



RESEARCH ARTICLE

DEPRESSION AND ANXIETY AMONG PARENTS HAVING CHILD OR MORE WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

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ARTICLE INFO

Article History:

Received 22nd September, 2017

Received in revised form

04th October, 2017

Accepted 21st November, 2017

Published online 30th December, 2017

Keywords:

Attention Deficit Hyperactivity Disorder (ADHD), Parents/ Caregivers Depression, Parents/ Caregivers Anxiety, Disruptive Behavior Disorders, Parent-Child relation.

ABSTRACT

Families of children and adolescents with attention-deficit hyperactivity disorder (ADHD) may be indirectly affected by the disorder; parent-reported impact on themselves or the family may include: parental stress; parental emotional/mental health problems; sibling conflict; disruption to family cohesion; and less time available to spend on family activities. Maternal depression is considered a risk factor for the socioemotional and cognitive development of children.

The aim of the study: was to evaluate the presence of depression and anxiety in parents having child or more with attention deficit hyperactivity disorder.

Subjects and Methods: This is a case control study, which carried out on 100 parents with children having ADHD and a control group of 100 parents with their children without any psychiatric or chronic medical disorders. Both cases and controls are subjected for the Hospital Anxiety and Depression scale (HAD) to detect the symptoms in the studied sample.

Results: Depression and anxiety scales were high in both cases and controls with slight difference between the two groups (44% versus 41 % in depression) and (46% versus 41% in anxiety) respectively. There were high significant relation between anxiety and depression scales results among studied cases.

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INTRODUCTION

ADHD is a problem of inattention, hyperactivity, and impulsivity according to the American Psychiatric Association (American Psychiatric Association, 2013). This disorder is recognized globally and is referred to as hyperkinetic disorder in Europe and other countries that use the WHO classification system (World Health Organization, 2004). ADHD is a chronic condition with symptoms that begin in early childhood but often persist into adult life. A key element of the definition is functional impairment across 2 or more domains, most often in school and at home (American Psychiatric Association, 2013). As a result, ADHD can limit academic, interpersonal, and occupational success and can also lead to greater risk-taking and accidents (Schonwald, 2006). In addition, patients with ADHD are more likely to have co-existing psychiatric disorders such as oppositional defiant disorder (ODD), conduct disorder, substance abuse, and possibly mood disorders, such

as depression and mania (Barkley, 2005; Faraone, 1997; Biederman, 1997; Milberger, 1997; Faraone, 1997 and Biederman, 1996). ADHD is one of the most common disorders of childhood. A recent large review of the literature has found the global prevalence to be 5.29% (Polanczyk, 2007). In the US the National Survey of Children's Health found an overall prevalence of 11% among children aged 4 to 17 years in 2011, (<http://www.cdc.gov/>) while the National Health Interview Study done at 2010 found an estimated 8% of US children aged 3 to 17 had ADHD (Bloom, 2011). Hyperactivity, impulsivity and inattentiveness — may negatively impact functioning and behaviour in children and adolescents in school, and adults in the workplace. In a Swedish cohort study of 544 children, considerable association was observed between symptoms of inattentiveness (as measured by the Conner's 10-item scale) in children aged 7 and 10 years and academic underachievement at age 16 years (Holmberg, 2012). ADHD in children, may impact on the relationships that they share with family, friends, teachers, or colleagues, with evidence of peer rejection, and difficulty in maintaining friendships or family/romantic relationships

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(Schermerhorn, 2012). Children with ADHD experience a myriad of behavioral and social problems as a direct result of the inattention, hyperactivity, and impulsivity that characterize this disorder. These include failure to meet the expectations of adults, noncompliance, and exhibition of public behaviors that may be embarrassing to many parents. The effect that these children's problems may have on their caregivers, appropriately labeled caregiver strain, has piqued the interest of psychologists for decades (Evans, 2009). In July 2013, B. Lovell *et al.* (Lovell, 2013; Brian Lovell, 2016; Brian Lovell, 2016 and Brian Lovell, 2015), examined the psychological, endocrine and health corollaries of child problem behaviours in caregivers of children with autism and attention deficit hyperactivity disorder. Data revealed a positive relationship between caregivers' perceived levels of stress and problems with child conduct behaviours. In addition, caregivers who reported more problems with child emotional and hyperactivity behaviours displayed atypical cortisol patterns characterized by flatter diurnal cortisol slopes and reduced cortisol awakening response magnitude. Subjective reports of commonly occurring ailments were also greater in caregivers experiencing more problems with child emotional behaviours. Jennifer Theule *et al.* (Jennifer Theule, 2002), conducted a meta-analysis in Nov 18, 2010 to examine findings on the association between parenting stress and ADHD. Results confirmed that parents of children with ADHD experience more parenting stress than parents of nonclinical controls and that severity of ADHD symptoms was associated with parenting stress. Child co-occurring conduct problems and parental depressive symptomatology predicted parenting stress. Parents of children with ADHD experienced no more parenting stress than parents of other clinically referred children. Little difference in parenting stress was found between mothers and fathers, but child gender was a significant moderator of parenting stress, with lower stress levels in samples with higher proportions of girls.

Objectives

To evaluate the presence of depression and anxiety in parents of ADHD children and the relation to some risk factors.

MATERIALS AND METHODS

This is a case control study, which carried out on 100 parents with children having ADHD visited the behavioral and developmental disorders center, Khamis Mushayet Pediatric and Maternity Hospital, Asser region, Kingdom of Saudi Arabia, during the period (September 2015-September 2016). Control group of 100 parents with their children without any psychiatric or chronic medical disorders who were referred from different health care centers in Abha for other medical problems. In this study a printed questionnaire will be given to parents/caregivers of both case and control groups. The copy given to parents/caregivers having one or more child with ADHD will consist of two pages one page for biodata and one page for Hospital Anxiety / Depression Scale (HADS). The copy given to parents/caregivers having children with no history of ADHD will consist also of two pages, one page for biodata, and one page for Hospital Anxiety and Depression Scale (HADS). Each item on the questionnaire is scored from 0-3 and this means that a person can score between 0 and 21 for either anxiety or depression. The Bjelland *et al.* (2002) (Bjelland, 2002), through a systematic review of a large number of studies identified a cut-off point of 8/21 for anxiety or depression. For anxiety (HADS-A) this gave a specificity of 0.78 and a sensitivity of 0.9. For depression (HADS-D) this gave a specificity of 0.79 and a sensitivity of 0.83. HADS uses a scale and therefore the data returned from the HADS is ordinal. The research team will be given a two-month period to collect and organize the copies given to subjects questions either by direct meeting or by telephone (for subjects cannot find time to meet us).

Table 1. Demographic data of studied groups (N=200)

| Studied variables | Control (N=100) | | Cases (N=100) | | χ^2 | P value |
|-----------------------|-----------------|------|---------------|------|----------|---------|
| | No. | % | No. | % | | |
| Age / years | | | | | | |
| ➤ < 25 | 23 | 23.0 | 5 | 5.00 | 30.9 | 0.001** |
| ➤ 26 – 35 | 57 | 57.0 | 40 | 40.0 | | |
| ➤ 36 – 45 | 17 | 17.0 | 45 | 45.0 | | |
| ➤ > 45 | 3 | 3.00 | 10 | 10.0 | | |
| Gender | | | | | 10.7 | 0.001** |
| ➤ Male | 34 | 34.0 | 57 | 57.0 | | |
| ➤ Female | 66 | 66.0 | 43 | 43.0 | | |
| Relative to the child | | | | | 15.5 | 0.001** |
| ➤ Mother | 66 | 66.0 | 42 | 42.0 | | |
| ➤ Father | 30 | 30.0 | 57 | 57.0 | | |
| ➤ Others | 4 | 4.00 | 1 | 1.00 | | |
| Educational level : | | | | | 1.06 | 0.900 |
| ➤ Primary | 10 | 10.0 | 10 | 10.0 | | |
| ➤ Middle | 4 | 4.00 | 6 | 6.00 | | |
| ➤ Secondary | 20 | 20.0 | 24 | 24.0 | | |
| ➤ Bachelor | 59 | 59.0 | 54 | 54.0 | | |
| ➤ High graduates | 7 | 7.00 | 6 | 6.00 | | |
| Occupation | | | | | 4.78 | 0.091 |
| ➤ Employer | 60 | 60.0 | 66 | 66.0 | | |
| ➤ Student | 7 | 7.00 | 1 | 1.00 | | |
| ➤ Jobless | 33 | 33.0 | 33 | 33.0 | | |
| Number of children | | | | | 6.79 | 0.034* |
| ➤ 1 – 3 | 68 | 68.0 | 50 | 50.0 | | |
| ➤ 4 – 6 | 24 | 24.0 | 39 | 39.0 | | |
| ➤ >6 | 8 | 8.00 | 11 | 11.0 | | |
| Income | | | | | 3.21 | 0.200 |
| ➤ < 5000 SR | 24 | 24.0 | 15 | 15.0 | | |
| ➤ 5000- 10000 SR | 45 | 45.0 | 45 | 45.0 | | |
| ➤ > 10000 SR | 31 | 31.0 | 40 | 40.0 | | |

*Significant ** highly significant

Exclusion Criteria

Parents / Caregivers of ADHD children had a previous history of depression or anxiety before they get a child or more diagnosed to have ADHD.

Ethical considerations: The approval from the local medical ethical committee, and the director of the hospital were obtained. The data will be introduced to the computer anonymously.

of cases and controls the mothers were more than fathers represent (43% and 66%) respectively. Majority of cases and controls educational level were bachelor degree represent (54% and 55%). As regards the occupation of cases and controls who were employed represent (66% and 60 %) respectively. As regards number of children for cases and controls were between (1 – 3 children) represent (50% and 68 %) respectively. As regards the income of majority of cases and controls families were between (5000 – 10000 SR) representing 45% for both groups.

Table 2. Depression and anxiety among studied groups (N=200)

| Studied variables | Control (N=100) | | Cases (N=100) | | χ^2 | P value |
|-------------------|-----------------|------|---------------|------|----------|---------|
| | No. | % | No. | % | | |
| Depression | | | | | | |
| ➤ Yes | 41 | 41.0 | 44 | 44.0 | 0.184 | 0.668 |
| ➤ No | 59 | 59.0 | 56 | 56.0 | | |
| Anxiety | | | | | | |
| ➤ Yes | 41 | 41.0 | 46 | 46.0 | 0.509 | 0.476 |
| ➤ No | 59 | 59.0 | 54 | 54 | | |

Table 3. Relation between anxiety and demographic data of studied cases (N=100)

| Studied variables | Cases (anxiety) | | | | χ^2 | P value |
|-----------------------|-----------------|------|-----------|------|----------|---------|
| | Yes (N=46) | | No (N=54) | | | |
| | No. | % | No. | % | | |
| Age / years | | | | | | |
| ➤ < 25 | 3 | 6.50 | 2 | 3.70 | 3.38 | 0.336 |
| ➤ 26 – 35 | 22 | 47.8 | 18 | 33.3 | | |
| ➤ 36 – 45 | 18 | 39.1 | 27 | 50.0 | | |
| ➤ > 45 | 3 | 6.50 | 7 | 13.0 | | |
| Gender | | | | | 6.35 | 0.012* |
| ➤ Male | 20 | 43.5 | 37 | 68.5 | | |
| ➤ Female | 26 | 56.5 | 17 | 31.5 | | |
| Relative to the child | | | | | 7.86 | 0.020* |
| ➤ Mother | 26 | 56.5 | 16 | 29.6 | | |
| ➤ Father | 20 | 43.5 | 37 | 68.5 | | |
| ➤ Others | 0 | 0.00 | 1 | 1.90 | | |
| Educational level : | | | | | 1.77 | 0.778 |
| ➤ Primary | 4 | 8.70 | 6 | 11.1 | | |
| ➤ Middle | 4 | 8.70 | 2 | 3.70 | | |
| ➤ Secondary | 12 | 26.1 | 12 | 22.2 | | |
| ➤ Bachelor | 24 | 52.2 | 30 | 55.6 | | |
| ➤ High graduates | 2 | 4.30 | 4 | 7.40 | | |
| Occupation | | | | | 2.83 | 0.243 |
| ➤ Employer | 27 | 58.7 | 39 | 72.2 | | |
| ➤ Student | 1 | 2.20 | 0 | 0.00 | | |
| ➤ Jobless | 18 | 39.1 | 15 | 27.8 | | |
| Number of children | | | | | 7.99 | 0.018* |
| ➤ 1 – 3 | 30 | 65.2 | 20 | 37.0 | | |
| ➤ 4 – 6 | 12 | 26.1 | 27 | 50.0 | | |
| ➤ >6 | 4 | 8.70 | 7 | 13.0 | | |
| Income | | | | | 5.09 | 0.078 |
| ➤ < 5000 SR | 9 | 19.6 | 6 | 11.1 | | |
| ➤ 5000- 10000 SR | 24 | 52.2 | 21 | 38.9 | | |
| ➤ > 10000 SR | 13 | 28.3 | 27 | 50.0 | | |

*Significant

Table 4. Relation between anxiety and depression among studied cases (N=100)

| Studied variables | Cases (anxiety) | | | | χ^2 | P value |
|-------------------|-----------------|------|-----------|------|----------|---------|
| | Yes (N=46) | | No (N=54) | | | |
| | No. | % | No. | % | | |
| Depression | | | | | | |
| ➤ Yes | 34 | 73.9 | 10 | 18.5 | 30.9 | 0.001** |
| ➤ No | 12 | 26.1 | 44 | 81.5 | | |

** Highly significant

Statistical methods: Was done by Microsoft Excel program and data were analyzed using SPSS 21 software.

RESULTS

Table (1) above shows that the majority of cases were with age group between 26 – 45 years old but majority of controls were with age group between <25- 35 years old. As regards the sex

Table (2) above shows that no significant difference between the cases and controls as regards the results of depression and anxiety scales. Table (3) shows the relation between anxiety scales and the demographic data were significant where the parents age between (26 – 35 years old), gender difference of parents (56 % versus 43 %) and for parents had (1-3 children), (65.2 % versus 20 %). Table (4) sows that there were high

significant relation between anxiety and depression scales results among studied cases. Table (5) shows that no significant relation between depression and the demographic data of studied cases.

McComic and colleges (Mc Cromic, 1995), evaluated level of depression in mothers of children with ADHD and reported that the prevalence of major depressive disorder was 17.9 % while that of minor depression was 20.5 %.

Table 5. Relation between depression and demographic data of studied cases (N=100)

| Studied variables | Cases (depression) | | | | χ^2 | P value |
|-----------------------|--------------------|------|-----------|------|----------|---------|
| | Yes (N=44) | | No (N=56) | | | |
| | No. | % | No. | % | | |
| Age / years | | | | | | |
| ➤ < 25 | 3 | 6.80 | 2 | 3.60 | 3.00 | 0.391 |
| ➤ 26 – 35 | 18 | 40.9 | 22 | 39.3 | | |
| ➤ 36 – 45 | 21 | 47.7 | 24 | 42.9 | | |
| ➤ > 45 | 2 | 4.50 | 8 | 14.3 | | |
| Gender | | | | | 0.001 | 0.974 |
| ➤ Male | 25 | 56.8 | 32 | 57.1 | | |
| ➤ Female | 19 | 43.2 | 24 | 42.9 | | |
| Relative to the child | | | | | 0.812 | 0.666 |
| ➤ Mother | 19 | 43.2 | 23 | 41.1 | | |
| ➤ Father | 25 | 56.8 | 32 | 57.1 | | |
| ➤ Others | 0 | 0.00 | 1 | 1.80 | | |
| Educational level : | | | | | 1.54 | 0.819 |
| ➤ Primary | 5 | 11.4 | 5 | 8.90 | | |
| ➤ Middle | 3 | 6.80 | 3 | 5.40 | | |
| ➤ Secondary | 8 | 18.2 | 16 | 28.6 | | |
| ➤ Bachelor | 25 | 56.8 | 29 | 51.8 | | |
| ➤ High graduates | 3 | 6.80 | 3 | 5.40 | | |
| Occupation | | | | | 1.36 | 0.505 |
| ➤ Employer | 28 | 63.6 | 38 | 67.9 | | |
| ➤ Student | 1 | 2.30 | 0 | 0.00 | | |
| ➤ Jobless | 15 | 34.1 | 18 | 32.1 | | |
| Number of children | | | | | 2.59 | 0.273 |
| ➤ 1 – 3 | 26 | 59.1 | 24 | 42.9 | | |
| ➤ 4 – 6 | 14 | 31.8 | 25 | 44.6 | | |
| ➤ >6 | 4 | 9.10 | 7 | 12.5 | | |
| Income | | | | | 4.44 | 0.108 |
| ➤ < 5000 SR | 10 | 22.7 | 5 | 8.90 | | |
| ➤ 5000- 10000 SR | 20 | 45.5 | 25 | 44.6 | | |
| ➤ > 10000 SR | 14 | 31.8 | 26 | 46.4 | | |

DISCUSSION

This study investigates the rate and severity of depression in parents of children with ADHD in a case control study. Results of this study indicated that anxiety and depression in parents of children with ADHD were not significantly more than in the parents of the control group. In agreement with our study Jennifer Theule *et al.* at 2010 found that parents of children with ADHD experienced no more parenting stress than parents of other clinically referred children. Little difference in parenting stress was found between mothers and fathers, but child gender was a significant moderator of parenting stress, with lower stress levels in samples with higher proportions of girls (Jennifer Theule, 2010). In another study conducted by Segenreichd at 2009 (Segenreichd, 2009) in a Brazilian University, higher prevalence rates of anxiety and depression were reported in parents of children with ADHD. Results reviewed in the literature done by Joseph Bawalsah at Amman University showed significant difference in anxiety and depression scales in parents of ADHD children and that of control group (Joseph Bawalsah, 2014). In another study done by Ghanizadeh at 2008 in Shiraz University of medical sciences at 2008, the finding indicated that the most common psychiatric disorder in the parents of ADHD children was mood disorder. The rate for major depression in mothers and fathers of those children was 48.1 % and 43.0 % respectively (Ghanizadeh, 2008). The study done by Atefeh Soltanifar *et al* at 2009 (Atefeh Soltanifar, 2009), found that the rate of depression in mother's of ADHD children was 30% which is more than rate in the control group.

In our study depression and anxiety scales were high in both cases and controls with slight difference between the two groups (44% versus 41 % in depression) and (46% versus 41% in anxiety) that may reveal specific genetic or environmental factors that characterized our sample of study with high incidence of both anxiety and depressive disorders. Table (3) shows that the mothers of ADHD children had significant higher anxiety scales than the fathers (56% versus 43%) respectively. Raising on ADHD child has numerous challenges due to the disturbed behavior of the child (Harison, 2002). Harrison and Sofroneffk 2002 (Harison, 2002), suggested that children with ADHD have adverse effects on parent's mental health. According to Gerdes and colleges (Gerdes, 2007), mothers experiencing life events as uncontrollable and evaluating parenting stress as sever. They proposed that experiencing events as uncontrollable and consequently having elevated stress lead mothers to be unresponsive to child's negative behavior. These cognition limit problem solving ability of the mother as well as increasing anxiety and depressive symptoms. Similar to these hypotheses, the study showed that mothers of children with ADHD have elevated level of anxiety and depression and those factors may be important in the treatment process of the child.

Kashdan *et al* 2004, reported that the disruptive behavior of this child would affect parents in many ways. Parent may found themselves incapable to deal with these inappropriate maladaptive behaviors of the child. Table (4) shows that there were high significant relation between anxiety and depression among studied cases (P value = 0.001) this is consistent with

many studies done and reveal high comorbidity between depression and anxiety symptoms. Depressive disorder (MDD) and anxiety disorders comorbidity is frequent and perhaps as high as 60% (Oliver, 2007). Kashdan *et al* 2004 (Kashdan, 2004) also indicated that raising a child with ADHD may exacerbate parenting social difficulties, and those parents perceive their family environment as less supportive and more stressful and also indicated that depressive symptoms are greater in parents of children with disruptive behavior disorders in comparison to parents of non-disruptive children.

Conclusion

An additional attention to the clinical symptoms of level of depression is should be specifically toward understanding the way they affect family functioning of those parents over time. These results also have important educational implications. First we need to ensure that behind any child with special need there is a family with special need, therefore additional efforts should be directed toward parents with child with ADHD as they forced to deal with the disruptive behavior of the child and its consequences. These efforts should include but not limited by family counseling, training programs, group sessions and peers support discussions. Second, teachers and educators of children with ADHD should empower parents with strategies to deal with disruptive behaviors of their child, i.e., parents should be part of any remedial intervention with ADHD child. Third, any positive improvement in the behavior of ADHD must be amplified and shared with parents as an indicator that ADHD child is capable to change toward the best; this might have positive impact on the psychological wellbeing of the parents. ADHD has a major negative impact on parents in different aspects. So, family evaluation and support are essential in assessment and management of all ADHD children. Further researches are recommended.

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