Clinical Psychologist

Clinical Psychologist **19** (2015) 39–48

Family functioning and behaviour problems in children with Autism Spectrum Disorders: The mediating role of parent mental health

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Key words
autism spectrum disorder, child problem behaviours, family functioning, parent mental health, parent stress.

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Received 27 May 2014; accepted 25 September 2014.

doi:10.1111/cp.12047

Abstract

Background: Parents of young children with Autism Spectrum Disorders (ASDs) are often relied on to help implement therapy with their child, which occurs within a family context. Therefore, it is important to understand and support families where there is a child with an ASD. Although individual parent factors have received substantial research attention, fewer studies have investigated family functioning. This study explored the relationship between child behaviour problems and family functioning in families where there was a preschooler with an ASD. Parent mental health difficulties, including stress, fatigue, and depressive symptoms, were investigated as mediators in this relationship.
Method: Participants included 97 parents with a preschooler diagnosed with an ASD. Parents completed an online questionnaire reporting on child behaviour problems, their own symptoms of stress, depression and fatigue, and family functioning.
Results: Path analysis showed that the relationship between child behaviour problems and family functioning was mediated by depressive symptoms, but not stress and fatigue.
Conclusions: These results highlighted one way that ASDs can impact on the family system, suggesting that when parents are overburdened by behaviour problems, there are implications for the family. The importance of providing clinical interventions and support to strengthen parent mental health and family functioning is discussed.

Key Points

1. Parents of children with Autism Spectrum Disorders (ASDs) are increasingly responsible for implementing early intervention to their children; therefore, assessing and supporting the family unit are of importance in clinical practice.
2. Children's behaviour problems are associated with depressive symptoms in parents, which can have flow-on negative effects to the family system, such as difficulty supporting one another and making decisions. Although child behaviour problems are associated with increased stress and fatigue in parents, these symptoms are less likely to affect family functioning.
3. Clinical interventions targeting the mental health, particularly depressive symptoms, of parents may increase their capacity to manage their children's behaviour and the impact it can have on the overall family system. This, in turn, is important for the family to meet the needs of their children.

Funding: None.
Conflict of interest: The authors declare there are no conflict of interests.

Raising a child with an Autism Spectrum Disorder (ASD) can be challenging for parents and families (Sikora et al., 2013). During the preschool years, parents play a key role in seeking assessments and diagnoses, selecting and coordinating treatment programmes, managing atypical behaviours, and working to improve their child's developmental and educational skills (Bloch & Weinstein, 2009; Estes et al., 2013). Therapy is often integrated in to home life due to financial and time constraints of parents, as well as the advantages of working with the child in a familiar setting (Reed & Osborne, 2014).

Family functioning refers to the extent to which families communicate effectively, manage daily life, and foster positive relationships (Zubrick, Williams, Silburn, & Vimpani, 2000). A well-functioning family system provides support for family members, and is associated with positive child and parent outcomes (Renzaho, Mellor, McCabe, & Powell, 2013). Evidence suggests that when there is a child with an ASD, family functioning is often affected in terms of greater strain on the family system; less participation in recreational activities (Myers, Mackintosh, & Goin-Kochel, 2009); and less flexibility and connectedness (Higgins, Bailey, & Pearce, 2005). Numerous qualitative studies have shown that family life comes to centre on the needs of the affected child (e.g., Hoogsteen & Woodgate, 2013; Myers et al., 2009).

Parents of children with an ASD tend to report less effective family functioning than parents of typically developing (TD) children (Higgins et al., 2005). This finding has been replicated across cultures in families of children with ASD or developmental delay (Gau et al., 2012; Manor-Binyamini, 2011). Family difficulties might be influenced by a number of individual, intra-familial, and social factors. For example, limited social support (Bromley, Hare, Davison, & Emerson, 2004; McConnell, Savage, & Breitkreuz, 2014), socio-economic status, individual wellbeing (Georgiades, Boyle, Jenkins, Sanford, & Lipman, 2008), children's behaviour problems, and difficulty coping (Khanna et al., 2011) are all factors that can make it difficult for families to function optimally. During the preschool years, families are often in crisis because their child's ASD diagnosis is recent and the challenges associated with the child's behaviour can be extreme during this period (White, McMorris, Weiss, & Lunsky, 2012). These behaviour problems are distressing for parents, which could contribute to family difficulties (Sikora et al., 2013).

Children's behaviour problems and family functioning

In addition to their core deficits, children on the Autism spectrum have a high incidence of emotional and behavioural problems, including being withdrawn, aggressive, destructive, and hyperactive (Maskey, Warnell, Parr, Le Couteur, & McConachie, 2013). They tend to show more severe behaviour problems than TD children. This difference has been found for preschool-aged children (Eisenhower, Baker, & Blacher, 2005) and toddlers (aged 18 to 30 months; Estes et al., 2013) based on parent report measures. These behaviours are often enduring, difficult to manage, and highly stressful for families (Hastings, 2002). In fact, challenging behaviours are generally more difficult for families to manage than the severity of ASD traits (Herring et al., 2006).

A number of researchers have investigated the association between behaviour problems in children with an ASD and family functioning (Herring et al., 2006; Khanna et al., 2011; Sikora et al., 2013). For example, Sikora et al. (2013) found that clinically significant externalising, but not internalising, behaviours were associated with poorer family functioning as rated by parents of children with an ASD. The authors proposed that managing externalising behaviours might lead to hypervigilance on the part of caregivers, exacerbating stressors and limiting the family's ability to function healthily (Sikora et al., 2013). This interpretation requires further empirical evaluation. A better understanding of the relationship between these child, parent, and family factors is needed to most effectively support children with an ASD in the context of a family system, particularly because these difficulties can be longstanding.

Longitudinal research by Herring et al. (2006) showed that behaviour problems in preschoolers with ASDs were associated with higher maternal stress and lower levels of family functioning. Parent ratings on these variables taken 1 year apart were moderately to strongly correlated, suggesting that difficulties were maintained over time rather than resolved. This difficulty adjusting during the preschool years highlights the need for better understanding and support (Karst & Van Hecke, 2012). There are several ways in which behaviour problems can impact on the family system, and one likely pathway is via the well-established negative effects of child behaviour problems on parent mental health (Hayes & Watson, 2013).

Parent mental health

Parents of children with ASDs report higher levels of stress than parents of TD children, or parents of children with other needs (see Hayes & Watson, 2013 for a review). These parents are also at increased risk for experiencing depression (Ingersoll & Hambrick, 2011), poorer quality of life (Khanna et al., 2011), and fatigue (Giallo, Wood, Jellett, & Porter, 2013). Although fatigue is a diagnostic feature of depression, research has shown

that fatigue and depression are distinct, but related, constructs (Giallo, Wade, Cooklin, & Rose, 2011). Studies have shown that behaviour problems predict stress (Estes et al., 2013) and fatigue (Seymour, Wood, Giallo, & Jellett, 2013) in parents of young children with ASDs. Behaviour problems are more strongly associated with parenting stress than autism symptomatology or adaptive skills (e.g., Jones, Totsika, Hastings, & Petalas, 2013; McStay, Dissanayake, Scheeren, Koot, & Begeer, 2014).

Studies have also demonstrated a relationship between parent mental health and poor family functioning in families where there is a child or young adult with an ASD (Baker, Seltzer, & Greenberg, 2011; Khanna et al., 2011). Less is known about this in the preschool years. Furthermore, parent mental health difficulties are often conceptualised as an outcome of poor family functioning (e.g., Baker et al., 2011; Renzaho et al., 2013). It is also likely that bidirectional effects are evident whereby child and parent factors influence family functioning. No known studies have linked these experiences together in a child-driven model in families of preschoolers with an ASD.

Transactional models of child development

Sameroff (1975) proposed a transactional model that outlined the reciprocal influences that occur between children and their environments over time. Child development is described as a process occurring through continual transactions between children and their environments (Sameroff, 2009). In infancy and the preschool years, parents and families are highly influential, as the child spends the most time in the family home interacting with parents (Sameroff & Fiese, 2000).

The transactional approach has been applied to families of children with developmental disabilities (Hastings, 2002). Hastings (2002) proposed that challenging behaviours influence parents' stress levels, which in turn affects parenting behaviour. This can then serve to maintain and escalate the child's behaviour problems. Other factors were acknowledged as contributing to this cycle, including parents' beliefs about parenting and their child's behaviour, coping strategies, and resilience (Hastings, 2002). It is also likely that when parent mental health is compromised by managing difficult behaviours, the family system is impacted on. The family system might then function less effectively, resulting in a reduced capacity to provide structure and support to family members, and meet the needs of a child with an ASD.

The present study

Although a number of studies have investigated the impact of children's behaviour problems on either parent mental health or family functioning, further work is needed to integrate these areas. Clarifying the processes that occur in these families during a critical window for development and intervention (i.e., the preschool years) is likely to assist with informing treatment so as to improve outcomes for children and their parents. This approach also reflects an ongoing push to include the family system in the assessment and treatment of ASDs (Baker et al., 2011; Karst & Van Hecke, 2012).

While previous research has shown that behaviour problems in children with an ASD can impact on the mental health of parents, less is known about the implications for family functioning. Building on transactional models of child development (Hastings, 2002; Sameroff, 1975), the aim of this study was to investigate the relationship between child behaviour problems and family functioning, and examine pathways via parent mental health. The study focused specifically on parents of preschool-aged children with an ASD because of the unique challenges associated with this developmental stage. Fatigue was included as an important indicator of parent mental health, in line with recent research showing its salience in this population (Giallo et al., 2013; Seymour et al., 2013). It was hypothesised that children's behaviour problems would be associated with increased parent mental health difficulties (as defined by symptoms of stress, depression, and fatigue), and these in turn would be associated with less effective family functioning.

Method

Participants

Participants were 97 parents of children (aged 16–71 months) diagnosed with an ASD. Sample demographic characteristics are displayed in Table 1.

Participants were excluded if their child was outside the age range of interest ($n = 3$). The majority of parents were female, tertiary educated, Australian born, heading a two-parent household, and had just one child diagnosed with an ASD. The majority of *focus children* were male and diagnosed with Autism. As the survey was primarily conducted online, response rates could not be determined.

Measures

Demographic and family background questionnaire. Information about family composition, language spoken at home, educational attainment, employment status, and household income was collected. Information about the

Table 1 Demographic characteristics of the sample

Variable	Parents (*N* = 97)
Parent characteristics	
Age (*M*, *SD*)	36.08 (5.51)
Gender	
Female	88 (90.7%)
Male	9 (9.3%)
Family type	
Couple	87 (89.7%)
Single-parent family	10 (10.3%)
Country of birth	
Australia	76 (78.4%)
Other	21 (21.6%)
Language spoken	
English only	96 (99%)
Bilingual	1 (1%)
Aboriginal or Torres-Strait Islander	2 (2.1%)
Employment status	
Full-time	18 (18.6%)
Part-time or casual	37 (38.1%)
Not in paid employment	42 (43.3%)
Highest level of education completed	
Some high school	8 (8.2%)
Completed high school	13 (13.4%)
TAFE, trade certificate or diploma	22 (22.7%)
Tertiary (degree or postgraduate)	54 (55.7%)
Number of children in the family (*M*, *SD*)	2.25 (1.02)
Number of children with ASD	
One	80 (82.5%)
Two	15 (15.5%)
Three or more	2 (2%)
Focus child characteristics	
Age in years	4.29 (1.05)
Gender	
Male	82 (84.5%)
Female	15 (15.5%)
Diagnosis	
Autism (low functioning)	16 (16.5%)
Autism (high functioning)	35 (36.1%)
Asperger's disorder	12 (12.4%)
Pervasive developmental disorder NOS	16 (16.5%)
Other (e.g., ASD)	18 (18.5%)
Age of diagnosis (in years; *M*, *SD*)	3.14 (1.10)
Hours per week at childcare or kinder (*M*, *SD*)	16.47 (10.23)
Intervention accessed	
Speech therapy	69 (71.1%)
Applied behaviour analysis (ABA) therapy	25 (25.8%)
Occupational therapy	24 (24.7%)
Respite care	10 (10.3%)

ASD, autism spectrum disorder; *M*, mean; *SD*, standard deviation; TAFE, technical and further education.

child with ASD, including gender, age, diagnosis, age at diagnosis, and types/hours of intervention in a typical week, was also collected.

Developmental Behaviour Checklist – Parent Short Form (DBC-P24; Taffe et al., 2007) provides a brief (24 items) assessment of emotional and behaviour problems in children with intellectual and developmental disabilities. Items are rated on a 3-point scale (0 = *not true as far as you know*; 2 = *very true or often true*). A mean behaviour problem score is computed, reflecting the Total Behaviour Problem Score from the original measure, with scores above 0.48 indicative of psychopathology (Taffe et al., 2007). This short form has been evaluated as an appropriate tool to estimate problem behaviours in a research setting (Taffe et al., 2007). Cronbach's α for the present sample was .84.

Depression, Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995) is a commonly used measure of negative emotional states. The stress and depression subscales (7 items each) were used for the purpose of this study. The stress subscale assesses non-specific arousal, including agitation, irritability, impatience, nervousness, and difficulty relaxing. The depression subscale assesses dysphoria, hopelessnesses, anhedonia, and self-contempt. Items are rated on a 4-point scale, ranging from 0 = *did not apply to me at all* to 3 = *applied to me very much, or most of the time*. Scores are summed and multiplied by two to approximate the original 42-item version. Cronbach's α for the present sample were .83 and .88 for the stress and depression subscales, respectively.

An adapted version of the *Fatigue Assessment Scale* (Michielsen, De Vries, & Van Heck, 2003) was used in the present study. The adapted version uses five items rather than the full 10 items, based on the outcome of a confirmatory factor analysis with a large sample of mothers of children aged 5 years or younger (Giallo, Wade, & Kienhuis, 2014). The five items are proposed to more accurately reflect the experience of fatigue among parents of young children. These items are rated on a 5-point scale, where 1 = *never* and 5 = *always*, with higher scores reflecting higher levels of fatigue. Cronbach's α for the present sample was .86.

Family Assessment Device – General Functioning Scale (FAD-GF; Epstein, Baldwin, & Bishop, 1983) is a 12-item subscale from the FAD that assesses the overall level of family functioning. The FAD is based on the McMaster Model of Family Functioning where communication, problem solving, role clarity, behaviour control, affective responsiveness, and affective involvement are considered the essential components of family functioning (Miller, Ryan, Keitner, Bishop, & Epstein, 2000). The items (e.g., "Planning family activites is difficult because we misunderstand each other") from the FAD-GF reflect these key areas. The items are rated on a 4-point scale, ranging from 1 = *strongly agree* to 4 = *strongly disagree*. After reverse-scoring six items, scores are averaged, with higher scores representing less optimal functioning. The authors reported a high internal consistency for this

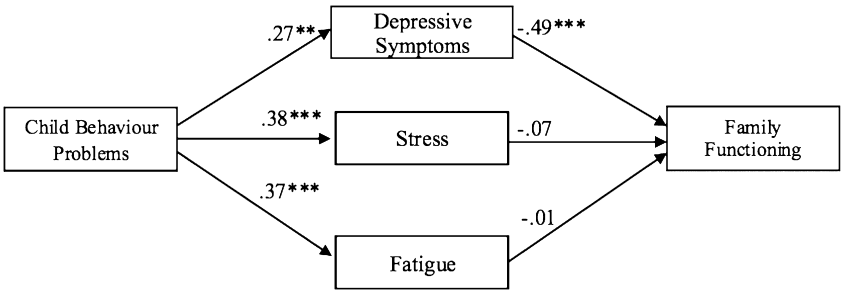

Figure 1 Standardised parameter estimates for the model of child behaviour problems, parent mental health, and family functioning. *Notes*: $^{**}p < .01$, $^{***}p < .001$; Residual variances between depressive symptoms, stress, and fatigue were correlated to account for salient interrelationships.

subscale of the FAD (Cronbach's $\alpha = .92$; Epstein et al., 1983). Cronbach's α for the present sample was .91.

Procedure

The study was approved by Swinburne University's Human Research Ethics Committee, Melbourne, Australia. ASD-related support groups and services across Australia were contacted to assist in advertising the study; approximately 40 groups assisted. Most parents completed the questionnaire online, but 10 were mailed a paper copy. Completing the questionnaire implied consent. Parents with more than one child with an ASD in the target age group ($n = 10$) were asked to select one child as their *focus child*.

Data analysis

Path analysis using Mplus Version 7.11 (Muthén & Muthén, 1998–2013) was conducted to test the hypothesised model (see Fig. 1), where parent mental health mediates the relationship between child behaviour difficulties and family functioning. This regression-based approach estimates the complex relationships between a set of independent, intermediate, and dependent variables simultaneously. This provides estimates of the direct effects of the relationships between the variables (e.g., child behaviour difficulties and parent mental health), along with indirect effects of the independent variables (e.g., child behaviour difficulties) on the dependent variables (e.g., family functioning) via the intermediate variables (e.g., stress, depression, and fatigue).

In the hypothesised model, the number of parameters to be estimated was 17, including correlations of the residual variances between depressive, stress, and fatigue symptoms to account for the interrelationships between the parent mental health variables. The sample size was adequate, adhering to the recommended ratio of five participants to every free parameter to be estimated (Tanaka, 1987). The estimation method used was maximum likelihood with robust standard errors (MLR) to account for non-normal multivariate data. Model fit was assessed using the chi-square test, and other practical fit indices including Tucker–Lewis index (TLI), the comparative fit index (CFI), and root mean square error of approximation (RMSEA). Indices for the TLI and CFI should exceed .90 for an acceptable fit, and values close to or below .05 for the RMSEA were considered acceptable (Hu & Bentler, 1999).

Results

Preliminary data analysis

Initial data screening showed that missing data were less than 5% and were missing at random (Little MCAR test, $p > .05$). The expectation-maximisation algorithm in PASW18 was used to impute missing values. Data from mothers ($n = 88$) and fathers ($n = 9$) were compared on each of the key variables. Fathers were found to report significantly less child behaviour problems ($F = 4.83$, $p < .05$, $\eta^2 = .05$) and significantly lower levels of fatigue ($F = 7.65$, $p < .05$; $\eta^2 = .13$) than mothers. The effect sizes associated with these differences were small, and so it was decided to include fathers in the final analysis. Furthermore, it has been suggested that despite differences in the magnitude of difficulty reported by mothers and fathers, similar overall patterns predict parental well-being across both genders (Jones et al., 2013). Given that none of the demographic variables were significantly associated with the variables in the hypothesised model, no model adjustments for demographic characteristics were made. Normality plots showed that data for the parent depression and family functioning measures were positively skewed. However, no data transformations were conducted as maximum likelihood estimation with robust standard error was used. Descriptive statistics for

Table 2 Means, standard deviations, and ranges for questionnaire measures

Scale	Parents (*N* = 97)			
	M	*SD*	Range	Skewness
DBC-P24	.86	.31	.17–1.71	.07
a-FAS	16.60	4.46	7–25	−.09
Stress subscale	19.75	8.32	2–38	.04
Depression subscale	11.75	8.68	0–38	.88
FAD-GF	2.11	.59	1–3.75	.46

Notes: DBC-P24, Developmental Behaviour Checklist – Parent Short Form; a-FAS, Adapted Fatigue Assessment Scale; FAD-GF, Family Assessment Device – General Functioning Scale; *M*, mean; *SD*, standard deviation.

the study variables are displayed in Table 2, and the correlation matrix is shown in Table 3.

Testing the hypothesised model

The hypothesised model was an excellent fit to the data, χ^2 (1, $N = 97$) = 12.9, $p = .381$; RMSEA (90% CI) = .00 (.00 – .26), CFI = 1.00, TLI = 1.02. The model accounted for 20% of the variance in family functioning, 14% of the variance in stress, 7% of the variance in depressive symptoms, and 14% of the variance in fatigue. The standardised parameter estimates for the model are shown in Fig. 1.

As can be seen in Fig. 1, more problematic child behaviours were associated with greater depressive, stress, and fatigue symptoms in parents, and these direct paths were significant. Only depressive symptoms were, in turn, associated with more problematic family functioning.

The total indirect effect of difficult child behaviour on family functioning was close to significant (.10, $t = 1.78$, $p = .074$). The indirect pathway from child behaviour problems to family functioning via parent depressive symptoms (.13, $p = .02$) was significant, providing some evidence for mediation. The indirect pathways via parent stress (−.03, $p = .594$) and parent fatigue (−.002, $p = .952$) were not significant.

Table 3 Correlations among the study variables

Scale	DBC-P24	a-FAS	Stress subscale	Depression subscale
DBC-P24	—			
a-FAS	.37**	—		
Stress Subscale	.39**	.54**	—	
Depression Subscale	.31**	.44**	.65**	—
FAD-GF	.26*	.16	.22*	.44**

N = 97.
* $p < .05$;
** $p < .01$.
Notes: DBC-P24, Developmental Behaviour Checklist – Parent Short Form; a-FAS, Adapted Fatigue Assessment Scale; FAD-GF, Family Assessment Device – General Functioning Scale.

Discussion

This was the first known study to investigate the pathways between behaviour problems in children with an ASD and family functioning via parent mental health. Addressing this gap in the literature supports the important need to assess and support children with ASDs in the context of their family system (e.g., Karst & Van Hecke, 2012). Consistent with previous findings (Herring et al., 2006; Khanna et al., 2011; Sikora et al., 2013), children's behaviour problems were associated with less effective family functioning. The hypothesis was partially supported, as this relationship was mediated by parental depressive symptoms, but not fatigue or stress symptoms. That is, when children's behaviour problems contribute to depressive symptoms, it can have adverse effects on family functioning.

While behaviour problems were associated with increased stress, fatigue, and depressive symptoms in parents, after accounting for behaviour problems, parental stress and fatigue were not associated with family functioning. This suggests that these specific symptoms may have less of an impact on families than parental depression. Attending to behaviour problems can make it difficult for parents to devote time to other family members, and can limit the family's participation in rewarding activities (Nealy, O'Hare, Powers, & Swick, 2012; Phelps, Hodgson, McCammon, & Lamson, 2009; Sansosti, Lavik, & Sansosti, 2012). The current findings suggest that this may be particularly so when parents are experiencing symptoms of depression. Depressive symptoms such as low mood, and lack of enthusiasm and initiative, can make it harder for parents to function, which can then impact on family life. Families may be more likely to withdraw from pleasant activities when parents are experiencing depressive symptoms. It might be that feeling stressed or fatigued has less of an impact on parents' ability to manage family life, tasks, and processes, but further research in this area is needed. A recent study suggested that despite their fatigue, mothers continued to report being capable of completing daily tasks and activities (Giallo et al., 2014).

Behaviour problems shown by children with ASDs are often secondary to their core deficits, such as their impaired social communication or sensory sensitivity (Sikora et al., 2013), and can be unrelenting. Targeting behaviour problems in interventions is one way to improve the outcomes for families; however, this is less effective when parents are stressed (Osborne, McHugh,

Saunders, & Reed, 2008). Taken together, these findings suggested that supporting parents to manage their children's behaviour as well as their wellbeing, particularly any depressive symptoms, could help to minimise the impact of behaviour problems on the family system. Consistent with this were the findings of a recent evaluation of a parent-support group intervention, where family functioning improved along with parent wellbeing post-intervention (Samadi, McConkey, & Kelly, 2013).

Consistent with transactional theory, it is also acknowledged that other pathways, including bidirectional effects, are likely when investigating the impact of individual factors on family relationships (Sameroff, 2009). There is some initial evidence from longitudinal studies, suggesting that increased parenting stress impacts on future behaviour problems in a mutually escalating cycle of transactions (Osborne & Reed, 2009). The present results suggested that this commonly identified child–parent transaction also has implications for the broader family system. When family functioning is ineffective, it can have ongoing consequences for family members. For example, increased family conflict has been associated with depression, anxiety, and worsening symptoms in individuals with an ASD (Kelly, Garnett, Attwood, & Peterson, 2008). Family functioning difficulties are also associated with maladaptive parental coping (Khanna et al., 2011).

Limitations

There are several limitations to note. Some groups of parents were poorly represented in the study, including fathers, single parents, parents of lower functioning children, and parents with lower educational attainment than a tertiary qualification. Furthermore, the majority of the sample accessed speech and applied behavioural analysis therapies more than has been reported in other samples of Australian parents of preschoolers with an ASD (see Carter et al., 2011). These factors suggested that the families were generally well resourced. As the survey was conducted online, the response rate could not be determined, making it unclear as to whether particular families were excluded through the recruitment process. Furthermore, reliance on self-report measures introduces the possibility of reporter bias, where parents with mental health difficulties may describe their child and family less favourably as a result of feeling overwhelmed. The self-report method also meant that the child's diagnostic status was unable to be independently verified and that family functioning estimates are also based on the responses of one family member. Although the sample size was reasonable and acceptable for the analyses conducted, a larger sample size would make the findings more robust.

Finally, the amount of variance in family functioning explained by the mediation model was modest, likely due to the present study having a narrow focus on just one pathway relating to the influence of children's behaviour problems. Although this pathway is clinically relevant for families of preschoolers, there are many other important child, parent, and contextual factors not investigated in this study that may have an impact on family functioning. Factors such as the quality of the parent relationship, parenting practices, social support, sibling issues, and employment are also likely to impact upon family functioning, and warrant further investigation.

Implications and conclusions

Despite its limitations, there are important theoretical and clinical implications arising from this study. The findings suggested that understanding and acknowledging parent mental health, particularly depressive symptoms, and family functioning concerns are important components of assessment and intervention for ASDs. Whereas many services take a child-centred approach, support for parent mental health and family functioning is also likely to be important. In some cases, this may be a necessary first step for families because being burdened by mental health and family problems is likely to make it more difficult for parents to engage in strategies to effectively manage their child's behaviour.

Current Australian good practice guidelines for early intervention in ASDs acknowledge the importance of assessing the needs of the family system (Prior, Roberts, Rodger, Williams, & Sutherland, 2011). However, available family interventions primarily focus on parent-implemented intensive behavioural interventions that are focused on the child (Prior et al., 2011). Although these interventions can reduce stress by assisting parents to feel better equipped to support their child, their effectiveness might be reduced when parents are struggling with symptoms of depression such as low mood and a lack of motivation. A number of factors have been identified as being protective of parent mental health, including social support, exercise, self-care (Giallo et al., 2013), and psychological acceptance (Jones, Hastings, Totsika, Keane, & Rhule, 2014). Based on the current findings, prioritising parent mental health, particularly depressive symptoms, would be a valuable step to reduce the impact of behaviour problems on the family system.

Acknowledgements

The authors wish to thank the parents who participated in this study.

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