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FAMILY FACTORS ASSOCIATED WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER AND EMOTIONAL DISORDERS IN CHILDREN

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ABSTRACT

Background. Few well controlled studies have identified psychosocial profiles of families of boys with ADHD and boys with emotional disorders compared with normal controls. However, the clinical and theoretical literature pinpoints four domains in which distinctive profiles would be expected to occur.

Method. 22 mothers and 13 fathers of 22 boys with ADHD; 20 mothers and 15 fathers of 20 boys with a mood or anxiety disorder; and 26 mothers and 16 fathers of 27 normal controls were compared on (1) stress, support and quality of life; (2) current family functioning; (3) parenting style and satisfaction in the family of origin and current family; and (4) current and past parental functioning.

Results. The two clinical groups showed higher levels of stress and lower levels of both social support and quality of life than normal controls. Both clinical groups showed deficits in current family functioning, but contrary to expectations the ADHD and emotional disorder group did not show distinctly different profiles. Parents of ADHD children reported higher levels of authoritarian parenting styles and parents from both clinical groups reported less parenting satisfaction than normal controls in both their current families and their families of origin. Parents of children with ADHD and emotional disorders reported greater parenting satisfaction in their families of origin than in their current families. This discrepancy was greatest for parents of ADHD children. Parents of children with ADHD and emotional disorders reported greater psychological health problems and more childhood ADHD symptomatology than normal controls

Conclusions. Parents of children with ADHD and emotional disorders have significant psychosocial difficulties in family and personal functioning. Family intervention is highly appropriate for families with children who are referred for help with both types of difficulties.

Keywords: ADHD, childhood depression, children's anxiety disorders, stress, support, quality of life, family functioning, parenting style, DISC, CBCL, FAD.

INTRODUCTION

The present study aimed to profile the psychosocial difficulties shown by families of children with presentations referred to as attention deficit hyperactivity disorder and emotional disorders. Before specifying the precise hypotheses we set out to test, a brief overview of each of these types of problems will be given.

Attention deficit hyperactivity disorder

Attention deficit hyperactivity disorder (ADHD, APA, 2000) or hyperkinetic syndrome (WHO, 1996) are the current diagnostic terms used to describe children who present with pronounced and incapacitating difficulties in sustaining attention, modulating activity level and regulating impulses across a number of social contexts such as the family, school and peer group. In the UK 1% of youngsters between 5 and 16 meet the ICD 10 diagnostic criteria for hyperkinetic syndrome (Meltzer et al, 2000). ADHD is more common among boys than girls; preadolescents than adolescents; and urban than rural children (Hinshaw, 1994). In clinical settings, about half of children diagnosed with ADHD qualify for co-morbid diagnoses of either oppositional defiant disorder (ODD) or conduct disorder (CD) (Jensen, Martin, & Cantwell, 1997). Both biological and psychosocial factors probably play a role in the aetiology and maintenance of ADHD. Genetic factors, prenatal and perinatal factors, traumatic brain injury or exposure to toxins such as lead, render children vulnerable to the development of ADHD (Schachar & Ickowicz, 2000; Schachar & Tannock, 2002). The psychosocial environment influences the degree to which children with such biological vulnerabilities learn to regulate their attention, activity and impulsivity or the degree to which such difficulties can be tolerated and managed by members of the child's social system without entailing adverse social consequences (Hechtman, 1996; Woodward, Taylor & Dowdney,1998). A diathesis-stress model of ADHD suggests that

families, schools and peer groups which contain members that are intolerant and punitive of inattention, overactivity and impulsivity, and who offer limited structured and supportive opportunities for developing self-regulation skills probably maintain or exacerbate ADHD symptomatology in vulnerable youngsters (Carr, 1999). In contrast, social systems that contain members who are more tolerant of inattention, overactivity and impulsivity, and which offer structured and supportive opportunities for developing self-regulation skills probably help youngsters, vulnerable to ADHD symptomatology, to learn self-regulatory skills. Currently the most effective treatment programmes are multimodal and include psychostimulant therapy to directly address the biological vulnerability to inattention, overactivity and impulsivity, while concurrently training parents and teachers to offer youngsters with ADHD highly structured, supportive and non-punitive opportunities on an daily basis to learn and practice self-regulation (Fonagy et al., 2002, chapter 6; Nolan & Carr, 2000; Wells, 2004). Such programmes typically involve behavioural parent training, school-based contingency management and home-school reporting systems, and self-instructional training.

This diathesis-stress model of the aetiology and maintenance of ADHD, entails a number of specific hypotheses about psychosocial factors that may maintain or be associated with ADHD. Thus the model predicts that parents coping with multiple family stresses with limited social support and a diminished quality of life will be less tolerant of children with a vulnerability to ADHD. Such parents may engage in parenting styles and patterns of family functioning which maintain or exacerbate ADHD symptomatology rather than alleviate it. The model also predicts that such parents will experience diminished parenting satisfaction. Parents, prone to these difficulties may themselves have childhood histories of ADHD symptomatology. Furthermore, the distress entailed by living with a child with ADHD may contribute to them developing psychological health problems.

Currently there is some empirical support for a number of these hypotheses, although the evidence is sparse and by no means clear cut (Hechtman, 1996; Woodward et al., 1998). Cunningham, Bennes and Siegel (1988) in a comparative study of families of children with ADHD and normal controls found that in ADHD families there were lower levels of social support and greater levels of maternal depression. Unexpectedly no significant intergroup differences on the dimensions of the McMaster Family Assessment Device (FAD, Epstein, Baldwin & Bishop,1983) were found in this study. In contrast Kaplan, Crawford, Fisher and Dewey (1998) found that parents of children with ADHD reported more difficulties in family functioning on the FAD than normal controls or families of youngsters with reading difficulties only. Compared with normal controls, Woodward et al. (1998) found that the parents of children with ADHD used more aggressive discipline methods. Camparo, Christensen, Duane and Hinshaw (1994) found that parents of boys with ADHD had a greater tendency to blame their sons and devote much time to discussing their sons' problems with their spouses compared with parents of normal controls. The degree to which these problems which characterize the families of youngsters with ADHD antedate or follow from children's behaviour problems is unclear. Also, the degree to which poor parenting practices are intergenerationally transmitted is unclear (Van Ijzendoorn, 1992). It is also unclear the degree to which difficulties shown by families of youngsters with ADHD are unique to this disorder or whether similar difficulties would be shown by families of children with other disorders such as anxiety or depression.

Emotional disorders

Emotional disorder is a general term for presentations characterized by sustained low mood or persistent excessive fearfulness. In DSM IV TR (APA, 2000) and ICD 10 (1992) low mood is the central feature of presentations referred to as mood disorders, the most

common of which are major depression and dysthymia. Excessive fearfulness is the core difficulty in presentations referred to as anxiety disorders and these include separation anxiety, generalized anxiety disorder, panic, phobias, obsessive compulsive disorder and post-traumatic stress disorder. In the UK 4% of youngsters between 5 and 16 meet the ICD 10 diagnostic criteria for emotional disorders (Meltzer et al, 2000). Emotional disorders are equally common among boys and girls, but more common among female than male adolescents and this is largely accounted for by higher rates of depression in older adolescent girls (Angold & Costello, 2001; Verhulst, 2001). In clinical settings there is considerable comorbidity among mood and anxiety disorders (Verhulst, 2001). Both biological and psychosocial factors probably play a role in the aetiology and maintenance of emotional disorders. Genetic factors may render children vulnerable to the development of these conditions (Boer & Lindhout, 2001; Strober, 2001). Episodes of low mood or excessive fearfulness may be precipitated by single major stressful life events or an accumulation life stresses. The psychosocial environment may influence the degree to which children with biological vulnerabilities develop emotional disorders in such circumstances (Manassis, 2002; McCauley et al., 2001). A diathesis-stress model of both mood and anxiety disorders suggests that families, schools and peer groups which contain members who are unsupportive and critical, or anxious and over-involved may maintain low mood, excessive fearfulness and other features of emotional disorders (Carr, 1999). In contrast, social systems that contain members who are supportive, and who encourage adaptive coping probably help youngsters, vulnerable to low mood and excessive fearfulness, to learn the skills required to tolerate exposure to major life stresses without developing the features of emotional disorders. Currently the most effective psychosocial treatment programmes include systemic interventions to promote a supportive family and

school context and cognitive behaviour therapy to help children develop effective coping strategies (Moore & Carr, 2000a, 2000b; Fonagy et al., 2002, chapters 3 and 4).

This diathesis-stress model of the aetiology and maintenance of emotional disorders, entails a number of specific hypotheses about psychosocial factors associated with emotional disorders. Thus the model predicts that parents coping with multiple family stresses with limited social support and a diminished quality of life will be less able to offer children with emotional disorders the support they require. Such parents may engage in critical or overinvolved parenting styles and patterns of family functioning which maintain or exacerbate low mood and excessive fearfulness. The model also predicts that such parents will experience diminished parenting satisfaction. Furthermore, the distress entailed by living with a child with an emotional disorder may contribute to them developing psychological health problems, although the distress associated with parenting such children is probably less than that associated with ADHD.

Currently there is some empirical support for a number of these hypotheses, although the evidence is sparse and by no means clear cut (Harrington, 2002; Klein & Klein, 2002). A parental diagnosis of anxiety or depression has been found to be associated with childhood emotional disorders (Goodyer, 2000). Insecure attachment has been found in a series of studies to be associated with childhood anxiety disorders (Manassis, 2002). Associations between high levels of criticism and overinvolvement as assessed by instruments which measure parental expressed emotion have been found for childhood depression (Asarnow et al., 1993; Goodyear et al., 1997) and anxiety (Hirshfield, 1997; Stubbe et al, 1993). The degree to which some of these problems which characterize the families of youngsters with emotional disorders antedate or follow from children's difficulties is unclear. It is also unclear the degree to which difficulties shown by families of youngsters with emotional disorders are specific to these types of problems or

whether similar difficulties would be shown by families of children with other disorders such as ADHD.

Hypotheses

The present study was designed to compare parental reports about families of children with ADHD or emotional disorders (such as depression or an anxiety disorder) with families of normal control children in the following four domains: (1) stress, support and quality of life; (2) current family functioning; (3) parenting style and satisfaction in the family of origin and current family; and (4) current and past parental functioning. The study addressed the following hypotheses entailed by the diatheses-stress models of ADHD and emotional disorders. First, it was expected that the two clinical groups would show greater stress and lower levels of both support and quality of life than normal controls. Second, it was expected that both clinical groups would show deficits in current family functioning on the McMaster Family Assessment Device, with families of ADHD children showing significant problems with behavioural control, and families of children with emotional disorders showing problems in the affective responsiveness and involvement domains. Third, it was expected that parents from both clinical groups would report less parenting satisfaction, less authoritative parenting and more authoritarian or permissive parenting than normal controls in both their current families and their families of origin. The relationship between parenting style and satisfaction in the families of origin and current families of parents of children with ADHD, emotional disorders and normal controls was a question of interest although we had no specific hypothesis here.

METHOD

Participants

Participants for this study were 22 mothers and 13 fathers of 22 boys with a Child Behaviour Checklist (CBCL, Achenbach, 1992) externalizing behaviour problem T score greater than 63 and a DSM IV ADHD diagnosis derived from the parent version of the Diagnostic Interview Schedule for Children (DISC-P-4, National Institute of Mental Health, 1992); 20 mothers and 15 fathers of 20 boys with a CBCL internalizing behaviour problem T score above 63 and a DSM IV diagnosis derived from the DISC-P-4 of an emotional disorder (ED) such as major depression, dysthmia or an anxiety disorder; and 26 mothers and 16 fathers of 27 normal controls with CBCL internalizing and externalizing behaviour problem T scores below 63 and no DSM IV diagnosis.

Diagnostic and demographic characteristics of the boys and their families are presented in Table 1. Eighty-two percent of the children in the ADHD group met the criteria for comorbid ODD; 41% met the criteria for comorbid CD; and none met the criteria for a mood or anxiety disorder. On the CBCL, the mean externalizing and internalizing behaviour problem T scores were 70 and 59 respectively for the ADHD group, and 55 and 72 respectively for the ED group. Thus the two clinical groups were diagnostically distinct. Neither contained cases with mixed presentations involving comorbid disruptive behaviour disorders and emotional disorders or significant co-occurring internalizing and externalizing behaviour problems. All cases in both the ADHD and ED groups were receiving psychological intervention at the time of the study. In addition, 48% of the ADHD cases were receiving stimulant medication and 25% of the ED cases were receiving antidepressants. The ADHD group and the ED group were matched for disorder duration. In each group the mean duration of the disorder was greater than 4 years.

The two clinical groups and the control group were demographically similar insofar as they were matched for the age and gender of the child and family composition. The

three groups did not differ with respect to the distribution of one and two parent families and they had similar numbers of siblings, with about 2 siblings on average in each family.

There were two important demographic intergroup differences. Significantly more members of the control group were from higher socio-economic classes and parents in the ADHD group were significantly younger than those in the other two groups. The impact of these confounding variables is addressed in the results section

Instruments

In addition to a demographic questionnaire the following list of instruments, all of which have acceptable levels of reliability and validity, were included in the assessment protocol.

- Child Behaviour Checklist (CBCL, Achenbach, 1991)
- Diagnostic Interview Schedule for Children – Parent Version-4 (DISC-P-4, National Institute of Mental Health, 1992)
- Family Inventory of Life Events and Changes (FILE, McCubbin, Patterson & Wilson, 1982) keyed so that high scores indicate low stress
- Perceived social support scale (PSSS, Carr & O'Reilly, 2000)
- Quality of Life Inventory (QOLI, Frisch, 1994)
- Family Assessment Device (FAD, Epstein et al., 1983)
- Parental Authority Questionnaire (PAQ, Buri, 1991) with versions to assess parenting style in the current family and family of origin
- Kansas Parenting Satisfaction Scale (KPS, James et al., 1985) with versions to assess parenting style in the current family and family of origin
- General Health Questionnaire-12 (GHQ, Goldberg, 1972, Goldberg & Williams, 1991) to assess current parental mental health

- Wender-Utah Rating Scale (WURS, Ward, Wender & Reimherr, 1993) to assess parents' perceptions their own childhood attention deficit hyperactivity symptomatology
- Social Desirability Scale (SDS, Reynolds, 1982).

Procedure

Participants for the ADHD and ED groups were recruited through regional child psychiatric and community care psychology services of the North Eastern Health Board and a child psychiatric clinic within Lucena Clinic Services in the Republic of Ireland. The control group was recruited through urban and rural primary schools within the greater Dublin area and the North Eastern Health Board. Data collection occurred between November 2001 and March 2003. All cases were initially screened with the CBCL. Parents of clinical cases who returned CBCL internalizing or externalizing behaviour problem T scores above 63, were administered the DISC-P-4. Parents of such cases which met the diagnostic criteria for ADHD, an anxiety or mood disorder were invited to complete the remainder of the assessment protocol. Cases were excluded from the ADHD group if they met the diagnostic criteria for any co-morbid disorder other than ODD or CD. Cases were excluded from the ED group if they met the diagnostic criteria for ODD, CD, or ADHD. For protocols of control group cases to be accepted, parents had to return CBCL internalizing and externalizing behaviour problem T scores less than 63. Where such scores exceeded 63, protocols were excluded. The DISC-P-4 was not completed for cases in the control group, since these were already screened with the CBCL. For all three groups cases were excluded if there was evidence of intellectual disability (IQ below 70 and significant impairment in adaptive functioning). The study was conducted with ethical approval of involved institutions and all participants gave informed consent.

RESULTS

Data were entered on an item-by-item basis into the Statistical Package of the Social Sciences (SPSS) for processing and analysis and verified by checking actual against possible ranges. For no item were more that 10% of the data missing and group means were substituted for all missing data points in all analyses. Cronbach's alpha was calculated for each multi-item clinical scale and subscale in the assessment protocol. These ranged from .77 to .95 for main scales and from .66 to .94 for subscales, indicating satisfactory internal consistency reliability.

To address the main research questions and hypotheses about group profiles on stress, support, family functioning and parental functioning, the statistical significance of intergroup differences on continuous dependent variables was evaluated using a series of 3 X 2, Group X Role, Analyses of Variance (ANOVAs) with Scheffe post-hoc tests for unequal N designs. In these analyses there were three Groups (ADHD, ED, and Control) and two Roles (Mother and Father). To address questions and hypotheses about the intergenerational patterns of parenting practices and satisfaction, a series of 3 X 2 X 2, Group X Role X Time, mixed model Analyses of Variance (ANOVAs) were conducted for variables derived from the AQ and KPS. In these analyses there were three Groups (ADHD, ED, and Control); two Roles (Mother and Father); and two Times (Family of Origin and Current Family). In these mixed model ANOVAs, Group and Role were between subject variables and Time was a within subject variable. Mean scores and F values from these ANOVAs are reported in Tables 2-5.

The potential influence of response set and intergroup differences in age and socioeconomic status on the validity of results was evaluated by computing correlations between all 26 dependent variables and SDS, age and socioeconomic status. These

correlations were small (r<.3) so it was concluded that these three variables had a negligible impact on intergroup differences on dependent variables.

Because of the large number (N=26) of dependent variables and the consequent need to control for type 1 error (accepting chance differences as significant), only effects significant at p<.01 were interpreted as being statistically significant (although effects significant at p<.05 are noted in the tables but not the text).

Stress, support and quality of life

From Table 2 it may be seen that the three groups differed on levels of family stress, total social support, support from friends and family, and quality of life. Parents in the ADHD and ED groups reported more stress, less total social support, less social support from family and friends, and a lower quality of life than the control group. Also, mothers reported greater support from friends compared with fathers.

Current family Functioning

From Table 3 it may be seen that the three groups differed in the way they perceived their current family to be functioning at a general level, and also with respect to the specific domains of family communication, roles, affective responsiveness, affective involvement and behaviour control. In each of these specific domains and for general family functioning parents in the ADHD and ED groups reported greater problems than parents in the normal control group.

Parenting style and satisfaction

From Table 4 it may be seen that the three groups differed in the level of authoritarian parenting style they reported as characterizing their current families and their families of

origin. Parents of ADHD children reported higher levels of authoritarian parenting than parents from the ED or control groups. Parents in all three groups reported significant changes in perceived parenting style from their families of origin to their current families. Across all three groups there was an increase in permissive and authoritative parenting and a decrease in authoritarian parenting.

From Table 4 it may also be seen that for parenting satisfaction, a significant Group X Time interaction occurred. Parents in both the ADHD and ED groups reported greater parenting satisfaction in their families of origin than in their current families. This discrepancy between the parenting satisfaction they perceived their parents to have experienced, and their own parenting satisfaction in their current families was greatest for parents of ADHD children. In contrast, parents of normal controls reported the level of parenting satisfaction that their parents had in their families of origin and the parenting satisfaction they experience in their current families to by quite similar. Also, overall, parents from the ADHD and ED groups reported lower levels of parenting satisfaction than parents of normal controls.

Parental functioning

From Table 5 it may be seen that the three groups differed on current parental psychological health as assessed by the GHQ-12 and current perceptions of parental childhood ADHD symptomatology. In each of these domains, parents in the ADHD and ED groups reported greater difficulties than parents in the normal control group. Also, overall, mothers reported greater psychological health problems than fathers.

DISCUSSION

This study was designed to compare parental reports about families of children with ADHD or emotional disorders with families of normal controls across a number of domains of psychosocial functioning. A summary of the key findings is given in Table 6, which serves as a useful reference point for considering the four hypotheses addressed in this study. First, as expected, the two clinical groups showed greater stress and lower levels of both social support and quality of life than normal controls. Second, as expected, both clinical groups showed deficits in current family functioning on the McMaster Family Assessment Device. However, the profile of deficits was the same for families from the ADHD and ED groups. Families of children with ADHD did not show more problems with behavioural control, and families of children with emotional disorders did not show more problems in the affective responsiveness and involvement domains as expected. Third, with respect to parenting style, the only difference between the clinical and control groups was the higher level of authoritarian parenting in current families of children with ADHD. Contrary to expectations, there were no differences between groups in parenting styles in families of origin and no difference between parenting styles in families of children with emotional disorders and normal controls. With respect to parenting satisfaction, however, as expected, parents from both clinical groups reported less parenting satisfaction than normal controls in both their current families and their families of origin. A particularly noteworthy finding was that parents of children with both ADHD and emotional disorders reported greater parenting satisfaction in their families of origin than in their current families. This discrepancy was greatest for parents of ADHD children.

This study had two potential limitations. First, the groups, which were convenience samples, were not matched for parental age or socioeconomic status. However, the impact of these demographic intergroup difference was limited since correlations between the two demographic variables and the dependent variables were negligible. Second, the

validity of scores on variables based on parental self-report may have been compromised by response set. However, when we correlated a measure of social desirability response set with all self-report dependent variables, these correlations were found to be small, indicating that the self-report data were largely uncontaminated by a social-desirability response set. In view of these limitations and our attempts to deal with them we are fairly confident that the profiles found in this investigation are valid for the groups studied.

Our results are broadly consistent with findings from previous studies of psychosocial factors associated with ADHD (Schachar & Ickowicz 2000) and emotional disorders (Goodyer, 2000). The surprising finding in this study is the extraordinary similarity between the profiles of the families of the two clinical groups. The very similar profiles shown by families of children with ADHD and emotional disorders may reflect a constellation of non-specific predisposing and/or maintaining factors common to a range of childhood psychological problems. Thus, the high stress, lack of support, low parental quality of life, family functioning difficulties, low parenting satisfaction, and parental psychological health problems, may all have predisposed biologically vulnerable youngsters to developing worse psychological problems than they might otherwise have had. And once their problems became intense and chronic, then in response, their families may have begun to show this constellation of difficulties as a reaction, which in turn may have maintained the youngsters' psychological problems.

Clearly, only longitudinal studies can unravel the temporal sequencing entailed by these types of hypotheses, and such studies should be a priority for further research.

At a clinical level, the current results point to the importance of careful family assessment in cases where youngsters present with ADHD or emotional disorders, and to the value of multisystemic interventions which target not only the child's symptoms but the family difficulties which may be maintaining these. The results suggest that for families

whose children present with ADHD and emotional disorders it may be useful to focus therapy not only on enhancing parenting skills and the quality of parent-child relationships but also on (1) facilitating the development a network of support for parents; (2) helping parents find solutions to interfamilial and extrafamilial life stresses; (3) exploring ways to enhance parental quality of life; (4) enhancing family communication and problem-solving; and (5) facilitating an emotionally warmer and more responsive family climate.

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Table 1. Behavioural and demographic characteristics.

			Group				
			Group 1	Group 2	Group 3	F or Chi	Differences
			ADHD	ED	Controls		
N of Boys			22	20	27		
N of Fathers			13	15	16		
N of Mothers			22	20	26		
CBCL	**Total-t**	M	69.97	67.48	43.33	53.50**	1,2>3
		SD	5.53	12.10	9.66		
	Externalizing-t	M	70.29	54.82	42.88	38.22**	1>2>3
		SD	8.82	13.45	10.20		
	Internalizing-t	M	59.17	71.55	45.83	45.07**	2>1>3
		SD	9.64	7.67	8.09		
Boy's age		M	8.43	8.89	8.11	0.72	1=2=3
		SD	2.88	3.09	2.06		
N of Siblings		M	2.26	2.33	1.87	1.19	1=2=3
		SD	1.41	1.64	1.08		
Family comp.	**One-parent**	F	7	1	3	8.75	1=2=3
		%	32	5	11		
	Two-parent	F	14	19	24		
		%	64	95	89		
	SES score	M	3.31	3.26	2.09	4.97**	1,2>3
		SD	1.59	2.12	1.96		
Parental age		M	34.50	42.34	41.42	13.16**	1<2,3
		SD	7.47	5.86	5.26		

Note: ADHD=Attention-deficit hyperactivity disorder. ED=Emotional disorder. CBCL=Child Behaviour Checklist. SES= Socio-economic status.

TABLE 2 *Family stress, perceived social support and quality of life*

		Group 1 ADHD		Group 2 ED		Group 3 control		ANOVA F values			
		Mother N = 22	Father N = 13	Mother N = 20	Father N = 15	Mother N = 26	Father N = 16	Group	Parent	G × P	Group Differences
Family stress	M	60.86	61.92	60.35	63.00	64.92	65.19	7.01**	2.10	0.60	1,2<3
	SD	5.59	3.17	6.58	3.94	3.96	2.88				
Total social support	M	98.36	105.54	106.85	102.13	114.42	121.06	7.98**	0.73	1.17	1,2<3
	SD	26.23	15.54	13.58	15.69	17.43	15.34				
Support from spouse	M	21.41	24.15	22.30	22.27	23.46	25.81	2.07	2.71	0.70	
	SD	6.46	4.45	4.70	2.91	6.70	3.44				
Support from friends	M	21.23	18.31	21.25	18.40	24.08	22.87	8.40**	7.13**	0.44	1,2<3. M>F
	SD	5.75	4.11	4.25	4.75	3.77	3.77				
Support from Family	M	18.45	20.54	21.45	20.87	23.58	24.56	9.21**	0.86	0.71	1,2<3
	SD	6.70	4.21	3.97	2.75	4.35	3.78				
Support from health professionals	M	16.27	18.77	20.15	19.20	19.23	22.06	3.77*	2.37	1.62	1<3
	SD	6.28	3.09	4.85	4.66	4.84	4.01				
Support form significant other	M	21.95	23.69	22.95	21.33	24.84	25.75	4.69*	0.14	1.18	2<3
	SD	6.42	5.02	3.92	4.32	4.15	3.41				
Quality of life	M	2.12	2.49	1.61	1.54	3.19	3.15	13.73**	0.13	0.28	1,2<3
	SD	1.62	1.30	1.76	0.80	0.93	1.04				

Notes: Family stress scores are from the Family Inventory of Life Events and Changes (McCubbin *et al.*, 1982). Social support scores are from the Perceived Social Support Scale (Carr & O'Reilly, 2000), Quality of life scores are from the Quality of Life Inventory (Frisch, 1994). *p<.05. **p<.01.

TABLE 3 *Perceived current family functioning*

		Group						ANOVA F Values			
		Group 1 ADHD		Group 2 ED		Group 3 control					
		Mother	Father	Mother	Father	Mother	Father				
		N = 22	N = 13	N = 20	N = 15	N = 26	N = 16	Group	Parent	G×P	Group Differences
General family functioning	M	1.96	1.98	1.86	2.01	1.68	1.51	13.48**	0.00	1.96	1,2>3
	SD	0.45	0.26	0.37	0.21	0.27	0.36				
Problem-solving	M	1.98	1.92	1.93	2.09	1.79	1.75	4.65*	0.05	1.02	2>3
	SD	0.42	0.31	0.40	0.14	0.35	0.37				
Communication	M	2.07	2.24	2.18	2.27	1.96	1.83	8.94**	0.37	1.72	1,2>3
	SD	0.37	0.21	0.40	0.26	0.40	0.35				
Roles	M	2.44	2.27	2.40	2.35	2.20	1.97	8.57**	5.40*	0.72	1,2>3. M>F
	SD	0.38	0.30	0.32	0.18	0.39	0.35				
Affective responsiveness	M	1.96	1.97	2.04	2.25	1.58	1.67	17.05**	1.93	0.56	1,2>3
	SD	0.30	0.44	0.44	0.30	0.40	0.45				
Affective involvement	M	2.18	2.16	2.02	2.15	1.84	1.80	6.80**	0.04	0.40	1,2>3
	SD	0.55	0.43	0.39	0.31	0.36	0.43				
Behaviour control	M	1.91	1.78	1.94	1.92	1.58	1.63	8.54**	0.22	0.65	1,2>3
	SD	0.45	0.40	0.34	0.17	0.36	0.29				

Notes: Scores on all variables are from the Family Assessment Device (Epstein *et al.*, 1983). *p < .05. **p < .01.

TABLE 4 *Perceived parenting styles and satisfaction in current family and family of origin*

			Group 1 ADHD		Group 2 ED		Group 3 control		ANOVA Fvalues							
			Mother N = 22	Father N = 13	Mother N = 20	Father N = 15	Mother N = 26	Father N = 16	Group	Parent	Time	G×P	G×T	P×T	G×P×T	Group differences
Parenting styles																
Permissive	FOO	M	21.72	22.23	20.55	21.73	21.42	21.31	0.15	0.08	19.89**	1.06	0.93	0.34	1.62	FOO<C
		SD	5.19	4.67	3.82	3.86	4.28	5.68								
	C	M	25.09	22.38	24.90	25.07	22.96	24.93								
		SD	6.01	3.86	4.74	3.88	2.32	3.92								
Authoritarian	FOO	M	35.72	36.08	35.00	32.53	33.11	33.19	8.83**	0.38	51.92**	1.04	0.61	0.08	0.30	1>2,3
		SD	6.09	5.65	4.88	6.48	6.61	4.72								FOO>C
	C	M	30.82	32.31	28.80	27.67	27.35	26.25								
		SD	6.13	4.94	4.15	5.21	4.81	4.66								
Authoritative	FOO	M	32.45	31.00	30.45	31.73	33.46	35.12	4.17*	0.00	101.11**	0.26	0.90	0.56	0.91	2<3
		SD	7.53	5.71	6.25	4.80	6.25	5.45								C>FOO
	C	M	38.68	38.85	39.40	38.27	40.19	39.62								
		SD	4.80	2.54	2.14	2.15	2.71	3.28								
Parenting satisfaction																
	FOO	M	16.04	14.69	14.90	15.80	17.00	17.12	28.92**	0.85	8.16**	0.32	7.92**	1.41	0.99	1&2: FOO>C
		SD	3.03	2.93	3.46	2.14	2.45	2.73								3: FOO=C
	C	M	11.45	12.69	14.10	14.73	17.38	18.12								
		SD	4.81	2.78	3.19	2.91	2.23	1.75								

Notes: Scores for parenting styles are from the Parental Authority Questionnaire (Buri, 1991). Parenting satisfaction scores are from Kansas Parenting Satisfaction Scale (James *et al.*, 1985). FOO = Family of origin. C = Current family. *p<.05. **p<.01.

TABLE 5 *Parental general health and recollection of personal childhood ADHD symptomatology*

		Group 1 ADHD		Group 2 ED		Group 3 control		ANOVA F values			
		Mother N = 22	Father N = 13	Mother N = 20	Father N = 15	Mother N = 26	Father N = 16	Group	Parent	G × P	Group differences
Current parental psychological health (GHQ-12)	M	15.95	12.15	15.55	11.87	10.81	9.37	5.75**	7.49**	0.53	1,2>3. M>F
	SD	7.82	4.32	6.75	2.59	4.53	4.67				
Parental ADHD symptomatology In childhood (WURS)	M	32.59	33.00	25.35	27.27	18.00	16.06	11.65**	0.00	0.18	1,2>3
	SD	18.55	16.30	14.64	13.68	9.12	10.19				

Notes: GHQ-12 General Health Questionnaire-12 (GHQ, Goldberg, 1972, Goldberg and Williams, 1991). WURS: Wender–Utah Rating Scale (WURS, Ward *et al.*, 1993). **$p < .01$.

TABLE 6 *Profiles of families with children with ADHD, emotional disorders and normal controls*

		Families of children with ADHD		Families of children with emotional disorders		Families of normal control	
Domain	Scale	Mother	Father	Mother	Father	Mother	Father
Stress	Family stress	+	+	−	−	−	−
Support	Total social support	+	+	+	+	−	−
	From spouse	−	−	−	−	−	−
	From friends	+	+	+	+	−	−/+
	From family	+	+	+	+	−	−
	From health professionals	−	−	−	−	−	−
	From significant other	−	−	−	−	−	−
Quality of life		+	+	+	+	−	−
Current family Functioning	General family functioning	+	+	+	+	−	−
	Problem-solving	−	−	−	−	−	−
	Communication	+	+	+	+	−	−
	Roles	+	+	+	+	−	−
	Affective responsiveness	+	+	+	+	−	−
	Affective involvement	+	+	+	+	−	−
	Behaviour control	+	+	+	+	−	−
Parenting style	Permissive in current family	−	−	−	−	−	−
	Permissive in family of origin	−	−	−	−	−	−
	Authoritarian in current family	+	+	−	−	−	−
	Authoritarian in family of origin	−	−	−	−	−	−
	Authoritative in current family	−	−	−	−	−	−
	Authoritative in family of origin	−	−	−	−	−	−
Parenting satisfaction	Satisfaction in current family	+	+	+	+	−	−
	Satisfaction in family of origin	+/−	+/−	+/−	+/−	−	−
Current parental psychological health		+	+/−	+	+/−	−	−
Parental ADHD symptomatology in childhood		+	+	+	+	−	−

Notes: +Problems occur in this area. − There are no problems in this area. +/− There are some problems in this area.