis of ASD reported or evident in either the parent's or the child's generations. It comprised 109 neurotypical parents (22 fathers and 87 mothers) of typically developing children without ASD or any other clinical diagnosis.

Parents in Groups 1 and 2 were recruited via two psychology clinics in Queensland specializing in ASD. Invitations were sent to 412 families with at least one child clinically diagnosed with ASD from the clinic databases. The response rate was 62.1% (256 completed questionnaires). Group 3 (non-ASD) participants were recruited by sending an advertisement about this study to personal contacts and research participant pools at the University of Queensland, and 122 out of 143 non-ASD parents completed the questionnaires. A total of 113 parents were selected from these 122 on the basis of matched age, gender, ethnicity, marital status and education level. Of the total 369 (256 + 113) parents altogether completed the questionnaires, 13 of the total respondents did not meet inclusion criteria (see below), and eight were subsequently discarded from analyses due to having more than five missing answers (i.e., 10% of the total number of items) on the AQ.

Each of the parents in Group 1 and Group 2 had at least one child diagnosed with ASD, including Autistic Disorder (Autism), Asperger Disorder (AS) and Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS). Diagnosis was made by an experienced registered psychologist using DSM IV-TR criteria (Robinson et al., 2011). In addition, in each case, this diagnosis was independently ascertained for meeting the DSM IV-TR criteria for ASD by a medically qualified professional (i.e., paediatrician, neurologist or psychiatrist). Parents in Group 1 had received a clinically confirmed diagnosis of ASD (i.e., Autism, AS, or PDD-NOS) conferred via DSM IV-TR (American Psychiatric Association, 2000) criteria by a registered psychologist, general practitioner or psychiatrist, independent of this research.

This study excluded families raising children with other developmental disorders such as Down syndrome or Fragile X Syndrome, even if the same child (or another child in the family) also had ASD. To reduce the risk that low intellectual functioning or significant learning or literacy delays would confound the results, only parents who had completed a full high school education (i.e., 12 years of formal schooling from Grades 1 through 12) were included in this study. In cases where both members of a particular couple volunteered, we ensured that only one respondent per couple was included in the present sample so as to maintain the statistical independence of all of the group comparisons. Twenty-five parents were excluded for this reason. Three couples where both parents had ASD were also excluded on the grounds that there were too few of these couples to permit statistical comparisons with other groups. Demographic details for each group are presented in Table 2.

Table 2
Sample characteristics ($N = 346$).

Variables		Group 1 ($n = 109$)	Group 2 ($n = 128$)	Group 3 ($n = 109$)	η^2
Age (yrs)	Mean	40.72	41.19	39.88	$< .001$
	SD/range	7.90/19–65	7.84/26–63	8.25/22–62	
Total no. of	Mean	2.01	2.14	2.19	$< .001$
Offspring	SD	1.16	1.32	1.11	
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Gender	Male	29	31	22	.06
	Female	80	97	87	
Ethnicity	Caucasian	90	96	85	.08
	Non caucasian	19	32	24	
Marital status	Married/cohabiting	88	93	87	.09
	Divorced/separated	21	35	22	
Education	High school only	55	73	56	.06
	Post secondary[a]	54	55	53	

[a] Included diploma, bachelor degree and above.

3.2. Measures

3.2.1. Traits of autism

The Autism Spectrum Quotient (AQ) (Baron-Cohen et al., 2001) is a 50-item self-report screening questionnaire consisting of five subscales, namely, *Social Skills*,*Attention Switching*, *Attention to Details*, *Communication*, and *Imagination*. The AQ has been validated in Australian samples (Lau, Kelly, & Peterson, 2013). Sample items from each subscale (respectively) include: "Other people frequently tell me what I have said is impolite, even though I think it is polite", "I am good at social chit-chat", "I prefer to do things over and over again", "I often notice small sounds when others do not", "I don't particularly enjoy reading fiction". The respondent rates to what extent s/he agrees or disagrees with each of the statements on a four-point scale, with answer categories "definitely agree", "slightly agree", "slightly disagree" and "definitely disagree". Every response that indicates an feature of autism is scored '1′ and otherwise '0′ leading to the total score of the AQ ranging from 0–50. A total score of 32 or more is indicative of a clinical diagnosis of autism (Baron-Cohen et al., 2001).

3.2.2. Parenting sense of efficacy

Parenting sense of efficacy denotes the belief that one will be able perform the role of parent successfully. Johnston and Mash (1989) devised the Parenting Sense of Competency (PSOC) questionnaire, which has two subscales: parenting sense of efficacy (PSOE) and parenting sense of satisfaction (PSOS). In the present study, only the first of these, the PSOE was used. This was because a previous study of a similar population (Lau & Peterson, 2011) showed no difference in parenting satisfaction between adults with and without a diagnosis of ASD. The PSOE subscale consists of eight items, including "My mother/father was better prepared to be a good mother/father than I am." All items are rated on a 6-point scale from 1 'strongly disagree" to 6 "strongly agree'. The range of subscale scores varies from eight (not confident at all in one's efficacy) to 48 (very confident). Rogers and Matthews (2004) previously validated this scale with a large Australian sample, and reported that the internal consistency according to Cronbach's test was good (alphas were .77 for mothers and .80 for fathers).

4. Results

Preliminary analyses were conducted to check the demographical match of the three groups. In general group effects were nonsignificant (see Table 2). There were no significant group differences in parent age, $F(2343) = 1.17$, $p = .312$, even when stratified by gender: $F(2343) = 1.42$, $p = .243$ for mothers; $F(2343) = 1.74$, $p = .182$ for fathers. There were also no significant differences between the three groups in their marital status [married/cohabiting versus separated/divorced; χ^2 (2, $N = 346$) = 2.71, $p = .26$], ethnicity [Caucasian versus non Caucasian; χ^2 (2, $N = 346$) = 2.0, $p = .37$], and highest education level completed by the parents [high school only versus post-secondary; χ^2 (2, $N = 346$) = 1.23, $p = .54$]. The category of post-secondary denoted those who had completed a diploma, bachelor degree or higher. The majority of our sample had one (24.1%), two (33.8%) or three (18.8%) children, and the average number of offspring across the three comparison groups were comparable, $F(2343) = .767$, $p = .465$. Among the parents of children with ASD, six from Group 1 (5.5%) had more than one child with ASD, as did five from Group 2 (3.9%). The average number of children in each family was 2.4 ($SD = 1.0$). There were no differences between groups on child's age (overall mean was 11 years of age, SD = 4). We did not exclude multiplex families from this study given they only comprised of a small percentage of the total sample and that both Group 1 and Group 2 had a similar number of cases.

The hypotheses were assessed using ANOVAs rather than regression modelling, because the core measure of autism (the AQ) is primarily used and validated as a screening measure (with a score of above 32 being indicative of an autism diagnosis). In Table 3 is presented the means and standard deviations for AQ and parenting efficacy scores, split by group and gender, and the correlations between AQ and parenting efficacy scores. To test the possible interactive influences between parental gender (male and female) and diagnostic group (Group 1, 2 and 3) on parental traits of autism and parenting efficacy, a $2_{(\text{gender})} \times 3_{(\text{group})}$ independent ANOVA was conducted (see Table 4), with effect sizes (Cohen's D) reported for statistically

Table 3
Mean and standard deviation of Autism Spectrum Quotient (AQ) and Parenting Sense of Efficacy(PSOE) scores among three groups ($N = 346$).

	Mean (SD)		
	Group 1	Group 2	Group 3
Males	$n = 29$	$n = 31$	$n = 22$
Total AQ	32.07(10.84)	25.32(9.96)	16.55(7.65)
Parenting efficacy (PE)	24.46(9.01)	31.40(8.49)	33.25(3.28)
Correlation AQ by PE	.22	−.26	−.09
Females	$n = 80$	$n = 97$	$n = 87$
Total AQ	30.98(11.87)	18.94(10.69)	14.46(9.50)
Parenting efficacy	31.07(9.15)	31.69(6.88)	33.11(6.46)
Correlation AQ by PE	.10	−.02	.14

Table 4
Main effects of group, gender and group by gender interaction among the three groups ($N = 346$).

	Main effect (F value) and effect size (partial eta squared)					
	Group		Gender		Group × Gender	
	$F_{(340)}$	Partial η^2	$F_{(340)}$	Partial η^2	$F_{(340)}$	Partial η^2
Total AQ	46.18***	.214	5.68*	.014	1.61	.011
Parenting efficacy	4.83**	.044	2.41	.011	2.44	.023

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

significant effects. Eta squared (η^2) estimates are also provided for main/interaction effects (small: $\eta^2 > .01$; medium: $\eta^2 > .06$; large: $\eta^2 > .14$; Fritz, Morris, & Richler, 2012).

On total AQ scores there was a significant main effect for ASD diagnosis, $F(2340) = 46.18$, $p < .001$, $\eta^2 = .214$. Tukey HSD tests of group differences indicated that total AQ score was highest in Group 1, followed by Group 2, then Group 3, with a significant level of $p < .001$ for each pairwise comparison. Effect size estimates were large for the difference between Group 1 and Group 2 (Cohen's $D = 1.03$), medium for Group 2 versus Group 3 (Cohen's $D = .53$), and large for Group 1 versus Group 3 (Cohen's $D = 1.56$). Male subjects scored significantly higher on the Total AQ than female subjects and the effect was medium in size, $F(1340) = 5.68$, $p = .018$ (Cohen's $D = .42$). The interaction of gender and group was non-significant, $F(2340) = 1.61$, $p = .20$. Although AQ scores are typically bifurcated at 32 for screening purposes, we examined correlations between AQ scores and parenting efficacy split by gender and group. These were nonsignificant (p values were .06 or greater), potentially reflecting the AQ's primary design and current usage as a screening tool as well as restricted variability of scores within each cell.

For parenting efficacy, a $2_{(gender)} \times 3_{(group)}$ analysis of variance yielded a significant main effects for diagnostic group, $F(2, 340) = 4.83$, $p = .03$, but not for gender, $F(1340) = 2.41$, $p = .13$. In relation to the group effect, post hoc Tukey HSD tests indicated that Group 1 had significantly lower parenting efficacy compared to Group 3 (Cohen's $D = .51$, $p = .02$), but there were no significant differences between Group 1 and Group 2 (Cohen's $D = .31$, $p = .08$). Differences between Groups 2 and 3 were nonsignificant (Cohen's $D = .20$, $p = .127$). There was a trend towards a significant interaction effect for group and gender ($p = .08$), and post hoc tests indicated that males in Group 1 had significantly lower parenting efficacy than males in the other two groups (this effect not present for females). For males, effect size estimates were large for the difference between Group 1 and Group 2 (Cohen's $D = .90$), small for Group 2 versus Group 3 (Cohen's $D = .24$), and large for Group 1 versus Group 3 (Cohen's $D = 1.14$).

5. Discussion

This study investigated the severity and patterns of manifestation of autism in parents of children with ASD and its association with their sense of efficacy as parents. The sample was large relative to other studies on parents of children with ASD. Comparisons were made among three groups: Group 1—ASD diagnosis in parents and in child; Group 2—ASD diagnosis in child only; and Group 3—no ASD diagnosis in the family. Results were partially consistent with Hypotheses 1 and 2. Parents in Group 1 had higher AQ scores than parents in Group 2, and parents in Group 2 had higher AQ scores than parents in Group 3. Males had higher AQ scores than females. In relation to Hypothesis 3, the data was partially consistent. Male parents in Group 1 had lower parenting efficacy scores than fathers in the other two groups, but there were no differences across groups for female parents.

Although the cross-sectional nature of the study precludes statements about causality, the results were consistent with the possibility that male and female parents with ASD have different experiences of parenting, and/or respond to the challenges of parenting differently. For example, fathers with ASD may have particular difficulty effectively managing parent-child conflict and children's emotional distress, or they may tend to avoid family conflict and make few attempts at resolution. A tendency for males in general to avoid rather than 'approach' family conflict and disagreement has been noted in the couple and family literature (Kelly & Halford, 1995; Kelly & Fincham, 1999), and the effect may be heightened when ASD-related difficulties in managing interpersonal communication are present. Also, children with ASD may withdraw or react more negatively and more strongly when conflict is high (Kelly, Garnett, Attwood, & Peterson, 2008), presenting greater challenges for parenting and further corroding parenting efficacy in fathers with ASD. If this is the case, fathers with ASD may benefit from parent training in evidence-based approaches to managing challenging child behaviors, including joint couple plans for managing conflict and clear and consistent parenting sequences, as well as training in the monitoring of outcomes to accurately gauge success (Kelly, Fincham, & Beach, 2003). Mothers in Group 3 did not have low parenting efficacy relative to other groups, despite being comparable in AQ scores to their male counterparts. Our experience is that mothers of children with ASD are often more accepting of the personal impact of ASD, are frequently highly active in pursuing resources and support for their child (Attwood, 2007), and more open to studying and developing their skills as parents (based on the couple/family literature, this is generally more characteristic of females than males even in non-clinic families). Mothers'

attention to detail, logical thinking, and persistence, combined with a tendency to approach rather than avoid family problems, may increase the chances of parenting successes and therefore build a stronger sense of parenting efficacy. Of course, further research is needed on couple/family dynamics among people with ASD, and the present results point to the value and need for future direct observational research of family interaction patterns to gain a richer picture of how families respond to distress and conflict.

Distinct strengths of this study are its focus on the unique challenges of parenting in families with ASD, its large sample size, and the recruitment of a good size group of female participants with ASD, which is comparatively rare in this research area. This study is limited by its predominant reliance on parent self-report on the AQ. Thus behavioral observation is a natural next step in expanding knowledge on parenting experiences and patterns in families affected by ASD. In addition, a considerable proportion of the parents of children with ASD in our sample were recruited through the databases of two private specialist clinics. The findings may not generalize to samples from other population groups such those of lower socioeconomic backgrounds. These latter families could conceivably experience even higher levels of stress, ASD severity, and family conflict. This could conceivably either exacerbate adverse influences of ASD on efficacy or, conversely could depress parenting efficacy irrespective of the parents' tendency towards autism. Further study of such population groups is therefore desirable. Nevertheless, the present findings serve as a useful first step not only towards greater understanding of how ASD characteristics in families may relate to parenting, and appropriate targets for parenting interventions in families where a parent and/or child has ASD.

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