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ORIGINAL CONTRIBUTION

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Adults' self-efficacy beliefs and referral attitudes for boys and girls with AD/HD

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Abstract Males with Attention Deficit/Hyperactivity Disorder (AD/HD) are referred to specialists significantly more frequently than females. The aim of this study was to examine differences in mothers' and prospective educators' self-efficacy beliefs and severity perceptions towards boys and girls with AD/HD and to explore the inter-relationships between those perceptions and referral judgements. One hundred and fifteen female prospective preschool educators and 118 mothers of boys and girls aged 4–6, enrolled in kindergartens in Athens completed a questionnaire that: (a) presented a vignette describing a typical boy or girl with AD/HD, and (b) was followed by two scales exploring severity perceptions and self-efficacy beliefs with reference to the child described in the vignette. Mothers' sense of self-efficacy was higher than educators' and both samples had higher sense of self-efficacy towards girls with AD/HD than boys. Educators rated the boys' behaviour as significantly more severe than girls'. Finally, perceived self-efficacy predicted severity perceptions and severity perceptions predicted referral decisions. To conclude, adults' differentiated perceptions of severity of AD/HD in boys and girls, which might be influenced by their own limited self-efficacy beliefs, especially towards males, might account for a proportion of the differences in referral ratio of boys and girls with AD/HD.

Key words AD/HD – sex differences – referral – self-efficacy – educators

Introduction

Attention Deficit/Hyperactivity Disorder (AD/HD) is one of the most common reasons of referral to child mental health services [11, 19]. Males present the disorder at higher rates than females with a mean ratio of 4:1 in clinical samples [4]. This substantial discrepancy in prevalence suggests that far fewer girls with AD/HD are brought to the attention of specialists.

In their attempt to explain the gender disparity in AD/HD, researchers either focus on the disproportionate frequency of *occurrence* of AD/HD in boys and girls or on the disproportionate frequency of *referral* of boys and girls with such difficulties. In the first case, they share the belief that AD/HD really affects boys more often than girls and investigate possible biological or child-rearing differences by gender [5, 11, 17, 34]. In the second case, they are based on the assumption that differences in the referral process of boys and girls might mask the

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true picture of the prevalence of the disorder in the two sexes [28, 33].

One of the most common explanations given is that sex differences in referral rates of boys and girls with AD/HD reflect the nature of boys' and girls' associated difficulties. For example, part of the higher male-to-female ratio in clinical samples might result from boys being more likely to be referred due to their disruptive behaviour, especially in school settings [9, 12, 13]. For that reason, it has been claimed that gender-correlated behaviour patterns may be more frequently identified as AD/HD in boys than girls. However, it has been found that, even after correction for co-morbid Conduct Disorder or Oppositional Defiant Disorder, there remains some bias favouring referral of boys [6]. Thus, it is still unclear whether the main reason for which the children are referred truly reflects: (a) their predominant problems, (b) the predominant problems the referring agent perceives in them, (c) the predominant problems children cause to the referring agent, or (d) a combination of these.

Parents and educators are primary sources of referral of children with behavioural problems to child mental health services. A whole line of research investigates the factors that may influence adults' decision to refer a child for psychological assessment. Generally, studies of this kind focus on characteristics of the child. There have been only few on characteristics of the referrer as factors susceptible to influence referral judgements [1, 21]. Among the latter, cultural factors and sociodemographic characteristics have been examined [22, 30]. In addition, referring agents' perceptions about the severity of the child's problem have been revealed as a strong predictor of referral judgement [1]. Finally, a key variable identified as influencing referral decisions—mainly in educators—is their personal sense of self-efficacy [16, 29, 31, 36].

However, very few of the above studies have taken into account the sex of the child as an independent variable that might differentiate either adults' ratings of severity of AD/HD or their personal sense of self-efficacy that have both been revealed as influential factors of referral decisions. In a previous study of ours, it was found that mothers' sense of self-efficacy to deal with AD/HD behaviours was lower in the case of boys compared to girls, although their ratings of severity did not differ between the two sexes [26]. However, to our knowledge, no published research has examined the impact that the sex of the child could possible exert on educators' perceptions regarding the above-mentioned variables.

Preschoolers with AD/HD frequently present a significant challenge for both parents and nursery teachers as they require close control and surveillance and often need specific support and encouragement in order to adhere to the family and class rules. These challenges might be more important in the case of boys, as they tend to display disruptive behaviour in significantly higher frequency compared to girls [9, 13]. Thus, hyperactive boys' behaviour could be perceived as more threatening both for the classroom's and home's normal function and for adults' sense of self-efficacy. It is possible that, in the case where adults consider themselves as less capable of dealing with hyperactive boys' behaviour than girls', they might perceive this behaviour as more severe in boys than girls. In other words, severity perceptions might refer to the apprehension both of the child's behaviour and the adult's own capacity to deal with it. But, as referring agents' perceptions about the severity of the child's problems is a strong predictor of referral judgements [1], low sense-of self-efficacy in front of hyperactive boys might indirectly lead to higher referral rates of boys through adults' biased perceptions of the severity of their difficulties. In sum, such a view posits that the sex of the child with AD/HD might interact with the referring agents' sense of self-efficacy in order to bias their perceptions of the severity of AD/HD in the child and guide differentially referral decisions.

Within this framework, the main aims of this study are the following:

1. To examine whether mothers' and educators' sense of self-efficacy to control behaviours indicative of AD/HD differ for boys and girls. It is predicted that self-efficacy levels will be lower towards boys than girls.
2. To investigate whether mothers' and educators' perceptions of the severity of AD/HD symptoms differ for boys and girls. It is predicted that perceptions of severity will be higher in the case of boys.
3. To explore whether perceptions of severity of AD/HD behaviours and referring agents' self-efficacy beliefs are related to each other and to referral judgements and whether such relationships vary with the child's sex. It is predicted that perceptions of severity and self-efficacy beliefs will be negatively correlated. It is also predicted that perceptions of severity will be positively correlated to referral judgements.

Methods

Participants

The sample consisted of two subgroups. The first one included 115 female Greek students of the Department of Early Childhood Education at the Technological Educational Institution (T.E.I.) of Athens

(henceforth called educators), with a mean age of 19.9 years (SD = 1.24). Students of the above Department are expected, upon graduating, to enter a career as educators at nursery schools and kindergartens. The second subgroup included 118 mothers of boys and girls aged 4–6, enrolled in seven kindergartens and nursery schools in Athens, with a mean age of 34.2 years (SD = 4.1 years). About half of the mothers (55.6%) had two children, 31.6% had one child and 12.9% had three children or more.

Pre-service nursery teachers and mothers of a community sample of children were chosen because this study was on perceptions and not actual practices of potential referring agents. We aimed to examine which pre-conceived ideas about child behaviour would accompany educators and mothers before having the chance to interact with a hyperactive child. After all, given the fact that AD/HD is one of the most common childhood disorders, every parent or educator is potentially facing the possibility of having a child or a pupil with AD/HD.

Measures

Two questionnaires were employed in this study. The first one was based on analogue methodology and was used in two versions, one including a vignette ascribed to a five-year-old boy and a second one including a vignette ascribed to a five-year-old girl. The vignette outlined some of the major symptoms of AD/HD, Predominantly Hyperactive—Impulsive Type. The symptom list was derived from the DSM-IV diagnostic scheme [4]. The use of written vignettes (hypothetical scenarios), despite several limitations, is a well-known and widely accepted method in the study of attitudes and perceptions [18, 32]. The vignette was followed by 9 items, composing the two scales described below, 4 items referring to demographic information and one question regarding referral intention. More specifically, participants were asked to indicate whether they would refer or not the child described in the vignette to Child Mental Health Services if they were the mother/educator of this child. In addition, there was a question asking the participants whether they had ever met a child like the one described in the vignette. Only questionnaires where the answer to this question was negative were considered for analysis in order to ensure that participants' answers would not be influenced by actual interactions with children displaying AD/HD behaviours. The aforementioned scales were the following:

1. The "Scale for Assessment of Perceived Severity of Problem Behaviour" [25] was composed by 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 [39] theory about the dimensions of causal attributions. A sample question is: "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?". Responses were scored from 1 to 5, with higher ratings indicating perceptions of greater severity of the child's behaviour. The scale was proved to have high internal consistency (Cronbach's a = 0.86).
2. 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) [38]. This scale was composed by four items, where participants 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 classroom management system (or a harmonious everyday family life) with a hyperactive child in class (or at home). Items were scored from 1 to 5, ranging from a diminished sense of self-efficacy to high levels of self-efficacy to control such behaviour displayed by a child. Cronbach's alpha coefficient was calculated for the total score of the self-efficacy scale and was proved satisfactory (a = 0.78).

Before use, both scales were translated into Greek by a bilingual Greek/English speaker and checked for consistency of meaning by an expert translator. Following this, they were 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 where 1 represented *not similar at all* and 5 represented *identical*.

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 [14]. 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 [14]. 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". Participants 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 participants as indicative of AD/HD for both boys and girls.

Procedure

The questionnaires were administered to students by their professors of Psychology and were asked to complete them in class. They were also told that their participation was voluntary and that if they chose not to participate, there would be no reflection on their grade or their treatment as students of the Department. Finally, they were informed that a debriefing statement in the form of a short lecture should be made after data had been collected and analysed. Mothers were given the questionnaires by the nursery teacher of their child and they were asked to fill them in at home. A letter accompanied the questionnaire, explaining the purposes of the research, assuring the participants that personal information would not be released and results of this study would not include any identifying characteristics. Half of the participants in each subgroup (students and mothers) completed a questionnaire including a male version of the vignette and half completed a questionnaire including a female version of the vignette. The assignment of the vignette was made randomly. The questionnaires were then collected by the professors and the nursery teachers and handed to the researcher. Specific care was taken that both students and mothers remained unaware of the existence of two versions of the vignette.

Results

A total of 115 questionnaires were administered to students, 59 presenting a male and 56 presenting a female version of the vignette. All questionnaires were completed. A total of 300 questionnaires were administered to mothers, of which 118 were completed, 52 presenting a male and 66 presenting 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. Results from the analysis of the 233 questionnaires are presented below.

SDQ ratings

Analysis of the SDQ demonstrated that the participants identified the behaviours manifested by the child in the vignette as indicative of AD/HD symptomatology, thus validating the content of the vignette. Over 90% of the SDQ ratings exceeded clinical cut-offs for AD/HD (Table 1). The χ^2 tests performed revealed no difference neither between male and female AD/HD nor between mothers and educators in this regard. A large number of participants also believed that the child in the vignette had clinically significant levels of conduct problems. Moreover, emotional and peer problems were also perceived as possibly present in the child of the vignette but at clearly lower percentages compared to AD/HD symptoms. It is reminded that participants where asked whether they believed that the child in the vignette would *also* display behaviours described by the 25 items of the SDQ. The fact that other kinds of problems were perceived as possibly present in a child with AD/HD symptomatology as well might reflect accurate perceptions of the true clinical picture of such children, where hyperactivity and impulsivity rarely go alone, and high levels of comorbidity with conduct and peer problems is the rule rather than the exception [7].

Table 1 Ratings (%) of the behaviours in the vignette on the 5 SDQ subscales

Participants	SDQ subscales	Normal (%)		Borderline (%)		Abnormal (%)		Total
		M	F	M	F	M	F	
Mothers	Conduct problems	6.8	12.5	6.8	7.8	86.4	79.7	100
Educators		0	8.9	11.9	5.4	88.1	85.7	100
Mothers	Hyperactivity problems	9.1	4.6	0	6.3	90.9	89.1	100
Educators		3.4	0	3.4	0	93.2	100	100
Mothers	Emotional problems	22.7	35.9	20.5	17.2	56.8	46.9	100
Educators		45.7	30.4	11.9	23.2	42.4	46.4	100
Mothers	Peer problems	18.2	18.8	13.6	23.4	68.2	57.8	100
Educators		20.3	8.9	10.2	17.9	69.5	73.2	100
Mothers	Prosocial behaviour	20.5	35.9	13.6	6.3	65.9	57.8	100
Educators		5.1	1.8	10.2	7.1	84.7	91.1	100

Note. M = Male, F = Female

Self-efficacy beliefs

Adults' sense of self-efficacy to control a hyperactive child's behaviour at home or in class was revealed to be only moderate (M = 3.32, SD = 0.58). In order to investigate the effects of the child's sex, the participants' role and their interactions on sense of self-efficacy towards child hyperactive behaviour, a two-way ANOVA was carried out using the self-efficacy score as the dependent variable. Important child sex [$F(1,228) = 16.09$, $p < 0.001$] and participant role [$F(1,228) = 13.18$, $p < 0.001$] effects were revealed. Mothers were found to have higher levels of sense of self-efficacy compared to educators (M = 3.46, SD = 0.62 for mothers; M = 3.18, SD = 0.52 for educators) and both samples were found to have higher levels of sense of self-efficacy towards hyperactive girls than hyperactive boys (M = 3.47, SD = 0.53 for girls; M = 3.16, SD = 0.60 for boys). No interaction effects were found (see Table 2).

Perceived severity

Scores on the "Scale for Assessment of Perceived Severity of Problem Behaviour" suggested that the behaviours presented were assessed as being a problem of modest severity (M = 3.26, SD = 0.79). The effects of the child's sex, the participants' role and their interactions on perceived severity of behaviours indicative of AD/HD were investigated in a two-way ANOVA using the severity score as the dependent variable. A significant participant role effect was revealed [$F(1,228) = 10.06$, $p < 0.01$], with educators giving higher ratings of severity in the behaviour described in the vignette than mothers (Table 3). Moreover, a 2-way interaction between participant role × child's sex was found for perceptions of severity. As shown in Table 3, educators rated these behaviours as significantly more severe for boys than girls, whereas mothers' ratings on perceived severity didn't differ significantly for boys' and girls' behaviour.

Referral intention

As shown in Table 4, 53.5% of the participants would not refer the child to Mental Health Services, whereas 46.5% would take this decision. No significant differences were found between mothers and educators in this regard. Overall, referral intention didn't differ significantly for males (45.8%) and females (46.2%). There was a tendency for mothers to indicate referral intention more often for females (51.1%) than males (42.9%) whereas educators indicated referral intention more frequently for males (48.6%) than females (41.4) but these differences didn't reach statistical significance.

The relationship between perceived severity, self-efficacy beliefs and referral judgements

In order to examine how perceived severity of AD/HD, participants' self-efficacy beliefs and referral judgements were related with each other, a series of correlational analyses were performed. As shown in Table 5, a significant positive correlation was found between perceived severity of AD/HD and intention to refer the child, independent of the child's sex and the

Table 2 Ratings of participants' sense of self-efficacy towards hyperactive boys and girls

Subgroups	Males (n = 111)		Females (n = 121)		Total (n = 234)	
	Mean	SD	Mean	SD	Mean	SD
Educators	3.06	0.51	3.31	0.50	3.18	0.52
Mothers	3.28	0.68	3.61	0.52	3.46	0.62
Total	3.16	0.60	3.47	0.53	3.32	0.58

Note. Higher ratings indicate higher level of sense of self-efficacy

Table 3 Ratings of perceived severity of AD/HD in boys and girls

Subgroups	Males (n = 111)		Females (n = 121)		Total (n = 234)	
	Mean	SD	Mean	SD	Mean	SD
Educators	0.25	1.06	−0.18	0.96	0.04	1.03
Mothers	−0.44	1.19	−0.14	0.95	−0.23	1.04
Total	−0.12	1.18	−0.15	0.95	−0.14	1.04

Note. Higher ratings indicate the behaviours are rated as more severe

Table 4 Referral intention (%) for boys and girls with AD/HD

Participants	Males (n = 111)		Females (n = 122)		Total (n = 233)	
	No	Yes	No	Yes	No	Yes
Mothers	57.1	42.9	48.9	51.1	52.4	47.6
Educators	51.4	48.6	58.6	41.4	54.5	45.5
Total	54.2	45.8	53.8	46.2	53.5	46.5

Note. $\chi^2 = 0.54$, $p = 0.46$ (for mothers)
$\chi^2 = 0.35$, $p = 0.56$ (for educators)

Table 5 Correlation between perceived severity, sense of self-efficacy and referral attitudes towards boys and girls with AD/HD

Participants	Variables	Severity		Self-efficacy	
		M	F	M	F
Mothers	Self-efficacy	−0.41**	−0.40**	1.00	1.00
Educators		−0.34*	0.00	1.00	1.00
Mothers	Referral	0.44**	0.60**	0.30	0.43**
Educators		0.63**	0.53**	−0.19	0.07

Note. M = Male, F = Female
*$p < 0.05$. **$p < 0.01$

Table 6 Predictors of referral intention

Subgroups	Variables	Beta		t		p	
		M	F	M	F	M	F
Educators	Severity	−0.65	−0.53	−4.45	−3.15	0.00	0.00
	Self-efficacy	−0.05	−0.02	−0.34	−0.10	0.74	0.92
Mothers	Severity	−0.42	−0.51	−2.25	−4.00	0.03	0.00
	Self-efficacy	0.03	0.22	0.17	1.72	0.87	0.09

Note. M = Male, F = Female

participant's role (mother or educator). It seems that, when an adult perceives a child's behaviour as indicating a severe problem, he/she decides to refer it no matter whether the child is a boy or a girl. In addition, results revealed a significant negative interaction between perceived severity and self-efficacy beliefs for both boys and girls in the case of mothers but only for boys in the case of educators. The more severe the child's behaviour is considered, the less competent the adult feels in coping with this behaviour. However, this relationship existed for educators only in the case of boys.

Finally, in order to investigate their independent contribution to predicting intention for referral, perceived severity of AD/HD and participants' self-efficacy beliefs were entered as independent variables into two multiple logistic regressions with referral intention as the dependent measure (Table 6). Results revealed that the stronger predictor of participants' intention to refer both boys and girls was perceived severity of the child's problematic behaviour. In other words, it seems that both mothers and educators were equally likely to refer a child independently of his/her sex if they felt the child had a problem.

Discussion

In this study we sought to examine whether referring agents' perceptions of severity of AD/HD and self-efficacy beliefs about handling this behaviour differ for boys and girls and are related between them and to referral judgements.

First of all, participants correctly identified the behaviour presented in the vignette as symptomatic of AD/HD as revealed by their ratings in the SDQ.

Two key constructs were examined in this investigation. The first one was the participants' self-efficacy beliefs towards children with AD/HD. According to the results, mothers were found to feel more competent than prospective preschool educators. A further finding is that both samples rated their sense of self-efficacy as significantly lower in the case of boys. It seems that, although the behaviour presented was

identical for boys and girls, participants felt that it would be easier for them to control girls' behaviour than boys'. Other studies have shown that schools are more likely to request parental assistance for managing the behaviour of boys with AD/HD than for managing the behaviour of girls with the condition [8].

Several explanations could be plausible for the above findings. First, the lower self-efficacy level of trainee educators compared to mothers could be an accurate reflection of their lower level of experience with children. Alternatively, self-efficacy to control disruptive behaviour may have a more functional meaning for educators than mothers. Reduced self-efficacy to manage difficult behaviour can have a negative impact on their performance of their job. If educators do not respond effectively to students when their behaviour is disruptive, instructional time is lost for all students. It may therefore be assumed that educators perceive attaining a comfortable classroom environment as an invaluable outcome of their efforts. Children with AD/HD overtly challenge the above goals. Dealing with them is considered to be a frustrating task that can generate feelings of helplessness and incompetence [15, 23].

Second, given that all participants in the study were female, the greater efficacy reported with girls than boys could just indicate a relationship to the gender of the raters. A more compelling argument relates this finding to typical behaviour of boys with AD/HD, who are known to present more oppositional behaviours than girls with AD/HD. Girls tend to display more indirect aggression, such as social manipulation and ostracism, rather than direct aggression such as fighting, which is more of a management problem [3, 37]. Moreover, girls have higher levels of social and interactional skills that facilitate the management of their symptoms. In general, adults have been found to be more tolerant of girls' misbehaviour [27] So, the behaviour of boys with AD/HD may be perceived as more challenging both to prospective educators and mothers, thus leading to lower sense of self-efficacy towards them compared to girls.

The second construct referred to perceptions of severity of AD/HD. The results indicated that prospective preschool educators rated AD/HD in boys as a significantly more severe problem than AD/HD in girls and, overall, they rated AD/HD as more severe than mothers did. In this study "severe" referred to a condition that was considered global, stable, concerning and out of the child's control. At contrast, no differences for ratings of severity in boys' and girls behaviour were found for mothers. A similar finding was revealed by Abikoff et al. [2]. These authors report that teachers rate boys with AD/HD as significantly more impaired than girls with the disorder in comparison to parent reports.

One possible explanation is that such differences in ratings may indicate a "halo" effect whereby teachers overly attend to disruptive behaviours and ignore positive behaviours [2]. An alternative explanation may be that educators' low sense of self-efficacy towards boys with AD/HD might bias their perceptions of severity and make them consider AD/HD as a more severe problem when present in boys than girls. Literature supports such an idea as self-efficacy has been shown to influence both problem ratings and referral chances [29]. Findings from this research also provide some support for this explanation. A significant negative association was found between educators' self-efficacy beliefs and perceptions of severity of AD/HD in the case of boys. Further analysis revealed that self-efficacy beliefs are a strong predictor of perceptions of severity of AD/HD in boys. This association indicates that the least competent educators feel in handling the behaviour of a boy with AD/HD, the more severe the child's symptoms are considered.

Analyses regarding the association between severity perceptions and referral judgements showed that severity perceptions were a significant predictor of intention of referral for both boys and girls. Similar results were also revealed by Brooks [10], who found that in the cases where teachers correctly identified child behaviours as problematic, they were likely to refer the child to professionals without considering the child's sex. However, if we take into account that educators tend to perceive AD/HD as more problematic in boys than girls, the higher referral rates of boys with AD/HD than girls to child mental health services can be partially explained.

In this study, a significant positive relationship was found between mothers' self-efficacy beliefs and referral judgements for girls and a tendency for such a relationship for boys. However, no direct relationship between these variables was found for prospective educators, although several studies have documented that educators' sense of self-efficacy in managing disruptive behaviour is usually a main predictor of intervention choice [16]. It may be the case that self-efficacy beliefs do not constitute a direct predictor of referral decisions for educators but may affect referral indirectly through their influence on severity judgements. However, this interpretation is admittedly speculative and more sophisticated statistical techniques (e.g. path analyses) should be used in order to test it.

These findings have several implications. First, it has been shown that adults' attitudes towards children with AD/HD are sometimes biased on the basis of the child's sex and own self-efficacy beliefs. This is consistent with a previous research of ours where it was found that AD/HD behaviours are considered more untypical in girls than boys [24]. Even before

actually meeting children with AD/HD, adults perceive boys' behaviour as more difficult to cope with than girls'. However, it should be noted that it is with the behaviour that one has to deal with and not the sex of the child.

Second, it has been shown that perceptions of the severity of AD/HD in the child and adult self-efficacy judgements are closely related and may influence referral decisions. Thus, it is important to acknowledge that it is not always the child's actual problems that may lead it to the specialist but the adult's cognitions, which are often biased and influenced by the child's sex. In another study of ours, it has been found that teachers' assessments of the academic performance of pupils with AD/HD did not primarily depend on the children's actual problems but on teachers' perceptions of each particular symptom of AD/HD (hyperactivity, impulsivity, inattention), as an obstacle to academic progress [20]. As Saracho [35] suggests "Researchers and teacher educators need to develop special training for teachers to help them become aware of their possible biases and to use this awareness to become more proficient in teaching". We would like to strengthen this point of view by adding that clinicians working with AD/HD should not focus exclusively on the child with the difficulties but also on parents' and teachers' behaviours towards him/her, which are usually guided by their subjective perceptions about the child's problems. Consequently, the replacement of adults' distorted and maladaptive cognitions regarding the child's difficulties should become one of the first therapeutic goals.

However, there are a number of methodological limitations which need to be considered. This study was restricted to correlational relationships and therefore cannot yield any causal associations between the variables studied. In addition, this study shares in the weakness of all self-report studies. Participants' responses to vignettes might not disclose how they actually thought and might not represent their actual behaviour. Moreover, there was a rate of more than 50% of non-responding mothers which might have biased the results. Finally, the generalisability of our results is restricted to mothers and preservice preschool educators and does not apply to other kind of referring agents.

Despite the above limitations, this study has extended the current research literature on rate of referral of children with AD/HD by determining that a child sex effect exists on adults' perceptions of severity of the child's behaviour that might influence referral decisions. Future research should examine the possible mediating role of self-efficacy beliefs between severity perceptions and referral judgements.

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