

## Depressive and Anxiety Symptoms in Mothers of Children with ADHD Compared to the Control Group

Atefeh Soltanifar MD<sup>1</sup>

Fatemeh Moharreri MD<sup>1</sup>

Azadeh Soltanifar MD<sup>1</sup>

<sup>1</sup> Department of Psychiatry  
Mashhad University of Medical  
Sciences

### Corresponding Author :

Fatemeh Moharreri, MD,  
Assistant Professor of Child and  
Adolescent Psychiatry,  
Department of Psychiatry  
Mashhad University of Medical  
Sciences, Ebn-e-Sina Hospital,  
Hor-e-Ameli Bulv., Mashhad, Iran.  
Tel : +98-511-7112701-4  
Fax:+98-511-7112723  
Email: MoharariF1@mums.ac.ir

**Objective:** Attention deficit/ Hyperactivity Disorder is a common psychiatric disorder with an early onset. Investigation reveals that mothers of children with ADHD higher levels of depressive and anxiety symptomatology than do mothers of comparison children. The aim of the present study was to compare anxiety and depressive symptoms in the mothers with ADHD children with control group .

**Method:** Fifty mothers of the ADHD children aged between 6 to 12 whom diagnosed on the basis of interviews held with psychiatrist in the first referral to sheikh Child Psychiatry Clinic. The control group consisted of mothers of fifty children without any psychiatric disorder. The selected mothers were evaluated with Beck Depression Inventory (BDI) and State-Trait Anxiety Inventory interviewed for the basic Psychiatric disorder,. Data were analyzed using t-test, ANOVA, Chi-square statistical tests.

**Results:** Our data showed the 20% and 10% of mothers had mild and moderate depression. In control group, mild and moderate depression was reported 6/7% and 3/3%, respectively. The differences between depression and trait anxiety in mothers of ADHD children and control group were significant. There was a correlation between intensity of the trait and state anxiety and the depression in mothers with intensity of ADHD in their children but the relation was not significant .

**Conclusion:** The present study suggests that the Intensity of depression and trait anxiety in mothers of ADHD children are more than the control group .

**Keywords:** Anxiety, Attention deficit disorder with hyperactivity, Depression, Mothers

*Iran J Psychiatry 2009; 4:112-115*

**A**ttention-deficit/hyperactivity disorder (ADHD) is one of the most common childhood onset psychiatric disorders that is characterized by inattention, hyperactivity and impulsivity (1,2). ADHD can affect social, cognitive and academic performance of children (2,3). Without appropriate interventions, many of ADHD children experience problems both at home and at the school (3,4).

Being a parent to an ADHD child is a challenging and sometimes frustrating task (5). Dealing with behavioral problems of these children may exacerbate parenting inadequacies and social difficulties (6). Parents of ADHD children assess their family environment as less supportive and more stressful than the comparison group (7). They report lower parental coping abilities than other parents (8).

Dealing with different problems of ADHD children can have adverse effects on parents' mental health (6). Some clinical and epidemiological studies have shown that parents, especially mothers of ADHD children, display higher levels of depression and anxiety (9).

Using State-Trait Anxiety Inventory and Beck Depression Inventory, Segenreich et al., compared the rates of anxiety and depression in a sample of Brazilian parents; the sample included the parents of 26 ADHD

students and 31 paired controls. The results of this study indicated that mothers of ADHD children presented higher depression and anxiety levels (10).

In another research, authors evaluated the depressive symptoms, anxiety status and coping behaviors of mothers of 30 children with ADHD in comparison to 30 healthy controls. Depressive and anxiety symptoms were examined using Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI). The Beck depression and anxiety scores of the mothers of ADHD sample were significantly higher than the controls (11). Depressed or anxious parents tend to be withdrawn, bad-tempered and to have less engagement with their children (12, 13). Depressive symptoms may be associated with aversive parenting behaviors (14). Anxious mothers display significantly less positive affection towards their children than the control group (7).

Therefore, depression and anxiety in mothers of ADHD children can be one of the consequences of dealing with the problems of these children and in turn can exacerbate their behavioral challenges, making family environment more stressful. Considering the importance of parents' mental health, especially mothers of ADHD children, in managing their problems, this study aimed to compare the rate of

anxiety and depressive symptoms in mothers of clinically referred ADHD children with the mothers in the control group in the city of Mashhad-Iran.

**Materials and Methods**

This study is a case- control research. The sample consisted of 50 mothers with children aged between 6-12 who had the clinical diagnosis of ADHD. Participants were recruited from consecutive referrals to the child and adolescent psychiatric clinic in Sheikh Hospital. All the children who were brought to the clinic with chief complaints of inattention and hyperactivity were evaluated using the schedule for affective disorders and schizophrenia for school aged children, present and lifetime version (K-SADS-PL); and ADHD rating Scale was used to confirm the diagnosis. The diagnoses were made by one board certified child and adolescent psychiatrist.

Inclusion criteria for the study were: a) mothers with ADHD children aged between 6 and 12 years; b) no signs of medical problems, mental retardation, psychosis and bipolar disorder in mothers and their children; c) mothers' willingness to participate in the study with their children.

The control group included 50 mothers of children without any psychiatric or chronic medical disorders who were referred to pediatric clinic for other problems. Children in the both groups were also matched by age and educational level. Through a clinical interview, a psychiatrist ruled out the presence of any psychiatric disorder in the control group.

The selected mothers were interviewed for basic psychiatric disorders by a psychiatrist and then they completed Beck Depression Inventory (BDI) and State-Trait Anxiety Inventory (Spielberger). Demographic data including age of the children and their parents and educational level of mothers were gathered using a questionnaire.

The study procedure was explained to the parents of children and written informed consent was obtained. The developmentally appropriate explanation about the study was also given to the children.

**Instruments**

*Beck Depression Inventory (BDI)* was used to assess maternal depression symptoms (5). BDI includes 21 items rated on a 4-point likert scale. This widely used self report scale has excellent construct validity in both psychiatric and non psychiatric samples (15,16).

*State-Trait Anxiety Inventory (Spielberger)* was administered to assess maternal anxiety symptoms. This 20 item test is rated as a 4 point likert scale to assess general feelings of anxiety, tension, nervousness and worry. Decades of research have demonstrated the construct validity of this scale as a measure of individual differences in perceiving and reacting to stress in psychiatric and medical patients as well as in healthy population (17).

*Kiddie schedule for affective disorders and schizophrenia (K-SADS)* is a semi- structured interview to the screen psychiatric disorders in the age group of 5 to 17 based on DSM-III and DSM-IV criteria. Diagnoses are made by a psychiatrist using the information gathered from the interview with the child and the mother. This test has a high specificity and low sensitivity (18).

**Data Analysis**

The Statistical Package for Social Sciences (SPSS) software version 11.5 for windows was used for data analysis. We compared the differences between the two groups using t- test.

**Results**

All mothers of children with ADHD and also the control group completed the self report measures. There were no significant differences between the demographic characteristics of the two groups. Table 1 demonstrates the demographic variables of the two groups.

The results of the maternal depressive symptoms are displayed in Table 2. There was a significant difference in the rate and severity of depression between the two groups. Mothers of ADHD children had higher levels of depressive symptoms than the other group .

Table 3 illustrates the results of maternal anxiety symptoms. Significant differences were found in the rates of trait anxiety; but no significant differences were observed in the rates of state anxiety between the two groups.

In our study, there was a correlation between the intensity of depression , the trait and state anxiety of mothers with the severity of ADHD in their children ; however, the relation was not significant.

There was not any significant relation between ADHD subtypes in children and depressive or anxiety symptoms in mothers.

**Table 1. Demographic variables of the two groups**

variables	M	SD	M	SD
Child age (Month)	108	24/017	108/13	28/16
Mother age (year)	37/93	5/76	36/16	5/22
Father age (year)	40/00	9/85	40/22	7/31

**Table2. Parental depressive symptoms in the case and control groups**

Depression	normal	mild	Moderate	sever	Pvalue
Case group	70%	20%	10%	0 %	0/019
Control group	90%	6/7%	3/3%	0 %	

**Table3. parental anxiety symptoms in the case and control groups**

	Anxiety	Mild	Under moderate	Above moderate	sever	P value
<b>Trait Anxiety</b>	Case group	6%	22%	52%	20%	0/029
	Control group	0%	53/3	46/2%	0	
<b>State Anxiety</b>	Case group	14%	24%	42%	20%	0/80
	Control group	0 %	23/3%	76/7%	0	

**Table 4. Psychiatric diagnoses in mothers of ADHD children**

Psychiatric diagnosis	Frequency	Percentage
GAD	8	16
Dysthymia	4	8
Anxiety disorder (NOS)	3	6
OCD	4	8
MDD	1	2
Adult ADHD	1	2
Minor depression	1	2
Dysthymia+OCD	5	10
GAD+Dysthymia	4	8
Minor depression+GAD	2	4
Adult ADHD+GAD	2	4
MDD+OCD	1	2
Adult ADHD+Dysthymia	1	2
Social phobia +GAD	1	2
MMD+GAD+Dysthymia	1	2
No diagnosis	11	22

Table 4 demonstrates psychiatric diagnoses of mothers with ADHD children ; 78% of the mothers had at least one psychiatric disorder.

Based on the clinical interview, the most common diagnosis in this group was Generalized Anxiety Disorder.

### Discussion

This study investigated the rate and severity of depression and anxiety in mothers of children with ADHD .

Mothers of ADHD children tend to exhibit more control ling and less rewarding parenting tactics than mothers of the control children (19). These parenting behaviors have been shown to predict the developmental and persistence of child aggression (20). Results of this study indicated that trait anxiety and depression in mothers of children with ADHD were significantly more than mothers of the control group. These results seem to be consistent with findings reported by Whaley et al. (7).

The results of an epidemiological survey of psychiatric disorders in Iran indicated that the prevalence of psychiatric disorders in the general population was 10.81% , and was more common among females than males (14.34% vs. 7.34%, P < 0.001). The prevalence of anxiety and mood disorders were 8.35% and 4.3% respectively (21).

In another study conducted by Segenreich in a Brazilian university, higher prevalence rates of anxiety and depression were reported in parents of children

with attention deficit hyper activity disorder. Mothers of ADHD children presented higher depressive and anxiety levels. However, only trait anxiety level was higher in ADHD mothers than the control group (10).

In another study conducted by Ghanizadeh in Shiraz University of medical sciences, the findings indicated that the most common psychiatric disorder in the parents of ADHD children was mood disorder .The rate for major depressive disorder in mothers and fathers of those children was 48 .1% and 43. 0% respectively (22).

In our study, the rate of depression in mothers of ADHD children was 30 % , which was higher in ADHD mothers than the control group. The rate of depressive symptoms in mothers of the ADHD group was higher than the results of an epidemiologic study in Iran (4.3%). The results of the present study are consistent with the two previous studies by Ghanizadeh and Segenreich that showed higher levels of depressive symptoms in mothers of ADHD children.

In our study no significant differences were found between state anxieties in the two groups although trait anxiety was higher in mothers with ADHD children than the control group. These findings are similar to results of the research by Segenreich in a Brazilian university which indicated no significant difference between the state anxiety in mothers of ADHD children and the control group, and higher trait anxiety levels in mothers of the ADHD group .

In our study, there was a correlation between the intensity of depression, the trait and state anxiety of the mothers with the severity of ADHD in their children;

however, the relation was not significant.

One of the limitations of the present study was the small sample size. On the other hand, matching and case-control design can be considered as one of the strengths of this research. Further investigations with longitudinal follow-up and observational methods are needed to clarify the interactions between ADHD symptoms and maternal depression and anxiety. The role of fathers in parenting of these children should also be examined more in the future studies .

In conclusion, this research in Iran is consistent with previous findings in other societies, as this study showed the higher levels of anxiety and depressive symptomatology in mothers of ADHD children compared with the mothers of the control group. These results signify the importance of maternal mental health assessments and the use of appropriate interventions not only for ADHD children but also for their parents especially mothers .

## References

1. Martin A, Volkmar FR, Lewis M. Lewis's Child and Adolescent Psychiatry:A Comprehensive Text book, 1th ed . Philadelphia :Lippincott Williams & Wilkins 2002:45-70.
2. Martin A, Volkmar FR, Lewis M. Lewis's Child and Adolescent Psychiatry:A Comprehensive Text book, 3th ed . Philadelphia :Lippincott Williams & Wilkins,Wolters Klawer business 2007:430-454.
3. Wiener JM. Text book of child and adolescent psychiatry ,3th ed. American Psychiatry publishing 1991: 389-411.
4. Sadock BJ , Sadock VA . Kaplan& Sadock : Comprehensive textbook of psychiatry,8 th ed. Lippincott Williams & Wilkins 2005 :3183-3198.
5. Kaplan and Sadock's Synopsis of Psychiatry, 9 th ed. Philadelphia: Lippincott Williams & Wilkins 2003 :1223-1232.
6. Harrison C, Sofronoff K . ADHD and parental psychological distress: Role of demographics, child behavioral characteristics and parental cognitions. J Am Acad Child Adolesc Psychiatry 2002 ; 41: 703-711.
7. Whaley S E, Pinto A, Sigman M. Characterizing interactions between anxious mothers and their children. J Consult Clin Psychol 1999; 67: 826-836.
8. Wilhelm K, Boyce P, Brownhill S. The relationship between interpersonal sensitivity, anxiety disorders, and major depression. J Affec Disord 2004; 79: 33-41.
9. Johnston C . Parent characteristics and parent-child interactions in families of nonproblem children and ADHD children. J Abnorm Child Psychol 1996; 24: 85-104.
10. Segenreich D, Fortes D , Coutinho G, Pastura G, Mattos P . Anxiety and depression in parents of a Brazilian non-clinical sample of attention-deficit/hyperactivity disorder (ADHD) students. Braz J Med Biol Res 2009;42:465-469.
11. Durukan I, Erdem M, Tufan AE, Congologlu A, Yorbik O, Turkbay T. Depression and anxiety levels and coping strategies used by mothers of children with ADHD: a preliminary study. Anatolian Journal of Psychiatry 2008 ;9:217-223.
12. Barkley RA, Anastopoulos AD, Guevermont DC, Fletcher KE. Adolescents with attention deficit hyperactivity disorder: Mother-adolescent interactions, family beliefs and conflicts, and maternal psychopathology. J Abnorm Child Psychol 1992 ; 20: 263-288.
13. Barkley RA, Fischer M , Edelbrock C, Smallish L. The adolescent outcome of hyperactive children diagnosed by research criteria: III. Mother-Child interactions, family conflicts and maternal psychopathology. J Child Psychol Psychiatry 1991 ; 32: 233-255.
14. Campbell SB, Pierce EW, March CL, Ewing LJ. non-compliant behavior, overactivity, and family stress as predictors of negative maternal control with preschool children. Dev Psychopathol 1991; 3: 175-190.
15. Beck AT, Steer RA, Brown GK. Beck Depression Inventory manual. NewYork: Psychological Corporation; 1987.
16. Beck AT, Steer RA, Carbin MG. Psychometric properties of the Beck Depression Inventory: twenty five years of evaluation. Clin Psychol Rev 1988; 8: 77-100.
17. Spielberger CD, Sydeman SJ . State- Trait anxiety inventory and state-trait anger expression inventory. In: Maruish ME, eds. The use of psychological tests for treatment planning and outcome assessment . Hillsdale NJ: Lawrence Erlbaum Associates Inc;1994.
18. Ambrosini PJ. Historical development and present status of the schedule for affective disorders and schizophrenia for school age children (K-SADS). J Am Acad Child Adolesc Psychiatry 2000; 39: 49-58.
19. Danforth JS, Barkley RA, Stokes TF. Observations of parent- Child interactions with hyperactive children: Re- search and Clinical implications. Clin psychol Rev 1991; 11: 703-727.
20. Klein RG, Mannuzza S. Long-term out come of hyper- active children : A review. J Am Acad Child Adolesc Psychiatry 1991; 30: 383-387.
21. Mohammadi MR. An epidemiological survey of psychiatric disorders in Iran. Clin Pract Epidemiol Ment Health 2005; 1 :16.
22. Ghanizadeh A, Mohammadi MR, Moini R. Comorbidity of Psychiatric disorders and parental psychiatric disorders in a sample of Iranian children with ADHD. J Atten disord 2008 ; 12: 149-155.