Maternal Emotions and Self-Efficacy Beliefs in Relation to Boys and Girls with AD/HD

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ABSTRACT: This study examined the impact of child gender on mothers' emotional responses to AD/HD, self-efficacy beliefs and perceived severity of AD/HD. Mothers ($N = 118$) of pre-schoolers were presented with a vignette describing a typical boy or girl with AD/HD and then completed three scales relating to their emotional response to AD/HD behaviour, their sense of parenting efficacy and their attributions about the severity of problems described. AD/HD behaviour elicited negative emotions and maternal self-efficacy was low, especially for male AD/HD. Perceived severity of the behaviour was negatively correlated with maternal sense of self-efficacy. These findings suggest that mothers of "normal" children have fixed negative emotions and low sense of self-efficacy towards a child with AD/HD and that these factors are key elements for change in the implementation of a therapeutic programme.

KEY WORDS: AD/HD; emotions; self-efficacy; sex differences; attributions.

Introduction

Attention Deficit/Hyperactivity Disorder (AD/HD) is widely regarded as a developmental disorder with biological and neurological underpinnings[1,2] which has an onset in early childhood, is cross-situational and persistent over time.[3] Nevertheless, there is evidence that the continuity of the primary symptoms (impulsivity, hyperactivity and inattention), the eventual development of

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secondary difficulties and the outcome of the disorder are also moderated to some extent by the child's social environment.[4]

For instance, the disturbed and conflictual nature of relations between the child with AD/HD and his/her parents is well established in the literature. Children with AD/HD are usually less compliant, more negative and less able to follow parental instructions and adhere to family rules than their peers.[5,6] In response, their parents may use over-reactive, inconsistent and punitive disciplinary methods.[5,7] Moreover, they display more disapproval, fewer rewards and more overall negative behaviour than parents of non-problem children do.[8]

This kind of parenting has the potential to lead to the escalation of conflicts within the caregiving relationship and the exacerbation of the child's difficulties through a "negative-reactive" response pattern.[8] An extensive body of research has linked punitive and inconsistent parenting practices with the exacerbation of a child's problem behaviours.[9–12] Negative emotional and behavioural reactions by parents to the difficult behaviour displayed by their children with AD/HD, therefore, may pose a considerable threat to their social–emotional development.[13,14] Such a response may both lead to a continuation of the symptoms of AD/HD[15] and to the development of comorbidities.[16]

Although there is much research describing these patterns of negative parenting practices towards children with AD/HD, little is still known about their determinants. One candidate that has often been suggested to influence parental responses to child behaviour is the parental emotional response elicited by their child's difficult behaviour. Emotional responses have been shown to contribute to either effective, responsive parenting or the opposite, negative, reactive parenting.[17] For example, negative emotion, such as anger, is related to excessive prohibitions, yelling and physical discipline.[18]

In the case of parents with children presenting with AD/HD, increased levels of parenting stress, anxiety and depression have been consistently reported.[19–21] However, only limited research has looked into parental emotional responses displayed in direct response to AD/HD behaviour. The current study takes a first step towards this goal by examining parents' ratings of negative emotions elicited by typical AD/HD behaviour presented in a vignette.

However, it seems unlikely that psychological distress alone determines a parent's response towards children with AD/HD. It is possible that the interaction of emotions elicited by AD/HD behaviours with other internal factors, such as parental cognitions,

could be important.[22,23] Developmental research over the past several years has identified self-efficacy beliefs as a core construct within the constellation of parental cognitions in relation to difficult and challenging behaviour. Parents' beliefs about their own effectiveness at dealing with difficult behaviour may be especially important.[24] Current research generally supports an association between high maternal sense of self-efficacy and various outcomes, including positive parental emotions and behaviours; and the converse, low maternal sense of self-efficacy has been related to negative parental emotions and behaviours.[25] In a number of studies, parental self-efficacy beliefs have emerged as a mediator of parenting quality.[26,27] For example, maternal emotional distress has been associated with lower levels of mother responsiveness to the child, but this association was mediated by mothers' perceptions of their parenting efficacy.[28] In other words, emotions seem to influence the cognitive appraisal process leading to self-efficacy perceptions and both emotions and self-efficacy beliefs seem to jointly affect parenting.

In the cases of families with a child presenting AD/HD, daily struggles usually occur as parents attempt to get their child to adhere to family rules and directives. Failure to comply with repeated directives often poses a challenge or threat to a parent's sense of self-efficacy. Parental beliefs about self-efficacy have been found to be lower in parents of children with AD/HD as compared to parents of non-problem children.[12,20,29,30]

Previous studies have focused on the impact of parental beliefs about self-efficacy separately from their emotional responses towards children displaying AD/HD behaviours. The proposed study examined the relationship between these two potential mediators of parental responses together.

There is now good evidence that the sex of the child affects a parent's response to displays of difficult behaviour; parents respond to difficult behaviour displayed by boys differently to that displayed by girls. For example, anger expressions in female infants are likely to be followed by a negative response from the mother, whereas anger in males received a more empathic response.[31] Little girls are explicitly told more often than boys that their aggressive actions have harmful consequences for others.[32] Parents have been found to tolerate or encourage injury-risk behaviours by boys but to tutor girls to proceed cautiously or not at all in risk-taking activities.[33]

A key aim of the current study was to examine how the responses to AD/HD behaviours displayed by boys and girls might differ from

one another. In their meta-analysis of 18 studies on gender-based differences in AD/HD, Gaub and Carlson[34] reported that boys with AD/HD have been found to demonstrate disruptive, uncontrolled behaviours more frequently and have higher rates of aggression.[35,36] On the other hand, it has been claimed that girls with AD/HD demonstrate more severe cognitive impairments, poorer self-esteem and poorer academic achievement.[35,37,38] The nature of the above gender-based differences in the manifestation of AD/HD symptoms by boys and girls has been suggested as one of the reasons explaining the higher referral rates of boys with the disorder compared to girls.[39] From our point of view, since the clinical correlates of the disorder might be quite different in the two sexes, parents' and educators' attitudes, self-efficacy beliefs and emotional responses towards boys and girls with AD/HD might differ as well. In a previous study, we identified ways in which child's sex moderated parents' expectations of and behaviour towards children with AD/HD.[40,41] In this study we extend this analysis to look at the constructs of perceptions of severity, emotion and self-efficacy.

In summary, in the present study we sought to (a) examine a wide range of maternal emotions towards a hypothetical boy or girl with AD/HD, (b) investigate mothers' expected sense of self-efficacy, and (c) examine possible interactions between perceptions of severity of AD/HD behaviours, elicited emotions, and self-efficacy beliefs as these affect response to AD/HD behaviours displayed by boys and girls.

Method

Participants

A total of 118 mothers of boys and girls aged 4–6, enrolled in seven kindergartens and nursery schools in Athens, were recruited for the study. Mothers' mean age was 34.2 years (SD = 4.1). Half of the sample had completed primary school in Athens, whereas 18% had finished primary school in a village, 13% in another big city and 11% in a small province city. Half of the sample (55.6%) had two children, 31.6% had one child and 12.9% had three children or more.

Measures

Two questionnaires were used in the study:

A. The first questionnaire was used in two versions, one including a vignette ascribed to a hypothetical 5-year-old boy's behaviour and

another one including a vignette ascribed to a hypothetical 5-year-old girl's behaviour. Only the child's sex distinguished the two vignettes, which outlined some of the major symptoms of AD/HD, Predominantly Hyperactive-Impulsive Type, as described in DSM-IV.[42] Thirty-two items, composing the three below-mentioned scales, and four items referring to demographic information followed the vignette:

1. The "Scale for Assessment of Attributions about the Severity of Problem Behaviour"[43] was composed of five items assessing perceived severity, uncontrollability, stability and globality of the behaviour, as well as parental concern. This scale was partially based on Weiner's[44,45] theory about the dimensions of causal attributions. Sample questions are: "To what extent do you think that this behaviour is indicative of a severe problem in John or does not indicate the presence of a problem at all?" or "To what extent do you think that John would have control over behaving in this way?". Mothers were required to respond on a five-point scale, with higher ratings indicating perceptions of greater severity, uncontrollability, stability, globality and concern for the child's behaviour. The relationship between the items of the scale was explored and inter-correlations were statistically significant at the 0.01 level. Based on analyses derived from the current sample, the scale was proved to have high internal consistency (Cronbach's $\alpha = 0.86$). Item scores were combined to produce one value for attributed severity.
2. The "Emotional Response to AD/HD Behaviour Scale", adapted from the "Emotional Reactions to Challenging Behaviour Scales".[46] This measure was initially developed in order to explore the relationships between attribution, emotion and staff coping in services for people with learning disabilities. It is reported to have good internal consistency ($\alpha = 0.82$), confirmed by the present study ($\alpha = 0.85$), good test–retest reliability ($r = 0.81$) and to be relatively unaffected by social desirability response biases ($r = -18$, $p =$ n.s.).[46] The modified version of the above scale used in this study was composed of 23 items. In order to identify the fullest range of emotions, the scale was composed of 5 positive and 17 negative emotional reactions. Mothers were asked to indicate how frequently they believed they might feel as proposed (e.g. angry, anxious, confident, etc.) if they interacted with a boy or girl like the one presented in the vignette. Mothers were asked to respond on a three-point scale ranging from 0 (*never*) to 3 (*very frequently*).
3. The "AD/HD Parenting Efficacy in Behaviour Management Scale", adapted from the subscale "Efficacy in Classroom Management", included in the "Teachers' Sense of Efficacy Scale" (short form).[47] This scale was composed of four items, where mothers were asked to indicate how much they could do to: (a) control a child's hyperactive behaviour, (b) get a hyperactive child to follow rules, (c) calm a hyperactive child when he/she is disruptive and noisy, and (d) establish a harmonious everyday family life with a hyperactive child at home. Mothers were required to respond on a five-point Likert-type scale with anchors at 1 (*nothing*), 3 (*some influence*) and 5 (*a great*

deal). This instrument has been found to hold good psychometric properties, detailed description of which is given by its authors.[47] In addition, highly significant positive correlations with other measures of self-efficacy have provided evidence of construct validity. According to analyses derived from the current sample, the scale had satisfactory internal consistency (Cronbach's $\alpha = 0.83$).

B. The second questionnaire used was the "Strengths and Difficulties Questionnaire" (SDQ), which is a brief behavioural screening questionnaire designed to measure children's and adolescents' behaviours, emotions and relationships.[48] It can be completed by the parents or teachers of children aged 4–16. The SDQ asks about 25 attributes, divided between five scales of five items each, generating scores for Conduct Problems, Inattention-Hyperactivity, Emotional Symptoms, Peer Problems and Prosocial Behaviour.[48] Each item is scored as 0 (*not true*), 1 (*somewhat true*) or 2 (*certainly true*). According to whether scores fall above or below a cut-off point, children and adolescents are classified as "normal", "borderline" and "abnormal". The psychometric properties of the SDQ have been well documented in large epidemiological studies within the preschool age group.[49] Mothers were asked whether they thought the child presented in the vignette would also display behaviours described by each of the 25 items of the SDQ as well. The purpose of the use of this instrument in this way was to examine whether the behaviour presented in the vignette was actually perceived by mothers as indicative of AD/HD for both boys and girls.

Procedure

Three hundred questionnaires, half presenting a male and half presenting a female version of the vignette, were administered to mothers by the nursery teacher of their child. A between-subjects design was used. Mothers were told that the aim of the study was to investigate adults' attitudes towards children's behaviour and were asked to fill in the questionnaires at home. The questionnaires were accompanied by a letter informing the mothers that their participation in the study was anonymous and voluntary. The anonymity and free will of participation was ensured in order to reinforce the sincerity of the answers, despite the fact that some important information would be necessarily lost due to this procedure. A box was placed in the play room of each one of the seven kindergartens, where mothers could dispose the completed questionnaires. The box was opened at a predetermined date and the questionnaires were then collected by the nursery teacher and handed in to the researcher. Care was taken that in each kindergarten only questionnaires including the same version of the vignette (either male or female) were administered so that the participants remained unaware of the existence of two versions of the vignette.

Results

Three hundred questionnaires were administered to mothers. One hundred and eighteen questionnaires were completed, indicating a

response rate of approximately 60%. Fifty-two of the completed questionnaires included a male and 66 a female version of the vignette. Unfortunately, due to the procedure that ensured the anonymity of the participants, no information was available regarding either the causes of non-response or potential differences between responders and non-responders.

SDQ Ratings and Perceived Severity

Table 1 displays the ratings (%) of the behaviours in the vignette on each of the five SDQ subscales for boys and girls separately. Around 90% of parents' SDQ ratings exceeded clinical cut-offs for AD/HD. There were no significant differences between males and females for AD/HD or any other SDQ subscale in this regard (male AD/HD = 90.9%; female AD/HD = 89.1%). Interestingly, a large number of parents also believed that the child in the vignette displayed clinically significant levels of conduct and emotional problems. Scores on the "Scale for Assessment of Attributions about the Severity of Problem Behaviour" suggested that the behaviour presented was generally regarded as a modest problem ($M = 3.25$, SD = 0.91). The behaviour of boys and girls was perceived to be of equal severity.

Emotional Responses to AD/HD and Self-Efficacy Beliefs

AD/HD behaviours seem to elicit mostly negative emotional reactions by mothers. Over 60% of the participants indicated that they would feel resigned, anxious, preoccupied, angry, annoyed and nervous in relation to the behaviour described in the vignette. On the

Table 1
Ratings (%) of the Behaviours in the Vignette on the five SDQ Subscales

	Normal (%)		*Borderline (%)*		*Abnormal (%)*		
SDQ subscales	*M*	*F*	*M*	*F*	*M*	*F*	*Total*
Conduct problems	6.8	12.5	6.8	7.8	86.4	79.7	100
Hyperactivity problems	9.1	4.6	0	6.3	90.9	89.1	100
Emotional problems	22.7	35.9	20.5	17.2	56.8	46.9	100
Peer Problems	18.2	18.8	13.6	23.4	68.2	57.8	100
Prosocial Behaviour	20.5	35.9	13.6	6.3	65.9	57.8	100

Note: M, male; F, female.

other hand, less than 30% of the participants believed that they would feel cheerful, confident, comfortable or proud towards this behaviour. Among the least frequently indicated emotional reactions are feelings of shame or humiliation. Overall, it appears that mothers do not feel that such behaviour is considered as something that they should be either proud or ashamed of. Regarding mothers' self-efficacy beliefs, they were revealed moderate ($M = 3.46$, SD = 0.62).

Parent ratings of emotional responses were submitted to principal components factor analysis with an orthogonal rotation to varimax solution in order to identify which emotions towards children with AD/HD cluster together. The Bartlett's Test of Sphericity was highly significant (test value = 1029.70, $p < 0.000$), indicating that the correlation matrix was not an identity matrix. Seven factors were extracted by the factor analysis, accounting for 68.5% of the variance (see Table 2). Given the factor to item correlations, the factors were

Table 2
Principal Component Analysis of Mothers' Emotions towards Children with AD/HD

Factor	*1*	*2*	*3*	*4*	*4*	*6*	*7*
Percent Variance	13.48	13.06	11.11	9.34	8.86	8.09	4.59
Item							
Angry	0.75						
Upset	0.52						
Anxious	0.50			0.62			
Annoyed	0.72						
Nervous	0.76						
Confident		0.46					
Comfortable		0.68					
Proud		0.83					
Happy		0.86					
Cheerful		0.80					
Hopeless			0.54				
Incompetent			0.74				
Frustrated			0.64				
Helpless			0.81				
Embarrassed				0.68			
Afraid				0.53			
Concerned				0.46			
Sad					0.80		
Worried					0.73		
Ashamed						0.77	
Humiliated						0.80	
Resigned							0.93

Note: Factor loadings with absolute values less than 0.50 are not reported.

Table 3
Ratings of Mothers' Emotional Responses and Self-efficacy Beliefs towards Boys and Girls with AD/HD

Emotional Responses and	*Males*		*Females*		
Self-efficacy Beliefs	*Mean*	*SD*	*Mean*	*SD*	*t*
Annoyance	0.48	0.82	0.55	0.97	−0.36
Positive	−0.00	0.85	0.13	1.07	−0.68
Incompetence	0.08	1.23	−0.07	0.91	0.70
Concern	0.06	1.01	−0.09	1.05	0.73
Sadness	0.18	0.97	0.17	1.01	0.03
Shame	0.28	1.19	0.25	1.08	0.14
Resign	0.06	1.05	−0.16	1.07	1.00
Self-efficacy	3.28	0.68	3.61	0.52	−3.00**

Note: d.f. for *t*-tests = 115. Higher ratings indicate that the emotion is reported more frequently and the level of self-efficacy is higher.
**$p < 0.01$.

named as follows: factor 1, annoyance; factor 2, positive emotions; factor 3, feelings of incompetence; factor 4, concern; factor 5, sadness; factor 6, shame; and factor 7, resigned.

In order to investigate whether the above emotions and maternal self-efficacy beliefs were related to the sex of the child presented in the vignette, a series of independent samples *t*-tests were conducted with scores for each of the eight factors as dependent variables. The analysis revealed that there was no significant main effect of the child's sex on any of the emotions reported by mothers (see Table 3). However, significant effects of the child's sex on maternal self-efficacy beliefs were revealed ($t = -3.00$, $p = 0.003$). Specifically, mothers reported that they would be less effective, when dealing with a boy displaying the AD/HD symptoms than a girl (Table 3).

The Relationship Between Perceived Severity, Self-Efficacy and Emotional Responses

In order to examine how perceptions about severity of AD/HD, emotions towards children with AD/HD and self-efficacy beliefs were related to each other and to SDQ ratings as well, a series of correlational analyses were performed separately for boys (see Table 4) and girls (see Table 5). Judgements about severity were negatively correlated with mothers' sense of self-efficacy for both boys and girls. Perceived severity was also positively correlated with the emotion of

Table 4
Correlation between Perceived Severity, Emotions and Sense of Self-efficacy of Mothers towards Boys with AD/HD

	Severity	*Self-efficacy*	*Annoyance*	*Positive*	*Incompetence*	*Concern*	*Sadness*	*Shame*	*Resign*	*Conduct problems*	*Hyperactivity*	*Emotional problems*
Severity	1.00											
Self-efficacy	−0.41*	1.00										
Annoyance	0.15	−0.17	1.00									
Positive emotions	−0.15	0.03	−0.19	1.00								
Incompetence	0.39*	−0.36	−0.25	0.35	1.00							
Concern	0.14	−0.26	0.19	0.01	−0.05	1.00						
Sadness	0.00	−0.24	−0.07	−0.10	0.05	0.07	1.00					
Shame	0.03	0.04	−0.04	−0.28	0.07	−0.20	−0.25	1.00				
Resign	0.27	−0.02	0.20	0.15	0.10	−0.27	−0.12	0.08	1.00			
Conduct problems	0.20	−0.29	0.07	−0.06	0.10	0.13	0.28	−0.04	−0.32	1.00		
Hyperactivity	0.41*	−0.21	−0.07	−0.18	0.14	−0.10	0.09	−0.10	−0.12	0.51*	1.00	
Emotional problems	0.19	−0.30	0.11	−0.35	−0.39	0.10	0.07	−0.04	−0.20	0.38	0.23	1.00

Note: Alpha corrected for multiple tests following a Bonferroni test.
* = significant ($p < 0.01$).

Table 5
Correlation between Perceived Severity, Emotions and Sense of Self-efficacy of Mothers towards Girls with AD/HD

	Severity	*Self-efficacy*	*Annoyance*	*Positive*	*Incompetence*	*Concern*	*Sadness*	*Shame*	*Resign*	*Conduct problems*	*Hyperactivity*	*Emotional problems*
Severity	1.00											
Self-efficacy	−0.40*	1.00										
Annoyance	0.32	−0.22	1.00									
Positive emotions	0.01	0.17	0.23	1.00								
Incompetence	0.25	−0.09	0.07	0.12	1.00							
Concern	0.42*	−0.15	0.01	0.04	0.10	1.00						
Sadness	0.37*	0.01	−0.21	−0.01	−0.08	0.15	1.00					
Shame	0.21	0.06	0.05	−0.12	0.13	0.18	0.25	1.00				
Resign	0.03	0.09	0.05	−0.13	0.02	0.21	−0.15	−0.04	1.00			
Conduct problems	0.37*	−0.30	0.30	0.03	0.34	0.09	0.18	0.26	−0.08	1.00		
Hyperactivity	0.37*	−0.21	0.06	−0.20	0.21	0.03	0.19	−0.11	0.06	0.43*	1.00	
Emotional problems	0.39*	−0.25	0.26	0.14	0.02	0.28	0.19	0.23	0.01	0.40*	0.25	1.00

Note: Alpha corrected for multiple tests following a Bonferroni test.
* = significant ($p < 0.01$).

feeling incompetence for boys and with the emotions of feeling concern and sadness for girls. In order to test weather these differences in correlations between severity and incompetence, concern and sadness for boys and girls were statistically significant, the above correlation scores have been transformed to z-scores and Fisher's exact test has been performed. The difference in correlation between severity and incompetence in the two sexes was revealed non-significant. The difference in correlation between severity and sadness as well as the difference in correlation between severity and concern for boys and girls were revealed significant at the 0.05 level. Regarding the relationship between the constructs of severity and self-efficacy and the SDQ ratings, significant positive correlations were found between severity and all three categories of hyperactivity, conduct and emotional problems for girls but only between severity and hyperactivity for boys. It seems that the most the girl in the vignette is perceived as a hyperactive child with conduct and emotional problems, the most severe her condition is considered. On the contrary, only hyperactivity appears related to perceptions of severity for boys.

Discussion

This study aimed to investigate mothers' reports of their projected emotional responses and sense of self-efficacy when presented with a hypothetical child with AD/HD.

The results of this study clearly show that the symptoms of AD/HD, Predominantly Hyperactive-Impulsive Type are perceived by mothers as generating a problematic condition with negative consequences for both boys and girls with AD/HD, and the parent. In particular, it was found that mothers identified the behaviour presented in the vignette as symptomatic of AD/HD and further, regarded this behaviour as a significant problem. Thus, even mothers who are not daily confronted with the difficulties of the interaction with a hyperactive child, appear to perceive AD/HD as a challenging condition.

Second, mothers reported that AD/HD symptoms would elicit predominantly negative emotions such as annoyance, feelings of incompetence, sadness, shame, resign, concern and only few positive emotions. This finding is consistent with those of other studies showing that AD/HD usually has a great impact on parents' psychological condition, as they experience elevated levels of stress and anxiety.[19–21]

Third, it was found that mothers of normal children believe that behaviours indicative of AD/HD would challenge their parenting capability and therefore, limit their effectiveness as parents. This finding is in accordance with findings from previous studies demonstrating low self-efficacy ratings of parents of children with AD/HD.[12,20,29,30] Furthermore, mothers rated their sense of self-efficacy as significantly lower in the case of boys. It seems that, even though the behaviour presented in the vignette is identical for both sexes, mothers feel that it is easier for them to control girls' behaviour than boys'. Hyperactive boys usually exhibit more oppositional and aggressive behaviours than hyperactive girls who display more indirect aggression, such as social manipulation and ostracism.[50] Given that oppositional-defiant behaviours are upsetting and problematic to parents,[51] it seems understandable why mothers feel less able to deal with hyperactive boys.

The inclusion of perceived severity of hyperactive behaviour in the study as a variable that might influence mothers' self-efficacy beliefs and emotions towards hyperactive boys and girls generated several findings. Clearly, judgements of severity of the behaviour were negatively related to maternal sense of self-efficacy. In other words, mothers who viewed the hyperactive behaviour presented as being more severe also considered that they would be less able to deal with it. From this it seems that parental efficacy is related more to perceptions of severity than actual behaviours.

Despite the fact that there are no sex differences found in perceptions of severity of hyperactive behaviour and in emotions elicited by such behaviour, judgements of severity are found to slightly differentiate mothers' emotional responses to boys and girls with AD/HD. In particular, the more severe they considered the behaviour in girls the more likely they were to report feelings of concern and sadness towards them. Weiner[45] argued that the more one judges another person as non-responsible for his/her negative actions, the more one experiences emotions of tolerance. According to a previous study on parents' causal attributions of AD/HD,[43] parents tend to attribute girls' hyperactivity to biological causes and therefore, regard girls as not responsible for such behaviour. In line with attributional theory,[45] it might well be the case that mothers attributing non-responsibility to girls for their hyperactive behaviour, experienced emotions of concern and sadness.

Taken together, the negative emotions and the low sense of self-efficacy found to be elicited towards a child with AD/HD may have an important impact on the reactions towards the child and the

outcome of the hyperactive child's difficulties as well. Several studies have well documented on the one hand, the relationship between negative parental feelings and harsh parenting practices[52,53] and on the other hand, the relationship between negative emotional and behavioural reactions and exacerbation of children's difficulties.[9,10,12] Given that, in our study mothers seem to feel less efficacious to control boys' behaviour and experience negative feelings towards them, it is possible that boys are more likely than girls to be at risk for developing aggressive behaviour which will probably lead to a worse outcome of the disorder.

This study aimed to extend previous research on parental sense of self-efficacy and emotions towards children with AD/HD in several ways. First, the findings provided evidence that mothers of normal children are very similar to mothers of children with AD/HD in relation to their emotions and sense of self-efficacy towards this condition. Thus, this study demonstrated the possible way mothers would think, feel, and therefore, react in case of having a child with AD/HD. Given that every parent is potentially facing the possibility of having a child with AD/HD, the implementation of preventive programmes should centre upon the reduction of possible negative parent–child interactions.

Second, this study established the sex of the child as an important variable that should be further examined in future studies, since it was found that mothers have different perceptions of self-efficacy towards a boy's and girl's hyperactive behaviour.

Third, the findings of the study have several implications from a clinical perspective. It has been demonstrated that mothers may enter into a relationship with a hyperactive child with fixed negative emotions and low sense of self-efficacy. Within the framework of meta-emotion theory, it is claimed that parental awareness and healthy management of parents' own emotions plays a central role in how parents socialise their children's emotions and in child outcomes.[54,55] Thus, practitioners who implement cognitive-behavioural intervention programmes should assist parents of AD/HD children in regulating their negative emotions, replacing maladaptive perceptions with more realistic ones and feeling confident about their capacities to cope with challenging child behaviours. Treatment sessions should create opportunities for success in parent–child interactions as well. Parents should be encouraged to believe that children's problems are susceptible to improvement and that they, as co-therapists, can produce better outcomes in children's lives.

Nevertheless, there are several caveats and limitations that should be taken into account when interpreting the findings. First, the present study shares in the weakness of all self-report studies. Parents' responses to vignettes might not disclose how they actually thought and felt and therefore, might not represent their actual behaviour. Second, the study was restricted to predictive relationships and cannot yield any causal associations between the variables. Even though emotions and sense of self-efficacy have been found to relate to perceptions of severity, the direction of causality for the relations found is yet an unresolved matter that might serve as a promising area of study. Third, the possibility of having a child diagnosed with a psychiatric condition was not explored in the assessment of the mothers. It is possible that in these cases the results would be slightly different, but the direction of the difference is uncertain. Mothers with a child diagnosed with a psychiatric condition might feel either more positive and efficacious towards the child in the vignette, since the problems reported would be familiar to them, or less positive and efficacious, since their daily encounters with such problems might have already created feelings of disappointment and helplessness. Therefore, the conclusions drawn from the study should be dealt with caution.

Bearing in mind the potential limitations of this study, the findings presented contribute to our general understanding of risk and protective factors in the developmental course and outcome of AD/HD. Such understanding is widely recognised as one of the major challenges in the growing field of developmental psychopathology.

Summary

It has been well documented that the outcome of AD/HD is moderated, to some extent, by the quality of parenting. Nevertheless, little is known about the determinants of parenting practices, like maternal emotional reactions and cognitions about AD/HD and their interactions. Moreover, there is evidence that the sex of the child affects a parent's response to displays of difficult behaviour. If the determinants of parenting practices are different for boys and girls, then the developmental trajectories of boys and girls with AD/HD may be different as well.

This study examined the impact of child gender on mothers' emotional responses to the symptoms of child AD/HD, as described in a

hypothetical vignette, and the extent to which these responses were related to self-efficacy beliefs and perceived severity of the disorder. Participants ($N = 118$) selected at random from the general population of mothers with children attending pre-school were presented with a vignette describing a typical child with AD/HD. For half of the parents the vignette described a boy and for half a girl. Parents completed a questionnaire with three scales relating to their emotional response to AD/HD behaviours, their sense of parenting efficacy in relation to AD/HD behaviours, and their attributions about the severity of problems described. Parents also rated the behaviour in the vignette using a standard rating scale.

In general, both male and female AD/HD elicited negative emotions from mothers and maternal self-efficacy was low. This was especially so for male AD/HD. Perceived severity of the behaviour was negatively correlated with maternal sense of self-efficacy. These findings provide evidence that mothers of normal children have fixed negative emotions and low sense of self-efficacy towards a child with AD/HD. Negative emotions and low sense of self-efficacy may have an important impact on the reactions towards the child and the outcome of the child's difficulties as well. Given that, in this study, mothers presented lower sense of self-efficacy towards boys with AD/HD, it is possible that boys are more likely than girls to be at risk for developing disruptive behaviour and coercive interaction patterns with their mothers. Taken together, the findings of this study suggest that maternal emotions and sense of self-efficacy towards children with AD/HD, especially boys, are key elements for change in the implementation of a cognitive-behavioural intervention programme.

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