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**Relationship between perceived limit setting abilities, ASD severity,
behaviour problems, and parenting stress in mothers of children with ASD**

Phil Reed¹, Jessie Howse¹, Ben Ho¹, and Lisa A. Osborne²

¹Swansea University; ²*Abertawe Bro Morgannwg University* Health Board, UK

Correspondence address: Phil Reed,

Department of Psychology,

Swansea University,

Singleton Park,

Swansea, SA2 8PP, UK.

e-mail: p.reed@swansea.ac.uk

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Abstract

Parenting stress in mothers of children with Autism Spectrum Disorder (ASD) is high and impacts perceptions about parenting. The current study examined the relationship between parenting stress and observer-perceived limit-setting ability. Participants' perceptions of other parents' limit-setting were assessed by showing participants video clips of parenting behaviours. Mothers of 93 children with ASD completed an online survey regarding the severity of their own child's ASD (Social Communication Questionnaire), their child's behaviour problems (Strengths and Difficulties Questionnaire), and their own levels of parenting stress (Questionnaire on Resources and Stress). They were shown five videos of other parents interacting with children with ASD, and were asked to rate the limit-setting abilities observed in each video using the Parent-Child Relationship Inventory. Higher parenting stress negatively related to judgements about others' limit-setting skills. This mirrors the literature regarding the relationship between self-reported parenting stress and rating child behaviour more negatively. It suggests that stress negatively impacts a wide range of judgements, and implies that caution may be required when interpreting the results of studies in which parenting skills are assessed by self-report.

Keywords: limit-setting, parenting stress, mothers' perceptions, ASD.

Parenting a child with Autism Spectrum Disorder (ASD) can be extremely stressful (Blacher & McIntyre, 2006; Dunn, Burbine, Bowers, & Tantleff-Dunn, 2001; Osborne & Reed, 2009); often more so than parenting a child without a disability, or a child with almost any other form of disability (see McKinney & Peterson, 1987; Sanders & Morgan, 1997; Weiss, 2002; Wolf, Noh, Fisman & Speechley, 1989). Not only can this stress be debilitating for the parent, potentially leading to physical illness and mood disturbances (Allik, Larsson, and Smedje, 2006; Boyd, 2002; Reed, Sejunaite, & Osborne, 2016), but such parenting stress can impede the child's social and emotional skills, communication ability, and can increase levels of challenging and aggressive behaviour (Floyd & Gallagher, 1997; Lecavalier, Leone, & Wiltz, 2006; Osborne & Reed, 2009). Research also suggests that parenting stress can have a negative impact on the progress of a child with ASD in educational interventions (see Osborne, McHugh, Saunders, & Reed, 2008a; Robbins, Dunlap, & Plienis, 1991).

Two important child variables appear to be associated with levels of parenting stress: the severity of the child's ASD symptoms (Ingersoll & Hambrick, 2011; Kasari & Sigman, 1997; Lyons, Leon, Phelps, & Dunleavy, 2010), and the child's behaviour problems (Lecavalier et al., 2006; McStay, Dissanayake, Scheeren, Koot, & Begeer, 2014). Although these two child variables are related to one another, child behaviour problems appear to account for a greater proportion of the variance of parenting stress, at least in older children (Baxter, Cummins, & Yiolitis, 2000; McStay et al., 2014; Tomanik, Harris, & Hawkins, 2004; Osborne & Reed, 2009). It has also been noted that child behaviour problems and parenting stress exacerbate each other over time (Lecavalier et al., 2006; Osborne et al., 2008b). For example, parenting behaviours such as communication with the child, interaction with the child, and limit-setting abilities, correlate bi-directionally with parenting stress (Osborne & Reed, 2010), and there are significant time-lagged correlations between

child behaviour problems and parenting stress (e.g., Lecavalier et al., 2006; Osborne & Reed, 2009).

Of particular importance for the management of challenging behaviour of children is parental limit-setting abilities (Anthony, Anthony, Glanville, Naiman, Waanders, & Shaffer, 2005; Osborne & Reed, 2010; Oosterling, Visser, Swinkels, Rommelse, Donders, Woudenberg, Roos, van der Gaag, & Buitelaar, 2010). In this context, *limit-setting* broadly refers to the ability to establish the parameters of acceptable and desirable behavior, and is used in the context of encouraging an individual to perform a particular valued act or not to perform an act that is inappropriate. Often, this skill is needed when dealing with challenging or problematic behaviours, and disruptions to this skill can mean either resort to overly harsh/disciplinarian or overly permissive techniques in response to such challenging behaviours (Gerard, 1994). High levels of parenting stress appear to lead to disruptions to this parenting ability (Antony et al., 2005; Osborne & Reed, 2010; Rodrigue, Morgan, & Geffken, 1990); being particularly associated with a counter-productive stricter disciplinary style (Karrass, VanDeventer, & Braungart-Riker, 2003). It has been noted that such disruptions to limit-setting can result in increased child behaviour problems (Jackson, 2000; Osborne et al., 2008b; but see Antony et al., 2005). In turn, the child behaviour problems can further increase levels of parenting stress, leading to even greater disruption of limit-setting abilities for the parents (see Deater-Deckard, 2004; Osborne, 2009, for reviews).

Despite its potential importance, there have been relatively few studies investigating why high parenting stress might lead to disrupted limit-setting behaviours. One suggestion derives from the work published by Fong (1991), who found that parenting stress affects parental perceptions of child behaviours and the parents' emotional reactions to those behaviours. In that study, parents of children with ASD watched a series of videos of adolescents' behaviour, and then rated that behaviour and their own reactions to that

behaviour. Parents who reported higher levels of stress rated the adolescents' behaviours as more threatening, and had stronger negative reactions to them, than parents who were less stressed. In addition, it is known that parents tend to report more problematic child behaviours than teachers for the same children (see Johnson, Filliter, & Murphy, 2009; Szatmari, Archer, Fisman, Streiner, 1994), sometimes in the same environment (Reed & Osborne, 2013). These findings might imply that stress-induced negative parental perceptions of behaviour could lead parents to perceive the behaviours exhibited by their child as being more negative. In turn, this could drive parents to a stricter parenting style (see Antony et al., 2005; Crnic & Greenberg, 1987), and cause disruptions to their limit-setting ability (see Osborne & Reed, 2010), which would, in turn, impact on the child behaviour problems (see Deater-Deckard, 1998; Osborne, 2009).

However, it should be noted that, due to practical constraints, almost all assessments of parenting behaviours have come from self-reports (see Antony et al., 2005; Osborne et al., 2008b). If stress impacts negatively on parents' perceptions of the child behaviour problems, it is plausible that high levels of stress also may negatively impact parent's evaluations of limit-setting abilities (see Rodrigue et al., 1990). This might lead to an under-estimation of the ability of these parents to provide limits for their children. To assess the degree to which higher levels of stress relate to the ratings given to limit-setting, the current research extended the technique introduced by Fong (1991) in relation to judging child behaviour problems to assess the impact of stress on judgments of limit setting. It was hoped that this might gain some knowledge of the relationship between parenting stress and assessment of limit-setting abilities.

To follow directly from the report supplied by Fong (1991), the mothers were asked to rate the limit-setting abilities of other parents seen in a video clip. To this end, mothers of children with ASD were assessed in terms of their levels of parenting stress, and were then

asked to watch a series of videos of other parents interacting with children. The participants were then asked to complete an assessment of the limit-setting abilities of the parents in the video clips. If high levels of parenting stress are negatively related to assessments of limit-setting ability, then it might be hypothesised that mothers with high-stress would rate the same parental behaviours in others more poorly than mothers who are not so stressed. This may support the view, derived from the work reported by Fong (1991) that implies that ratings of limit-setting ability are negatively impacted by parenting stress. Indeed, it would imply that evaluative judgments in general, and not just those made about the self, are negatively affected by higher levels of stress. Such a result might require some re-assessment and re-interpretation of the findings regarding parenting and limit-setting in parents of children with ASD. If parents' views of various abilities are impacted by stress, which is known to be high in this group, then these ratings may need to be treated with some caution when reported in the absence of information about the parents' psychological functioning.

Method

Participants and Recruitment

An online recruitment strategy was adopted for the current study. An e-mail that contained information about the study, and a link to a website containing the study materials, was sent to moderators of parent support groups for ASD in the UK. The moderators were asked if they would be willing to share the post with their members on their websites, and asked if mothers would be kind enough to complete the questionnaires. Thus, being a mother of a child with ASD was the only inclusion criterion. The only exclusion criterion was that fathers would not be analysed, as it is currently not clear that the same mechanisms operate for fathers as for mothers (cf. Davis & Carter, 2008; Moes, Koegel, Schreibman, & Loos, 1992). If the moderators agreed, the post was placed on the group website. Parents could

then read the post, and, if mothers of children with ASD were willing to participate, they could click the link which would take them to a further information page that explained what would be expected of them if they consented to participate. Ethical permission was obtained from the Department of Psychology Ethics committee at the authors' University.

Initially, the moderators of 35 parent groups were contacted regarding the study, and 23 of the groups agreed to allow the link to be posted on their site. The survey was kept open until 100 respondents had been recruited. This number was based on power calculations of previous studies in this area. These studies had suggested that correlations between the relevant variables tended to be in the .200 to .400 range. Using a midpoint estimation ($r = .300$), and specifying $\alpha = .05$, and power = 90%, a sample size of 92 as being required.

One hundred parents of children diagnosed with ASD agreed to take part within one month of the survey being posted. On inspection it was found that 7 respondents had identified themselves as fathers, and they were excluded from the analyses. Of the 93 mothers, the mean age was 43.29 (± 6.76 ; range = 25 – 58) years; 67 (72%) were married or in a relationship, and 26 (28%) were single. All of the mothers reported that they were living in the UK, with 85% of the respondents giving white, 10% giving Asian, and 5% giving black, as their ethnic groups. The mean age of the children with ASD (77/83% males and 16/17% females) was 10.49 (± 4.12 ; range = 3 – 18) years. The mean time elapsed since the diagnosis of ASD was 4.42 (± 3.84 ; range = 0 – 16) years. Of the sample, 58% reported at least one other diagnosis for their child: with 45% reporting a learning disability or intellectual impairment, and 18% reporting a co-morbid medical condition.

Stimuli and Questionnaires

Video Material: Videos showing parents interacting with their children were taken from the social media site, YouTube. These videos were selected in preference to videos that

could have been developed specifically for the study, as it was thought that such ‘real world’ examples of parenting would have more validity for the participants than laboratory-based or engineered examples of such parent-child interactions. Initially, a very large sample of such videos was collected through using the search terms: “*autism*”, “*parent*”, and “*behaviour*”.

The resultant large set of videos was then assessed by the authors for their usefulness for the current purposes by the adoption of a number of exclusion criteria: the videos had to have good visual and audio quality; they had to show a parent or parents (maximum of two adults) interacting with their child (maximum of one child) in a home setting; the parents had to ask the child to commence or to stop one particular behaviour, which the child did not do immediately; this behaviour had not already commenced before the video started; the videos had to show a sequence of behaviour which started with the child, included the request from the parent, some further parent-child interactions, and, finally, the child emitting the required response; the videos could not be from clips that were commercially developed to promote a particular approach (such as ABA); and clips were excluded if there was a specific comment or narration about the parenting behaviour included.

Following this elimination process, 24 videos were selected, and were then watched independently by two of the authors, who rated the videos in terms of the severity of the child behaviours that were shown, and also in terms of the limit-setting skills displayed by the parents. The raters used a five-point scale to judge the severity of the child behaviour problems in the video (1 = very severe to 5 = very mild), and to judge the quality of the parenting in terms of their limit setting (1 = very good to 5 = very poor). The videos in which the child behaviour problems, or the parent behaviours, were judged to be at either extreme of the spectrum (scoring a 1 or a 5) by both raters were excluded in an attempt to equate, in so far as was possible, the severities of the behaviours in each video clip to be rated by the participants. This process left a sample of 16 videos.

To validate the opinion of the raters, a small pilot study was conducted, in which the 16 video clips were shown to 10 mothers of typically developing children (selected as they were known to one of the authors). The participants in this pilot study were asked to rate the behaviours of the parents that they observed in the video clips using the Limit-setting Scale of the Parent-Child Relationship Inventory (Gerard, 1994; see below). The ratings of the clips were then compared to one another, and any video that showed a statistically significantly different PCRI rating to the other videos, through the use of an analysis of variance performed on the mothers' ratings of the videos, was excluded from the study. This process left 10 potentially usable video clips, which differed from one another in terms of their length and in terms of the parent and child behaviours that they depicted.

Although this variance in the videos was thought to be a positive aspect when getting judgments from the participants (as too narrow a range might have produced a result that would not generalise across a wide enough range of parenting situations), it meant that there were aspects of the clips that were not equivalent to one another. In an attempt to overcome this problem, a randomisation procedure was adopted for the presentation of the videos, so that each participant did not see the same clips as one another – and that the ratings given could not be attributed to specific aspects of any clips selected (see Table 1 for details of the video clips).

Table 1 about here

Participants watched 5 out of a possible 10 video clips of children with ASD engaging with their parents whilst in the scenarios outlined in Table 1. These video clips were embedded in the online survey and lasted between 30s and 150s. After each video clip, the

participants were asked 12 questions about their perceptions of the depicted parents' limit-setting taken from the Limit-setting Scale from the Parent-Child Relationship Inventory.

Social Communication Questionnaire (SCQ; Rutter, Bailey, & Lord, 2003) contains 40 questions, scored yes or no, and screen for children with ASD. There are two sub-scales: social interaction and repetitive behaviours, which sum to measure overall problems (maximum = 39; > 15 indicating ASD). The overall score has a Cronbach α of .81.

Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001) contains 25 questions, scored not true, somewhat true and certainly true, measuring child behaviour problems. There are five sub-scales: Emotional Symptoms, Conduct Problems, Hyperactivity, Peer Problems, and Prosocial Behaviour. The total difficulties score is calculated by adding the scores from the first four scales (maximum = 40; < 13 = 'normal', 14-16 = 'borderline', and > 17 = 'abnormal'). The overall score has a Cronbach α of .73.

Questionnaire on Resource and Stress (QRS-F; Friedrich, Greenberg, & Crnic, 1983) contains 52 questions, scored true or false, measuring the impact of a developmentally disabled child on other family members. There are four sub-scales: Parent and Family Problems, Pessimism, Child Characteristics and Physical Incapacity, that sum to give an overall parenting stress score (maximum = 52), with higher scores indicative of greater stress. The overall score has a Cronbach α of .97.

Parent-Child Relationship Inventory (PCRI; Gerard, 1994) includes 78 items scored: strongly agree, agree, disagree and strongly disagree, that assess parental attitudes towards their children and parenting. It includes 7 scales that are scored individually. These items give a total score for limit-setting that can be transformed into a T score. The mean 50 indicates average ability, with higher scores indicating stronger abilities in this area. This research only included the 12 items from the limit-setting scale, focusing on parental ability and experience of disciplining a child. This scale included items such as: "*I have trouble*

disciplining my child”, “*I sometimes give in to my child to avoid a tantrum*”, and “*My child really knows how to make me angry*”. In this study, the wording of these questions was altered so that they referred to the limit-setting behaviours of others (e.g., “*This parent has difficulty disciplining their child.*”). This altered limit-setting scale had a Cronbach α of .78 in the current study.

Procedure

After reading the information about the study, mothers could indicate that they wanted to participate by clicking the “I Consent” button on the website. They were then presented with the questionnaires (SCQ, SDQ, QRS-F); one questionnaire on each webpage, with the instructions about how to complete each questionnaire displayed at the top of the webpage containing that questionnaire. The mothers were then presented with their 5 video clips, one at a time, and each followed by the 12 PCRI questions. Instructions regarding each video clip and the PCRI questionnaire were written at the top of the webpage displaying that video and questionnaire. The 5 videos for a participant were chosen at random from the pool of 10 possible video clips that had been identified (see Table 1). After completing the study, participants were taken to a debrief page. There was no time limit to complete the study, but the whole survey took between 30-45 min.

Results

Table 2 about here

Table 2 shows the mean child ASD severity (SCQ), behaviour problems (SDQ), parenting stress (QRS-F), and the mean limit-setting (PCRI) score across the five videos that

participants observed. The Pearson's correlations between these variables, as well as with the ages of the mothers and their children, and the years since the diagnosis was obtained, are also shown in Table 2. Due to the high number of individual correlations analysed, only those with a $p < .01$, were considered to help minimize the chances of a false positive result. Inspection of these data shows a significant positive correlation between levels of parenting stress and the child behaviour problems of the mothers' own children ($r = .278, p < .01$). Assessment of the limit-setting ability of the parents' shown in the videos was negatively related to the participants' parenting stress ($r = -.399, p < .001$), and to the levels of behaviour problems reported by the participants about their own children ($r = -.289, p < .01$).

To explore which of the potential predictors relate to ratings of limit-setting a multiple regression was conducted to examine the relationship between child behaviour problems (SDQ), and parental stress (QRS-F), on parental perceptions of limit-setting in others. As levels of autism severity (SCQ) were not found to relate to any variable in the above correlational analysis this variable (and any other variable not related to limit-setting) was excluded from this analysis in the interests of increasing power. The model was significant, $F(3,97) = 7.14, p < .001$, and had an $R^2 = .128$. Of the individual predictors, parenting stress ($\beta = -.178, p < .05$), and child behaviour problems ($\beta = -.312, p < .05$), were both significant.

To further explore the relationship between the predictor variables and perceived limit-setting of others, a mean split was conducted for both of the potential predictor variables: child behaviour problems (SDQ), and parenting stress (QRS-F), to create high and low scoring groups for each variable. This method has previously been used in the analyses of the impacts of parenting stress, and is employed in preference to regression due to sampling size, and because it was not known whether the relationship between the subscales and perceptions of limit-setting would have a linear or step function (see Osborne et al., 2008). For child behaviour problems (SDQ), the lower-scoring group ($n = 51$) had a mean

SDQ score of 15.10 (± 4.62), and the higher-scoring group ($n = 42$) has a mean SDQ score of 22.21 (± 5.88). For parenting stress (QRS-F), the lower-scoring group ($n = 39$) had a mean QRS-F score of 18.51 (± 6.74), and the higher-scoring group ($n = 54$) had a mean QRS-F score of 35.20 (± 4.62).

Figure 1 about here

Figure 1 displays the mean PCRI score for the 5 videos for the lower- and higher-scoring groups on each variable. Inspection of these data shows that the group with a higher score in terms of parenting stress showed lower ratings of others' parenting ability than the group with lower parenting-stress. However, this difference was not as pronounced when comparing lower- and higher-scoring groups for in terms of child behaviour problems. Separate analysis of covariance (ANCOVA) with group (lower versus higher) as a factor, and the score on the other predictor variable as a covariates (i.e., if parenting stress was the independent variable, then behaviour problems was the covariate), were conducted on these data. A Bonferroni correction was employed to accommodate the three tests ($p = .05/2 = .025$). These analyses revealed that parent stress group (QRS-F) was significant, $F(1,97) = 8.12, p < .001, partial \eta^2 = .077$, but that SDQ, $F(1,97) = 2.03, p > .10, partial \eta^2 = .02$, was not significant.

Discussion

The current study explored the relationship between parenting stress and perceptions of limit-setting abilities in others. The results suggest that the higher the parenting stress levels, the more likely mothers were to make a negative judgment about the limit-setting skills of other parents. It was also the case that the higher the level of child problem

behaviour of their own children, the worse was the judgment of others limit-setting abilities, although this factor did not produce a significant result when examined in terms of a lower versus higher group split. This effect of parenting stress was independent of the level of ASD severity of the participants' own child as measured by the SCQ. This is a similar finding to that noted by Fong (1991), in which more highly stressed mothers of children with ASD rated child behaviour problems as more severe than mothers who reported less stress. These findings imply that mothers' perceptions of a range of abilities, including other parents' limit-setting skills, are negatively influenced by their own levels of parenting stress, and show the pervasive influence parenting stress on judgments made by parents of children with ASD.

There are a range of plausible mechanisms that may underlie the negative relationship between parenting stress and such parent judgements. For example, the association of high and chronic levels of stress with psychiatric problems such as depression (Boyd, 2002), and even ill health (see Allik et al., 2006; Reed et al., 2016), may serve to impact the judgements made by the mothers. Moreover, prolonged stress is known to impact on problem solving and working memory (Olver, Pinney, Maruff, & Norman, 2015), which includes stress related to social situations (Evans & Schamberg, 2009). Poor levels of functioning in both of these domains of functioning have long been noted to be related negatively to judgement making (Kimberg & Farah, 1993), and are also important for parenting skills (see Deater-Deckard, Sewell, Petrill, & Thompson, 2010; Kazdin, Siegel, & Bass, 1992). Of course, there are a range of other factors that also might be related to these findings, such as parent confidence, and their satisfaction with parenting, which might also have had an impact. These factors were not measured in the current study, and could be explored in further investigations.

The present results have implications for interpreting the results obtained from studies relying on self-reports of parents of children with ASD regarding their parenting, or other, abilities (e.g., Antony et al., 2005; Osborne et al., 2008b). It may be that these estimates of parenting ability are artificially decreased when the levels of parenting stress is high. Thus, it is possible that studies relying on self-report from highly-stressed parents may tend to see an artificially-lowered estimation of parenting ability or behavioural abilities. Although, it should be considered that a lack of limit setting skills may, in turn, lead to greater levels of stress, impacting negatively on parenting strategies, and, in turn, exacerbating the stress due to failed attempts to manage behaviour (see Osborne & Reed, 2010). Of course, this cannot be known for certain until observational studies of the parenting style are conducted alongside self-reports – which would present severe practical research problems.

It should also be noted that both the current report, and that of Fong (1991) relating to the impact of parenting stress on judgments of child behaviour problems, studied the relationship of parenting stress to judgments of other people's children and parenting. It may be that the same factors do not influence the parents' judgments regarding their own parenting ability. However, it could be noted that, according to Fong (1991), the participants commented that they would limit set for their children using the same methods as the ones shown in the video.

A relatively novel aspect of the research was the use of an online survey method to collect the data, and to present the video clips to the participants. This method has some advantages in terms of the scope and speed with which data can be collected. Of course, this has some limitations. One concern that should be mentioned is that the videos that were rated by the participants were deliberately selected from 'real-world' examples of parenting a child with ASD, in order to enhance their ecological validity for the participants. However, this approach meant that certain aspects of the video clips could not precisely be equated with one

another. It may be that a more fine-grained analysis could reveal that certain types of parental behaviours are rated as better or worse in terms of their limit-setting qualities by certain types of participants. However, it should be noted that the parent behaviours in the video clips selected had been rated as broadly equivalent in terms of their overall limit-setting quality by other parents in a small pilot study. As the video clips employed were randomised across the participants, and the main thrust of this research was about the perceptions of the participants, this was not felt to be a major problem for this study. It should be noted that, when the videos seen by each group of parents (lower and higher stressed) were checked, each group had seen each video approximately equal numbers of times as one another (as might be expected through the randomisation process). An alternative approach might have been to show participants all the same selection of videos, which would have overcome the issues of the variance in the videos presented, and the potential impact that this variance had on the results. However, while this latter approach has the disadvantage that too narrow a range of parenting situations shown might lead to a lack of generalisability of the results.

A number of limitations to the current study should be acknowledged. As with all survey studies, the sample was self-selecting that may limit the generalisability of the findings. One issue that might be noted in this regard is the uneven distribution of ethnic backgrounds (being predominately white). It is also the case that the socio-economic status of the participants was not measured in this study. Although it is not clear how such factors differences might impact the results, this should be acknowledged. It should also be acknowledged that the data collected in the current study are self-reported, and further studies might benefit from a more objective measure of some of these aspects of parent behaviour (although, in terms of many of the variables employed, it is difficult to find strong objective measures). However, in this regard one important consideration is the degree to which the diagnosis of ASD can be validated through such parent-rated scores as are obtained on the

SCQ – especially given the relatively large range of scores reported. Although employing sample of mothers whose children have a known diagnosis would be a good step in future research it should also be noted that the SCQ may be taken as an index of ASD severity and is not synonymous with the diagnostic status of the child. The range of scores along dimensions such as time since diagnosis may also play a role in these findings, as it is possible that the mothers of more newly-diagnosed children may react differently to mothers whose children were diagnosed some years previously. It should also be acknowledged that the conclusion regarding the impact of stress on judgments of other limit-setting relies on the assumption that the modified PCRI can be used to assess others' limit setting abilities. As noted above, the current study employed a modified version of the PCRI limit-setting scale in order to obtain a measure of parent perception of other's limit-setting skills. Although the internal consistency of this altered scale was acceptable, further work might need to be conducted to validate this measure in this regard.

However, should these findings be substantiated, they do have a range of implications for real life settings. The suggestion that stress will impact judgments regarding parenting and child behaviour that derives from the current data, and other studies, suggests that parents experiencing high levels of stress will need some form of help to overcome this stress and its associated consequences. This is not only important for the results of research studies, but such inaccurate judgements may well lead to parenting approaches that are inappropriate to the actual circumstances. In turn, this could make worse the child behaviour problems. Thus, intervention focused on the parent of the child with ASD, as well as the child, may be helpful.

In summary, the findings corroborate the literature regarding the relationship between self-reported parenting stress and child behaviour problems, and extend the findings of Fong (1991) to show that higher levels of parenting stress are negatively related to judgements

about other limit-setting skills study. This finding suggests that caution may be required when interpreting the results of studies in which parenting skills are assessed by self-report as it could be that these judgments are impacted by the parents' own psychological states in addition to the actual behaviours that they are attempting to judge.

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Table 1: Description of the 10 video clips used in the current study

Video Clip	Length (s)	Parents shown	Approx age parent(s)	Gender of child	Approx age child	Activity
1	23	Mother/ father	Early 40s	Male	7- 9	Child tries to get ice cream, parent requests that child asks for ice cream.
2	132	Mother	Late 30s	Male	2-4	Child spitting on floor, parent requests child to stop.
3	140	Mother	Late 30s	Female	4-6	Child not eating, parent asks child to eat
4	77	Mother	Early 40s	Male	3- 5	Child banging head on wall, parent asks child to stop.
5	93	Mother	Mid 40s	Female	16-18	Child not cleaning teeth at sink, parent asks child to clean teeth.
6	100	Mother	Late 30s	Male	3-5	Child displaying a tantrum, parent attempts to stop tantrum.
7	34	Mother/ Father	Mid 40s	Male	7-9	Child interacting with cat, parent asks child to stop stroking cat.
8	66	Father	Early 30s	Male	5-7	Child eating food and flicking it on floor, parent asks child to stop.
9	113	Mother	Mid 30s	Female	14-16	Child walking around room shouting, parent asks child to stop.
10	45	Mother	Mid 40s	Male	3-5	Child standing at the wash basin looking at water, parent asks child to come away.

Table 2: Mean (standard deviation and range) scores for ratings of limit-setting (PCRI), child ASD severity (SCQ), behaviour problems (SDQ), and parenting stress (QRS-F), and the Pearson correlations between these variables as well with the parents' age, child's age, and years since diagnosis.

	Mean (SD; range)	SCQ	SDQ	QRS-F	Parent age	Child age	Years diagnosed
PCRI	48.17 (8.43; 3-74)	-.065	-.289**	-.399***	-.252	-.178	-.116
SCQ	23.43 (3.55; 14-38)		.076	.132	.142	-.005	-.049
SDQ	20.14 (3.85; 4-35)			.278**	.057	-.055	.017
QRS-F	20.29 (16.74; 1-50)				-.094	-.066	.032

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

Figure 1: Mean PCRI ratings (T score) for groups with lower- or higher-scores on the behaviour problems (SDQ), and parenting stress (QRS-F) scales.

