

Psychological distress and life satisfaction in mothers of attention-deficit/hyperactivity disorder children

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ABSTRACT

Background: Attention-deficit/hyperactivity disorder (ADHD) is most commonly diagnosed psychiatric disorder of childhood ADHD which is often comorbid with other psychiatric disorders. This disorder is a major public health problem with enormous negative impact on the child, the family schools, and society. **Objective:** This study objective is to look into the relationship of attention-deficit hyperactivity symptom of children with psychological distress (i.e., depression, anxiety, and stress) and life satisfaction in their mothers. **Materials and Methods:** The sample of the present study consisted of 27 mothers with ADHD children who were selected with children age range from 6 to 17, both male and female. These children diagnosed as having ADHD attending the Psychiatry Child and Adolescent Unit. The study design is a case-control research. The measures used were depression, anxiety, and stress scale-21 translated version, along with the Satisfaction with Life Scale (SWLS), the Conners Parent and Teacher Rating Scale of attention-deficit hyperactivity disorder, and the Strengths and Difficulties Questionnaire (SDQ; parent version). **Results:** A total of 27 mothers with ADHD children compared to 25 mothers with no ADHD children. The results show that there was more maternal depression ($P = 0.001$), anxiety ($P = 0.001$), and stress ($P = 0.002$), also less satisfaction with life ($P = 0.002$) compared to mothers with no ADHD children. **Conclusion:** The results indicate that characteristics in children influence family distress and satisfaction with life. It means that mothers with ADHD children are at higher risk to develop psychological distress.


KEY WORDS: Maternal Distress; Attention-Deficit/Hyperactivity Disorder; Conduct Problems; Emotional Problems; Difficulties; Family Impact; Satisfaction With Life; Medication

INTRODUCTION

Attention-deficit/hyperactivity disorder (ADHD) is the most common psychiatric disorder in child and adolescent psychiatric unit and characterized by developmentally inappropriate levels of inattention, impulsivity, and hyperactivity. ADHD is more likely to have comorbidity with other psychiatric disorders such as conduct disorder,

oppositional defiant disorder (ODD), and learning difficulties. Usually, these kids have difficulties such as emotional problems, peers relationship problems, and poor prosocial behavior. This disorder leads to negative impact on the child, the family, and the school.^[1] Hence, families of children with ADHD have many challenges and upbringing a child with ADHD is difficult and influence family functioning and it effects parents well-being and their mental health^[2] that causes parenting stresses due to burdens to handle disruptive behaviors of ADHD kids, which may also lead to poor parenting like inconsistent rules or discipline and physical aggression.

ADHD is affecting about 5% of children and 2.5% of adults in most cultures.^[3] According to the fifth edition of

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the Diagnostic and Statistical Manual of Mental Disorders (DSM-5),^[4] three types of ADHD are differentiated with each diagnosis requiring significant impairment in daily functioning.

First one, ADHD predominantly inattentive type, is marked by difficulties in sustained attention for a given task as well as increased disorganization.

Second one, predominantly hyperactive/impulsive type, is symptoms of over activity, fidgeting, or impulsivity.

The final type combines the two types (e.g., inattention with hyperactive/impulsive symptoms).

Each ADHD diagnosis requires the individual to experience six or more of the listed symptoms at a developmentally inappropriate level, with symptoms presenting for at least 6 months.

This study is to look at the influence of children with ADHD on their mothers that lead to parenting distress.

Psychological Maternal Distress

The definition of psychological maternal distress varies. It often defines psychological maternal distress as including symptoms of depression, anxiety, and stress.^[5] People may have distresses when their coping strategies are not efficient or adequate to handle situations,^[6] therefore, parenting is one of the hardest missions a mother does, which is more likely lead to maternal distress.^[7]

Life Satisfaction

The definition of life satisfaction means the positive evaluation of the life condition or ultimate outcome of experience. It is overall the assessment of attitudes and feelings about your life at a particular time ranging from negative to positive, it is also one of the major indicators of well-being.^[8]

Objectives

This study objective is to look at the influence of children with ADHD on their mothers. Parenting is usually associated with some stresses,^[9] which may affect the parent-child relationships,^[10] affect mental health of parents and their satisfaction, functioning,^[11,12] and well-being.^[13] This study also looks into the differences if the children were medicated or not.

MATERIALS AND METHODS

This study examined maternal distress among mothers of children with ADHD. The sample comprised 27 mothers of girls (5–18.5%) and boys (22–81.5%) aged 6–17 years old.

The sample size was estimated for this study using an estimated sample size for a matched case–control study. Asymptotic z test, 1:1 ratio of matched design assuming: 35% probability of exposure among controls; and an odds ratio = 3.0 of exposure in cases relatives to control was used for sample size calculations. The sample size was estimated for the two-sided test with error probabilities of alpha of 0.05 and 80% of power (or beta = 0.2). The sample size calculation suggested that a minimum of 25 cases will be needed for a sufficient analysis.

Inclusion Criteria

We included children aged between 6 to 17 years, from both sexes, who were diagnosed to have ADHD by a child and adolescent psychiatrist. The diagnosis of ADHD was confirmed based on Diagnostic and Statistical Manual, Fourth/Fifth Edition (DSM-IV/DSM-V) criteria.^[4] Children with or without medication and those with comorbid disorder were also included such as conduct disorder, ODD, and learning difficulties.

Exclusion Criteria

Mothers having children suffering from autistic spectrum disorder and intellectual disability and mothers with major medical condition such as CA, MS,... were excluded from the study. Mothers diagnosed with mental disorder such as psychotic disorder or BAD were excluded from the study.

Materials and Participants

The participants included 27 mothers of children/adolescents with ADHD aged 6–17 years.

Procedure

All the participants gave their verbal consent. Mothers provided all the information, completing self-report questionnaires. Child/adolescent ADHD was diagnosed by a psychiatrist in child and adolescent unit at psychiatric hospital, according to DSM-IV/DSM –V and Conners test 2/3.

Measures

The strengths and difficulties questionnaire (SDQ; parent version)^[14]

It rates the child's behavior screening questionnaire for children from 4 to 7 years and it has five scales: Emotional problems, conduct problems, hyperactivity, peer problems, and prosocial behavior (Goodman *et al.*, 2000). This scale has 25 statements.

Each statement has three response alternatives: “Not true,” “somewhat true,” or “certainly true.”

The sum score was calculated by adding all the statements, which ranged from 0 to 50, with the lower the score the better, except for prosocial scale with the higher the score the better.

The parent form of the conners' ADHD index^[15]

It is a screening test done by parents to show whether child is at risk to have ADHD.

It has inattention items (e.g., "Easily distracted," "Inattentive") and hyperactivity-impulsivity items ("Restless," "Interrupts others").

It has 10 items; each has four responses: "Not at all = 0," "sometimes = 1," "most of the time = 2," and "A lot=3."

The sum score was calculated by adding all statements, which ranged from 0 to 30 with the more symptoms and severity, the higher score on the scale.

The long forms of the conners-3 rating scales (conners, 2008; parent and teacher report forms)^[16]

This scale is used to determine whether ADHD symptoms were current in the sampled adolescents. Parents and teachers rated the youth on a 4-point scale ranging from 0 (not at all/seldom, never) to 3 (very much true/very often, very frequent) to evaluate symptom of inattention, hyperactivity, oppositional and aggressive behavior, conduct problems, and problems related to peer relations. These ratings were used as indicators of the severity of the adolescents' ADHD symptoms across two settings (home and school).

Depression, anxiety, and stress scale (DASS; lovibond and lovibond, [1995])^[17]

The DASS 21 is a 21-item self-report questionnaire that is intended to measure the levels of some symptoms common to depression, anxiety, and stress. While completing the DASS, the participant is required to indicate the symptoms over the previous week. The items are scored ranging from 0 (did not apply to me at all over the previous week) to 3 (applied to me very much or most of the time over the last week). The letters D (Depression), A (Anxiety), and S (Stress) indicate the scale to which each item belongs. For the scoring, each item from the D, A, and S is added and then the summed value from each scale. The scores are then evaluated with respect to the severity rating index which includes scoring in normal, mild, moderate, severe, and extremely severe intensity levels. The scores falling within these levels will show the intensity levels of depression, anxiety, and stress.

Satisfaction with Life Scale (SWLS)^[18]

The SWLS is a scale to assess satisfaction with life as a whole. The scale does not assess satisfaction with life domains such as health or finances but allows subjects to integrate and weight these domains in whatever way they choose. It consists of 5-item scale to measure global judgments of one's life satisfaction.

Respondents rate how much they agree or disagree with each statement of the 5 items using a 7-point scale that ranges from 7 strongly agree to 1 strongly disagree. The sum score is calculated by adding all statements, which ranged from 7 to 35 with the higher score the better and more satisfaction with life.

Statistical Analysis

We analyzed data using SPSS 20.

Consent

In this study, verbal consents were obtained from all participants.

Ethical Clearance

Ethical proposal and approval were obtained from Health Research Committee at Ministry of Health in Bahrain before conducting this study.

RESULTS

The mean age of the mothers of ADHD children was 40.71 years and the majority of the mothers are married (88.9%). The children with ADHD mean age were 10.06 and the majority were boys (81.5%). Furthermore, the children who were on medication for ADHD 13 (48.1%) are almost close to non-medicated children with ADHD 14 (51.9%) [Table 1].

We analyzed the interrelationships among measures used in the study for mothers with ADHD children. Results showed that the total difficulties of ADHD children were positively correlated with stresses of their mothers and anxiety and negatively correlated with life satisfaction [Table 2].

Mothers of ADHD children rated the behavior of their children (SDQ) with a mean score of 21.88 (standard deviation [SD] = 5.86) while mothers of normal children rated the behavior of their children (SDQ) with mean score of 7.56 (5.21). Psychological distress (DASS stress) rated by mothers of ADHD children with a total mean score of 11.07 (6.14), and anxiety (DASS Anxiety) had a mean score of 7.22 (5.27), and depression (DASS depression) had a mean score of 7.92 (5.73), whereas mothers of normal children had a total mean score of psychological distress (DASS stress) 6.24 (4.41), and anxiety (DASS Anxiety) had a mean score of 2.64 (2.91), and depression (DASS Depression) had a mean score of 3.24 (3.20). In addition to life satisfaction, total score was rated with a total mean score 20.51 (7.98) compared to mothers with normal children whom rated life satisfaction with a total mean score 26.20 (3.41).

Hence, the result showed that there is a significant relationship of children with ADHD and mothers level of stress, anxiety, and depression ($P < 0.001$). Mothers with ADHD children had higher level of stress, anxiety and depression plus lower level of satisfaction with life than mothers of normal children [Table 3].

Table 1: Demographic and variables of children/ adolescents and mothers

Variable	Children with ADHD	Normal children
Age	10.06	9.05
Gender		
Boys	22 (81.5%)	13 (52%)
Girls	5 (18.5%)	12 (48%)
Subtype of ADHD		
Combined	18 (66.7%)	-
Inattentive	1 (3.7%)	-
Hyperactive/impulsive	8 (29.6%)	-
Comorbidity		
Learning disorders	8 (29.6%)	-
Oppositional defiant disorder	3 (11.1%)	-
Multicomorbidity disorders	8 (29.6%)	-
No comorbidity	8 (29.6%)	-
Medication for ADHD		
Medicated	13 (48.1%)	-
Not medicated	14 (51.9%)	-

Variable	Mothers of ADHD children	Mothers of normal children
Age	40.71	39.85
Marital status		
Married	24 (88.9%)	25 (100%)
Divorced	2 (7.4%)	0
Widow	1 (3.7%)	0
Nationality		
Bahraini	24 (88.9%)	25 (100%)
Non-Bahraini	2 (7.4%)	0
Education		
Intermediate	1(3.7%)	5 (20%)
Secondary school	11 (40.7%)	20 (80%)
College/university	15 (55.6%)	0
Mothers work		
Professional	7 (25.9%)	12 (48%)
Labor	10 (37%)	8 (32%)
Housewife	8 (26.9%)	4 (16%)
Retired	2 (7.4%)	1 (4%)

Mean (percentage)

To look into differences between mothers with medicated children for ADHD and mothers with ADHD children not medicated, it showed that total SDQ, DASS, and satisfaction with life were significantly different between both groups. Mothers of ADHD children whom did receive medication for ADHD had more psychological distress (DASS stress) had a mean score of 14.07 (5.70), and anxiety (DASS anxiety) had a mean score of 9.14 (4.46), and depression (DASS depression) had a mean score of 9.42 (5.78) than mothers of children with ADHD whom received medications for ADHD [Table 4].

DISCUSSION

The result of this study showed that there is a significant relationship of children with ADHD and mothers level of stress, anxiety, and depression ($P < 0.001$). The effect of having ADHD child on their mothers psychological distress, which showed that mother’s mental health were affected^[19] due to their children behaviors such as hyperactivity, impulsivity, inattention, emotional problems and peer problems or rejection. Raising a normal child is not easy and having ADHD child making it tougher for parents and especially mothers, because usually mothers are the main caregivers, in addition to her other responsibilities, which may end up with frustration, stressed, and depression.^[13,20] The mothers of ADHD children may feel incompetent or inadequate, which may lead to hopelessness and helplessness that may end with depression. Having an ADHD child may lead to social withdrawn as it is sometimes difficult to join social gathering to avoid any embarrassment, criticism, or pressure due to his behavior and this will add to mothers feeling of loneliness that may also lead to depression. Moreover, having ADHD child associated with anxiety because mothers feel tense, inefficient parenting and fears of any damage can be done by their children due to their behavior. Mothers of children with ADHD may spend more time looking after their kids as they take longer to do tasks, which make mothers more exhausted, stressed, and not satisfied in their life. This study showed that half of children were on medication and half not taking medication, which may not reflect the actual percentage of children taking medication or not. Because those who were not taking medication have just diagnosed with ADHD and did not receive any intervention , therefore usually having closer appointments and some ADHD children especially

Table 2: Means, standard deviations, and interrelationships among study variables for mothers of children with ADHD

Variable	SDQ Total	Satisfaction total scores	DASS stress	DASS anxiety	DASS depression
SDQ total	1	-0.441* (0.021)	0.470* (0.013)	0.713** (0.001)	0.242 (0.224)
Satisfaction total scores	-0.441* (0.021)	1	-0.622** (0.001)	-0.471* (0.013)	-0.579** (0.002)
DASS stress	0.470* (0.013)	-0.622** (0.001)	1	0.746** (0.001)	0.769** (0.001)
DASS anxiety	0.713** (0.001)	-0.471* (0.013)	0.746** (0.001)	1	0.691** (0.001)
DASS depression	0.242 (0.224)	-0.579** (0.002)	0.769** (0.001)	0.691** (0.001)	1

Pearson correlation (Sig. two tailed); *. Correlation is significant at the 0.05 level (two tailed); **. Correlation is significant at the 0.01 level (two tailed)

Table 3: Statistically significant correlations among variables between mothers with ADHD children and mothers of normal children

Variable	Mothers of children with ADHD (n=27)	Mothers of normal children (n=25)	P value
Emotional problems	4.37 (2.15)	2.08 (1.93)	0.001
Conduct problems	5.33 (2.16)	1.20 (1.38)	0.001
Hyperactivity	8.07 (2.18)	2.8 (2.08)	0.001
Peer problems	4.11 (1.92)	1.40 (1.68)	0.001
Prosocial	6.25 (2.50)	8.20 (2.10)	0.004
Impact	6.22 (2.95)	0.00 (0.00)	0.001
SDQ total	21.88 (5.86)	7.56 (5.21)	0.001
Satisfaction total scores	20.51 (7.98)	26.20 (3.41)	0.002
DASS stress	11.07 (6.14)	6.24 (4.41)	0.002
DASS anxiety	7.22 (5.27)	2.64 (2.91)	0.001
DASS depression	7.92 (5.73)	3.24 (3.20)	0.001
Mean (SD)			

Table 4: Statistically significant correlations among variables between mothers of medicated ADHD children and mothers of non-medicated ADHD children

Variable	Mothers of medicated children with ADHD (n=13)	Mothers of non-medicated children with ADHD (n=14)	P value
Emotional problems	3.76 (2.00)	4.92 (2.20)	0.166
Conduct problems	4.69 (2.39)	5.92 (1.81)	0.141
Hyperactivity	6.92 (2.46)	9.14 (1.16)	0.006
Peer problems	3.76 (1.53)	4.42 (2.24)	0.385
Prosocial	7.23 (2.08)	5.35 (2.59)	0.050
Impact	4.84 (3.26)	7.50 (1.99)	0.016
SDQ total	19.15 (6.13)	24.42 (4.43)	0.016
Satisfaction total scores	23.76 (6.69)	17.50 (8.11)	0.039
DASS stress	7.84 (4.98)	14.07 (5.70)	0.006
DASS anxiety	5.15 (5.44)	9.14 (4.46)	0.047
DASS depression	6.30 (5.43)	9.42 (5.78)	0.162
Mean (SD)			

those on psychosocial treatment getting far appointment, whereas the rest on medication coming more regular on appointments and more frequent visits.

This study showed that the comorbidity with ADHD was less than other studies and did not show the difference of distress and life satisfaction among mothers of a child with ADHD alone or ADHD with comorbidity. Some researchers found higher comorbidity compared to this study.^[21,22] The most common comorbidity ODD found to be 40.6^[23] and in another study were 25–75% and CD (conduct disorder) about third of ADHD.^[24] In some studies, it showed comorbidity of ADHD with learning disabilities could be as low as 10% and high as 92%.^[25,26] In general, the incident of commodity in ADHD is high, some studies reporting that it ranges from 50% to 90%.^[27] Some studies showed the impact of hyperactivity of ADHD children and parental stress related to child behavior which lead to less efficacy and satisfaction of parenting and higher rate of parental psychopathology, marital discord, and social isolation compared to a parent of normal children.^[12] Our findings

were consistent with other studies which found that ADHD children carry difficulties to parents for their education that leads to family stress and affecting parents physical and mental health, it also found that level of stress is higher with more symptoms of ADHD and conduct or emotional problems.^[7] In another study, parents with ADHD had more psychological distress, weaker well-being (well-being measures the degree of happiness, satisfaction, and how rewarding or unsuccessful life is perceived to be), and less family functioning than other parents with normal child.^[13] Usually, ADHD requires a comprehensive management program. Hence, some researchers found that slightly <1/2 of the patient receives psychosocial management (46.7%) and almost two-third receive combined treatment (62%), however, nearly one-fourth of ADHD children were not receiving any treatment (23%).^[28] Mothers of ADHD children that were not medicated for ADHD reported more psychological distress, less life satisfaction, and more SDQ. Because medications help the child to improve ADHD symptoms^[29] and also improve family life. Therefore, less symptoms of ADHD may affect life and family functioning.^[30]

The finding of other study showed the correlation between parental stress and ADHD severity that carries negative impact on family life.^[7] Therefore, controlling symptoms and reducing the severity will improve parental stress and family life. The differences in this study between medicated and non-medicated ADHD probably due those who are not medicated might be newly diagnosed not yet received any intervention, in this study, we did not look into the differences in the outcome of different intervention for ADHD.

Strengths and Limitations

There are some limitations of this study that it was cross-sectional, participants mothers only, and the sample size was limited. Some studies have shown that mothers more sensitive than fathers to children behaviors, although the primary caregiver is usually mothers. Moreover, usually mother who comes to the clinic with their children and some mother also were reluctant to participate in the study either due to time or not interested to declare their information.

In this study, we did not look into differences of subtype of ADHD, as the majority were combined type. This study compared mothers of ADHD children with normally developed children. However, it would be also considered if this also showed a statistically different if it is compared to mothers having children with different chronic disorder such as autism or asthma.

In this study, extended families and grandparents were not considered, in which this variable might associated with reducing maternal distress and increasing satisfaction, especially when they are involved in raising up and taking care of these children.

Moreover, in our study we did not compare the level of distress in mother with different ages of children. This study showed the importance for psychiatrist to consider psychological distress in mothers of ADHD children that could influence or lead to negative impact on families and their functioning. Thus, families should carry on for interventions and management for ADHD, also clinician should focus on whole family as it is very crucial.

CONCLUSION

ADHD children behaviors and symptoms will influence mothers' well-being, mental health, and life satisfaction that could lead to maternal distress, anxiety, or depression. Hence, considering interventions for ADHD children reduce these distresses. Therefore, mothers of ADHD children not medicated are more likely to psychological distress and less satisfaction. Medication will improve family life because it reduces symptoms and severity for ADHD children.

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