

AD/HD Symptoms and Conduct Problems: Similarities and Differences in Maternal Perceptions

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Several theories attempt to explain the high co-occurrence of Attention Deficit/Hyperactivity Disorder (AD/HD) and Conduct Problems (CP). A strong possibility is that AD/HD behaviours lead to the development of CP, due to family coercive interaction patterns, maintained through parental false beliefs regarding child problem behaviour. We compared maternal perceptions about AD/HD behaviors and CP, and the possible reactions elicited by such behaviours. The sample consisted of 317 mothers of boys and girls aged 4–6. Four versions of The Parental Account of the Causes of Childhood Problems Questionnaire were used, in which a vignette was ascribed to either a boy or a girl displaying some of the major AD/HD behaviours or CP. The results showed that CP were perceived as significantly more severe than AD/HD behaviours. Moreover, AD/HD behaviours were attributed to biological causes more often than CP, and less strict rearing practices were chosen for AD/HD symptoms. Our findings provide evidence that mothers usually perceive AD/HD behaviours and CP as separate entities and may behave accordingly with their children.

KEY WORDS: AD/HD; conduct problems; maternal perceptions; attributions; disruptive behaviour.

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The two most common types of behaviour problems that bring children to Mental Health Services are symptoms of Attention Deficit/Hyperactivity Disorder (AD/HD) and Oppositional Defiant Disorder/Conduct Disorder (ODD/CD) (Abikoff & Klein, 1992). They represent two different diagnostic categories in the DSM-IV, under the broader category of Disruptive Behaviour Disorders (DBD) (APA, 1994). Primary features of AD/HD include inappropriate patterns of inattention, impulsivity and hyperactivity, ODD involves oppositional, negative and hostile behaviour, and CD is characterized by the violation of rules and/or the basic rights of others (APA, 1994).

Research has consistently showed high levels of comorbidity between AD/HD behaviours and conduct problems, ranging from 35% to 70% (Tannock, 1998). The high co-occurrence between AD/HD and ODD/CD has led authors to raise questions about the validity and clinical use of the distinction between them in the current diagnostic manuals (Angold, Costello, & Erkanli, 1999; Biederman, Newcorn, & Sprich, 1991).

According to Rutter (1997), comorbidity of mental problems may: (1) represent two manifestations of the same disorder, (2) reflect two stages of the same underlying condition, (3) arise from the same or correlated risk factors, (4) represent a nosologically distinct condition, or (5) be due to one condition predisposing the other. Regarding AD/HD behaviours and conduct problems, a strong possibility is that one type of behaviour may predispose the development of the other (Burns & Walsh, 2002). Within the framework of an epigenetic approach to development that has been adopted in developmental psychopathology (Kupfer, First, & Regier, 2002), AD/HD behaviours are considered the “motor” that drives the development of conduct problems (Burns & Walsh, 2002; Loeber, Green, Lahey, Frick, & McBurnett, 2000; McMahon & Estes, 1997). Current studies indicate that AD/HD behaviours and conduct problems share a common genetic etiology (Faraone, Biederman, Keenan, & Tsuang, 1991), but the genetic factors associated with conduct problems are heavily dependent upon the presence of environmental risk for their expression (Loeber et al., 2000).

Parents of children with AD/HD behaviours struggle on a daily basis with getting their children to adhere to family rules and, as a result, difficulties in parent-child interactions often arise (Johnston, 1996). According to Patterson’s (1982) family coercion model, failure to comply with repeated parental directives, which in the case of AD/HD is mainly due to the deficits in self-regulation, may result in an escalation of negative parent-child interactions. Thus, rejecting parents may reinforce the child’s oppositional and aggressive behaviour by attending either inconsistently or punitively only to disruptive behaviour, thereby increasing the likelihood of the establishment of cycles of reciprocated aggression.

Even though Patterson’s model is particularly useful in explaining the development of conduct problems in children, it fails to reveal the etiological mechanisms responsible for dysfunctional parenting behaviour (McKinnon, Lamb, Belsky, & Baum, 1990). Cognitive variables concerning parents’ perceptions of

themselves and their children have been shown to be very important in this process. Parental attributions of child behaviour have been linked to parental affective and behavioural responses (Johnston, Patenaude, & Inman, 1992; MacKinnon-Lewis, Lamb, Hattie, & Baradaran, 2001). Further, it has been suggested that parents are expected to become more upset and respond with punishment and power-assertive methods when they perceive the child as being responsible for his/her misbehaviour (Dix & Grusec, 1985; Dix, Ruble, & Zambarano, 1989).

Several investigators examining parental attributions specifically about children with AD/HD behaviours and/or conduct problems found that parents usually hold children less responsible for hyperactive symptoms than for conduct problems (Johnston et al., 1992). In addition, they usually perceive oppositional/defiant behaviours as more upsetting and serious than hyperactive behaviours (Hastings & Rubin, 1999; Johnston et al., 1992). Moreover, they indicate stronger disapproval, criticism and punishment towards oppositional/defiant than hyperactive behaviours (Hastings & Rubin, 1999).

This whole line of research demonstrates that parents appear to be making attributions for hyperactivity and conduct problems that are generally consistent with the idea that these conditions are separate entities. It seems that parents usually fail to understand that the deficits in self-control, which characterize AD/HD behaviours, often result in failure to comply with directives and/or control impulsive reactions. Therefore, given that parents may not capture the interrelationship between AD/HD behaviours and conduct problems, between what the child 'isn't able' and 'doesn't want' to do, it is possible that they will exercise disapproval and punishment towards behaviours which are not under the child's control.

Nevertheless, research on parental attributions about AD/HD behaviours and conduct problems has been limited to the study of perceived intentionality of child problem behaviour. In this study, we extended previous research by: (1) comparing causal attributions about AD/HD behaviours and conduct problems with the use of a whole range of possible causes; (2) comparing maternal perceptions of the nature of AD/HD behaviours and conduct problems, and (3) comparing the possible reactions elicited by AD/HD behaviours and conduct problems. We predicted that mothers would have different attributions about the causes and nature of AD/HD behaviours and conduct problems and employ different child rearing practices towards them. In addition, we examined the possible effects of the sex of the child on parental attributions about AD/HD behaviours and conduct problems.

METHOD

Participants

A total of 317 mothers of boys and girls aged 4–6, enrolled in 25 kindergartens and nursery schools in Athens were recruited. Mothers' mean age was 34.8 years

($SD = 4.88$). Half of the sample originated from Athens, whereas the other half was almost equally divided into three groups. One third originated from another big city, one third from a small province city and one third from a village. Almost 49% of the sample of mothers had received college or university education and almost 35% had graduated high school.

Measures

A written analogue methodology, based on “The Parental Account of the Causes of Childhood Problems Questionnaire” (PACCP; Sonuga-Barke & Balding, 1993) which is designed to examine adult attributions of common childhood problems ascribed to a child described in a written vignette, was used. Four versions of the PACCP were used in which the vignette was ascribed to either a boy or a girl displaying some of the major symptoms of either AD/HD or conduct problems. Each vignette was followed by 48 items grouped into three sections. These covered:

A. *Perceptions of the Nature of AD/HD or Conduct Problems*

Perceptions of the nature of the problem behaviour described in the vignette were assessed along three dimensions: severity, atypicality and social impact.

a. *Severity of the Problem Behaviour*

Five ratings of how problematic, specific to the child, uncontrollable, stable and global the problem behaviour was judged to be. This scale was partially based on Weiner’s (1995) theory about the dimensions of causal attributions. A sample question is: “To what extent do you think that John has control over behaving in this way?” Mothers were required to respond on a 5-point Likert type scale ranging from 0 (*no problem*) to 5 (*severe problem*). The scale had high internal consistency (*Cronbach’s alpha* = .85).

b. *Atypicality of the Problem Behaviour*

Four ratings of how atypical for the child’s age and sex, unique to the child and rare to most children of that age the problem behaviour was judged to be. A sample question is: “How typical is John’s behaviour for his age?” Mothers were required to respond on a 5-point Likert type scale ranging from 0 (*no problem*) to 5 (*severe problem*). The total score revealed an alpha of .79, indicating satisfactory internal consistency of the scale.

c. Social Impact of the Problem Behaviour

Three ratings of how much impact the problem behaviour was judged to have on his parents and the extent to which the child was judged to be unpopular among his/her peers and unhappy. A sample question is: "How popular is John among his peers?". Higher ratings indicated perceptions of greater negative social impact of the problem behaviour. The scale was proved to have high internal consistency (*Cronbach's alpha* = .82).

B. Attributions About Possible Causes of AD/HD and Conduct Problems

This section included 25 statements of likely causes of the behaviour described in the vignettes. These ranged from biological (e.g. genetic, brain damage) to environmental factors (e.g. early loss, parental style). Sample item: "John behaves as he does because he enjoys behaving like that." Mothers were required to respond on a 5-point Likert type scale ranging from 0 (*very likely*) to 5 (*very unlikely*), indicating their degree of agreement with the proposed statement.

C. Parental Responses to Child Problem Behaviour

This section included 11 statements describing possible actions that the child's parents would undertake in order to help him/her. Sample item: "To try and control John's behaviour his parents should be less strict with him at home." Mothers were required to respond on a 5-point Likert type scale ranging from 0 (*strongly agree*) to 5 (*strongly disagree*), indicating their degree of agreement with the proposed statement.

The questionnaire was translated into Greek by a bilingual Greek/English speaker and checked for consistency of meaning by an expert translator. It was then back-translated into English and the equivalence of the items on the original questionnaire and the Greek version were rated by five English psychology postgraduate students. There was a very high level of consistency between these versions with the mean rating of equivalence being 4.10 on a 5-point scale ranging from 1 (*not similar at all*) to 5 (*identical*).

Procedure

A between-subjects design was used. Mothers were randomly assigned to one of four groups and asked to complete one version of the PACCP. The questionnaires were handed out by the nursery school teacher of the child and a letter accompanied the questionnaire, explaining that the aim of the study was to investigate adults' attitudes towards children's behaviour. Care was taken that in each nursery school only questionnaires including the same version of the vignette (either male or

female child, displaying symptoms either of AD/HD or conduct problems) were administered so that the participants remained unaware of the existence of the rest three versions. Mothers were informed that the questionnaires were anonymous and that personal information would not be released. A box was placed in the play room of each of seven kindergartens where mothers could deposit the completed questionnaires. The box was opened at a predetermined date and the questionnaires were then collected by the nursery school teacher and given to the researcher.

Statistical Analyses

Factor analysis was performed in order to detect the minimum number of factors for meaningful comparisons. Multifactorial analyses of variance (ANOVAs) were also carried out to identify possible interaction effects.

RESULTS

Data were obtained from the 317 of the 600 questionnaires that were distributed, indicating a response rate of approximately 53%. 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. Of the 317 completed questionnaires, 115 presented a male and 202 presented a female version of the vignette. Moreover, 242 presented a child displaying symptoms of AD/HD and 75 presented a child displaying symptoms of conduct problems.

Perceptions About the Nature of AD/HD and Conduct Problems

In order to double check the internal consistency of the three scales, a Principal Component Analysis with minimum eigenvalues set at 1.00 and using varimax rotation was performed on the ratings of the 12 items relating to perceptions of the nature of the problem behaviour presented in the vignette. The factor analysis yielded three factors that accounted for 61.93% of the variance (Table I). The three factors related to perceived atypicality, severity and social impact of the problem behaviour.

In order to investigate the possible influence of child's sex and the type of problem behaviour examined and their interactions on parental perceptions regarding the severity, atypicality and social impact of AD/HD and conduct problems, several multifactorial ANOVAs were performed. Inspection of the means presented in Table II shows a significant effect of the type of problem behaviour on ratings of perceived severity [$F(2, 604) = 23.00, p < .001$] with conduct problems being rated as a more severe condition than AD/HD.

Table I. Principal Component Analysis of Perceptions about the Nature of AD/HD and Conduct Problems

Item	Factor (percent variance)		
	1 (26.22)	2 (22.32)	3 (13.39)
Atypicality for age	.68		
Atypicality for sex	.72		
Uniqueness	.71		
Rarity	.78		
Severity		.67	
Specificity		.84	
Uncontrollability		.55	
Stability		.71	
Globality		.68	
Concern			.64
Unpopularity			.90
Unhappiness			.57

Note. Factor loadings with absolute values less than .40 are not reported.

Investigation of the effects of the type of problem behaviour on perceptions of atypicality revealed no significant main effects [$F(2, 604) = 1.9, p > .05$]. On the other hand, there was a significant main effect of the child’s sex, with both AD/HD and conduct problems being perceived as significantly more atypical for girls than for boys. [$F(1, 604) = 44.99, p < .001$].

Finally, there was a significant effect of the type of problem behaviour on ratings of social impact [$F(2, 604) = 38.86, p < .001$]. In particular, conduct problems were considered to have more negative social impact on children’s lives than AD/HD.

Table II. Mothers’ Perceptions of the Nature of AD/HD and Conduct Problems for Boys and Girls

Factor	Problem behaviour	Males ($N = 230$)		Females ($N = 404$)		Total ($N = 634$)	
		Mean	SD	Mean	SD	Mean	SD
Severity	AD/HD	-.13	1.00	-.01	.89	-.05	.92
	Conduct problems	.62	.95	.35	1.05	.48	1.00
	Total	.11	1.03	.04	.90	.06	.95
Atypicality	AD/HD	-.43	1.05	.34	.83	.11	.97
	Conduct problems	-.45	.99	.14	1.03	-.15	1.04
	Total	-.41	1.02	.26	.88	.01	.99
Social impact	AD/HD	.11	1.14	.15	.87	.14	.95
	Conduct problems	-.29	1.12	-.54	1.19	-.42	1.16
	Total	-.00	1.08	-.01	.98	-.01	1.02

Note. Higher ratings indicate the behaviour is rated as more atypical, severe and with more negative impact.

Table III. Principal Component Analysis of Causal Attributions about AD/HD and Conduct Problems

Item	Factor (percent variance)				
	1 (12.68)	2 (9.60)	3 (9.46)	4 (8.79)	5 (7.52)
Mother's death	.81				
Father's death	.79				
Divorced parents	.76				
Single-parent family	.74				
Recent bereavement	.67				
Child's enjoyment		.67			
Lack of discipline		.67			
Attention seeking		.72			
Spoilt child		.74			
Purposeful behaviour		.50			
Mental sub-normality			.79		
Premature birth			.72		
Mild brain damage			.83		
Indifferent parents				.71	
Strict parents				.57	
Unloving parents				.76	
Can't help it				-.45	
By nature				-.52	
Strict school					.71
Deafness					.55
Inner city area					.60
Working mother					.45

Note. Factor loadings with absolute values less than .40 are not reported.

Attributions About the Causes of AD/HD and Conduct Problems

The associations between the 25 ratings of likely causes of the problem behaviour presented in the vignette were examined using a principal component analysis, with an orthogonal rotation to varimax solution. The initial factor analysis provided six factors. However, the two items of the last factor also loaded on the other factors, so a five-factor solution was forced, accounting for 48.06% of the variance (see Table III). The first factor related to parental absence, the second to child's fault, the third to biological cause, the fourth factor referred to parental fault, and the last factor related to difficult life circumstances.

Several ANOVAs were then performed in order to examine the effect of the independent variables on each one of the five causal factors. A significant problem behaviour effect was found for the "child's fault" factor [$F(2,525) = 60.86$, $p < .001$] and the 'difficult life circumstances' factor [$F(2,525) = 10.99$, $p < .001$] with mothers attributing mostly conduct problems to these factors than AD/HD. Finally, a problem behaviour effect was found for the 'biological' cause [$F(2,525) = 5.24$, $p < .01$] with conduct problems getting significantly lower ratings than AD/HD (Table IV).

Table IV. Mothers' Causal Attributions about AD/HD and Conduct Problems for Boys and Girls

Factor	Problem behaviour	Males (N = 230)		Females (N = 404)		Total (N = 634)	
		Mean	SD	Mean	SD	Mean	SD
Parental absence	AD/HD	-.13	.90	.02	.96	-.02	.94
	Conduct problems	.18	1.07	.19	.95	.19	1.00
	Total	.06	1.00	.10	.95	.09	.97
Child's fault	AD/HD	.16	.81	.30	.96	.26	.92
	Conduct problems	.38	.76	.31	.71	.35	.73
	Total	-.01	1.07	.05	1.05	.02	1.06
Biological cause	AD/HD	-.03	1.12	.18	.98	.12	1.02
	Conduct problems	-.29	.82	-.39	.81	-.34	.81
	Total	-.16	1.02	.07	.98	-.00	1.00
Parental fault	AD/HD	-.18	.93	-.13	.99	-.14	.97
	Conduct problems	.56	.95	.09	1.04	.31	1.02
	Total	.07	1.00	-.02	.99	.02	.99
Difficult circumstances	AD/HD	-.01	.80	-.22	.99	-.16	.94
	Conduct problems	.71	.95	.23	1.01	.46	1.00
	Total	.18	1.02	-.08	.98	.00	1.00

Note. Higher ratings indicate factors are judged more likely to be causal.

* $p < .01$.

** $p < .001$.

Table V. Principal Component Analysis of Perceptions about Recommended Parental Reactions

Item	Factor (percent variance)			
	1 (15.60)	2 (13.70)	3 (12.00)	4 (11.22)
Show more love	.65			
Try and work it out	.65			
Ask why he/she is unhappy	.77			
Help with school-work		.58		
Move school		.50		
Change diet		.65		
New friends		.55		
Stop watching T.V.			.62	
Stop spoiling him/her			.76	
Leave alone				.75
Less strict at home				.68

Perceptions About Recommended Parental Responses to AD/HD and Conduct Problems

A factor analysis using varimax rotation was also conducted on the 10 items regarding recommended parental reactions to the child displaying the problem behaviour presented in the vignette. Four factors were extracted, accounting for 52.51% of the variance. As can be seen in Table V, the items loaded on the first factor reflected a tendency to approach the child, the items loaded on the second factor reflected a tendency to change the child's environment, the third factor referred to more strictness and the fourth factor referred to reduced control.

In order to investigate whether each one of the four factors revealed by the above factor analysis varied with the sex of the child and with the type of problem behaviour, a series of multifactorial ANOVAs were conducted. The analysis revealed that significant higher ratings on the factor 'strictness' were given to boys than girls [$F(1, 566) = 10.90, p = .001$]. Additionally, significant higher ratings on the above factor were given in the case of conduct problems compared to AD/HD [$F(2, 566) = 11.31, p < .001$] (Table VI).

DISCUSSION

We compared maternal perceptions about several aspects of AD/HD behaviours and conduct problems and examined the impact of child sex on these perceptions. We found that three of the five causal factors provided by the factor analysis regarding AD/HD behaviours and conduct problems seem to differentiate maternal attributions. On the one hand, mothers were found to attribute AD/HD behaviours to biological cause more often than conduct problems. Therefore, they appeared to make causal attributions for AD/HD symptoms that are very much in keeping with the neurobiological nature of the disorder

Table VI. Mothers' Ratings of Recommended Parental Responses for Boys and Girls

Factor	Problem behaviour	Males (N = 230)		Females (N = 404)		Total (N = 634)	
		Mean	SD	Mean	SD	Mean	SD
Approach	AD/HD	-.18	.95	-.15	1.02	-.16	1.00
	Conduct problems Total	.61 .19	.67 .91	.31 .05	.85 1.02	.45 .11	.78 .99
Change environment	AD/HD	.29	.89	-.29	.97	-.11	.98
	Conduct problems Total	.50 .32	.83 .89	.31 -.06	.94 1.00	.40 .07	.89 .98
Strictness	AD/HD	-.02	1.10	-.13	.95	-.09	1.00
	Conduct problems Total	.57 .13	.74 1.08	.24 -.10	.99 .99	.40 -.01	.89 1.02
Reduced control	AD/HD	-.17	1.13	.08	1.06	.00	1.08
	Conduct problems Total	.16 -.01	1.37 1.16	-.11 .05	1.20 1.02	.01 .02	1.28 1.07

Note. Higher ratings indicate the parental reaction is more likely to be recommended.

* $p < .01$.

** $p < .001$.

(Johnston & Freeman, 1997). On the other hand, mothers appeared to attribute conduct problems to child's fault and difficult life circumstances more often than AD/HD behaviours. Thus, it seems that mothers attribute the manifestation of conduct problems to environmental factors more frequently compared to AD/HD symptoms.

Furthermore, mothers rated conduct problems as more severe and with more negative impact on the children's lives than AD/HD behaviours. One possible explanation is that they probably feel less capable of dealing with conduct problems than AD/HD symptoms in an effective way. Indeed, research has demonstrated a relationship between perceived severity of problem behaviour and sense of self-efficacy in parents (Maniadaki, Sonuga-Barke, Kakouros, & Karaba, 2005). Moreover, it has been found that parents usually feel that they have less control over aggressive than hyperactive behaviours (Johnston et al., 1992).

Differences were found in parental responses towards AD/HD behaviours and conduct problems. In particular, mothers reported that they would employ less strict child rearing practices towards children displaying AD/HD symptoms than conduct problems. The model proposed by Dix et al. (1989) might be particularly useful in explaining this finding. According to the model, when parents hold the child responsible for negative behaviour, they are more upset by the behaviour and feel that it is more important to respond to it. On the contrary, when they consider child misbehaviour as non-intentional, it is likely that they will respond in less punishing ways. Thus, given that AD/HD behaviours were attributed to child's fault and difficult life circumstances less regularly than conduct problems, efforts to change them by exercising less strictness would be expected. In contrast, given that conduct problems were found to be attributed to environmental factors more often than AD/HD behaviours, it might be that parents tend to apply more strict practices towards conduct problems, probably because they feel more able to have control over and change environmental aspects rather than biological underpinnings.

Earlier research supports the above findings, in which hyperactivity and conduct problems are perceived by parents as distinct entities (Hastings, & Rubin, 1999; Johnston et al., 1992). Parents usually make this distinction between AD/HD and conduct problems, failing to acknowledge that AD/HD symptoms often create the substrate for the emergence of conduct problems (Burns & Walsh, 2002; McMahon & Estes, 1997). Punishment for a behaviour that a child finds difficult to control may provide fertile ground for the persistence of AD/HD symptoms and the development or maintenance of coercion cycles in parent-child interactions, further leading to the emergence of conduct problems. Thus, the attributional messages that parents provide to children may prove critical for the course of AD/HD as well as for the emergence of secondary difficulties which are usually those who bring children to Mental Health Services (Abikoff & Klein, 1992).

Our study had several findings regarding the effects of the child's sex on parental attributions about AD/HD symptoms and conduct problems. Even though mothers were presented with identical disruptive behaviours for boys and girls, they had different attributions about the nature of AD/HD behaviours and conduct problems in the two sexes. Namely, they perceived both AD/HD symptoms and conduct problems as more atypical for girls than boys. A similar finding was found in a recent study, where girls' disruptive behaviour was considered as less sex-typical than boys' similar behaviour by trainee nursery teachers (Maniadaki, Sonuga-Barke, & Kakouros, 2003).

Parents are more likely to be stricter with boys than with girls with regards to their behaviour problems. This finding also seems to be quite robust in the literature (Block, 1983; Lytton & Romney, 1991). It has been argued that parents may punish their sons more because boys actually provide opportunities to receive punishment due to their more compelling and difficult behaviour (Maccoby & Jacklin, 1975). Nevertheless, our study showed that for identical disruptive behaviours, mothers believe that boys should be treated with more strictness. Thus, if disruptive behaviours are considered by the main socializing agents as less normative for girls and more typical of boys, and as requiring different responses, this may lead to different socialization practices towards the two sexes which might further implicate different course and outcome of AD/HD behaviours and conduct problems for the two sexes.

These findings could have several implications for treatment. This study demonstrated that mothers usually fail to understand the interrelationship between AD/HD symptoms and conduct problems and might treat them as two different conditions. Therefore, mothers may enter into clinical relationships not only with preconceived ideas about their children's problems, but also with well-established patterns of interaction with them (Sonuga-Barke & Balding, 1993). It is possible that pre-existing parental perceptions interact with emerging behaviours in a complex way to shape both cognition and parental responses that might become rigid over time (Baden & Howe, 1992).

In order to understand the above interrelationship, parents usually need professional help. However, it has been demonstrated that professionals tend to provide parents with less information about conduct problems than about AD/HD symptoms (Flannagan, Pillow, & Wise, 2002). Moreover, information about the possible co-existence of these two types of problems, or rather on the way the one may lead to the other, is rarely communicated by professionals. Thus, there is need for clinicians to explain to parents the mechanisms of the development of conduct problems and the possibility of different trajectories for boys and girls.

Our study also highlights the importance of helping mothers adopt more effective responses towards the disruptive behaviours often displayed by a child with AD/HD. Given that when solving child behaviour problems most parents prefer controlling or negative strategies, parent training should be helpful in

shifting to a more positive and preventive approach (Cunningham & Boyle, 2002).

Our findings are subject to several limitations. First, although the use of written vignettes provided the opportunity to exercise control over conditions to which mothers were exposed, this methodological advantage has the shortcoming of inevitable limited ecological validity. Second, the generalizability of our results is restricted to mothers, and future research might benefit by examining fathers' and teachers' attributions about child disruptive behaviours. A final issue concerns the non-clinical nature of our sample. Our study examined population-based parental beliefs about AD/HD behaviours and conduct problems and possible responses towards them. Future research might benefit by comparing those with the perceptions of parents of children with diagnosed AD/HD.

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