**Original Article**

# Comparison of Mental Health Status in Mothers of Primary School Children with Attention Deficit / Hyperactivity Disorder and Mothers of Normal Children in Yazd City (2015-2016)

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**Abstract**

**Introduction:** ADHD is one of the most common disorders among school children throughout the world. Parents of these children are faced with more conflicts than normal children's parents. The Purpose of his study was to evaluate and compare the mental health status of mothers having children with attention deficit / hyperactivity disorder versus mental health of mothers having normal primary school children, Yazd, Iran.

**Materials and Methods:** The sample consisted of 160 mothers of primary-school children who were selected through random cluster sampling; 80 of them had children with attention deficit / hyperactivity disorder and the remaining half had normal children. Also, for the diagnosis of children with attention deficit / hyperactivity disorder, the Conners test as well as test of General Mental Health (GHQ) were used to measure mothers' mental health. The data were then analyzed in two levels of descriptive and inferential statistics (T-test and analysis of variance)

**Results:** Comparison of mental health and its subscales indicated that mothers of children with ADHD disorder were lower in all aspects of mental health than mothers of normal children.

**Conclusion:** According to the research results, mothers of children with attention deficit/hyperactive disorder have lower levels of mental health than mothers of normal children. So, it is recommended that education and health officials provide training courses for these parents to promote their mental health status and consequently their quality of family life.

**Keywords:** Mental Health, Mothers, ADHD children

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## Introduction

Attention deficit / hyperactivity disorder is one of the most common neurodevelopmental disorders [1- 3] that is influenced by the genetic and environmental factors. [4, 5]

At the moment, this disorder has an increasing trend worldwide, i.e., in the United States of America 11% of children were diagnosed to have this disorder[6]. Symptoms of this disorder are attention deficit, impulsivity, and hyperactivity [7- 9] which normally continue by adolescence [10]. Attention deficit / hyperactivity disorder is due to the defects in executive functions [11, 12] which includes concepts of self- monitoring, self-control, and self-regulation in children [13, 14]. These disorders will affect children's academic performance as well as, social behavior. [15- 18]

This problem may cause a basis for children's isolation at home, school, or in relationship with peers. [19, 20] Existence of this disorder affects functionality of the family tremendously, especially mothers' mental health [21], it will also cast a negative impact on the relationship between the child and other members of family [22], moreover, this situation will increase conflicts in the parents' relationship to a large extent[23]. Different researches have presented that parents with this type of children have more stress and conflict in their relationships [24]. Since in our country mothers spend more time with children, they are more exposed to mental damages, thus their mental health is in a threatening situation [25]. Usually the first treatment prescribed for such disorders is medication [26], while drug treatments by itself will not be the only answer for this problem [27]. Some researchers stated that parents' training about this type of children may lead to reduce the symptoms of ADHD disorder [28, 29] and improve their methods of parenting style [30]. In some other studies, it was indicated that parents and mothers of children with attention deficit / hyperactivity disorder are more prone to psychiatric stress and damage [31- 34]. According to the span of disorder. Role of mothers' mental health in training children and their position in Iranian families as the main foundation which keeps the balance of family structure is prominent [35]. Therefore, evaluating and investigating mental health status of mothers with attention deficit / hyperactivity disorder children versus mothers of normal children is crucial.

## Materials and Methods

This causal-comparative study consisted of 160 people selected by random cluster sampling. Half of the research populations (i.e., 80 participants) were mothers of children with ADHD disorder and the other half were mothers with normal primary school children. These groups were selected from elementary schools of the first educational regain. Initially, 6 elementary boys' schools and 3 elementary girls' schools were selected, from each school one class was chosen randomly, and then teachers of these classes were asked about any evidences of attention deficit /

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hyperactivity disorder among the students. Parents also were required to answer the Conner's form to identify whether their children have any disorders. This questionnaire consisting of 27 questions was applied to diagnose attention deficit / hyperactivity disorder. The participants were asked to rate each item with a score from 0 to 3, the total scores of each questionnaire was then added and divided by the number of items. Moreover, mothers filled out and completed the general mental health questionnaires. The cut-off point in this questionnaire for this type of disorder is 1.5 and after confirmation of this condition for a child, a clinical interview was conducted with his/her parents to diagnose the disorder. The age range of 3 to 17 was set using Conners measurement. Internal correlation coefficients of durability with amplitude of 75% to 90% and Test-retest correlation coefficient with 8 distances of 60% to 90% has been reported [36].

This questionnaire has justifiability content validity and the translation copy of Tehranidoost and Zargarinezhad has been used [36, 37]. Also, the General Health Questionnaire (GHQ-28) with the following four subscales was administered in this study:

1- Somatic symptoms (questions from 1 to 7)

2- Anxiety and insomnia (questions from 8 to 14)

3- Impairment of social functioning ( questions 15 to 21)

4- Depression (questions 22 to 28)

The average time to execute this questionnaire is estimated to be between 10 to 12 minutes. For each individual, 5 scores were obtained, 4 of which were related to the subscales and 1 number came from adding up of partial measurements that finally will be the total number (i.e., 38).

**Scoring method:** Choosing options of A to D belongs to number from zero to three. In conclusion, by applying Table 1, each individual's situation in any sub subscales and generally in the entire questionnaire can be determined.

**Table 1**- Specification of Public Health Questionnaire's items in each subscale

| Partial subscales | Numbers in subscales | Item Numbers |
|---|---|---|
| Nothing or with minimum limit | 6-0 | 22-0 |
| Light | 11-7 | 40-23 |
| Average | 16-12 | 60-41 |
| Intense | 21-17 | 84-61 |

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Reliability coefficients for this test and the subscales are respectively 0.88 and from 0.50 to 0.81, the concurrent validity coefficient is also 0.69 [37].

## Result

For this research, 160 individuals were selected, 80 of whom (50%) were mothers of normal children and the other 80 (50%) were mothers of children with attention deficit /hyperactivity disorders. Findings on grade scales and knowledge of learning are shown in tables 2 and 3, respectively. Also, descriptive findings related to age and mental health tests are presented in table 4 and results of T-TEST conducted to compare two independent groups are tabulated in Table 5.

**Table 2**- Frequency and percentage of educational levels of children

| Base of education | frequency | percentage | real percentage | Cumulative percentage |
|---|---|---|---|---|
| **First grade** | 55 | 34.4 | 34.4 | 34.4 |
| **Second grade** | 41 | 25.6 | 25.6 | 60 |
| **Third grade** | 30 | 18.8 | 18.8 | 78.8 |
| **Fourth grade** | 17 | 10.6 | 10.6 | 89.4 |
| **Fifth grade** | 9 | 5.6 | 5.6 | 95 |
| **Sixth grade** | 8 | 5 | 5 | 100 |
| **Total** | 160 | 100 | 100 | |

Based on Table 2, majority of children under investigation were at the first grade following by the second and third. In other words, by the higher levels of education the frequency of children lowered, until in the fifth and sixth grades the frequency reached 21%. Results of Chi-square test that presented frequency of studied children in different bases of education were different and diverse ($x^2$= 66.5).

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**Table 3-** Frequency and percentage of educational levels of participants

| Test subjects education | frequency | percentage | Cumulative percentage |
|---|---|---|---|
| **Up to ninth grade(cycle)** | 40 | 25 | 25 |
| **Diploma** | 60 | 37.5 | 62.5 |
| **Over diploma** | 60 | 37.5 | 100 |
| **Total** | 160 | 100 | |

According to Table 3, the highest percentage of participants (75%) had diplomas or higher educational levels. Mother with the educational levels up to the ninth grade (25%) took the next place

**Table 4-** presents mothers' average and deviation of age-scales, psychology health levels and subscales of them are also represented for the two groups of mothers.

| Group | Criteria | Measurement A | Measurement B | Measurement C | Measurement D | Total |
|---|---|---|---|---|---|---|
| Mothers Normal children | Average | 6.15 | 7.64 | 6.86 | 6.2 | **26.85** |
| | Standard Deviation | 3.38 | 3.28 | 2.58 | 3.64 | **10.40** |
| Mothers Children With ADHD Disorder | Average | 5.05 | 4.58 | 4.5 | 3.59 | **17.71** |
| | Standard Deviation | 3.14 | 2.89 | 2.88 | 2.85 | **8.40** |
| Total | Average | 5.6 | 6.11 | 5.68 | 4.89 | **22.28** |
| | Standard Deviation | 3.3 | 3.44 | 2.97 | 3.51 | **10.48** |

In this study the average age of most participants was between 36 to 42 years, the average age difference of mothers with normal children and mothers with hyperactive children was not noticeable. The average score of psychological health for most participants stood from 12-33. In scale **A**, the average score of most mothers, almost was from 2-9. In scale **B,** the average scores were mostly 3-10. In scale **C**, most participants got a score from 2.3-8.6. Finally, in scale **D,** the average score was from1.4-8.4. Average of mothers

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with normal children in this five health measurements are obviously more than the average of mothers with ADHD Children.

**Table 5-** Results of **T-test** for comparison of two independent groups' mental health

| **Group** | **Lewin result's test in case of uniformity of variances** | | **Uniformity of average T - test** | | | | |
|---|---|---|---|---|---|---|---|
| | P | F | Standard Error | Difference of Average | p | Degree of Freedom | **t** |
| Scale of A of mother's health psychology | 0.32 | 1.01 | 0.52 | 1.10 | 0.04 | 158 | **2.13** |
| Scale of B of mother's health psychology | 0.35 | 0.89 | 0.49 | 3.06 | 0.00 | 158 | **6.27** |
| Scale of C of mother's health psychology | 0.69 | 0.16 | 0.43 | 2.36 | 0.000 | 158 | **5.46** |
| Scale of D of mother's health psychology | 0.05 | 3.86 | 0.52 | 2.61 | 0.000 | 158 | **5.06** |
| Total | 0.06 | 3.63 | 1.50 | 9.14 | 0.000 | 158 | **6.11** |

Table 5, shows the results of T-test for comparison of two independent groups' mental health; mothers with normal children and mother's with hyperactive children. Based on this table, the meaningful level of *Lewin* is set at $p>0.05$. The results of table indicate that participants of the two groups were equal in their variance of psychological health and its subscales, but there is a significantly meaningful difference between mothers with normal children and ADHD children's mothers ($p<0.05$).

With respect to the meaningful results and by paying attention to the results of Table 4, it can be said that level of mental health is significantly higher in mothers with normal children than that of mothers with ADHD children.

## Discussion

Descriptive findings concerning age and psychological health of participants, as well as results of T-test were presented to compare the two independents groups (mothers with normal children and mothers with attention deficit / hyperactive disorder children).

The outcomes of the current study were in the same path with those kimiyaee and beige (2010), Sanaei Kamal and college (2013), Beirami and college (2008), Shure and

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Gaue(2007 Quoted By Sanaei Kamal, 2013) Hekmati and college(2009). These studies have shown that mothers and parents of children with attention deficit / hyperactivity disorder had lower levels of mental health than mothers of normal children.

The results of Chi-square test have also indicated that participants' scores varied across different educational levels. That is the frequency of participants was much higher at the first and second grades. This outcome is then similar to those achieved by Namdari and colleagues (2008).

## Conclusion

As the literature and now the current study showed, parents' stress in families with attention deficit / hyperactivity's children is higher which consequently reduces the level of parents' psychological health. Further, considering Iranian cultural and social affairs, mothers spend more time with children than fathers. This maternal super visional role in children's education and social life causes many difficulties, especially for mothers with hyperactivity disorder / attention deficit children. Since these children need more devotion of time and effort to manage their duties and educational works, they are socially and educationally faced with various difficulties and challenges. Therefore, mothers dealing with this type of children are more prone to psychological damages, because they are constantly involved with their children. As a result, this problem, if not dealt with properly, may end up in collapse of the structure and reduction of life-quality in families. Akhavan Karbasi et al. [39] reported that the spread rate of 16.3 for this disorder among 6-year old children in Yazd city is considered acceptable. Thus, it is essential to pay more attention to this disorder and try to reduce the number of these children and their families.

In a study conducted by Najafi et al., [40] it was presented that attention deficit/hyperactivity disorder is the first disorder among elementary-school children in Iran. Consequently, conductance of comprehensive programs is considered essential to interfere and educate parents (especially mothers) and teachers to reduce the individual and social damages. On the other hand, with attention to the results of researches based on abundance of this disorder in foundational education, it is proposed to assess this disorder at first, then, parents require to participate in special educational classes, and finally further interventions should be conducted at proper time to reduce educational and psychological damages in the future.

## Acknowledgment

None .

## Conflict of Interest

None .

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