# Mental Health and Resilience Among Mothers of Children with ADHD and Mothers of Normal Children: A Casual-Comparative Study

**Mohammad Khademloo[1], Mahshid Ahmadi[1, *], Narjes Bagheri[2]**

[1]Mazandaran University of Medical Sciences, Department of Social Medicine, Sari, Iran

[2]Azad University of Sari, Department of Psychology, Sari, Iran

**Email address:**

m.ahmadi@mazums.ac.ir (M. Ahmadi)

[*]Corresponding author

**To cite this article:**

Mohammad Khademloo, Mahshid Ahmadi, Narjes Bagheri. Mental Health and Resilience Among Mothers of Children with ADHD and Mothers of Normal Children: A Casual-Comparative Study. *American Journal of Pediatrics*. Vol. 2, No. 6, 2016, pp. 23-28. doi: 10.11648/j.ajp.20160206.11

**Abstract:** ADHD (Attention Deficit Hyperactivity Disorder) tend to me one of the most debilitating and prevalent behavioral disorders among children. Unfortunately, adverse outcomes of this disorder are not solely limited to children; it detrimentally affects the family and most of all mothers as main caregivers. In current study, we aimed to compare mental health and Resilience among mothers of children with ADHD and mothers of Normal children. This study was casual-comparative study. Statistical society consisted of all mothers of children in all primary school in Sari (Mazandaran Province, Iran) during 2016-2017. One hundred fifty two mothers of children with ADHD and mothers with normal children were chosen via Cluster Random Sampling in two stages. Data were obtained via Connors Parents Questionnaire, SCL-90-R and Connor-Davidson Resilience Scale (CD-RISC). Finally, data were analyzed via SPSS-17. Results showed that there is a meaningful difference between mental health of mothers with ADHD children and mothers with normal children. Furthermore, level of complaints, aggression, paranoid thoughts, and depression was higher among mother of ADHD children compared to children of mothers with normal children. Finally, it was concluded that there is a strong casual nexus between resilience and mental health of mothers of ADHD children. Results of current study showed that mothers of ADHD children, maintained lower mental health, compared to mothers of normal children. Hardships of raising ADHD child are so devastating that it detrimentally would tamper with mental health of their caregivers and more specifically their mothers. Furthermore, there is a strong relationship between resilience and mental health of mothers in both group; in this sense, higher resilience was correlated with higher level of mental health. Hence, it appears plausible to conducting preventive intervention would amplify resilience of mothers and indirectly in with positively influence their mental health status.

**Keywords:** Resilience, Mental Health, Attention Deficit Hyperactivity Disorder

## 1. Introduction

Attention-deficit-hyperactivity disorder (ADHD) is a common neuropsychiatric disorder that impairs social, academic, and occupational functioning in children, adolescents, and adults. In patients with ADHD, neurobiologic research has shown a lack of connectivity in key brain regions, inhibitory control deficits, delayed brain maturation, and noradrenergic and dopaminergic dysfunction in multiple brain regions. The prevalence of this disorder in the United States is 6-9% in youth (i.e., children and adolescents) and 3-5% in adults. Prevalence rates for youth are similar worldwide. Children with ADHD are at greater risk than children without ADHD for substance abuse and delinquency whether or not they receive drug therapy; however, early treatment with psychoeducation as well as drug therapy and/or behavioral intervention may decrease negative outcomes of ADHD, including the rate of conduct disorder and adult antisocial personality disorder. Drug therapy is effective for all age groups, even preschoolers, and

for late-onset ADHD in adults. Stimulants, such as methylphenidate and amphetamine, are the most effective therapy and have a good safety profile; although recent concerns of sudden unexplained death, psychiatric adverse effects, and growth effects have prompted the introduction of other therapies. Atomoxetine, a non-stimulant, has no abuse potential, causes less insomnia than stimulants, and poses minimal risk of growth effects. Other drug options include clonidine and guanfacine, but both can cause bradycardia and sedation. Polyunsaturated fatty acids (fish oil), acetyl-L-carnitine, and iron supplements (for youth with low ferritin levels) show promise in improving ADHD symptoms. As long-term studies show that at least 50% of youth are nonadherent with their drug therapy as prescribed over a 1-year period, long-acting formulations (administered once/day) may improve adherence. Comorbid conditions are common in patients with ADHD, but this patient population can be treated effectively with individualized treatment regimens of stimulants, atomoxetine, or bupropion, along with close monitoring (1).

Adverse outcomes of ADHD is not limited only to the child, it detrimentally has influence of psychological and physical wellbeing of caregivers and in most cases on mothers. Compared with mothers of children without ADHD, mothers of children with ADHD were more likely to be diagnosed with numerous medical and mental health problems in the 2 years after birth of their child, including depression [odds ratio (OR): 1.88], anxiety neuroses (OR: 1.64), obesity (OR: 1.70), and musculoskeletal symptoms (OR: 1.51). Results were similar for the year before delivery. Mothers of children with ADHD also had higher total health care costs per person in the year before ($1,003) and the 2 years after ($953) the birth of their child. Mothers of children with ADHD also were diagnosed with more health conditions and had higher health care costs than mothers of children with asthma (2). We couldn't find any similar study conducted in IRAN population and in current study we aimed to compare mental health and resilience among mothers of ADHD children and mothers of normal children.

### 1.1. Mental Health

Mental health is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.

The positive dimension of mental health is stressed in WHO's definition of health as contained in its constitution: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (3, 5).

Certain factors may increase your risk of developing mental health problems, including:
- Having a blood relative, such as a parent or sibling, with a mental illness
- Stressful life situations, such as financial problems, a loved one's death or a divorce

- An ongoing (chronic) medical condition, such as diabetes
- Brain damage as a result of a serious injury (traumatic brain injury), such as a violent blow to the head
- Traumatic experiences, such as military combat or being assaulted
- Use of alcohol or recreational drugs
- Being abused or neglected as a child
- Having few friends or few healthy relationships
- A previous mental illness (5)

### 1.2. Resilience

According to APA (American Psychological Association), Resilience is the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress — such as family and relationship problems, serious health problems or workplace and financial stressors. It means "bouncing back" from difficult experiences. Research has shown that resilience is ordinary, not extraordinary. People commonly demonstrate resilience. One example is the response of many Americans to the September 11, 2001 terrorist attacks and individuals' efforts to rebuild their lives. Being resilient does not mean that a person doesn't experience difficulty or distress. Emotional pain and sadness are common in people who have suffered major adversity or trauma in their lives. In fact, the road to resilience is likely to involve considerable emotional distress. Resilience is not a trait that people either have or do not have. It involves behaviors, thoughts and actions that can be learned and developed in anyone (4).

### 1.2.1. Factors in Resilience

A combination of factors contributes to resilience. Many studies show that the primary factor in resilience is having caring and supportive relationships within and outside the family. Relationships that create love and trust, provide role models and offer encouragement and reassurance help bolster a person's resilience.

Several additional factors are associated with resilience, including:

The capacity to make realistic plans and take steps to carry them out.

A positive view of yourself and confidence in your strengths and abilities.

Skills in communication and problem solving.

The capacity to manage strong feelings and impulses.

All of these are factors that people can develop in themselves.

### 1.2.2. Strategies for Building Resilience

Developing resilience is a personal journey. People do not all react the same to traumatic and stressful life events. An approach to building resilience that works for one person might not work for another. People use varying strategies.

Some variation may reflect cultural differences. A person's culture might have an impact on how he or she communicates feelings and deals with adversity — for

example, whether and how a person connects with significant others, including extended family members and community resources. With growing cultural diversity, the public has greater access to a number of different approaches to building resilience.

Some or many of the ways to build resilience in the following pages may be appropriate to consider in developing your personal strategy. There are various ways to build resilience:

- Make connections. Good relationships with close family members, friends or others are important. Accepting help and support from those who care about you and will listen to you strengthens resilience. Some people find that being active in civic groups, faith-based organizations, or other local groups provides social support and can help with reclaiming hope. Assisting others in their time of need also can benefit the helper.
- Avoid seeing crises as insurmountable problems. You can't change the fact that highly stressful events happen, but you can change how you interpret and respond to these events. Try looking beyond the present to how future circumstances may be a little better. Note any subtle ways in which you might already feel somewhat better as you deal with difficult situations.
- Accept that change is a part of living. Certain goals may no longer be attainable as a result of adverse situations. Accepting circumstances that cannot be changed can help you focus on circumstances that you can alter.
- Move toward your goals. Develop some realistic goals. Do something regularly — even if it seems like a small accomplishment — that enables you to move toward your goals. Instead of focusing on tasks that seem unachievable, ask yourself, "What's one thing I know I can accomplish today that helps me move in the direction I want to go?"
- Take decisive actions. Act on adverse situations as much as you can. Take decisive actions, rather than detaching completely from problems and stresses and wishing they would just go away.
- Look for opportunities for self-discovery. People often learn something about themselves and may find that they have grown in some respect as a result of their struggle with loss. Many people who have experienced tragedies and hardship have reported better relationships, greater sense of strength even while feeling vulnerable, increased sense of self-worth, a more developed spirituality and heightened appreciation for life.
- Nurture a positive view of yourself. Developing confidence in your ability to solve problems and trusting your instincts helps build resilience.
- Keep things in perspective. Even when facing very painful events, try to consider the stressful situation in a broader context and keep a long-term perspective. Avoid blowing the event out of proportion.
- Maintain a hopeful outlook. An optimistic outlook enables you to expect that good things will happen in your life. Try visualizing what you want, rather than worrying about what you fear.
- Take care of yourself. Pay attention to your own needs and feelings. Engage in activities that you enjoy and find relaxing. Exercise regularly. Taking care of yourself helps to keep your mind and body primed to deal with situations that require resilience.
- Additional ways of strengthening resilience may be helpful. For example, some people write about their deepest thoughts and feelings related to trauma or other stressful events in their life. Meditation and spiritual practices help some people build connections and restore hope.

The key is to identify ways that are likely to work well for you as part of your own personal strategy for fostering resilience (4).

Various studies have shown strong casual nexus between Mental Health and Resilience (3,4,5,6). In a study conducted by Mortazavi and Yarollhi (2015), the effect size of the relationship between resilience and mental health was 0.35 ($P<0.00001$). Also, the results of moderator analysis showed no effect for moderator variables in this regard. According to Cohen chart, the effect size of the relationship between resilience and mental health is considered to be medium (6). Due to lack of study in this area in Iran, we decided to compare mental health and resilience of Mothers with ADHD children and Mothers with normal Children.

## 2. Materials and Methods

This study was casual-comparative study. Statistical society consisted of all mothers of children in all primary school in Sari (Mazandaran Province, Iran) during 2016-2017. One hundred fifty two mothers of children with ADHD and mothers with normal children were chosen via Cluster Random Sampling in two stages. Data were obtained via Connors Parents Questionnaire, SCL-90-R and Connor-Davidson Resilience Scale (CD-RISC). Finally, data were analyzed via SPSS-17.

### 2.1. Procedure

In first phase of sampling procedure, three schools (male students) and three schools (female students) were chosen randomly from two zones in Sari (Mazandaran Province, Iran). Totally 12 schools were chosen. From each school, 59 students were chosen via simple random sampling. After reaching 703 samples, consent forms were acquired from their parents and accordingly parents answered to Connors Parents Questionnaire during one week. After one week, we collected questionnaires and after conducting analysis, ADHD children were chosen. Subsequently, validation of this diagnosis was assessed by clinical-psychologist at Mazandaran University of Medical Sciences. In second phase, mothers of both case and control group entered the study and they answered to SCL-90-R and Connor-Davidson Resilience Scale (CD-RISC). After acquiring data, data were analyzed via SPSS-17.

## 2.2. Tools

### 2.2.1. The Conners Parent Rating Scales (CPRS)-48

The Conners' Parent Rating Scale (CPRS)-48 is a popular research and clinical tool for obtaining parental reports of childhood behavior problems. The present study introduces a revised CPRS (CPRS-R) which has norms derived from a large, representative sample of North American children, uses confirmatory factor analysis to develop a definitive factor structure, and has an updated item content to reflect recent knowledge and developments concerning childhood behavior problems. Exploratory and confirmatory factor-analytic results revealed a seven-factor model including the following factors: Cognitive Problems, Oppositional, Hyperactivity-Impulsivity, Anxious-Shy, Perfectionism, Social Problems, and Psychosomatic. The psychometric properties of the revised scale appear adequate as demonstrated by good internal reliability coefficients, high test-retest reliability, and effective discriminatory power. Advantages of the CPRS-R include a corresponding factor structure with the Conners' Teacher Rating Scale-Revised and comprehensive symptom coverage for attention deficit hyperactivity disorder (ADHD) and related disorders (7).

### 2.2.2. Symptom Checklist-90 Revised (SCL-90-R)

The Symptom Checklist-90 Revised is a method to evaluate psychological problems and identify symptoms. This instrument is also used by psychologists, psychiatrists, mental health, medical, and educational professionals for monitoring the patient's progress or treatment outcome. The Symptom Checklist-90 Revised is an established instrument and has over 1,000 independent studies supporting is reliability and validity. The internal consistency coefficient rating ranged from 0.90 for Depression and 0.77 for Psychoticism. Test-retest reliability has been reported at 0.80 to 0.90 with a time interval of one week. All nine primary subscales are well correlated with the Minnesota Multiphasic Personality Inventory. The Symptom Checklist-90 Revised was also correlated with the IIP, 0.73, and the SAS, 0.69 (Pearson) (8).

### 2.2.3. Connor-Davidson Resilience Scale (CD-RISC)

The Connor-Davidson Resilience Scale (CD-RISC) was created to address aspects of resilience and for use in clinical practice. Resilience is considered as the capacity to overcome adversity. The CD-RISC is a 25 item scale that has been studied in a variety of populations such as, members of different ethnic groups and cultures, Alzheimer's caregivers, adolescents, elders, patients in treatment for PTSD, military medical personnel, medical students, college students, survivors of various traumas, social workers, and even select professional or athletic groups. Although the means scores vary with settings, the psychometric properties of the RISC hold up in almost all studies. There are two more brief versions of the 25-item Connor-Davidson Resilience Scale, there is a 10-item (CD-RISC 10). The CD-RISC 10 can range in score from 0-40

and is made of questions 1, 4, 6, 7, 8, 11, 14, 16, 17, and 19 from the original 25-item scale. This scale was developed by Dr. Laura Cambells-Sills and Dr. Murray Stein at the University of California, San Diego. The second version is the CD-RISC 2, this is based on items 1 and 8 from the original scale and can score from 0-8. This scale was developed by the original authors and made to measure "bounce-back" and adaptability (9).

# 3. Results

In current section, firstly we are going to describe demographic data of study's sample. After that we will discuss, measures of central tendency and frequency. Subsequently, in order to assess normal distribution of data we use Kolmogorov–Smirnov test. Finally via t-test we are going to measure Mental Health and Resilience status among mothers of children with ADHD and mothers of Normal children.

Demographic data of both groups can be observed in Table 1.

*Table 1. Demographic Data of Study's Groups.*

| Mothers' groups | Frequency | Frequency Percentage |
|---|---|---|
| ADHD | 76 | 50 |
| Normal | 76 | 50 |
| Total | 172 | 100 |

Distribution frequency and percentages with respect to gender can be observed in Table 2.

*Table 2. Distribution Frequency and Percentage with respect to Gender.*

| Groups | Gender | Frequency | Frequency Percentage |
|---|---|---|---|
| ADHD | Female | 20 | 13 |
| | Male | 56 | 37 |
| Normal | Female | 20 | 13 |
| | Male | 56 | 37 |
| Total | ----- | 152 | 100 |

In order to assess normal distribution of data, we used K-S test. Data regarding K-S test can be observed in Table 3.

*Table 3. K-S test Results.*

| Groups | Variables | K-S | | |
| | | Amount | Number | Level of Significance |
|---|---|---|---|---|
| ADHD | Mental Health | 0/597 | 76 | 0/868 |
| | Resilience | 1/52 | 76 | 0/019 |
| Normal | Mental Health | 1/20 | 76 | 0/111 |
| | Resilience | 1/08 | 76 | 0/189 |

According to Table 3, significance level in both variables is lower than 0.01; hence it appears plausible that with confidence of 99% variances are same and data distribution is normal.

| Groups | Variables | Mean | SD | t | Dof | Significance |
|---|---|---|---|---|---|---|
| ADHD | Mental Health (Total Score) | 115/97 | 45/31 | 2/20 | 150 | 0/029 |
| Normal | | 96/98 | 59/78 | | | |
| ADHD | Anxiety | 11/10 | 6/36 | 1/33 | 150 | 0/158 |
| Normal | | 9/64 | 7/13 | | | |
| ADHD | Aggression | 8/60 | 5/13 | 2/89 | 150 | 0/004 |
| Normal | | 6/18 | 5/19 | | | |
| ADHD | Paranoid Thoughts | 11/50 | 4/59 | 3/82 | 150 | 0/000 |
| Normal | | 8/34 | 5/53 | | | |
| ADHD | Depression | 20 | 10/26 | 2/56 | 150 | 0/011 |
| Normal | | 15/50 | 11/35 | | | |
| ADHD | Resilience | 72/26 | 19/03 | 1/01 | 150 | 0/310 |
| Normal | | 69/35 | 15/99 | | | |

According to data in Table 4, it can be inferred that there is a conspicuous difference between mental health status of Case-Group (ADHD) and Control-Group (Normal). T-test shows meaningful difference as well; so with 95% certainty it can be postulated that Control-Group (Normal) is healthier than Case-Group (ADHD) with respect to Mental Health Status.

According to data in Table 4, it can be inferred that there is no difference between Anxiety of Case-Group (ADHD) and Control-Group (Normal). T-test shows no meaningful difference as well; so with 95% certainty it can be postulated that level of Anxiety is the same between Case-Group (ADHD) and Control-Group.

According to data in Table 4, it can be inferred that there is a conspicuous difference between Aggression of Case-Group (ADHD) and Control-Group (Normal). T-test shows meaningful difference as well; so with 95% certainty it can be postulated that Control-Group (Normal) demonstrate lower level of Aggression in comparing to Case-Group (ADHD).

According to data in Table 4, it can be inferred that there is a conspicuous difference between Paranoid Thoughts of Case-Group (ADHD) and Control-Group (Normal). T-test shows meaningful difference as well; so with 95% certainty it can be postulated that Control-Group (Normal) demonstrate lower level of Paranoid Thoughts in comparing to Case-Group (ADHD).

According to data in Table 4, it can be inferred that there is a conspicuous difference between Depression of Case-Group (ADHD) and Control-Group (Normal). T-test shows meaningful difference as well; so with 95% certainty it can be postulated that Control-Group (Normal) demonstrate lower level of Depression in comparing to Case-Group (ADHD).

According to data in Table 4, it can be inferred that there is no difference between Resilience of Case-Group (ADHD) and Control-Group (Normal). T-test shows no meaningful difference as well; so with 95% certainty it can be postulated that level of Resilience is the same between Case-Group (ADHD) and Control-Group.

## 4. Discussion

In current study, we aimed to compare mental health status

and resilience of mothers with ADHD children and mothers with normal children. Results of current study are demonstrative of meaningful difference between mental health status of Case-Group (ADHD) and Control-Group (Normal); as Case-Group (ADHD) demonstrates lower level of mental health. Surprisingly, there was no meaningful difference between two groups with respect to Resilience.

In current study we focused on mental health status and resilience of mothers with ADHD children; Awat and Colleagues (2014), however, focused on Parenting stress among mothers of children with different physical, mental, and psychological problems. They concluded that Mothers of children with sensory-motor mental and chronic physical problems experience more stress than mothers of children with psychological disorders ($P < 0.05$). The stress score of mothers of children with psychological disorders was lower than the other two groups. Also there was a significant difference between the score of mothers of children with chronic physical problems and mothers of children with psychological disorders regarding parent-child dysfunctional interaction ($P < 0.01$). A significant difference was observed in terms of stress among mothers of children with sensory-motor mental problems with different number of children ($P < 0.05$); also mothers of children with chronic physical problems in different levels of education have experienced different levels of parenting stress ($P < 0.05$) (10). In another study conducted by Riahi and Izadi (2012), they studied Mental health status of Mother of Autistic children, results indicated that significant differences exist in mental health (F=5.69, P=0.02) and anxiety/ insomnia (F=4.82, P=0.03), between mothers of children with Autismand control group. There were not any other significant differences in the other subscales (11). As it can be inferred from similar studies, mental and physical problems can tamper with psychological status of parents and specifically mothers as main caregiver. In another study conducted by Azeem and Colleagues (2013), they assessed Anxiety and Depression among Parents of Children with Intellectual Disability in Pakistan. They concluded that significantly high proportion of mothers (89%) had anxiety, depression, or both anxiety and depression together as compared to fathers (77%) (*p-value* <0.05). Among mothers, 35% met criteria for anxiety, 40% for depression and 13% for both anxiety and depression.

Among fathers 42% had anxiety, 31% depression and 3% both anxiety and depression. There was a significant association between gender of parent and individual psychiatric diagnosis of anxiety, depression and anxiety and depression together (*p-value* <0.05). A significant association was also found between mother's anxiety, depression or both and degree of ID of their children (*p-value <0.05*) (12).

All in all, results of current study are demonstrative of meaningful difference between mental health status of Case-Group (ADHD) and Control-Group (Normal); as Case-Group (ADHD) demonstrates lower level of mental health. Surprisingly, there was no meaningful difference between two groups with respect to Resilience. Mental health providers need to be aware of these issues, so appropriate mental health screening can be utilized among the care givers of children with ID. The services provided for children with ID need to include appropriate systems interventions and support for their caregivers.

## Limitations

Limitations of the study were small sample size and lack of comparison group of fathers as well. Future studies are needed which should include multiple sites across the country, encompassing both urban and rural settings with a larger sample size and a control group.

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