



Maternal stress and family quality of life in response to raising a child with autism: From preschool to adolescence



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ABSTRACT

While the impact of raising a child with an Autism Spectrum Disorder (ASD) is well documented, with mothers reporting higher levels of stress than mothers of children with other disabilities, positive maternal outcomes have also been identified. What remains unclear, however, is the role of child age on maternal outcomes. We sought to clarify the role of child age in maternal stress and family quality of life (FQoL) in mothers raising a child with ASD. Participants included 140 mothers of children aged 3–16 years grouped to represent four key stages of childhood (preschool, early school years, middle school, early high school). Using a cross-sectional design, mothers completed questionnaires assessing potential risk (e.g., child problem behaviour, symptom severity) and protective (e.g., family characteristics) factors attributed to maternal outcomes. The results revealed significant age related group differences in child internalising behaviour and ASD symptomatology between the early and middle school years. Lower levels of adaptive social behaviour in older age groups were also found. Although mothers of older children reported significantly less support from professionals than mothers of younger children, no significant age effects were found to contribute to maternal reports of stress or FQoL. The current findings support the view that mothers appear to demonstrate stable levels of stress and FQoL despite fluctuations in key child variables and a reduction in supports, across age, highlighting the ongoing nature of maternal needs and heightened levels of child symptomatology during adolescence.

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1. Introduction

Due to the complex and heterogeneous nature of Autism Spectrum Disorder (ASD) and the associated difficulties in diagnosis, treatment and support, research has focused on the experience of raising a child with ASD on maternal outcomes.

Mothers raising children with ASD report poorer wellbeing and greater stress than mothers of children with other disorders and typically developing children (e.g., Abbeduto et al., 2004; Blacher & McIntyre, 2006; Eisenhower, Baker, & Blacher, 2005; Estes et al., 2009; Quintero & McIntyre, 2010). However, research has also identified characteristics of resilience and wellbeing in mothers, such as satisfaction with their family quality of life (FQoL; Pozo, Sarría, & Brioso, 2014). A deeper understanding of child and family factors that mitigate risk, and those that promote resilience, is needed to drive the development of evidence-based supports and services for these families.

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1.1. Child factors

Research has highlighted the important role of syndrome-specific stressors, such as symptom severity and adaptive functioning, on negative outcomes in mothers of children with ASD (Ekas & Whitman, 2010; Hall & Graff, 2011; Hayes & Watson, 2013; Lyons, Leon, Phelps, & Dunleavy, 2010; Zablotsky, Anderson, & Law, 2012). However, the biggest impact on maternal stress and wellbeing appears to be the manifestation of problem behaviours, such as aggression, withdrawal, impulsivity, and attention problems (e.g., Lecavalier, Leone, & Wiltz, 2006; Manning, Wainwright, & Bennett, 2011; McStay, Dissanayake, Scheeren, Koot, & Begeer, 2013; Peters-Scheffer, Didden, & Korzilius, 2012). While child characteristics affect the experience of mothers raising children with ASD, they change as children grow (e.g., Eisenhower et al., 2005; McGovern & Sigman, 2005; Shattuck et al., 2007). Thus, the relationship between child age and maternal stress requires further consideration.

There is consistent evidence to suggest a decline in problematic behaviour as children with ASD age (e.g., Eisenhower et al., 2005). Such behaviour problems have been suggested to stabilise between childhood and adolescence (Chadwick, Cuddy, Kusel, & Taylor, 2005) before further improvement in adolescence and young adulthood (Lounds, Seltzer, Greenberg, & Shattuck, 2007; Taylor & Seltzer, 2010). However, ongoing high rates of behavioural and emotional concerns are evident in adult participants (Gray et al., 2012). There is also evidence that core ASD symptoms (i.e., repetitive behaviours and interests, social and communication impairments) may reduce as children age (Shattuck et al., 2007). These findings are consistent with research that has examined changes in adaptive behaviour over time (e.g., Anderson, Oti, Lord, & Welch, 2009; Baghdadli et al., 2012; McGovern & Sigman, 2005), suggesting that children with ASD display reduced levels of impairment in social interactions, daily living skills, and communication as they grow.

Collectively, these studies suggest evolving symptomatology at different time points. However, due to the use of different populations, at different ages, in different countries, with different educational systems, at different times, it is unclear whether similar outcomes are evident in children of different ages within one cross-sectional cohort. Such investigations would help validate previous findings and increase our understanding about patterns of development across children of different ages in one geographical area. Furthermore, future studies need to address the impact of family factors and their subsequent development over time.

1.2. Family factors

A number of internal and external family resources have been suggested to act as protective factors in mothers raising children with ASD, decreasing vulnerability to negative outcomes. These resources include the family environment (i.e., the expression of thoughts, feelings, and support within the family unit); family hardiness (i.e., the strength of the family unit, commitment, and sense of control); level of marital support; perception of social support; sense of coherence (i.e., seeing life as meaningful, ordered, and able to be managed); and the range of coping strategies mother's employ to cope with identified stressors.

Evidence suggests that these resources may buffer against the impact of stressors, lowering levels of distress, depression, negative affect, and general stress in mothers of children with ASD (Altiere & von Kluge, 2009; Benson & Karlof, 2009; Benson & Kersh, 2011; Greeff & van der Walt, 2010; Manning et al., 2011; Siman-Tov & Kaniel, 2011). Research examining the impact of these factors may help clinicians recommend strategies that are most fitting with, and appropriate to, the individual circumstances of each family.

Only two family resources have been tracked across child development in an attempt to capture changes in protective factors available to mothers raising children with ASD. These studies have highlighted adolescence as a period in which mothers report higher levels of support (Tehee, Honan, & Hevey, 2009) and engage in greater use of disengagement (detachment from stressors) to cope with raising a child with ASD (Smith, Seltzer, Tager-Flusberg, Greenberg, & Carter, 2008). While such research advances our understanding of the potential impact of changes in support and coping over time, it is unclear whether such findings are unique to a particular geographical area or representative of the services and supports provided to parents of children with ASD more broadly. In addition, possible changes in the family environment and marital relationship as children with ASD age remain unknown.

1.3. Maternal outcomes

The fluctuations in identified child and family factors highlight the importance of taking a developmental approach to the assessment of positive and negative outcomes for mothers of children with ASD (Karst & Van Hecke, 2012). Some evidence suggests that maternal stress may change over time with mothers of older children reporting lower stress levels (e.g., Barker et al., 2011; Gray, 2002; Lounds et al., 2007; Osborne & Reed, 2009) while other studies report no age-related effects (e.g., Lecavalier et al., 2006; Manning et al., 2011; Peters-Scheffer et al., 2012). However, these studies tend to be conducted within a relatively short time frame (e.g., 2 years); focus on specific stages of development (e.g., preschoolers and school-age children, Hastings et al., 2005); or combine children within a wide age range (e.g., 2–18 years of age), limiting the specificity of study findings. In addition, limited research exists regarding the development of positive outcomes, such as maternal wellbeing, over time.

1.4. The current study

Due to the necessary time and cost in conducting longitudinal research, a preliminary cross-sectional study investigating possible changes in child and family variables over time was utilised to chart the wellbeing of mothers raising a child with ASD. As mothers are predominately the primary carer of children with special needs in Australia (Dillon-Wallace, McDonagh, & Fordham, 2013), we chose to focus on maternal experiences of raising a child with ASD. The first aim was to chart differences in child and family variables as reported by mothers of preschoolers, school aged children, and adolescents with ASD. We hypothesised that mothers of older children would report significantly lower levels of child problem behaviour and ASD symptomatology, and higher child adaptive functioning than mothers of younger children. We also hypothesised that mothers of older children would report significantly higher levels of social support and coping than mothers of younger age groups. The second study aim was to explore differences in both negative and positive maternal outcomes across the different developmental stages. We hypothesised that mothers of adolescent children would experience significantly lower levels of stress and report higher FQoL than mothers of preschoolers and school aged children with ASD.

2. Method

2.1. Participants

The participants were 140 mothers of Australian children and adolescents (122 boys; 18 girls) with a diagnosis of ASD. Children with ASD were aged between 3.10 and 16.60 years (mean age = 9.10 years; $SD = 3.73$; median = 8.36). The majority of mothers had completed tertiary (i.e., bachelor degree or postgraduate studies; 41.70%) or further education (34.10%), and worked as professionals (38.10%) or home carers (38.10%). The majority also reported that their partners had completed some secondary (42.80%) or tertiary (47.30%) education and worked as either professionals (50.00%) or as a tradesperson (18.00%). Eighty-three percent of participants were married or in a de facto relationship (i.e., lived with a partner with whom they were not married), 10.70% were single parents, and 6.40% were separated or divorced. Mothers were aged between 27.10 and 55.30 years (mean age = 42.00 years; $SD = 5.76$; median = 42.70), lived in the state of Victoria (93.60%), and were born in Australia (84.90%). Twenty-nine percent of mothers reported their family income as less than \$55,000 per year, 25.40% reported a family income of between \$55,000 and \$85,000 per year, and 45.80% reported an annual family income of greater than \$85,000. Eighty percent of mothers reported having multiple children, with 25.70% reporting having more than one child with a diagnosis of ASD.

Mothers were included in the current study if: (a) their child had a diagnosis of ASD (ASD, Autistic Disorder, Asperger's Disorder, Pervasive Developmental Disorder, Pervasive Developmental Disorder – Not Otherwise Specified); (b) their child was aged between 3 and 16 years of age; (c) their child was living in the family home; and (d) mothers spoke English.

All children had received a community-based diagnostic classification of ASD, as reported by mothers, prior to study entry. Child diagnosis was checked with the Social and Communication Questionnaire (SCQ; Rutter, Bailey, & Lord, 2003). All children received a score of 11 or above, indicating the likelihood of an ASD diagnosis (Allen, Silove, Williams, & Hutchins, 2007; Corsello et al., 2007). A cutoff score of 11 was used rather than the recommended score of 15 due to increased sensitivity and specificity found in previous research (.89 and .89, respectively; Wiggins, Bakeman, Adamson, & Robins, 2007). An additional 15.00% of mothers reported that their child had a co-morbid disorder (e.g., Intellectual Disability, Attention Deficit and Hyperactivity Disorder, Anxiety Disorder).

Participants were classified into four age groups which coincided with key life transitions: preschool (3–5 year-olds; $n = 34$), early school years (6–8 year-olds; $n = 39$), middle school years (9–12 year-olds; $n = 40$), and early high school years (13–16 year-olds; $n = 27$). As presented in Table 1, these four groups were similar on key child demographic variables. The only difference was in relation to child diagnosis with a larger percentage of children in their early school years receiving a diagnosis of Autistic Disorder than children in their early high school years (see Table 1). Child diagnosis was controlled in subsequent analyses of child variables. The four groups were also similar on key parent demographic variables including marital status, occupation, education, and family income (see Table 1).

2.2. Measures

Measures included in the current study to capture the relevant child and family variables are listed in Table 2 for brevity, and full details of scales and subscales assessed are presented in the Appendix.¹ Preliminary analyses were conducted with all variables screened for missing data and outliers. All variables met assumptions of normality, linearity, and homoscedasticity.

¹ Appendix available to be emailed upon request.

Table 1
Demographic characteristics stratified by age group.

Demographic characteristic	Preschool		Early school		Middle school		High school		χ^2	<i>p</i>
	%	<i>M</i> (<i>SD</i>)	%	<i>M</i> (<i>SD</i>)	%	<i>M</i> (<i>SD</i>)	%	<i>M</i> (<i>SD</i>)		
<i>Child</i>										
Age		4.58 (.92)		7.20 (.79)		10.99 (1.17)		14.63 (.94)		
Gender									6.28 ^a	.10
Male	82.40		97.40		80.00		88.90			
Female	17.60		2.60		20.00		11.10			
Diagnosis									18.65	.03
Autistic disorder	47.10		64.10		45.00		29.60			
ASD	26.50		17.90		12.50		11.10			
Asperger's disorder	20.60		12.80		35.00		55.60			
PDD-NOS	5.90		5.10		7.50		3.70			
Co-morbid disorder									1.21	.75
Yes	11.80		12.80		20.00		14.80			
No	88.20		87.20		80.00		85.20			
<i>Mothers</i>										
Age		38.06 (5.25)		39.97 (4.73)		44.26 (4.77)		46.64 (4.24)		
Education									13.58	.33
Completed some secondary	6.30		16.70		5.30		3.80			
Completed secondary education	12.50		16.70		18.40		15.40			
Completed diploma	21.90		30.60		36.80		50.00			
Completed bachelor degree	34.40		22.20		23.70		26.90			
Completed postgraduate studies	25.00		13.90		15.80		3.80			
Occupation									12.59	.63
Student/unemployed	11.80		7.90		12.50		.00			
Home duties	44.10		36.80		37.50		33.30			
Shop assistant/process worker	2.90		2.60		.00		3.70			
Clerical/sales	2.90		13.20		12.50		14.80			
Managerial	5.90		2.60		.00		.00			
Professional	32.40		36.80		37.50		48.10			
<i>Fathers</i>										
Age		41.37 (5.16)		42.19 (4.88)		45.57 (5.83)		49.52 (5.08)		
Education									11.83	.69
Completed some secondary	12.90		17.20		27.60		34.80			
Completed secondary education	32.30		31.00		31.00		26.00			
Completed diploma	19.40		13.80		13.80		21.70			
Completed bachelor degree	22.60		27.60		10.30		17.40			
Completed postgraduate studies	12.90		10.30		17.20		.00			
Occupation									26.08	.20
Student/unemployed	.00		12.50		5.90		.00			
Home duties	6.10		.00		2.90		4.30			
Shop assistant/process worker	9.10		15.60		8.80		13.00			
Tradesperson	27.30		6.30		23.50		13.00			
Clerical/sales	6.10		3.10		.00		13.00			
Managerial	9.10		9.40		5.90		4.30			
Professional	42.40		53.10		52.90		52.20			
<i>Family</i>										
Primary carer									1.94	.59
Mothers	94.10		94.90		97.50		100.00			
Fathers	5.90		5.10		2.50		.00			
Marital status									9.63	.65
Married	79.40		84.60		72.50		74.10			
Single	5.90		12.80		10.00		14.80			
Divorced	2.90		.00		.00		3.70			
Defacto	5.90		.00		10.00		3.70			
Separated	5.90		2.60		7.50		3.70			
Income									29.17	.35
<\$25,000	.00		5.10		10.30		3.70			
\$25,000–\$40,000	14.70		15.40		5.10		3.70			
\$40,000–\$55,000	14.70		7.70		5.10		11.10			
\$55,000–\$70,000	5.90		17.90		12.80		14.80			
\$70,000–\$85,000	14.70		5.10		10.30		3.70			
\$85,000–\$100,000	5.90		7.70		7.70		7.40			
\$100,000–\$115,000	8.80		7.70		15.40		3.70			
\$115,000–\$130,000	8.80		2.60		7.70		.00			
>\$130,000	17.60		15.40		17.90		18.50			
Not answered	8.80		15.40		7.70		33.30			

Table 1 (Continued)

Demographic characteristic	Preschool		Early school		Middle school		High school		χ^2	<i>p</i>
	%	<i>M</i> (<i>SD</i>)	%	<i>M</i> (<i>SD</i>)	%	<i>M</i> (<i>SD</i>)	%	<i>M</i> (<i>SD</i>)		
Born in Australia									.97	.81
Yes	82.40		89.50		82.50		85.20			
No	17.60		10.80		17.50		14.80			
Live in Victoria									10.34	.80
Yes	94.20		94.80		92.50		92.60			
No	5.80		5.20		7.50		7.40			
Number of children									2.89	.41
1	18.20		13.20		26.30		19.20			
2	45.50		42.10		47.40		38.50			
3	24.20		36.80		23.70		30.80			
>3	12.10		7.90		2.60		11.50			
More than one child with ASD									2.89	.41
Yes	18.50		21.20		28.60		38.10			
No	81.50		78.80		71.40		61.90			

^a Chi square analyses were used to determine significant age-related group differences in key demographic variables. Due to minimum expected cell frequency in some analyses, results should be interpreted with caution.

Table 2
Child and family measures.

Measure	Author	Subscales/total	α
<i>Child variables</i>			
Behaviour problems			
Behaviour Assessment System for Children, Second Edition (BASC-2) ^a	Reynolds and Kamphaus (2004)	Externalising behaviour ^S Internalising behaviour ^S	– –
Autism severity			
Social Communication Questionnaire (SCQ)	Rutter et al. (2003)	Total score ^R	.81
Adaptive behaviour			
Vineland Adaptive Behaviour Scales, Second Edition (VABS-II) ^a	Sparrow, Balla, and Cicchetti (1984)	Socialisation ^S Communication ^S Daily Living ^S	– – –
<i>Family variables</i>			
Family hardiness			
Family Hardiness Index (FHI)	McCubbin, McCubbin, and Thompson (1996)	Commitment ^R Challenge ^R Control ^R	.79 .79 .31 ^b
Family environment			
Family Environment Scale (FES)	Moos and Moos (1986)	Cohesion ^S Expression ^S Conflict ^S	.76 .61 .75
Marital adjustment			
Dyadic Adjustment Scale (DAS) ^a	Spanier (1976)	Total score ^S	–
Social support			
Family Support Scale (FSS)	Dunst, Jenkin, and Trivette (1984)	Informal support ^R Formal support ^R	.75 .61
Family sense of coherence			
Sense of Family Coherence Scale (FSOC)	Sagy (1998)	Total score ^R	.93
Coping			
Family Crisis Oriented Personal Evaluations Scales (F-COPES)	McCubbin, Olson, and Larsen (1981)	Total score ^R	.83
<i>Maternal variables</i>			
Parenting stress			
Parenting Stress Index-Short Form (PSI-SF)	Abidin (1995)	Parental distress ^R	.87
Family quality of life			
Family Quality of Life Survey (FQOL)	Hoffman, Marquis, Poston, Summer, and Turnbull (2006)	Total score ^R	.93

α , Cronbach's alpha; R, raw score; S, standardised score.

^a Cronbach's alphas could not be calculated due to computer entry of participant scores.

^b Due to inaccurate interpretation by participants of reverse scored items this subscale was excluded from subsequent analyses and from the total score of the FHI.

2.3. Procedure

Following their informed consent, mothers completed a questionnaire package mailed to them, including demographic questions regarding parent's ethnicity, education and occupation as well as parent and child age, and family income. The majority of mothers (67.90%) were recruited through the participant registry of Researchers initially invited 216 families to participate in study with the 133 (61.57%) agreeing to being sent the questionnaire package. Ninety-five participants returned their questionnaires (71.43%) and were included in subsequent analyses. The remaining participants were recruited through ASD specific service providers (6.40%), and Internet websites and media for ASD specific organisations and support groups across Australia (25.70%). Of the initial 67 participants who contacted researchers about the study and were sent questionnaire packages, 45 returned their questionnaires (67.16%) and were included in subsequent analyses. Source of recruitment did not differ in relation to maternal stress, $F_{(4,139)} = 1.05$, $p = .38$, partial eta squared = .03; FQoL, $F_{(4,138)} = .48$, $p = .75$, partial eta squared = .01; or family income,² $\chi^2 = 30.82$, $df = 36$, $p = .71$.

3. Results

Having more than one child with a disability, such as ASD, has been shown to impact stress in parents (Bernier, Gerdt, Munson, Dawson, & Estes, 2012; Estes et al., 2009). As a number of participants had more than one child with ASD in the current study, preliminary analyses were conducted to determine any differences between mothers with one child with ASD and those with multiple children with ASD. As no significant differences were found between groups on maternal stress, $F_{(1,108)} = 1.09$, $p = .30$, partial eta squared = .01, or FQoL, $F_{(1,108)} = .48$, $p = .49$, partial eta squared = .00, the entire sample of participants was included in subsequent analyses.

3.1. Child variables

Between-groups ANCOVAs/MANCOVAs were conducted to investigate the effect of child age on the relevant child variables, controlling for child diagnosis where appropriate. The results indicated a significant group difference on child internalising behaviour as reported by mothers, $F_{(3,136)} = 6.32$, $p < .001$, partial eta squared = .13, with a significant effect of the child diagnosis covariate, $F_{(1,136)} = 10.05$, $p < .01$, partial eta squared = .07 (see Fig. 1). Post hoc comparisons using Bonferroni tests indicated that the mean score for internalising behaviour in middle school-age children was significantly higher than the mean score for internalising behaviour in preschool children ($p < .01$), early school-age children ($p < .001$), and early high school children ($p < .05$). Thus, mothers of middle school-age children were found to report greater levels of anxiety, depression, and somatisation in their children than other age groups. No other differences were found.

Significant group differences were found on child ASD severity scores as reported by mothers, $F_{(3,136)} = 6.67$, $p < .001$, partial eta squared = .13, with an increase in severity apparent with increasing age (see Fig. 2). A significant effect was also found with the child diagnosis covariate, $F_{(1,136)} = 6.54$, $p = .01$, partial eta squared = .05. Post hoc comparisons indicated that the mean ASD severity scores for preschool children were significantly lower than the mean ASD severity scores for middle school-age children ($p = .01$) and early high school children ($p = .02$). Thus, mothers of older children reported greater deficits in their children's social interaction, communication, and repetitive behaviours and interests, than mothers of younger children.

Significant group differences were also found on the Vineland Socialisation scores, $F_{(3,133)} = 7.83$, $p < .001$, partial eta squared = .16, which decreased with age (see Fig. 3). A significant effect of the child diagnosis covariate was found, $F_{(1,133)} = 4.26$, $p = .04$, partial eta squared = .03. Post hoc comparisons indicated that the mean scores for adaptive social ability in preschool children and early school-age children were significantly higher than the mean scores in middle school-age children ($p = .03$ and $p = .04$, respectively) and early high school children ($p < .01$). Mothers of older children reported that their child demonstrated greater deficits in their interaction with others, ability to play in an age appropriate manner, and ability to demonstrate sensitivity and responsibility in social interactions, than children in younger age groups. No significant group differences were evident for maternal report on other child variables across age groups (see Table 3).

3.2. Family variables

Between-groups ANOVAs/MANOVAs were conducted to investigate the effect of child age on family variables. Significant group differences were found for formal support scores, $F_{(3,140)} = 4.44$, $p = .01$, partial eta squared = .09 (see Fig. 4) with the amount of formal support available decreasing with child age. Post hoc comparisons indicated that the mean scores for formal support in the preschool group and early school-age group were significantly higher than the mean score for formal support in the early high school age group ($p = .01$ and $p = .02$ respectively). Mothers of

² Due to violation of the assumption of minimum expected cell frequency, results should be interpreted with caution.

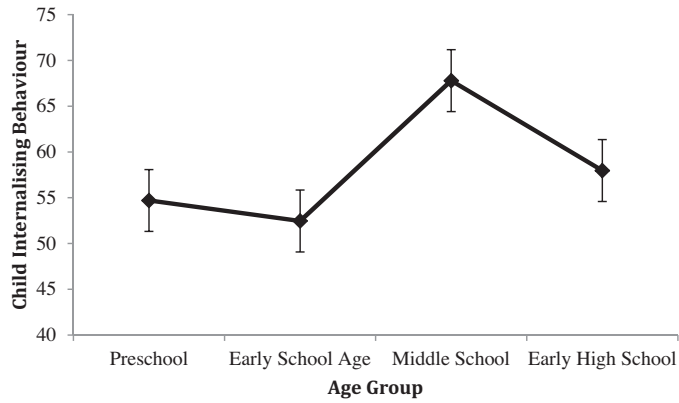


Fig. 1. Standardised child internalising behaviours composite scores across age groups. Error bars represent standard errors.

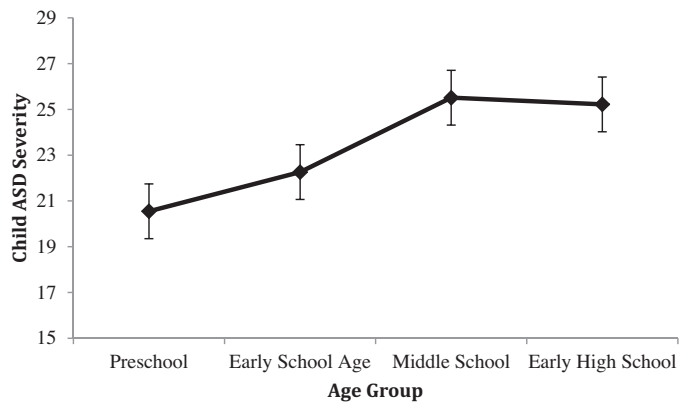


Fig. 2. Child Social Communication Questionnaire raw scores across age groups. Error bars represent standard errors.

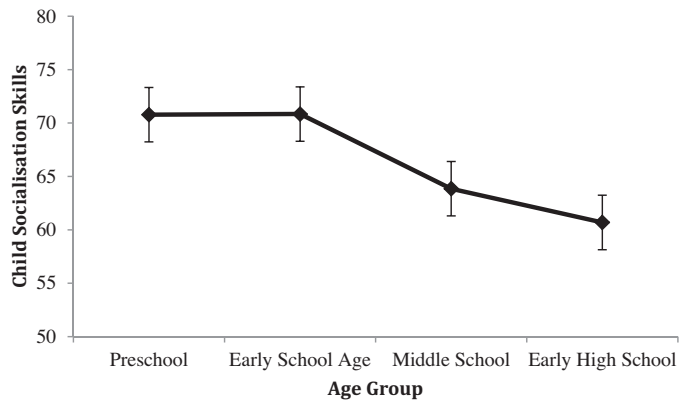


Fig. 3. Standardised child Vineland socialisation domain scores across age groups. Error bars represent standard errors.

older children reported less support from professionals and organisations than mothers of younger children. No significant group differences were evident for maternal report on any other family variables across age groups (see Table 4).

3.3. Maternal stress and FQoL

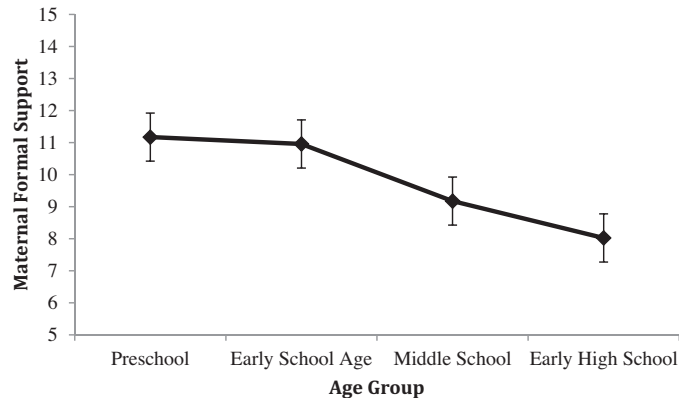
Two between-groups ANOVAs were conducted to examine the influence of child chronological age on maternal stress and FQoL (see Table 5). The results indicated no significant group differences on maternal stress, $F_{(3,136)} = 1.49, p = .22$, partial eta squared = .03, or FQoL, $F_{(3,135)} = .92, p = .43$, partial eta squared = .02.

Table 3

Descriptive statistics for maternal reports on child variables.

Measure	Preschool <i>M (SD)</i>	Early school <i>M (SD)</i>	Middle school <i>M (SD)</i>	High school <i>M (SD)</i>	<i>F</i>	Sig.	PES
BASC							
Externalising	61.27 (11.49)	58.54 (12.06)	61.44 (9.62)	59.52 (12.64)	.47	.70	.01
VABS							
Communication	68.52 (17.57)	75.16 (12.86)	68.87 (14.10)	73.76 (13.27)	1.87	.14	.04
Living	73.19 (15.96)	68.71 (13.44)	69.31 (14.12)	68.56 (12.63)	.96	.42	.02

PES, partial eta squared; BASC, Behaviour Assessment System for Children; VABS, Vineland Adaptive Behaviour Scale.

**Fig. 4.** Maternal formal support raw scores across age groups. Error bars represent standard errors.

Examination of maternal stress scores indicated that 58.80% of mothers of preschool age children, 46.20% of mothers of early school age children, 50.00% of mothers of middle school children, and 33.30% of mothers of early high school age children reported clinically significant levels of parental stress (scores greater than or equal to 36; Kayfitz, Gragg, & Orr, 2010). However, no significant age effects were found on clinical stress levels, $\chi^2 = 4.04$, $df = 3$, $p = .26$.

Examination of maternal FQoL scores indicated that 17.60% of mothers of preschool age children, 41.00% of mothers of early school age children, 17.90% of mothers of middle school children, and 37.00% of mothers of early high school age children reported high satisfaction with their FQoL (scores greater than 4; Eskow, Pineles, & Summers, 2011). Significant age effects were found between high FQoL ratings, $\chi^2 = 8.13$, $df = 3$, $p = .04$.

4. Discussion

The current study examined differences in child and family risk and protective variables as well as maternal stress and FQoL in mothers of preschool, early school age, middle school, and early adolescent children with ASD. The hypothesis that

Table 4

Descriptive statistics for maternal reports on family variables.

Measure	Preschool <i>M (SD)</i>	Early school <i>M (SD)</i>	Middle school <i>M (SD)</i>	High school <i>M (SD)</i>	<i>F</i>	Sig.	PES
FHI							
Commitment	17.68 (3.34)	18.99 (3.77)	18.63 (4.21)	18.90 (3.71)	.90	.44	.02
Challenge	10.50 (3.37)	12.13 (3.36)	11.68 (3.41)	11.93 (2.99)	1.67	.18	.04
FES							
Cohesion	51.67 (12.60)	52.63 (14.12)	53.76 (12.23)	48.46 (16.35)	.77	.51	.02
Expression	48.85 (12.01)	50.80 (13.39)	51.81 (12.97)	52.25 (13.25)	.43	.73	.01
Conflict	54.91 (13.44)	55.83 (15.30)	53.05 (12.64)	58.08 (15.57)	.64	.88	.02
FSS							
Informal	24.61 (7.08)	27.40 (7.56)	25.09 (11.57)	24.96 (9.60)	.72	.54	.02
DAS	44.00 (9.44)	45.84 (12.69)	46.92 (11.11)	42.73 (10.85)	.81	.49	.02
FSOC	55.55 (10.93)	58.13 (12.21)	55.23 (12.81)	57.15 (10.18)	.51	.68	.01
F-COPES	98.57 (13.08)	97.04 (16.42)	97.24 (12.98)	100.48 (15.25)	.38	.77	.01

PES, partial eta squared; FHI, Family Hardiness Index; FES, Family Environment Scale; FSS, Family Support Scale; DAS, Dyadic Adjustment Scale; FSOC, Family Sense of Coherence Scale; F-COPES: Family Crisis Oriented Personal Evaluations Scale.

Table 5
Descriptive statistics for maternal stress and FQoL.

Child age	Stress	FQoL
Preschool	36.38 (9.39)	3.60 (.46)
Early school age	34.33 (9.32)	3.79 (.71)
Middle school	35.70 (9.96)	3.57 (.63)
Early high school	31.70 (7.92)	3.66 (.64)

FQoL, family quality of life.

mothers of older children would report significantly lower levels of child problem behaviour and ASD symptomatology, and higher levels of adaptive functioning than mothers of younger children was not supported. Contrary to predictions, mothers of middle school-age children reported higher levels of child internalising behaviour problems than preschool and early school-age children. Mothers of middle school-age children and adolescents also reported higher levels of ASD symptomatology than younger children, in addition to poorer adaptive social abilities.

The hypothesis that mothers of older children would report significantly higher levels of social support and coping than mothers of younger children was not supported. Mothers of middle school-age and adolescent children with ASD reported significantly lower levels of formal support than mothers of preschool and early school-age children. Significant differences were not found between age groups on measures of informal support or coping strategies employed.

The final hypothesis that mothers of adolescent children with ASD would experience significantly lower levels of stress and higher levels of FQoL than mothers of preschoolers and children with ASD was also not supported. While no significant difference was found in maternal reports of stress or FQoL between the four age groups, the percentage of mothers who reported high levels of satisfaction with their FQoL was found to fluctuate between groups.

4.1. Child characteristics

The findings from the current study confirm the importance of early adolescence in the development of internalising behaviour problems in children with ASD, and is consistent with previous research (e.g., Anderson, Maye, & Lord, 2011; Bauminger, Solomon, & Rogers, 2010). While the levels of externalising behaviour were found to be equivalent between groups, there appears to be a specific point in development where children with ASD demonstrate heightened symptoms of withdrawal, depression, and anxiety. Children at this age also show more severe ASD symptoms and poorer adaptive functioning relative to their chronological age, as reported by their mothers. These findings contrast with previous longitudinal findings of a decrease in ASD symptoms and an increase in adaptive behaviours over time (e.g., Anderson et al., 2009; Baghdadli et al., 2012; McGovern & Sigman, 2005; Osborne & Reed, 2009; Shattuck et al., 2007; Taylor & Seltzer, 2010). The current findings highlight the difficulty in generalising developmental trajectories across the ASD spectrum due to the strong heterogeneity of ASD symptomatology and associated concerns.

In the current study, it is possible that an increase in external stressors as children transition from primary to secondary education may result in exacerbating ASD symptom severity. These reports of higher ASD symptomatology in the older participants also coincided with higher levels of internalising behaviours and in particular, poorer adaptive social abilities (associated with social deficits seen in ASD). These findings suggest that social deficits may become more apparent in middle childhood and early adolescence as expectations for socialisation increase (Anderson et al., 2009). Alternatively, deficits in social interaction may be more persistent than other deficits seen in the ASD phenotype (Shattuck et al., 2007). Together, the current findings add to current literature by indicating that different ASD symptoms may improve at different stages of child development, with the ages of 9–16 years being indicative of significant fluctuations in ASD features. Further investigation into the core symptoms of ASD across the developmental trajectory is warranted to extend these preliminary cross-sectional findings.

4.2. Family resources

This was the first study to chart family resources of hardiness, the marital relationship, and the family environment across specific time points in childhood. The findings add to the literature by highlighting the stability of intrinsic resources within the family unit. Compared to external resources, such as social support, aspects of the family were unaffected by child developmental stage. This suggests that characteristics of the family unit may be robust in nature, acting as a potential buffer against stressors, to support families during difficult times. However, longitudinal research is required to clarify these preliminary findings.

Unlike other resources examined, mothers reported fluctuating levels of perceived support available from professionals and organisations, with lower levels of formal support reported by mothers of older children with ASD. This outcome contrasts the findings of Tehee and colleagues (2009) and adds to the limited evidence of a skewed distribution of formal support services available to young children diagnosed with ASD in the US and UK with declining resources available for parents and children as they develop (Baghdadli et al., 2012; Shattuck, Wagner, Narendorf, Sterzing, & Hensley, 2011). Due to changes in parental needs as children age, parents of older children may struggle to attain useful support and information,

subsequently reporting lower levels of perceived support from professional services. While the current study is the first to explore these differences, investigation of actual versus perceived support received from professionals over time is another area requiring further investigation.

4.3. Maternal stress and FQoL

Despite significant differences in child and family factors across the age groups evident in the current study, no differences were found in reports of maternal stress. This study extends the findings of [Orr, Cameron, Dobson, and Day \(1993\)](#) and [Tehee et al. \(2009\)](#) by using larger samples of children with ASD to chart maternal stress across specific age groups. Mothers consistently reported high levels of stress, both overall and at clinically significant levels ([Kayfitz et al., 2010](#); [Manning et al., 2011](#)). Contrary to the findings from previous studies ([Barker et al., 2011](#); [Fitzgerald, Birkbeck, & Matthews, 2002](#); [Gray, 2002](#); [Konstantareas & Homatidis, 1989](#); [Lounds et al., 2007](#); [Orr et al., 1993](#); [Smith et al., 2008](#)), this current finding suggests that there is no particular developmental stage at which mothers report respite from the stress of raising a child with ASD. It is possible that the predicted reduction in stress across age groups was not seen due to the greater needs evident in the older children (i.e., higher levels of ASD symptomatology and lower adaptive behaviour in relation to younger cohorts and age-matched peers). Consequently, mothers reported ongoing difficulties with managing the amount of stress they experienced as a result of parenting factors. Longitudinal research is now needed to replicate these findings.

This was also the first study to explore maternal FQoL across childhood. While no differences were found between age groups in overall FQoL scores, the current study did find that mothers of early school-age children and adolescents reported significantly higher levels of satisfaction with their FQoL than mothers of preschool and middle school age children. These two low points in FQoL satisfaction ratings (preschool and middle school age) accord with the time around diagnosis and reports of greater internalising behaviour, ASD severity, social deficits, and less formal support found in the current study. However, despite high levels of difficulty reported by mothers of adolescent children, one third of mothers reported high satisfaction with their FQoL. This finding may demonstrate the variability in maternal experiences when raising children with ASD, emphasising the need for further research into positive parental outcomes.

The equivalent levels of overall stress and FQoL across ages may also be an outcome of similar reports of key child and family factors between age groups. For example, as already noted, child externalising behaviour is a variable found to consistently predict parent stress in both cross-sectional and longitudinal studies (e.g., [Eisenhower et al., 2005](#); [Hall & Graff, 2012](#); [Manning et al., 2011](#); [Peters-Scheffer et al., 2012](#)). Although preschool-age and middle school-age children scored in the 'at risk' range for externalising behaviour problems in the current study ([Reynolds & Kamphaus, 2004](#)), no significant age-related differences were found. As children were reported to exhibit consistent levels of hyperactivity, aggression, and conduct problems across the ages of 3–16 years, it is perhaps not surprising that mothers reported similar levels of stress and FQoL across these age groups. Additionally, mothers reported a comparable use of positive coping strategies, such as informal support and sense of coherence, across groups, supporting the view that stability in key child and family factors may have resulted in equivalent maternal outcomes.

It is possible that additional factors, outside the scope of this study (e.g., locus of control, self-efficacy, parent–child relationship) may have impacted on how mothers coped with changes in child ASD severity, internalising behaviour, and adaptive functioning across age groups. Further, the lack of significant differences in maternal stress and FQoL across the age groups may also be attributed to a high level of variability within the age groups for each dependent variable. Further (longitudinal) research is needed to replicate and extend these study findings.

4.4. Clinical relevance

Findings of significant increases in child-related stressors between middle school and the early high school years have important clinical relevance. These outcomes illustrate a difficult stage of development where children with ASD appear to exhibit an increase in internalising behaviour and ASD symptomatology, and a decrease in social skills. Consequently, the need for intervention and treatment services for children between the ages of 9–16 years is highlighted in order to support families (particularly mothers) in raising their child and through potentially difficult school transitions ([Taylor & Seltzer, 2011](#)). In addition, the ongoing provision of strategies for the successful management of externalising behaviour problems as children age is required, with evidence of 'at risk' levels of externalising behaviour continuing into late childhood in the current sample.

The consistency of maternal reports of stress and FQoL across child development is also noteworthy. These findings demonstrate the ongoing nature of parental needs. Thus, it is not just parents of younger children receiving a diagnosis of ASD and entering the school system who report high levels of stress and less satisfaction with their FQoL. Subsequently, the availability of supports for mothers raising children with ASD should be the same irrespective of child age and developmental status.

4.5. Study limitations

High variability was evident in mothers' reports of child and family variables, which may have limited finding significant differences between age groups. However, this highlights the diverse experience of mothers raising a child with ASD (who

themselves are largely heterogeneous regardless of their age). Another limitation is the self-reporting nature of the current study with mothers completing both reports of their child and family variables. It is possible that maternal stress may have impacted on their reports potentially confounding the reliability of the study results. In addition, self-recruitment may have introduced some systematic bias, with maternal stress levels being a potential confounding variable in their interest in and their capacity for participation in the current study. The focus on maternal data from predominately married families also limits the generalisability of findings to single-parent families and fathers raising children with ASD. Finally, due to the cross-sectional nature of the study it is not possible to determine causality in study findings, highlighting the need for prospective longitudinal studies of child and family outcomes.

5. Conclusion

This was the first study to address maternal FQoL across age groups, capturing the experiences of mothers of children across a broad age range. The findings from the current study replicated those of previous research, with reports of high levels of stress and lower FQoL in mothers raising children with ASD. The results highlight the requirement of continued support for mothers across age groups, demonstrating the fluid nature of maternal needs. Further research is required to explore experiences of stress and FQoL in both mothers and fathers of children with ASD, measuring associations between potential risk and protective factors within a conceptual model to predict family adaptation.

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