

Study of Anxiety Symptoms in Mothers of ADHD Children

Mahmoud Abd ELrahman Hammoda, Ali Esmail Abd ELrahman , Mahmoud Kamal Ahmed Samada *

Department of Psychiatry, Faculty of Medicine, Al-Azhar University, Cairo, Egypt

Corresponding author: Mahmoud Kamal Ahmed Samada, Email: mahmoudkamal1138@gmail.com,

Mobile: (+20)01002597528.

ABSTRACT

Background: Attention-deficit/hyperactivity disorder (ADHD) is one of the most common childhood onset psychiatric disorders that is characterized by inattention, hyperactivity and impulsivity. ADHD can affect social, cognitive and academic performance of children. All these impairments of psychosocial functioning can affect the quality of life of both patients and their families. Based on that, it is suggested that parents, especially mothers of ADHD children, display higher levels of depression and anxiety.

Aim of the work: This study aimed to compare anxiety symptoms in the mothers with ADHD children with control group. **Patients and Methods:** Fifty mothers of the ADHD children as study group and fifty mothers with children without any psychiatric disorder as control group. All were evaluated with to a semi-structured interview and Taylor Manifest Anxiety Scale. **Results:** This study showed that 19 in mothers of study group (32%) had no anxiety symptoms while 31(68%) had anxiety symptoms and 13 (26%) had above sever anxiety. In the control group 35 (70%) had no anxiety and 15(30%) had anxiety symptoms while 3 (6%) had above sever anxiety. There was statistically significant difference between the two groups (p value = 0 .05). There was no significant relation between intensity of maternal anxiety and the intensity of ADHD symptoms in their children.

Conclusion: The present study suggested that the presence and intensity of anxiety symptoms in mothers of ADHD children are higher than the control group and there was no significant association with ADHD symptoms in children.

Key words: Anxiety symptoms in mothers, Attention-deficit, hyperactivity disorder children.

INTRODUCTION

Children with Attention Deficit Hyperactivity Disorder (ADHD) are characterized by developmentally excessive levels of inattention, over-activity and impulsiveness that are most frequently identified and treated in the primary school ⁽¹⁾. Rates are higher for boys than for girls and for children under 12 years of age compared to adolescents ⁽²⁾. Prevalence estimates vary based on method of ascertainment, diagnostic criteria used, and whether functional impairment criteria are included ⁽¹⁾. The majority of children with ADHD continue to show some cognitive impairment (e.g. poor executive functioning and impaired working memory) relative to same-age peers through their teen years and into adulthood ⁽³⁾.

ADHD is a chronic disorder with deficits in the neurotransmitter systems that affect executive functioning. Etiology is primarily genetic ⁽⁴⁾. Several environmental factors have been identified as putative risk factors for ADHD such as maternal stress during pregnancy, prenatal exposure to tobacco, alcohol and other drugs/environmental toxins, pregnancy/ birth complications. Early postnatal environmental influences related to ADHD or core ADHD symptoms including neonatal anoxia and seizures as well as brain injury ⁽⁵⁾. Psychosocial adversity and high levels of family conflict were also associated with ADHD. Recent findings have related ADHD to more specific familial issues such as inconsistent parenting after controlling for parental ADHD ⁽⁶⁾.

ADHD can affect social, cognitive and academic performance of children. Without appropriate interventions, many of ADHD children experience problems both at home and at the school ⁽⁷⁾. All these impairments, of psychosocial functioning that goes beyond the core symptoms of attention-

deficit, hyperactivity and impulsivity, can affect the quality of life of both patients and their families ⁽⁸⁾.

Being a parent to an ADHD child is a challenging and sometimes frustrating task. Dealing with behavioral problems of these children may exacerbate parenting inadequacies and social difficulties. Dealing with different problems of ADHD children can lead to adverse effects on parents' mental health ⁽⁹⁾. Parents of ADHD children assess their family environment as less supportive and more stressful than the comparison group. Lower parental coping abilities than other parents were reported ⁽¹⁰⁾. Some clinical and epidemiological studies have shown that parents, especially mothers of ADHD children, display higher levels of depression and anxiety ⁽¹¹⁾. In one of the first published studies of parenting behaviors of clinically anxious mothers, displayed significantly that anxious mothers are less warmth and positive affect than control mothers. In the same study, clinically anxious mothers were also more critical, controlling and possessive of their children. Thus, parental anxiety appears to negatively influence the quality of parent-child relationship ⁽¹⁰⁾.

The aversive parenting behaviors may not only result from parents' own symptoms of distress, but also the characteristics of their children. This notion is supported by findings that the quality of parent-child relationships improves when children are treated with medication, behavioral and combined treatments ⁽¹²⁾.

Aim of the work: The aim was to compare anxiety symptoms in a group of mothers with ADHD children with control group and to study the relation between maternal symptoms and symptoms of ADHD in their children.

PATIENTS AND METHODS

The study was a case control study that was conducted on two groups, the first was the study group and the second was the control group. The study group consisted of two segments, mothers and their children. They reached 50 mothers and their children. All children of school age and regular in school. The study group was selected from mothers of children referred to the outpatient clinic at Helwan Mental Health Hospital who were clinically diagnosed with attention deficit hyperactivity disorder.

Inclusion criteria:

The study group consisted of 50 mothers of children with diagnosis of attention deficit - hyperactivity disorder according to criteria of the diagnostic and statistical manual of mental disorders fifth edition and they met the following criteria:

- Age group of children ranging from 6 - 12 years old.
- Both sexes of children were involved.
- All had average IQ.

Exclusion criteria: For mothers were:

- Mothers who were clinically below average IQ.
- The mothers who were providing care for a child with chronic illness other than attention deficit - hyperactivity disorder.
- The mothers with known chronic health problems or psychiatric disorders.

While exclusion criteria for children were:

- Mentally retarded children.
- Children with chronic medical illness.

On other hand, the control group consisted of 50 mothers. Similarly, they were selected from volunteer mothers residing in and around Helwan, the same areas as the mothers who were selected in the study group. They were also mothers with children of the same age range. Their children did not suffer from any chronic psychiatric or medical disorders.

Procedure and tools:

Included mothers in both study and control groups were interviewed using a semi-structured

interview to take demographic data and history. Taylor Manifest Anxiety Scale was applied to mothers. It has been standardized in the Egyptian environment and has been used in many Egyptian studies. A group of questions investigated the different symptoms of anxiety and the person answered them with a yes or no. Then, the scores obtained were collected and the level of anxiety was based on the total score.

Children with ADHD were evaluated by a semi-structured interview to take data and history. The Good enough Draw Man test was applied to children to confirm their level of intelligence and then the long version of Conners' Parent Rating Scale- Revised-Long version was applied to assess children's behavior by parents. This questionnaire contributes to the diagnosis of attention deficit hyperactivity disorder. In addition to giving a degree of intensity of each of the symptoms as well as the survey of a number of subsidiary standards that reflect the problems associated with such as stubbornness, emotional liability, psychological problems and social problems.

Patients' approval considerations:

Oral and written consent was taken from parents of children taking into considerations maintaining the confidentiality of the data, consenting to visual footage, publications and most importantly acknowledgement of the potential side effects.

Ethical approval and written informed consent:

An approval of the study was obtained from Al-Azhar University academic and ethical committee. Every patient signed an informed written consent for acceptance of the operation.

Statistical analysis

Data were coded and computed using the statistical package SPSS version 24. For comparing categorical data. Chi square test was performed. Exact test was used instead when the expected frequency is less than 5. P-value is considered significant if < 0.05 .

RESULTS

Table (1): Comparison between study and control group considering level of anxiety symptoms (negative, mild, moderate, sever and above sever)

Variables	Study group (N = 50)	Control group(N = 50)	P- value
Negative	19 (38%)	35 (70%)	0.006
Mild	2 (4%)	3 (6%)	
Moderate	12 (24%)	7 (14%)	
Severe	4 (8%)	2 (4%)	
Above severe	13(26%)	3 (6%)	

Table (1) Showed that there was a statistical significant difference (p -value < 0.05) between level of anxiety symptoms in both groups, 13 mothers (26%) of the study group had above sever anxiety while only 3 mothers (6%) of the control group had above sever anxiety.

Table (2): Comparison between study and control group considering relation between family history (positive and negative) and level of anxiety symptoms (negative, mild, moderate, sever and above sever)

Variables	Study group		Control group	
	Positive N = 24	Negative N = 26	Positive N = 18	Negative N = 32
Negative	6 (25%)	13 (50%)	9 (50 %)	26 (81 .2%)
Mild	0 (0%)	2 (7,7 %)	2 (11.1%)	1 (3. 1%)
Moderate	5 (20.8%)	7 (26.9 %)	4 (22.2%)	3 (9.4%)
Severe	3 (12.5 %)	1 (3,8%)	1 (5.6%)	1 (3. 1%)
Above severe	10 (41,7)	3 (11,5%)	2 (11.1)	1 (3. 1%)
<i>P value</i>	0.038		0.153	

It was found that in study group 6 mothers (25%) with positive family history have no anxiety compared to 13 (50%) of those with negative family history. While, 3 (12.5%) had severe anxiety and 10 (41.7%) had above severe anxiety in mothers with a positive family history compared to 1 (3.8%) had severe anxiety and 3 (11.5%) had above severe anxiety in mothers with negative family history. There was a statistically significant difference indicating that anxiety is higher in the case of positive family history of psychiatric disorder compared to negative family history in the study group (table 2).

Table (3): Relationship between level of anxiety in study group (negative, mild, moderate, sever and above sever) and level of stubbornness in ADHD children (negative, mild, moderate and sever)

Variables		Anxiety in study group					P value
		Negative	Mild	Moderate	Sever	Above severe	
Stubbornness In ADHD children	Negative N = 10	3 (30%)	1(10%)	6 (60%)	0 (0%)	0(0%)	.001
	Mild N=15	9 (60 %)	1 (6.7%)	1 (6.7%)	3 (20%)	1(6.7%)	
	Moderate N = 12	2(16.7%)	0 (0%)	4 (33.3%)	1(8.3%)	5(41.7%)	
	Severe N = 13	5 (38.5%)	0 (0%)	1 (7.7%)	0 (0%)	7(53.8%)	

Table (3) showed that in the case of mild stubbornness in children, 9 mothers (60%) had no symptoms of anxiety, while the percentage of mothers with very severe anxiety in the case of mild stubbornness was only one (6.7%) and 7 mothers (53.8%) were with sever stubbornness.

Table (4): Relationship between level of anxiety in study group (negative, mild, moderate, sever and above sever) and level of emotional liability in ADHD children (negative, mild, moderate and sever)

Variables		Anxiety in study group					P value
		Negative	Mild	Moderate	Severe	Above severe	
Emotional liability In ADHD children	Negative N = 13	7(53.8%)	1(7.7%)	4 (30.8%)	0 (0%)	1(7.7 %)	.0013
	Mild N = 17	9 (52.9 %)	1 (5.9%)	5 (29.4%)	0 (0%)	2(11.8%)	
	Moderate N = 10	1 (10%)	0 (0%)	2 (20%)	3(30%)	4(40%)	
	Severe N = 10	2 (20%)	0 (0%)	1 (10%)	1 (10%)	6 (60%)	

Table (4) showed that in the case of emotional liability, in children with a mild degree, 9 mothers (52.9%) had no symptoms of anxiety. On the other hand, mothers with very severe anxiety reached 2 mothers (11.8%), and increased to 6 mothers (60%) in the case of extreme emotional liability.

DISCUSSION

This study involved 2 groups, study and control group. The study group consisted of 50 mother with

ADHD children. On the other hand, the control group consisted of 50 mother with children didn't suffer from any psychiatric disorder.

The study showed the absence of anxiety symptoms in 19 mothers (32%) of study group while it was absent in 35 mothers (70%) of control group (table 1). The presence of symptoms of anxiety reported in 31 mothers (68%) of the study group compared to 15 (30%) in the control group. There was also a

statistically significant difference between the two groups reflecting that the severity of anxiety symptoms in mothers of children with ADHD is significantly high in comparison with those who had children not suffering from the disorder. There was 13 mothers (26%) of study group were found to have above severe anxiety while 3 (6%) only had the same degree in the control group. It was found that symptoms of anxiety were more common in mothers with children who had the characteristic of stubbornness or emotional liability. There was also a statistically significant relationship between the severity of maternal anxiety and the severity of the presence of these two properties where the severity of anxiety among mothers increased with the intensity of each of these characteristic in children.

In our study, there was no significant relation between severity of ADHD symptoms and severity of maternal symptoms. Also, there was no significant relation between ADHD subtypes in children and anxiety symptoms in mothers.

Considering the previous results we found that the present study agrees with **Segenreich et al.**⁽¹³⁾ study in Brazil in 2009 considering increase in anxiety symptoms in mothers of ADHD children compared to control group. Our results are also in agreement with the results of **Durukan et al.**⁽¹⁴⁾ and **Soltanifar et al.**⁽¹⁵⁾.

In regard to the relationship between maternal anxiety symptoms and attention deficit and hyperactivity disorder in children. This study agrees with the results of **Segenreich et al.**⁽¹³⁾ in the absence of a significant relationship between maternal symptoms and children symptoms. However, it differs with **Kashdan et al.**⁽¹⁶⁾ study, which found significant relationship between symptoms of mothers and symptoms of their ADHD children. Also, it differs with the study of **Roohallah et al.**⁽¹⁷⁾ in the significant correlation of anxiety among mothers and hyperactivity in children.

CONCLUSION

The present study concluded that the presence and intensity of anxiety symptoms in mothers of ADHD children are higher than in the control group. There was no significant association between maternal anxiety and ADHD symptoms or subtypes in children. The severity of anxiety was significantly associated with positive family history for psychiatric disorder and also to characters of stubbornness and emotional liability in ADHD children.

REFERENCES

- Polanczyk G, de Lima MS, Horta BL et al. (2007):** The worldwide prevalence of ADHD: a systematic review and meta-regression analysis. *American Journal of Psychiatry*, 164 (6): 942-948.
- Waddell C, Offord DR, Shepherd CA et al. (2002):** Child psychiatric epidemiology and Canadian public policy-making: the state of the science and the art of the possible. *Canadian Journal of Psychiatry*, 47 (9): 825-832.
- Spencer TJ, Biederman J, Mick E (2007):** Attention-deficit/hyperactivity disorder: diagnosis, lifespan, comorbidities, and neurobiology. *Journal of Pediatric Psychology*, 32 (6): 631-642.
- Faraone SV, Perlis RH, Doyle AE et al. (2005):** Molecular genetics of attention-deficit/hyperactivity disorder. *Biological Psychiatry*, 57: 1313-1323.
- Pineda DA, Palacio LG, Puerta IC et al. (2007):** Environmental influences that affect attention deficit/hyperactivity disorder: study of a genetic isolate. *Eur Child Adolesc Psychiatry*, 16: 337-346.
- Ellis B, Nigg J (2009):** Parenting practices and attention-deficit/hyperactivity disorder: new findings suggest partial specificity of effects. *J Am Acad Child Adolesc Psychiatry*, 48: 146-154.
- Wiener JM (1991):** Text book of child and adolescent psychiatry, 3th ed. American Psychiatry Publishing, Pp: 389-411.
- Nijmeijer JS, Minderaa RB, Buitelaar JK et al. (2008):** Attention-deficit/hyperactivity disorder and social dysfunctioning. *Clin Psychol Rev.*, 28: 692-708.
- Harrison C, Sofronoff K (2002):** ADHD and parental psychological distress: Role of demographics, child behavioral characteristics and parental cognitions. *J Am Acad Child Adolesc Psychiatry*, 41: 703-711.
- Whaley SE, Pinto A, Sigman M (1999):** Characterizing interactions between anxious mothers and their children. *Journal of Consulting and Clinical Psychology*, 67: 826-836.
- Johnston C (1996):** Parent characteristics and parent-child interactions in families of nonproblem children and ADHD children. *J Abnorm Child Psychol.*, 24: 85-104.
- Wells KC, Epstein JN, Hinshaw SP et al. (2000).** Parenting and family stress treatment outcomes in attention deficit hyperactivity disorder (ADHD): An empirical analysis of the MTA study. *Journal of Abnormal Child Psychology*, 28: 543-553.
- Segenreich D, Fortes D, Coutinho G et al. (2009):** Anxiety and depression in parents of a Brazilian non-clinical sample of attention-deficit/hyperactivity disorder (ADHD) students. *Brazilian Journal of Medical and Biological Research*, 42(5): 465-469.
- Durukan İ, Erdem M, Tufan AE et al. (2008):** DEHB olan çocukların annelerinde depresyon ve anksiyete düzeyleri ile kullanılan başa çıkma yöntemleri : Bir ön çalışma Depression and anxiety levels and coping strategies used by mothers of children with ADHD : A preliminary study. *Anadolu Psikiyatri Dergisi*, 9: 217-223.
- Soltanifar A, Moharreri F, Soltanifar A (2009):** Depressive and Anxiety Symptoms in Mothers of Children with ADHD Compared to the Control Group. *Iran J Psychiatry*, 4: 112-115.
- Kashdan TB, Rolf GJ, William EP et al. (2004):** Depression and anxiety in parents of children with ADHD and varying levels of oppositional defiant behaviors: modeling relationships with family functioning. *Journal of clinical Child and Adolescent Psychology*, 1: 169-181.
- Roohallah M, Yegane K, Hasan B et al. (2014):** Maternal Anxiety and Attention Deficit Hyperactivity Disorder (ADHD) in Children. *J Midwifery Reprod Health*, 2 (4): 233-237.