Fatigue, Stress and Coping in Mothers of Children with an Autism Spectrum Disorder

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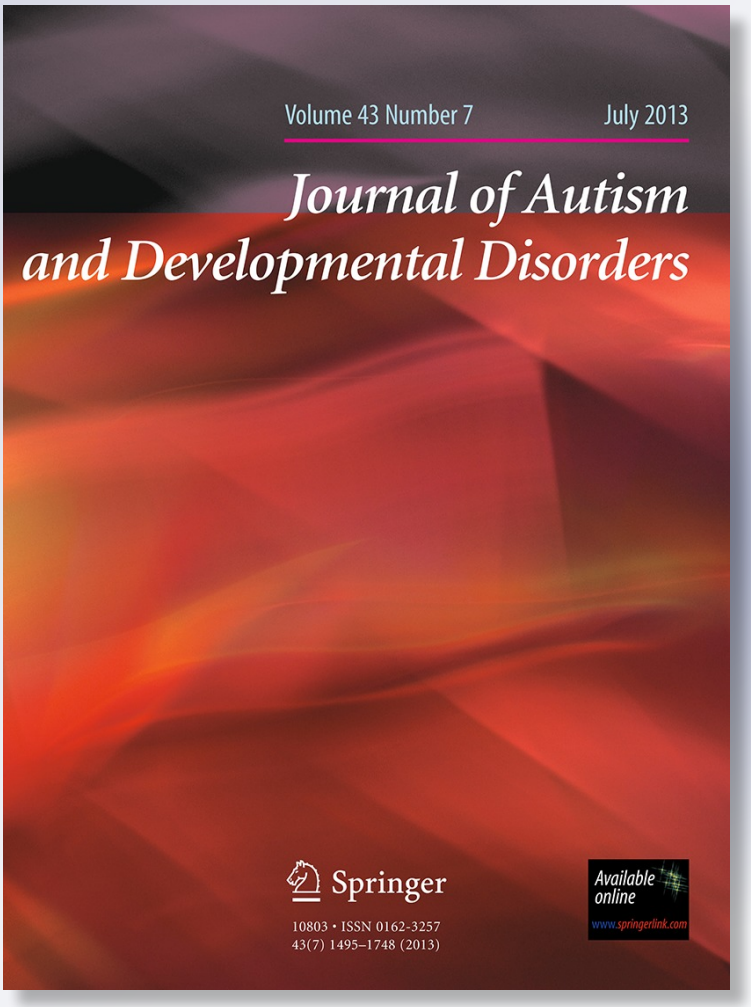

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ORIGINAL PAPER

Fatigue, Stress and Coping in Mothers of Children with an Autism Spectrum Disorder

Monique Seymour · Catherine Wood · Rebecca Giallo · Rachel Jellett

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Abstract Raising a child with an autism spectrum disorder (ASD) can be exhausting, which has the potential to impact on parental health and wellbeing. The current study investigated the influence of maternal fatigue and coping on the relationship between children's problematic behaviours and maternal stress for 65 mothers of young children (aged 2–5 years) with ASDs. Results showed that maternal fatigue but not maladaptive coping mediated the relationship between problematic child behaviours and maternal stress. These findings suggest child behaviour difficulties may contribute to parental fatigue, which in turn may influence use of ineffective coping strategies and increased stress. The significance of fatigue on maternal wellbeing was highlighted as an important area for consideration in families of children with an ASD.

Keywords Autism spectrum disorder · Fatigue · Maladaptive coping · Child problematic behaviours · Maternal stress

This research was undertaken as part of a fourth year psychology project. A version of this paper was presented at the 2011 Asia Pacific Autism Conference.

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Introduction

Children with autism spectrum disorders (ASDs) experience a complex range of social, emotional and behavioural difficulties that present significant and ongoing concerns for parents. As such, these parents are often at risk of stress and other mental health difficulties, including depression and anxiety (Hastings 2003; Lecavalier et al. 2006; Tomanik et al. 2004). To best support parents to manage stress, we need to further understand the mechanisms or pathways by which children's behaviour can contribute to parenting stress. One such pathway involves the types of coping strategies that parents use to manage the stress related to their child's behavioural problems. That is, ineffective maladaptive coping strategies, such as self-blame or venting of emotions, might contribute to increased parenting stress (Hastings 2002). Another possible pathway is via the effects child behaviour problems have on parents' exhaustion or fatigue levels, although this is a relatively new area of research. Therefore, the aim of this paper was to investigate the potential mediating influences of parent coping and fatigue on the relationship between children's behaviour difficulties and parenting stress in mothers of young children with ASDs.

Children's Behaviour Difficulties and Parenting Stress

Parenting stress relates specifically to the parenting environment and parent–child interactions. Like other forms of stress, parenting stress involves behavioural (e.g., neglecting responsibilities), cognitive (e.g., problem solving ability, motivation) and affective components (e.g., maternal emotional state) (Mash and Johnston 1990). Research has shown that mothers of children with an ASD report the highest level of stress than any other group of

mothers (i.e., mothers of typically developing [TD] children, mothers of children with other development disorders and chronic physical illness) (Bouma and Schweitzer 1990; Dabrowska and Pisula 2010; Eisenhower et al. 2005; Estes et al. 2009; Montes and Halterman 2007). For example, Estes et al. (2009) found that mothers of children with ASDs ($N = 51$) experienced significantly higher stress than mothers of children with developmental delay who did not have autism ($N = 23$). A possible explanation for these findings relates to the higher levels of problematic behaviour (e.g., hyperactivity, aggression) seen in children with ASDs compared to children with and without disabilities (Eisenhower et al. 2005; Estes et al. 2009). Not surprisingly, the behaviour problems of children with an ASD have been associated with high levels of maternal stress (Davis and Carter 2008; Hastings and Johnson 2001; Lecavalier et al. 2006; Rao and Beidel 2009; Tomanik et al. 2004).

Transactional Model of Child Behaviour Problems and Parenting Stress

Four coping strategies used predominantly by parents of children with ASDs have been identified:(1) active-avoidance coping (i.e., substance use, self-blame, and venting of emotions); (2) problem-focused coping (i.e., planning, taking action to address the problem and seeking instrumental social support); (3) positive coping (i.e., humour, positive reframing, acceptance and emotional social support to cope); and (4) religious/denial coping (i.e., drawing on religion or spiritually or pretending that the problem doesn't exist) (Hastings et al. 2005). Active-avoidant and religious/denial coping strategies are considered ineffective or maladaptive forms of coping, having been associated with increased wellbeing difficulties (e.g., depression, anxiety and stress) among mothers of children with ASD (Benson 2010; Dabrowska and Pisula 2010; Hastings and Johnson 2001; Hastings et al. 2005; Quine and Pahl 1991) and fatigue among mothers of TD children (Cooklin et al. 2011).

Transactional models of stress and coping suggest that stress is a process which involves interactions and adjustments (transactions) between the person and the environment (Quine and Pahl 1991). Individuals can influence the impact of stressors through behavioural and emotional coping strategies, as well as changing their cognitive appraisals of the stressors (Lazarus and Folkman 1984; Quine and Pahl 1991). Drawing on this transactional model of stress and coping, Hastings (2002) investigated the relationship between child behaviour problems and maternal stress in children with different developmental disabilities. The mediating role of parental coping was also examined. Children's problematic behaviours were associated with increased use of maladaptive coping strategies, which were in turn associated with increased maternal stress. The association between child behaviour problems, coping and maternal stress has also been found in a study of 166 mothers of children with severe learning difficulties (Quine and Pahl 1991). It was found that child behaviour problems influenced maternal stress through mothers' use of maladaptive coping strategies. Thus, the more severe the child's behaviour was, the more likely mothers were to use maladaptive coping, which in turn increased their stress levels. Other studies have also shown that parents of children with ASDs tend to use maladaptive coping strategies more frequently than parents of TD children and parents of children with Down syndrome (Hastings et al. 2005; Paster et al. 2009).

The transactional model of child behaviour, coping and stress offers an important theoretical and conceptual basis for which to understand maternal stress. It also highlights the importance of targeting coping as part of treatment, as well as directly supporting parents to manage their children's behaviour. However, this model has not been empirically tested specifically with mothers of children with ASDs. Furthermore, coping is only one factor that might mediate the relationship between child behaviour problems and maternal stress. There is an opportunity to extend the transactional model to explore other factors that might further elucidate the relationship between child behaviour problems and maternal stress (Hastings 2002; Quine and Pahl 1991). One such factor is maternal fatigue.

Fatigue in Parents of Children with an ASD

Exhaustion and fatigue are now understood to be relevant to mothers' experiences of parenting a child with an ASD (Bendrix et al. 2006; Giallo et al. 2011b; Vickers et al. 2004). Fatigue has been defined as extreme physical and emotional exhaustion, which is not easily relieved by rest, and can interfere with daily functioning and cognition (Cahill 1999; Ream and Richardson 1996). In a qualitative study, Bendrix et al. (2006) found that parents ($N = 10$) of children with ASDs reported that parenting was extremely exhausting and fatiguing due to their child's serious sleep and behavioural problems (e.g., hyperactivity). They described a sense of total exhaustion that contributed to experiencing a loss of control, cognitive deterioration at work and home, and increased stress. It was their experience of exhaustion and fatigue that resulted in these parents placing their child into a group home. Additionally, nine mothers who worked full-time and cared for their child with a chronic disability (including ASDs) described these competing demands as extremely exhausting (Vickers et al. 2004).

More recently, Giallo et al. (2011b) examined the extent to which 50 mothers of children with ASDs (aged 2–5 years)

experienced fatigue. The results showed that compared to mothers of TD children, mothers in the ASD group reported significantly higher fatigue, and this was associated with high levels of stress, anxiety and depressive symptoms. It has been suggested that physical and mental fatigue makes it harder for parents to access their personal coping resources putting them at increased risk of developing wellbeing difficulties such as stress (Giallo et al. 2011a). This is further supported by a large study on fatigue in parents ($N = 1{,}276$) of TD children (Cooklin et al. 2011) documenting that high levels of fatigue were associated with greater use of avoidant (e.g., self-blame, disengagement) forms of coping. Based on this research, we argued that children's behaviour difficulties are exhausting for parents of children with ASDs, and that this would influence how they cope, which in turn would impact their level of stress.

The Present Study

Despite studies highlighting the importance of parenting stress, coping and fatigue, no known study has examined the relationship between these constructs in parents of young children with an ASD. Building on the transactional models of maternal stress and child behaviour problems in children with development disabilities (Hastings 2002; Quine and Pahl 1991), the aim of this study was to investigate the relationship between child behaviour problems and stress in mothers of young children (aged 2–5 years) with an ASD, where fatigue and maladaptive coping behaviours mediate this relationship (see Fig. 1 for the proposed model). Children aged between 2 and 5 years were of particular interest as diagnosis at this age is often recent with difficult behaviour emerging (Gray 1994). Specifically, it was hypothesized that child behaviour problems would be associated with the use of maladaptive coping (e.g., avoidance, denial) strategies, and that this, in turn, would be associated with greater levels of stress. It was also hypothesized that child behaviour problems would be associated with high levels of maternal fatigue, which would be associated with increased use of maladaptive coping strategies and higher levels of stress.

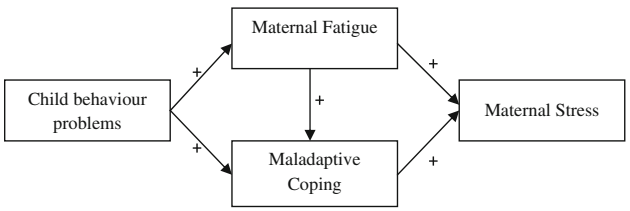

Fig. 1 Proposed model of the relationship between child behaviour problems and maternal stress mediated by maternal fatigue and maladaptive coping

Method

Participants

The participants were 65 mothers who had at least one child with an ASD aged between 2 and 5 years of age. Participants with focus children out of the age range were excluded from the study ($N = 10$). The demographic characteristics of the final sample of 65 mothers are presented in Table 1. As the study was primarily conducted online, it was not possible to determine response rates. The majority of mothers were partnered, Australian born, had a tertiary qualification, were in part-time or casual employment, and had one child with an ASD. The majority of focus children (i.e., children with an ASD) were male, had a diagnosis of autism, and were approximately 4 years of age.

Measures

Demographic and Family Background Questionnaire

Information pertaining to parent age, gender, country of birth, first language, highest level of education, employment status, and family composition was collected. Information on the age, gender and specific diagnosis of the focus child with an ASD was also obtained.

The Brief Developmental Behaviour Checklist-P24 (DBC-P24; Taffe et al. 2007) is a short form of the DBC-P (Einfeld and Tonge 1995) and is considered a reliable measure of problem behaviour for research purposes (Taffe et al. 2007). The 24 items assess behavioural and emotional problems in children with developmental and intellectual disabilities. Items (e.g., "kicks, hits others") are rated on a 3-point scale ranging from 0 = "not true as far as you know" to 2 = "very true or often true". A total behaviour problem score is computed, with a score of 46 suggesting the presence of psychopathology (Taffe et al. 2007). Cronbach's α for the current sample was .83.

The depression, anxiety and stress scale-21 (DASS-21; Lovibond and Lovibond 1995) assesses the negative emotional states of depression, anxiety, and stress over the past week. Only the Stress subscale was used in this study. 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". Cronbach's α for the current sample on the Stress subscale was .85.

Fatigue assessment scale (FAS; DeVries et al. 2003) is a 10-item self-report measure assessing the physical and cognitive symptoms of fatigue. Items are rated on a 5-point scale ranging from 1 = "never" to 5 = "always", with higher scores reflecting higher levels of fatigue. An adapted 5-item version of the scale was used based on a previous confirmatory factor analysis by the authors with a large

Table 1 Demographic characteristics of the sample

Variables	Mothers ($N = 65$)
Parent characteristics	
Parental age (M, SD)	36.09 (5.70)
Family type (*n*, %)	
Couple	57 (87.7 %)
Single-parent family	8 (12.3 %)
Country of birth (*n*, %)	
Australia	55 (84.6 %)
Other	10 (15.4 %)
Language spoken (*n*, %)	
English only	64 (98.5 %)
Bilingual	1 (1.5 %)
Employment status (*n*, %)	
Employed full-time	5 (7.7 %)
Employed part-time or casually	31 (47.7 %)
Not in paid employment	29 (44.6 %)
Highest level of education completed (*n*, %)	
Some high school	4 (6.2 %)
Completed high school	8 (12.3 %)
TAFE, trade, certificate, diploma	20 (30.7 %)
Tertiary (degree, post-graduate degree)	33 (50.8 %)
Number of children in the family (M, SD)	2.20 (.92)
Number of children with ASD	
One	54 (83.1 %)
Two	10 (15.4 %)
Three or more	1 (1.5 %)
Focus child characteristics	
Age of focus child (in years) (M, SD)	4.00 (.95)
Child gender (*n*, %)	
Male	56 (86.2 %)
Female	9 (13.8 %)
Diagnosis	
Autism	47 (72.4 %)
Asperger's disorder	9 (13.8 %)
Pervasive developmental disorder NOS	9 (13.8 %)
Age of diagnosis (in years) (M, SD)	2.89 (1.07)

sample of parents of young TD children (Giallo et al. 2011a). Several items were considered inappropriate for use with parents of young children due to limited variability in the pattern of responding and skewness. A confirmatory factor analysis with the current sample was performed, and the model was an excellent fit to the data, χ^2 (5, $N = 65$) = 6.76, $p = .239$, CFI = .99, TLI = .98, RMSEA = .07 (.00–.20), with item factor loadings ranging from. 41 to .92. Cronbach's α for the current sample was .88 with item-total correlations ranging from .40 to .84.

The Brief COPE (Carver 1997) is an abbreviated version of the COPE inventory (Carver et al. 1989) and was used to measure parental coping. This scale comprises 28-items (e.g., "I've been criticizing myself") for which participants indicate how frequently they engage in each of the behaviours and cognitions when coping with a specific stressful situation; in this case, parenting a child with an ASD. On a 4-point scale (1 = "I haven't been doing this at all" to 4 = "I've always been doing this a lot") participants rate whether or not they have been using each way of coping. A total score for maladaptive coping was used as the main dependent variable (Hastings et al. 2005). This was a combined score for active-avoidance coping and religious/denial coping. Both of these coping strategies relate consistently to negative health outcomes for parents of children with ASDs (Benson 2010; Hastings and Johnson 2001; Hastings et al. 2005). Higher scores indicate higher use of maladaptive coping. For the current sample, the Cronbach's α was.66.

Procedure

Ethics approval was obtained from Swinburne University Human Research Ethics Committee, Melbourne, Australia. Autism specific organisations (e.g., Autism Victoria, Raising Children Network) support groups and private practitioners were contacted to help advertise the study. Approximately 40 organisations advertised the study by providing a link to the survey on their own websites or via email distribution lists; informing parents directly and having paper-and-pencil questionnaires in waiting rooms. Parents had the option of completing a hardcopy version or an online version of the survey. Parents with more than one child with an ASD were asked to select one child as their "focus child" for the survey. A plain language statement was included at the beginning of the survey providing participants with an overview of the study and explaining that participation was voluntary. Participants were informed that completion of the survey indicated their consent to participate and that their responses would remain confidential and anonymous.

Data Analysis

The predictive analytic software (PASW) Statistics version 18 and Amos version 18, IBM, were used to analyse the data. The hypothesised model shown in Fig. 1 was tested using maximum likelihood estimation. The ratio of sample size to the numbers of parameters to be tested was approximately 1:7 and was deemed sufficient to run the model with nine parameters to be estimated. According to Bentler (1990) the ratio may go as low as 1:5 if the variables are normally distributed. Model fit was assessed using the Chi-square test (χ^2) 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 (Bentler 1990) and values close to or below .05 for the RMSEA were considered acceptable (Hu and Bentler 1999). Standardised parameter estimates were reported. The mediating hypothesis was assessed using the procedure outlined by Baron and Kenny (Baron and Kenny 1986).

Results

Preliminary Data Analysis

The percentage of missing data was approximately 3 % across all variables. Given that this was minimal, the missing values were replaced with the group mean for that item (Tabachnick and Fidell 2007). Descriptive statistics for each of the study variables are presented in Table 2.

Graphical normality plots showed that the data for all variables were approximately normally distributed, and Mardia's coefficient was 1.30, indicating no significant skewness. Mahalanobis distance revealed no multivariate outliers.

Prior to testing the hypothesized model, zero-order correlations among all the study variables were computed to assess whether the first three conditions of Baron and Kenny's (1986) four requirements for mediation were met. First, the independent variable (child behaviour problems) needed to be related to the dependent variable (maternal stress). Second, the mediating variables (maternal fatigue and maladaptive coping) needed to be associated with the dependent variable (maternal stress). Third, the independent variable (child behaviour problems) needed to be associated with the mediating variables (i.e., maternal fatigue and maladaptive coping). All conditions were met (see Table 3) except for the relationship between child behaviour problems and maladaptive coping. Therefore, it was not possible to test whether maladaptive coping mediated the relationship between child behaviour problems and maternal stress. However, maladaptive coping was retained in the analysis to identify any indirect relationships between maladaptive coping and other variables in the model. The final condition for mediation was tested below.

Table 2 Means, standard deviations, and ranges for total scale scores for mothers of children with an ASD

Scale	Mothers ($N = 65$)		
	M	SD	Range
DBC-P24	20.29	7.54	4–35
a-FAS	16.37	4.48	7–25
Stress Subscale	18.21	8.53	0–38
Brief COPE			
Maladaptive coping	20.83	4.45	13–36
Positive coping	13.69	3.46	6–23
Problem focused coping	19.23	4.44	9–28

DBC-P24 developmental behaviour checklist—parent short form, *a-FAS* adapted fatigue assessment scale

Table 3 Correlations among the study variables

	Maternal fatigue	Maladaptive coping	Maternal stress
Child behaviour problems	.39**	.15*	.32**
Maternal fatigue		.28*	.61**
Maladaptive coping			.41**

$N = 64$

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

Testing the Hypothesized Model

The hypothesized model (see Fig. 1) was an excellent fit to the data, χ^2 (1, $N = 65$) = .68, $p = .410$, GFI = 1.00, AGFI = .95, CFI = 1.00, TLI = .1.04, RMSEA = .00 (.00–.31). The model significantly accounted for 43 % of the variance in maternal stress ($R^2 = .43$, $p < .001$). Approximately 15 and 8 % of the variance in fatigue and maladaptive coping, respectively, was accounted for by the model but this was non-significant. The standardized parameter estimates for the model are shown in Fig. 2. Greater child behaviour problems were associated with greater maternal fatigue, which in turn was associated with increased maladaptive coping and stress. The relationship between child behaviour problems and maladaptive coping was not significant. However, maladaptive coping was associated with higher maternal stress.

To determine whether maternal fatigue mediated the relationship between child behaviour problems and maternal stress, Baron and Kenny's (1986) final condition for establishing mediation was conducted. They suggested that the relationship between the independent variable (child behaviour difficulties) and the dependent variable (maternal stress) should weaken or become non-significant when the mediator (maternal fatigue) is introduced into the model. Prior to the introduction of the mediators, the direct relationship between child behaviour problems and maternal stress was moderate and significant, $\beta = .32$, $t = 2.68$, $p = .007$. When maternal fatigue was entered into the model, the strength of this relationship decreased and was no longer significant, $\beta = .08$, $t = .83$, $p = .41$, indicating that the relationship between child behaviour problems and maternal stress was fully mediated by maternal fatigue.

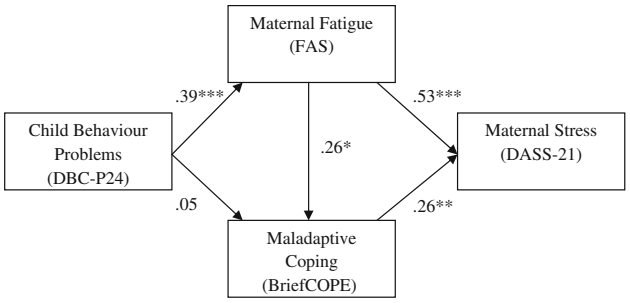

Fig. 2 Standardised parameter estimates for the mediation model of child behaviour problems and maternal stress

The estimates of the direct, indirect and total effects of child behavioural problems on stress via fatigue and maladaptive coping are displayed in Table 4. The indirect effects of child behaviour difficulties on parent stress were significant although fatigue had the strongest direct effect on parent stress. All indirect paths between child behaviour problems and maternal stress via maladaptive coping were non-significant.

Discussion

Using the transactional model (Hastings 2002; Quine and Pahl 1991) as a conceptual framework, the aim of this study was to examine the mediating roles of coping and fatigue in the relationship between maternal stress and child behaviour problems in a sample of mothers of preschool children with ASDs. This is one of the first studies to examine fatigue, a highly prevalent, yet overlooked aspect of parent wellbeing, in mothers of children with ASDs and how it relates to child behaviour problems and stress. The results showed that the relationship between maternal stress and child behaviour problems was mediated by maternal fatigue. That is, children's behaviour problems were significantly associated with high levels of fatigue, which in turn were associated with high stress. However, contrary to the transactional model (Hastings et al. 2005; Quine and Pahl 1991) maladaptive coping did not mediate the relationship between child behaviour problems and maternal stress in this sample.

Interestingly though, high levels of fatigue were significantly associated with maladaptive coping, which in turn was associated with high maternal stress. These finding further support those of Cooklin et al. (2011), suggesting increased fatigue in parents is associated with the use of maladaptive coping (e.g., self-blame, disengagement). Although it is not possible to infer causality, these findings provide further support that fatigue is a health and wellbeing concern for mothers of young children with an ASD (Bendrix et al. 2006; Giallo et al. 2011a). The fatigue experienced by these mothers has the potential to affect how they cope with their children's behaviour difficulties, and may directly contribute to, or exacerbate, their stress levels.

Mothers might be at risk of fatigue as their children require a high level of supervision and assistance in everyday tasks. Challenging behaviours can be demanding and exhausting for parents because of the constant need to respond to, and regulate them. In turn, fatigue might compromise mothers' cognitive and physical functioning, contributing to their experience of stress. The current results suggested that fatigue might contribute to, or exacerbate maternal stress. It is also important to acknowledge that the relationship between child behaviour problems and fatigue is likely to be bidirectional. That is, a mother who is exhausted and fatigued may find it harder to manage their children's behaviour, which may lead to an escalation in problematic behaviour.

It is well documented that child behaviour problems are associated with wellbeing difficulties such as stress, anxiety and depression, in mothers of children with ASDs (Estes et al. 2009; Hastings 2003; Kelly et al. 2008). The present study revealed that fatigue is another critical aspect of parent wellbeing to address when supporting parents. Physical and emotional exhaustion might increase mothers' susceptibility to stress or may make it harder for them to access their personal coping resources that would normally help manage or deal with stress present in their life (Cooklin et al. 2011). This study provides some evidence for this, demonstrating that fatigue was associated with the increased use of maladaptive coping behaviours such as denial or self-blame, which are generally deemed to be less effective in managing stress than other forms of

Table 4 Direct, indirect and total effects for parent stress and maladaptive coping

	Maladaptive coping			Parent stress		
	Direct effect	Indirect effect	Total effect	Direct effect	Indirect effect	Total effect
Child behaviour difficulties	.05	.10	.15	–	.25**	.25**
Parental fatigue	.26*	–	.26*	.53***	.07	.60***

All possible indirect paths have been tested

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

coping (e.g., acceptance, planning) (Benson 2010; Hastings et al. 2005). Consistent with previous research, the current results showed that increased use of maladaptive coping behaviours was associated with high levels of maternal stress (Hastings 2002; Quine and Pahl 1991).

Maladaptive coping was associated with high levels of stress in the present study. However, contrary to the transactional model and previous research (Hastings 2002; Quine and Pahl 1991), child behaviour problems were not significantly associated with maladaptive coping. It is possible that maladaptive coping may moderate, rather than mediate, the relationship between child behaviour problems and maternal stress. That is, when mothers use maladaptive coping strategies the association between child behaviour difficulties and maternal stress is stronger. It is also possible that coping strategies not explored in the current study play an important role in understanding the relationship between child behaviour problems and maternal stress. For instance, positive coping and problem-focused coping strategies may be more helpful for mothers in managing the daily hassles of their child's behaviour. This is an area for future research, and would make an important contribution to further developing the transactional model of child behaviour and maternal stress.

Limitations

Before considering the significance of the current study, there are several limitations to note. First, although adequate for analysis, the sample size was small. Moreover, some sample demographics (e.g., two parent family, tertiary educated) were over represented in the study. Therefore, the results may not be representative of all parents of young children with an ASD. Furthermore, it is likely that fathers' experiences of their child's behaviour problems, fatigue, coping and stress differ to that of mothers, and this is an important area for future research.

Second, as the survey was available online the final response rate for the study could not be determined. While online surveys are convenient and easily accessible, you cannot determine how many potential participants heard about the study and opted to take part or not. It is possible that mothers from a more advantaged social economic background and/or those who are technologically competent, and those with easy access to the internet participated in the study.

Third, as the current study used a cross-sectional design it was not possible to draw conclusions about causality of the relationships among the variables (Benson 2010; Spratt et al. 2007). With a larger sample size and the use of longitudinal data, sophisticated modelling procedures (e.g., structural equation modelling) could be used to test more complex models of the interrelationships and pathways among the variables over time. Furthermore, as with all modelling procedures, alternative models with other variables not explored in this study may be tested. For instance, parental behaviour (Hastings 2002) may also have an important role in understanding the relationship between child behaviour problems and stress in mothers of children with ASDs. Fatigue may also have an impact on other parenting variables that were not explored in this study, such as parenting warmth and hostility, anxiety and depression (Pugh and Milligan 1995; Ward and Giallo 2008). Other demographic variables also include single parent families, socioeconomic status and language barriers.

Finally, although approaching the acceptable threshold of .70, the low internal consistency of the maladaptive coping scale must be acknowledged. Although the scale has been used in previous studies with parents of children with ASD (e.g., (Hastings et al. 2005) further psychometric testing such as establishing construct validity is warranted. Additionally, although the maladaptive coping subscale is comprised of a broad range of behaviours it might not tap into the types of maladaptive coping for parents of pre-school children with ASDs. Future studies might examine specific maladaptive coping behaviours (e.g., denial) in relation to parents of young children with ASDs.

Implications and Conclusions

The present study has important clinical and theoretical implications. Fatigue, rather than maladaptive coping, was found to be an important construct in understanding the pathways between child behaviour difficulties and maternal stress. Despite this, fatigue is an often overlooked aspect of health and wellbeing for mothers of children with an ASD in research and practice. Therefore, when assessing and understanding the adjustment of mothers, an assessment of fatigue in addition to other wellbeing difficulties (e.g., stress and depression) is important. These findings also suggested that parents might benefit from psycho-education about fatigue and its impact on wellbeing and coping. Information and support about the management of fatigue is important as this may have direct effects on parents' ability to cope with stressors, including their child's behaviour. This is particularly important given that evidenced-based treatments for children with ASDs typically involve parent-delivered interventions to target difficult behaviour and the direct teaching of new skills and behaviours. Targeting fatigue and wellbeing may enhance or improve parents' ability to respond appropriately to their child's behaviour and consistently use the intervention strategies. Promotion and continued research into aspects of parent wellbeing is important not only for parents themselves, but also for the development of their children with an ASD.

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