

Parental beliefs about the nature of ADHD behaviours and their relationship to referral intentions in preschool children

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Abstract

Background Parental beliefs about child problem behaviour have emerged as closely related to referral intentions to mental health services.

Methods This study compared beliefs of severity, impact and advice seeking for attention deficit/hyperactivity disorder (ADHD) behaviours of parents whose preschool children present ADHD behaviours with those of parents whose children do not display such behaviours. Both parents of 295 preschoolers, aged 4–6 years, enrolled in kindergartens in Athens, filled in: (i) a questionnaire composed by a vignette describing a hypothetical 5-year-old child presenting ADHD symptoms followed by rating scales assessing dimensions of severity, impact and referral intention, and (ii) the 'Strengths and Difficulties Questionnaire' for screening ADHD behaviours in their own child.

Results Results showed that almost half of the parents who reported ADHD behaviours in their own child replied that they had never met a child exhibiting such behaviours. These parents also perceived such behaviours as being less severe and with less negative family impact than parents who did not report such behaviours in their own child.

Conclusions Parents whose preschool child displays ADHD behaviours tend to perceive them as normal developmental patterns and may suspend the referral of the child. Implications of these findings for early identification of ADHD are discussed.

Keywords

ADHD, parental beliefs, preschool children, referral intentions, self-efficacy

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Introduction

Attention deficit/hyperactivity disorder (ADHD) is well established as a developmental disorder with neurobiological underpinnings, and manifests as a spectrum of primary symptoms of inattention and hyperactivity-impulsivity with an onset in early childhood (Faraone & Biederman 1994; Barkley 1998). According to the American Psychiatric Association (APA 1994), the disorder affects 3–5% of school-aged children, whereas community-based studies constantly reveal higher prevalence rates of ADHD (Lesesne *et al.* 2003; Canino *et al.* 2004).

Prospective studies also indicate that up to half of children with ADHD will continue to display symptoms into adulthood (Weiss *et al.* 1985; Mannuzza *et al.* 1991). Moreover, children affected by ADHD are at a high risk of developing comorbid disorders, such as oppositional defiant disorder or conduct disorder, and impaired social adjustment as well (Taylor *et al.* 1996; Seija 2002).

Irrespective of ADHD high prevalence rates, chronicity, comorbidity and availability of evidence-based treatments, a great number of affected children do not receive treatment either from school-based or from specialist mental health

services (Lesesne *et al.* 2003; Alegria *et al.* 2004; Canino *et al.* 2004). Therefore, it appears that child symptomatology of ADHD alone is not sufficient enough to predict mental health service use (Zahner & Daskalakis 1997).

Help-seeking models suggest a series of steps to be followed between the initial recognition of a child mental health problem and the eventual use of mental health services (Rogler & Cortes 1993). Hence, identifying which factors precipitate service use among children affected by ADHD becomes a matter of clinical and public health importance.

Research has detected a number of factors that are related to mental health service use, including sociodemographic factors, and child- and family-related factors. In particular, female and younger children have lower odds of receiving care (Bussing *et al.* 2003; Farmer *et al.* 2003). Accordingly, family conflict and elevated parental stress levels have been positively linked to referral to mental health services (Jensen *et al.* 1990; Lavigne *et al.* 1998).

Given that parents are usually those who bring children in specialist mental health services, their beliefs about their children's problem behaviour have been investigated as a possible predictor of referral judgement. In fact, parental problem recognition has emerged as an important factor in predicting service use. Costello and colleagues (1998) defined two components of parental problem recognition: (i) parental perception that the child has problems, and (ii) parental perception of the intensity and type of suffering caused to others by the child's condition, referred to as 'family impact'.

Recent research in children exhibiting ADHD behaviours has revealed that parental beliefs that the child is impaired or has more problems than his/her peers signify an important predictor of mental health service use (Teagle 2002; Alegria *et al.* 2004). Studies conducted by Sayal and colleagues (2002, 2003) clearly demonstrate that parental perception of hyperactivity symptoms as a serious problem is one of the strongest predictors of service use. Substantial levels of family impact also have been found to represent a major predictor of service use (Angold *et al.* 1998; Sawyer *et al.* 2004). Moreover, research has identified adults' beliefs of self-efficacy to manage child's problem behaviour as a key variable influencing their referral decisions (Soodak & Podell 1993; Hodes 1997; Maniadaki *et al.* 2006). In a recent study, the most frequent reason given by parents of children with ADHD symptoms who had not attended services was that they felt they could manage their children's problems on their own (Sawyer *et al.* 2004).

So far, relevant studies have investigated the factors influencing help-seeking process for ADHD behaviours in the school-aged population, probably because ADHD is usually identified

as a problematic condition during the school-aged period. Moreover, the clinical significance of ADHD behaviours has been questioned during the preschool period, and recent studies constantly reveal low rates of mental health service use among preschoolers (Kataoka *et al.* 2002; Bussing *et al.* 2003). Even though preschool years appear to stand as a critical period during which it is now acknowledged that ADHD may emerge (Keenan & Wakschlag 2002; Dopfner *et al.* 2004), it still remains unclear why parents of preschool children with ADHD behaviours do not seek for help very often. An open question is whether they consider or not such behaviours as problematic enough to seek for professional help.

Therefore, it would be a matter of the utmost importance to investigate whether parents of preschoolers displaying ADHD behaviours: (i) acknowledge early the severity and impact of these behaviours on their children's life; (ii) recognize the need for service use; and (iii) differ on the above from parents of preschoolers not presenting such behaviours. It is assumed that parents who are acquainted with ADHD behaviours through their daily interactions with their preschool child would consider these behaviours as a problematic condition with negative impact on the child's life. Consequently, they would differ on the above perceptions from parents without such acquaintance, to whom a hypothetical scenario of a child manifesting such behaviours would be presented. It also becomes important to investigate whether mothers and fathers differ between them in their beliefs of severity, impact and referral intention for ADHD behaviours.

Within this framework, in the present study we sought to: (i) compare beliefs of severity, impact and intention of advice seeking for ADHD behaviours of parents whose preschool children present ADHD behaviours with those of parents whose children do not display such behaviours; (ii) investigate whether mothers and fathers differ between them in their beliefs of severity, impact and intention of advice seeking for ADHD behaviours; and (iii) examine the association between perceived severity and impact of ADHD behaviours and intention of advice seeking.

Methods

Participants

The sample consisted of 590 parents (295 mothers and 295 fathers) of boys and girls aged 4–6 years, enrolled in 25 kindergartens and nursery schools situated within the area of Athens, representing a socio-economic diverse population. Parents' mean age was 34.8 years ($SD = 4.88$). Almost 49% of the parents

participating in the study had finished college or university, and 34.9% had finished high school.

Measures

Two questionnaires were employed in the study.

In order to investigate parental beliefs of ADHD behaviours, an analogue methodology was employed, using written descriptions of a hypothetical child's ADHD behaviours. The vignette was followed by rating scales assessing dimensions of severity, impact and referral intention. This vignette was based on nine diagnostic criteria of the DSM-IV regarding ADHD, Combined Type. Three of them referred to hyperactivity (often leaves seat in classroom, often runs about or climbs excessively in situations in which it is inappropriate, and often acts as 'if driven by a motor'), two referred to impulsivity (often has difficulty awaiting turn, and often interrupts or intrudes on others), and four referred to inattentiveness (often has difficulty sustaining attention, often does not seem to listen when spoken to directly, is often easily distracted by extraneous stimuli, and often has difficulty organizing tasks). These criteria were represented in statements referring to everyday activities, e.g. 'John is a restless five-year old boy, who wants to move all the time even when he makes a puzzle or he takes his dinner' or 'He is often absent-minded. Sometimes, his mother thinks that he doesn't listen when spoken to as he gives answers irrelevant to the question'.

Part of the first questionnaire was adapted from 'The Parental Account of the Causes of Childhood Problems Questionnaire' (PACCP; Sonuga-Barke & Balding 1993). The PACCP was designed to examine adult perceptions of common childhood problems ascribed to a child described in a written vignette. The vignette was followed by 16 questions grouped into three sections. These covered:

(i) Five ratings (on a 5-point scale) of how problematic or severe the behaviour problem was judged to be. The points of the five ratings were summed up to generate a total 'severity' score. The resultant score could range from 0 to 25. The scale had satisfactory internal consistency (Cronbach's $\alpha = 0.83$).

(ii) Three ratings (on a 5-point scale) of how concerning the problem behaviour was considered and of the impact that such behaviour would have on the child's life (friends/family). The points of the three ratings were summed up to generate a total 'impact' score. The resultant score could range from 0 to 15. The scale had satisfactory internal consistency (Cronbach's $\alpha = 0.78$).

(iii) Eight ratings requesting demographic information and assessing intention of advice seeking. The 'intention of advice seeking item' was scored as 1 (*yes*) and 2 (*no*).

Mothers and fathers were asked to fill in the questionnaire based on the symptoms exhibited by the hypothetical child presented in the vignette and not on their own child's behaviour.

The second questionnaire used was the translated Greek version of the 'Strengths and Difficulties Questionnaire' (SDQ; Goodman 1997). This version has been used in several studies in Greek populations (Bibou-Nakou *et al.* 2001; Maniadaki & Kakouros 2005). Information about it is given at the official site of the SDQ (<http://www.sdqinfo.com>). The SDQ is a brief behavioural screening questionnaire, designed to measure the psychological well-being of children and adolescents. It can be completed by the parents and teachers of children aged 4–16 years. The SDQ presents 25 attributes, some positive and others negative, and asks the respondent whether he/she thinks that these attributes are 'not true' (0), 'somewhat true' (1) or 'certainly true' (2) for the child. The 25 items are divided into five scales of five items each, generating scores for Emotional Symptoms, Conduct Problems, Inattention-Hyperactivity, Peer Problems and Prosocial Behaviour. All scales but the last are summed to generate a Total Difficulties score. According to whether scores fall above or below a cut-off point, children are classified as 'normal', 'borderline' or 'abnormal'.

The SDQ has been found to have good psychometric properties and is being proved as a particular useful instrument in epidemiological, developmental and clinical research in several countries (Goodman *et al.* 2003; Mathai *et al.* 2003). This screening instrument was employed with mothers and fathers participating in the study in order to identify children displaying ADHD behaviours.

Procedure

All parents were given the questionnaires by the nursery teacher of their child on the same day, and they were told to fill these questionnaires in at home. Two identical questionnaires were administered to the mother and father of each child, and the nursery teacher explained that, if possible, both parents should complete the questionnaires. A letter accompanied the questionnaire, informing parents that the purpose of the study was to investigate adults' attitudes towards children's behaviour, that the study had ethical approval, and that their participation was voluntary and anonymous. 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 playroom of each one of the 25 kindergartens, where mothers and fathers could dispose the completed questionnaires. The box was then opened at a predetermined date,

and the questionnaires were collected by the nursery teachers and handed in to the researcher.

Results

Profile of the data

A total of 2000 questionnaires were administered to parents, and 590 were collected (approximately 30% response rate). Unfortunately, due to the procedure that ensured the anonymity of the participants, little information was available regarding either the causes of non-response or potential differences between responders and non-responders. It seemed that the greatest difficulty encountered was the unwillingness of the fathers to participate. There have been 352 additional questionnaires completed by mothers, but only data from cases where a child's parents both filled in the questionnaires were considered for analysis.

Statistics

Group comparisons were conducted using *t*-tests and chi-squared tests. Pearson's correlation coefficients were also carried out, in order to measure the statistical association between the two variables.

Descriptive analysis of the SDQ 'Hyperactivity' scale

According to a descriptive analysis, mothers and fathers considered that 10.4% of their own children fell in the abnormal band of the 'Hyperactivity' scale, and 6% in the borderline band. More preschool boys than girls fell in the abnormal band of the 'Hyperactivity' scale [$\chi^2(2,590) = 8.9, P < 0.05$]. Specifically, 14.3% of the boys and 5.9% of the girls received abnormal scores on this scale. The difference between mothers' and fathers' judgements was not statistically significant [$\chi^2(2,578) = 0.78, P > 0.05$] (Table 1). It is worth mentioning that 16.2% of parents also considered that their own children fell in the abnormal and 18% in the borderline band of the 'Conduct

Problems' scale respectively. Moreover, a significant positive correlation was found between hyperactivity and conduct problems scores ($r = 0.45, P < 0.01$), possibly representing comorbidity of these problems as is often reported in the literature (Barkley 1998).

Also, 46.9% of the parents whose own child received abnormal scores on the 'Hyperactivity' scale replied that they have never met such a child. Therefore, it seems that almost half of the parents of preschool children presented with ADHD symptoms failed to recognize ADHD symptomatology in their own children's behaviour. However, parents whose own child received abnormal scores on this scale replied that their child resembles to the one presented in the vignette to a greater degree than parents whose own child received normal scores [$\chi^2(2,590) = 40.01, P < 0.001$]. Moreover, parents whose own child received abnormal scores on the 'Hyperactivity' scale reported that they would like to have such a child to a greater degree compared with parents whose own child received normal scores [$\chi^2(4,585) = 12.88, P < 0.05$].

Parental beliefs of severity, impact and referral intention for ADHD behaviours

According to mothers and fathers, ADHD behaviours were considered as moderate difficulties ($M = 17.13, SD = 3.66$). They were also considered as having medium impact on the child's life ($M = 10.59, SD = 2.64$).

In order to compare beliefs of severity, impact and advice seeking for ADHD behaviours of parents whose child displays such behaviours (the first group) with those of parents whose child does not (the second group), independent samples *t*-tests and chi-squared tests were conducted (Table 2). The analysis revealed that parents of the first group perceived the behaviour of the child in the vignette as less severe than parents of the second group ($t = 1.97, P = 0.05$). Accordingly, parents of the first group perceived the behaviour of the child in the vignette as having less impact on the child's life (friends/family) than parents of the second group ($t = 3.46, P = 0.001$). However, no difference was found regarding referral intention between

Table 1. Ratings (%) on the SDQ 'Hyperactivity' scale for preschool boys and girls by mothers and fathers

	Normal			Borderline			Abnormal		
	Mothers	Fathers	Total	Mothers	Fathers	Total	Mothers	Fathers	Total
Boys	78.4	79.6	79.0	7.2	6.2	6.7	14.4	14.2	14.3
Girls	88.9	88.9	88.9	3.5	6.9	5.2	7.6	4.2	5.9
Total	83.3	84.0	83.6	5.5	6.5	6.0	11.3	9.5	10.4

SDQ, Strengths and Difficulties Questionnaire.

Table 2. Ratings on severity and impact of ADHD behaviours

Perceptions of ADHD behaviours	Presence of ADHD behaviours		Absence of ADHD behaviours		t-value
	Mean	SD	Mean	SD	
Severity	16.47	4.1	17.26	3.6	1.97*
Impact	9.78	2.7	10.76	2.6	3.46**

* $P = 0.05$; ** $P = 0.001$.

ADHD, attention deficit/hyperactivity disorder.

Table 3. Ratings on severity and impact of ADHD behaviours for mothers and fathers

Perceptions of ADHD behaviours	Mothers		Fathers		t-value
	Mean	SD	Mean	SD	
Severity	17.26	3.6	17.00	3.7	-0.90
Impact	10.84	2.5	10.34	2.7	-2.41*

* $P < 0.05$.

ADHD, attention deficit/hyperactivity disorder.

parents of the two groups [$\chi^2(2,576) = 2.5, P > 0.05$]. In particular, 78.2% of the first group replied that they would seek advice, compared with 83.2% of the second group.

Differences between mothers' and fathers' beliefs of severity, impact and referral intention for ADHD behaviours

Independent samples *t*-tests and chi-squared tests were also carried out in order to investigate whether beliefs of severity, impact and referral intention for ADHD behaviours were related to the gender of the parent (Table 3). The analysis revealed that mothers and fathers did not differ in their beliefs of severity ($t = -0.90, P > 0.05$) and intention of advice seeking ($t = 1.90, P > 0.05$) for ADHD behaviours. Nevertheless, mothers were found to consider ADHD behaviours as having more impact on the child's life as compared with fathers ($t = -2.41, P < 0.05$). Moreover, 86.4% of mothers replied that they would seek advice compared with 78.7% of fathers [$\chi^2(2,587) = 7.02, P < 0.05$].

The association between parental beliefs of severity and impact of ADHD behaviours and referral intention

Pearson's correlation coefficient was then carried out to measure the statistical association between parental beliefs of severity and impact of ADHD behaviours in a hypothetical preschool child and referral intention (Table 4). In particular, the more severe the behaviour presented in the vignette was perceived, the more impact it was considered to have on the

Table 4. Correlations between severity, impact and intention of advice seeking for ADHD behaviours

	Perceptions of ADHD behaviours		
	Severity	Impact	Intention of advice seeking
Severity	1.00	0.49*	-0.28*
Impact	0.49*	1.00	-0.30*
Intention of advice seeking	-0.28*	-0.30*	1.00

* $P < 0.01$.

ADHD, attention deficit hyperactivity disorder.

child's life ($r = 0.49, P < 0.01$). Moreover, the more severe the behaviour presented in the vignette was perceived, the more likely parents were to seek advice for such behaviour ($r = -0.28, P < 0.01$). Accordingly, the more impact the behaviour presented in the vignette was perceived to have on the child's life, the more likely parents were to seek advice for such behaviour ($r = -0.30, P < 0.01$).

Discussion

This study was designed to investigate mothers' and fathers' beliefs about the nature of ADHD behaviours in preschool children and their potential impact on referral intentions.

The study has three main aims. Initially, we sought to examine whether beliefs of severity and impact of ADHD behaviours and intention of advice seeking differed as a function of the degree of acquaintance of the participants with such behaviours. Thus, the above variables were compared between two groups of parents: one that reported clinical levels of such behaviours in their own child and the other who did not. However, both groups were asked to respond to a scenario regarding a hypothetical child displaying this kind of behaviours. It was predicted that parents acquainted with such behaviours would consider them as more severe and as having more negative family impact compared with parents who did not have similar experiences.

Counter to our expectations, it was found that parents who reported ADHD behaviours in their own preschool child perceived such behaviours as being less severe and with less negative family impact than parents who did not report such behaviours in their own child. The former finding is inconsistent with research findings derived from studies with school-aged children, where ADHD is usually perceived as a serious problem by parents of children facing this disorder (Bussing *et al.* 2003).

It seems that parents who are acquainted with ADHD behaviours through their daily interactions with their preschool child fail to acknowledge their clinical meaning and negative impact

on their child's life, probably due to several reasons that merit further investigation. Of course, it should be stressed that the children of our sample were not clinically diagnosed with ADHD, but were identified as being at risk from a screening questionnaire. Therefore, the behaviours described in the vignette might be somewhat different from the actual behaviours experienced by parents in their own children. However, it is indicated in the literature that parents probably ignore the existence of ADHD in the preschool period and have an alternative 'explanatory' model of their child's behaviour, which is not perceived yet as a medical issue (Bussing *et al.* 1998). Indeed, a recent study revealed that mothers and fathers of preschoolers usually attribute behaviours reflecting primary symptoms of ADHD to child's intentional behaviour rather than to the existence of biological abnormalities (Maniadaki *et al.* 2005a).

One possible explanation of the above finding is that parents have got used to dealing with such disruptive behaviours from very early in their child's life and are puzzled about labelling them a serious condition or not. It may also be the case that they believe that these behaviours might diminish as the child grows older. An alternative explanation is that parents of preschoolers presenting ADHD behaviours fail to acknowledge their severity and impact, because they may consider themselves up to a point capable of controlling a child exhibiting such behaviours in the preschool age. This has been shown as particularly true in the case of girls (Maniadaki *et al.* 2005b). Another compelling argument is that secondary behaviours usually associated with ADHD and related learning disabilities are not yet easily distinguishable by parents. This might explain why our findings differ from those of studies with school-aged children.

Regarding parents' intentions of referral of a child displaying ADHD behaviours, it was found that the two groups of parents did not differ significantly. It seems that a great number of parents who reported clinical levels of ADHD behaviours in their own preschool child replied that they would seek advice from a specialist in case they were the parents of the child presented in the vignette. Nevertheless, almost half of these parents replied that they had never met a child exhibiting such behaviours. It seems that, even though parents of preschool children acknowledge the need to seek advice from a specialist in the case of a child with such difficulties, in practice they usually fail to recognize the presence and the clinical meaning of ADHD behaviours in their own child.

The second aim of this study was to investigate whether beliefs about ADHD behaviours and referral intention differed as a function of the parent's gender. The results revealed no significant differences between mothers and fathers regarding beliefs

of severity and intention of advice seeking. Nevertheless, mothers were found to consider ADHD behaviours as having more impact on the child's life than fathers. This is probably due to the fact that mothers usually tend to spend more time with their preschool child and therefore are challenged by his/her ADHD behaviours to a greater degree than fathers. Alternatively, self-efficacy beliefs about handling a preschooler with ADHD may influence maternal perceptions of impact of ADHD behaviours. In other words, mothers of preschool children with ADHD may perceive that ADHD behaviours have more impact on child and family life, probably because they feel less competent to deal with these behaviours compared with fathers. Indeed, literature reports low sense of self-efficacy of mothers with children facing ADHD (Hoza *et al.* 2000; Johnston & Mash 2001; Keown & Woodward 2002; Maniadaki *et al.* 2005b).

Finally, the association between perceived severity and impact of ADHD behaviours and referral intention was examined. It was found that the more severe ADHD behaviours are perceived and the more impact these behaviours are considered to have on the child's life (friends/family), the more likely it is that parents would seek a specialist's advice. Therefore, the present study is in accordance with studies conducted mainly in school-aged populations (Teagle 2002; Sayal *et al.* 2003; Sawyer *et al.* 2004), and replicates the findings of a previous study, where perceived severity and impact of ADHD behaviours serve as strong prerequisites for advice seeking (Maniadaki *et al.* 2006).

This study contributes to the existing literature by highlighting the crucial role that parental beliefs of severity and impact of ADHD behaviours in preschool children may play in parents' referral decisions. Taken together, the results of this study can provide a partial explanation of the low referral rates of preschool children with ADHD to mental health services. It has been shown that parents' referral decisions are closely related to their beliefs of severity and impact of problematic behaviour. However, it also has been demonstrated that parents of preschool children displaying ADHD behaviours very often have a difficult time interpreting the presence of such behaviours in their own child and perceiving them as possible symptoms of a developmental disorder. Thus, it seems reasonable to suggest that the limited number of preschool children with ADHD symptoms that are referred to the specialist might partially be attributed to their parents' reduced perception of severity and to their belief in their own capabilities of handling such behaviours.

These findings have several implications. With the consideration of studies indicating low referral rates of children with ADHD before the age of 5 years and showing the debilitating outcomes of the disorder if left untreated (Kataoka *et al.* 2002; Farmer *et al.* 2003), efforts should be made at two levels. First,

parent education should include training about cues that can help them identify ADHD symptoms early in their child's life. Nursery teachers and paediatricians may represent an appropriate venue for informing parents of preschool children about the nature of ADHD and the impact of the symptoms on the child's functioning. Second, at a theoretical level, future research should more thoroughly investigate all relevant components of parental problem recognition leading to seeking professional intervention.

However, there are several methodological limitations that need to be considered. First, the selection of our sample might result in several biases. Almost half of the parents who participated were highly educated, and only families where both parents responded were included in the study. Both facts might bias the sample to families who provide better parenting, and have reduced perception of need for assistance. Moreover, the participation of both parents in the study as a necessary condition might bias the sample to couples who follow a common line in the upbringing of their children, thus leading to the absence of significant differences between maternal and paternal beliefs of severity and intention of advice seeking.

Second, 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, where possibly informants' responses to vignettes might not disclose how they actually thought. Future research might benefit from supplementing the vignette-based approach with a more naturalistic approach exploring parental beliefs of particular children. The investigation of referral intentions or advice seeking by applying a single item, the low response rate and the use of the parent sample derived from a certain urban centre, rendering the results preliminary and not representative of the general population, also constitute caveats of the present study.

Despite these limitations, evidence from this and other studies calls attention to cognitive aspects of behaviour, such as beliefs, that might constitute a fundamental component of a mechanism that might lead parents of preschool children facing ADHD to mental health services or prevent them from functioning as referring agents.

References

- Alegria, M., Canino, G., Lai, S., Ramirez, R., Chavez, L., Rusch, D. & Shrout, P. (2004) Understanding caregivers' help-seeking for Latino children's mental health. *Medical Care*, **42**, 447–455.
- American Psychiatric Association (1994) *Diagnostic and Statistical Manual of Mental Health Disorders*, 4th edn. Washington, DC, USA: APA.
- Angold, A., Messer, S., Stangl, D., Farmer, E., Costello, E. & Burns, B. (1998) Perceived parental burden and service use for child and adolescent psychiatric disorders. *American Journal of Public Health*, **88**, 75–80.
- Barkley, R. A. (1998) *Attention-Deficit/Hyperactivity Disorder: A Handbook for Diagnosis and Treatment*, 2nd edn. New York, USA: Guilford Press.
- Bibou-Nakou, I., Kiosseoglou, G. & Stogiannidou, A. (2001) Strengths and difficulties of school-aged children in the family and school context. *Psychology: The Journal of the Hellenic Psychological Society*, **8**, 506–525.
- Bussing, R., Schoenberg, N., Rogers, K., Zima, B.T. & Angus, S. (1998) Explanatory models of ADHD: do they differ by ethnicity, child gender or treatment status? *Journal of Emotional and Behavioural Disorders*, **6**, 233–242.
- Bussing, R., Zima, B., Gary, F. & Wilson, C. (2003) Barriers to detection, help-seeking, and service use for ADHD symptoms. *Journal of Behavioural Health Services and Research*, **30**, 176–189.
- Canino, G., Shrout, P. & Rubio-Stipec, M. (2004) The DSM-IV rates of child and adolescent disorders in Puerto Rico. *Archives of General Psychiatry*, **61**, 85–93.
- Costello, E., Pescosolido, B., Angold, A. & Burns, B. (1998) A family network-based model of access to child mental health services. *Research in Community Mental Health*, **9**, 165–190.
- Dopfner, M., Rothenberger, A. & Sonuga-Barke, E. (2004) Areas for future investment in the field of ADHD: preschoolers and clinical networks. *European Child and Adolescent Psychiatry*, **13** (Suppl. 1), 1/130–1/135.
- Faraone, S. & Biederman, J. (1994) Is attention deficit hyperactivity disorder familial? *Harvard Review of Psychiatry*, **1**, 271–287.
- Farmer, E., Burns, B., Philips, S., Angold, A. & Costello, J. (2003) Pathways into and through mental health services for children and adolescents. *Psychiatric Services*, **54**, 60–66.
- Goodman, R. (1997) The Strengths and Difficulties Questionnaire: a research note. *Journal of Child Psychology and Psychiatry*, **38**, 581–586.
- Goodman, R., Ford, T., Simmons, H., Gatward, R. & Meltzer, H. (2003) Using the Strengths and Difficulties Questionnaire (SDQ) to screen for child psychiatric disorders in a community sample. *International Review of Psychiatry*, **15**, 166–172.
- Hodes, T. G. (1997) Teacher tolerance, self-efficacy, causal attributions for student aggression, and intervention preference. (Doctoral Dissertation, Fordham University, 1997). *Dissertation Abstracts International*, **57** (7-A), 2866.
- Hoza, B., Owens, J. S., Pelham, W. E., Swanson, J. M., Conners, C. K., Hinshaw, S. P., Arnold, L. E. & Kraemer, H. C. (2000) Parent cognitions as predictors of child treatment response in attention-deficit/hyperactivity disorder. *Journal of Abnormal Child Psychology*, **28**, 569–583.
- Jensen, P., Blodau, L. & Davis, H. (1990) Children at risk. II. Risk factors and clinic utilization. *Journal of the American Academy of Child and Adolescent Psychiatry*, **29**, 804–812.
- Johnston, C. & Mash, E. J. (2001) Families of children with attention-deficit/hyperactivity disorder: review and

- recommendations for future research. *Clinical Child and Family Psychological Review*, 4, 183–207.
- Kataoka, S., Zhang, L. & Wells, K. (2002) Unmet need for mental health care among U.S. children: variation by ethnicity and insurance status. *American Journal of Psychiatry*, 159, 1548–1555.
- Keenan, K. & Wakschlag, L. (2002) Can a valid diagnosis of disruptive disorder be made in preschool children? *American Journal of Psychiatry*, 159, 351–358.
- Keown, L. J. & Woodward, L. J. (2002) Early parent–child relations and family functioning of preschool boys with pervasive hyperactivity. *Journal of Abnormal Child Psychology*, 30, 541–553.
- Lavigne, G., Arend, R., Rosenbaum, D., Binns, H., Christoffel, K., Burns, A. & Smith, A. (1998) Mental health service use among young children receiving pediatric primary care. *Journal of the American Academy of Child and Adolescent Psychiatry*, 31, 1175–1183.
- Lesesne, C. A., Visser, S. N. & White, C. P. (2003) Attention-deficit/hyperactivity disorder in school-aged children and association with maternal mental health and use of health care resources. *Pediatrics*, 111 (5 Part 2), 1232–1237.
- Maniadaki, K. & Kakouros, E. (2005) The use of the Strengths and Difficulties Questionnaire (SDQ) as a screening instrument for behaviour problems in preschoolers. Poster presentation at the 35th Annual Congress of the European Association for Behavioural & Cognitive Therapies, Thessaloniki, Greece. *Book of Abstracts*, p. 208.
- Maniadaki, K., Sonuga-Barke, E. & Kakouros, E. (2005a) Parents' causal attributions about attention deficit/hyperactivity disorder: the effect of child and parent sex. *Child: Care, Health and Development*, 31, 331–340.
- Maniadaki, K., Sonuga-Barke, E., Kakouros, E. & Karaba, R. (2005b) Maternal emotions and self-efficacy beliefs in relation to boys and girls with ADHD. *Child Psychiatry and Human Development*, 35, 245–263.
- Maniadaki, K., Kakouros, E. & Sonuga-Barke, E. (2006) Adults' self-efficacy beliefs and referral attitudes for boys and girls with ADHD. *European Child and Adolescent Psychiatry*, 15, 132–140.
- Mannuzza, S., Klein, R., Bonagura, N., Malloy, P., Giampino, T. & Addalli, K. (1991) Hyperactive boys almost grown up. V. Replication of psychiatric status. *Archives of General Psychiatry*, 48, 77–83.
- Mathai, J., Anderson, P. & Bourne, A. (2003) Use of the Strengths and Difficulties Questionnaire as an outcome measure in a child and adolescent mental health service. *Australasian Psychiatry*, 11, 334–337.
- Rogler, L. & Cortes, D. (1993) Help-seeking pathways: a unifying concept in mental health care. *American Journal of Psychiatry*, 150, 554–561.
- Sawyer, M., Rey, J., Arney, F., Whitam, J., Clark, J. & Baghurst, P. (2004) Use of health and school-based services in Australia by young people with Attention-Deficit/Hyperactivity Disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*, 43, 1355–1363.
- Sayal, K., Taylor, E. & Beecham, J. (2003) Parental perception of problems and mental health service use for hyperactivity. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42, 1410–1414.
- Sayal, K., Taylor, E., Beecham, J. & Byrne, P. (2002) Pathways to care in children at risk of attention-deficit hyperactivity disorder. *British Journal of Psychiatry*, 181, 43–48.
- Seija, S. (2002) *Hyperactivity and Attention Disorders of Childhood*, 2nd edn. New York, USA: Cambridge University Press.
- Sonuga-Barke, E. J. S. & Balding, J. (1993) British parents' beliefs about the causes of three forms of psychological disturbance. *Journal of Abnormal Child Psychology*, 21, 367–376.
- Soodak, L. C. & Podell, D. M. (1993) Teacher efficacy and student problem as factors in special education referral. *Journal of Special Education*, 27, 66–81.
- Taylor, E., Chadwick, O., Heptinstall, E. & Danchaerts, M. (1996) Hyperactivity and conduct problems as risk factors for adolescent development. *Journal of the American Academy of Child and Adolescent Psychiatry*, 35, 1213–1226.
- Teagle, S. (2002) Parental problem recognition and child mental health service use. *Mental Health Services Research*, 4, 257–266.
- Weiss, G., Hechtman, L., Milroy, T. & Perlman, T. (1985) Psychiatric status of hyperactives as adults: a controlled prospective 15-year follow-up of 63 hyperactive children. *Journal of the American Academy of Child and Adolescent Psychiatry*, 24, 211–220.
- Zahner, G. & Daskalakis, C. (1997) Factors associated with mental health, general health and school service use for child psychopathology. *American Journal of Public Health*, 87, 1440–1448.