



Original Article

# A survey of the relationship between mental health with parenting styles in mothers of children with attention deficit hyperactivity disorder

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## Abstract

**Introduction:** Attention Deficit Hyperactivity Disorder (ADHD) is the most common psychiatric disorder in children. Family has a very important role in the management of these children. The present study aimed to assess the parenting styles and mental health status in mothers of children with ADHD.

**Materials and Methods:** This is a case control study which was conducted in 2013-2014. The statistical community consisted of children with ADHD who referred to psychiatric clinics in 5<sup>th</sup> of Azar and Taleghani hospitals. The case group consisted of 64 ADHD children selected through random sampling. The participants in the control group (64 school children in Gorgan) were selected through multi-stage cluster sampling. After explaining the project to mothers, the demographic, Buri's Parental Authority (PAQ), and General Health (GHQ) questionnaires were filled out. Data analyzed by SPSS-version 16, descriptive and analytical statistics and chi-square test.

**Results:** Number of 47 boys and 17 girls were in each group. The mean age of ADHD group was  $8.42 \pm 1.84$  years and  $8.84 \pm 1.10$  years in the control group. Subscales of somatic symptoms, maternal anxiety, depression and the total score of GHQ questionnaire showed a significant difference ( $P=0.01$ ,  $P=0.001$  and  $P=0.01$ ) between mothers of ADHD and control groups; that is to say mothers of children with ADHD are more anxious and depressed, and have poorer health than the others. Authoritative parenting style showed statistically significant difference in the case and control groups ( $P=0.002$ ). Also mothers age in ADHD group is higher but their academic education was significantly lower than the control group ( $P=0.01$  and  $P=0.001$ ).

**Conclusion:** According to our findings, among the four factors of ADHD, maternal education, maternal mental health, and maternal age, the influence of ADHD on authoritative parenting style is more pronounced than maternal mental health.

**Keywords:** Attention Deficit/Hyperactivity Disorder, Mental health, Parenting style

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## Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is the most prevalent behavioral and psychiatric

disorder which is highly prevalent(1).Diagnostic and Statistical Manual of Mental Disorders-4<sup>th</sup> edition (DSM-IV-TR) describes it as a constant pattern of inattention, hyperactivity, and impulsiveness. The disorder is in fact a type of severe chronic disorder in mental development. At least, 6 of 9 criteria (inattention or hyperactivity-impulsiveness) must be observed in two different settings (for example home

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and school) for diagnosis to be made. Symptoms must last for at least six months before the age of 7 and should not relate to the child's level of development (1). The prevalence of ADHD has been reported 5-12% on average terms (2-4). Reports on the prevalence of ADHD in US vary between 2-20% in school children. Compared to US, the prevalence in England is lower than 1% (5). Ghanizadeh et al. reported the general prevalence of ADHD in Iran at 9.53% and it was reported more common in boys (3). Family plays a very significant role in managing these children and their learning activities. Teachers participate to a great extent in day to day management of these children (6). Extensive evidence shows that ADHD is basically a genetic and neural disorder (7-9). However, we should not underestimate the importance of the role of family in behavioral management of these children.

Each family has a special way of child-rearing called parenting style, which is under the influence of a variety of factors such as cultural, social, political, and economic ones (10,11). Parenting styles are standard patterns of child rearing that are known by the specific behaviors and responses of parents to the behavior of their children (12). Parents with authoritarian style try to form, control, and assess the attitudes and behaviors of their children in accordance with a series of definite behavioral standards set by a superior power. Parents with authoritarian parenting style are known as strict parents (13,14). Permissive parents are recognized as responsive but permissive parents. These parents rarely make demands of their children and allow them to do everything they want without exerting any control on their behavior (15).

Children with ADHD suffer much developmental disability in social behavior, emotional growth, communication, language, and speech. Research proves that these children can cause marital disputes and are a source of anxiety in their parents (15,16). These children experience higher mental pressures and may feel inadequate in child rearing (17). Research shows that compared to control group, mothers of children with ADHD had substantial depression periods or anxiety symptoms in the last year (18). A study of parent-child reciprocal relationships proved that the parents of children with ADHD gave many instructions to control the impulsive behaviors of their children and used more reward and punishment (19). In view of the role of parenting styles in improvement or aggravation of the symptoms of this disorder in children and the reciprocal influence of these symptoms on the

mental health of parents, this research was carried out in order to study the relationship between mental health status of the parents of children with ADHD and their parenting styles.

### Materials and Methods

This research is a case control study. The study population consists of the parents of 7 to 12-year-old children with ADHD referring to the psychiatry clinics of Taleghani and 5<sup>th</sup> of Azar hospitals in Gorgan city. The parents consented to participate in this research. 64 cases were selected through random sampling based on DSM-IV-TR criteria and according to the expert opinion of a psychiatrist. The control group consisted of 64 elementary school children aged 7 to 12 in Gorgan, selected through multistage cluster sampling. At first, the city was divided into 4 regions. One school from every region and 16 children from every school were randomly selected. We explained our project to the parents of these children. Then, Demographic Characteristics Questionnaire, Buri's Parental Authority Questionnaire (PAQ), and General Health Questionnaire (GHQ) were distributed among them.

### Research instrument

- *General Health Questionnaire (GHQ)*: This is a tool used in psychometric quality assessment. It was developed by Goldberg in 1972 for screening of non-psychotic psychological disorders. The questionnaire was designed on a 0 to 3 Likert scale. The 28-item version has been validated for use in research. Hence, it was used in this study. Studies have reported a validity of 0.83 and reliability of 0.87 for this tool with a Cronbach's alpha of 0.9 (20). In Iran, Palahang reported the validity of this test 91.0% and is estimated Cronbach's alpha for physical symptoms 84.0%, anxiety and sleep disorders 78/0% social applications 79.0%, depression 81.0%, and the situation mental health 91.0% (21).

- *Parenting Assessment Questionnaire (PAQ)*: It was made by Baumrind to study parenting styles. It contains 30 questions which are scored on a 0 to 4 Likert Scale. Every ten questions of the test assess one style of parenting (14). Buri (1991) has reported test-retest reliability of the questionnaire by 81% for permissive, authoritarian style, and 92% to 86% for authoritative style (22). In Iran, Younesi and Esfandiari study (1995) assessed The reliability of the questionnaire through test for permissive style 69%, 77% authoritarian style, and 73% reported by the authoritative style (20).

The exclusion criteria in both groups are as follows: children with other diseases, mentally

retarded children, children who live with people other than their parents, and parents who have divorced or live separately. After collecting data, descriptive and analytical statistics was used for data analysis by SPSS software version 16. Chi-square test was used to study the relationship among variables with a significance level of 0.05.

## Results

In this study, 64 children with ADHD and 64 healthy children were studied in Gorgan. Both groups were matched in view of age, education, and gender variables. The mean age of subjects was  $8.42 \pm 1.84$  years in ADHD and  $8.84 \pm 1.10$  years in the control group. The average age of mothers in ADHD group was  $36.95 \pm 3.26$  years, and  $35.09 \pm 4.6$  years in the control group. No significant difference was observed between the two groups concerning the children's age. There were 47 boys (73.4%) and 17 girls (26.6%) in each group.

**Table 1.** The mean and standard deviations of demographic variables of children and parents in the two study groups

Variable	Mean $\pm$ SD		P
	Case	Control	
Children's age	84.1 $\pm$ 42.8	84.8 $\pm$ 10.1	NS
Mother's age	95.36 $\pm$ 26.3	90.35 $\pm$ 6.4	0.01
Mothers' level of education	Below High School diploma	(20) 2.31 (4) 2.6	0.001
	High school diploma	(31) 4.48 (53) 8.82	
	Bachelor's degree or higher	(13) 3.20 (13) 9.10	
Number of children	Single-child	25 (1.39) 16 (25)	NS
	Non single-child	39 (9.60) 48 (75)	

**Table 2.** Mean  $\pm$  SD of the distribution of maternal mental health (mental health subscales and total score) of the GHQ questionnaire

Variable	Case		Control		P value
	Normal Number (percent)	Abnormal Number (percent)	Normal Number (percent)	Abnormal Number (percent)	
Somatic symptoms	31 (48.43)	33 (51.56)	46 (71.78)	18 (28.12)	0.01
Mean $\pm$ SD	7.65 $\pm$ 4.84		4.98 $\pm$ 2.90		
Anxiety/Insomnia	20 (31.25)	20 (31.25)	42 (65.62)	22 (34.37)	0.000
Mean $\pm$ SD	9.23 $\pm$ 4.3		5.82 $\pm$ 3.78		
Social dysfunction	32 (50)	32 (50)	35 (54.68)	29 (45.31)	NS
Mean $\pm$ SD	6.87 $\pm$ 3.18		6.29 $\pm$ 2.86		
Severe depression	44 (68.75)	20 (31.25)	59 (92.18)	5 (7.8)	0.001
Mean $\pm$ SD	4.53 $\pm$ 4.33		2.20 $\pm$ 2.81		
Overall GHQ Score	26 (40.62)	38 (59.37)	45 (70.31)	19 (29.68)	0.001
Mean $\pm$ SD	28.53 $\pm$ 13.58		19.34 $\pm$ 10.02		

According to the table, a statistically significant difference was observed between the case and control groups in the subscales of somatic symptoms, anxiety, depression, and total GHQ scores.

59 families (92.2%) in the case group and 61 families (95.3%) in the control group had authoritative parenting style. 5 families (7.8%) in the case group and 3 families (4.7%) in the control group had authoritarian parenting style. The difference was not significant.

**Table 3.** The mean and standard deviation of parenting styles in both groups

Variable	Mean $\pm$ SD		P value
	case	control	
Authoritative	27.93 $\pm$ 3.9	30.70 $\pm$ 5.6	0.002
Permissive	16.09 $\pm$ 4.21	16.14 $\pm$ 4.52	0.95
Authoritarian	17.14 $\pm$ 5.14	17.09 $\pm$ 6.34	0.96

The difference in average authoritative parenting style score was statistically significant in the case and control groups ( $P = 0.002$ ). This difference was not significant in the other styles.

The predicted regression analyses of the score of authoritative parenting style shows that the ADHD variable and mother's education were significantly different in the two groups ( $P < 0.01$ ). Mothers' GHQ score and maternal age were not significantly different in this prediction. Moreover, beta coefficient in regression equation for prediction of the score of authoritative parenting style was estimated 0.077 for mothers' age, -2.178 for case and control group, and 1.52 for mothers' education.

## Discussion

In this study, 64 children with ADHD and 64 healthy children were studied as the case and control groups respectively. Each group consisted of 47 boys (73.4%) and 17 girls (26.6%).

According to the results of this study, there was a significant difference between the case and control groups concerning subscales of somatic symptoms, anxiety, and depression in mothers based on General Health Questionnaire (GHQ). This means that mothers of children with ADHD were more anxious and depressed and had lower physical health. The total GHQ score was significantly different in both groups. That is to say, ADHD mothers suffer from impaired mental health. This finding is consistent with other studies, respectively (21).

Mohareri et al. studied the influence of training constructive parenting to mothers on the behavioral problems of children with ADHD. This clinical trial was performed on 60 mothers (30 as treatment group, and 30 as control group) referring to child and adolescent clinic of Roozbeh Hospital in Tehran. These mothers had 6 to 12 year-old children suffering from ADHD. The difference in anxiety and depression indexes between the treatment and case groups was significant (23). These results conform to our study.

In this study, mothers of children with ADHD showed higher levels of depression. This was similar to the study of Cunningham et al. They found that compared to control group, the parents of children with ADHD reported higher levels of depression (23,24).

Compared to the parents of children with ADHD, the parents of healthy children had lower somatic symptoms, anxiety, and social dysfunction and were healthier in general. In other words, the parents of children with ADHD reported higher levels of somatic symptoms, anxiety symptoms, and sleep disorders. They had more problems in social function and act poorer than the parents of healthy children. The highest level of mental health is seen among the children brought up by authoritative parenting style. On the other hand, lowest level of mental health is seen in the children reared based on authoritarian parenting style (25).

In the study by Alizadeh, the reciprocal relationship between parenting styles and ADHD

was studied and showed a significant negative relationship between ADHD and authoritative style. On the contrary, a positive relationship was proven between ADHD and authoritarian style (16). This study found no significant relationship between permissive style and ADHD. Comparison of genders showed that the fathers and mothers of healthy children were not different in their parenting styles, however, the fathers and mothers of children with ADHD showed some differences in authoritative and authoritarian styles. It was found that Iranian mothers with ADHD children act more authoritatively than fathers. This finding was not observed in the parents of healthy children. This relationship was not observed in authoritarian and permissive styles (26).

Although the dominant parenting style in the present study was authoritative, the mean score was higher in the control group and they used this method more appropriately. This was similar to other studies in that training parents concerning their behavior towards children can change the parenting methods of mothers of children with ADHD. Behavioral training can increase authoritative style in the ADHD group (27).

### Conclusion

According to our findings, among the four factors of ADHD, maternal education, maternal mental health, and maternal age, the influence of ADHD on authoritative parenting style is more pronounced than maternal mental health. The two important factors that might help these families enhance their mental health are: appropriate treatment of ADHD and increasing mothers' level of education.

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