Original research article

To Study Prevalence of Stress, Anxiety and Depression in Parents of Children with ADHD.

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Abstract

Introduction: Attention deficit hyperactivity disorder (ADHD) is a chronic and pervasive condition that begins in childhood and is characterized by inattention, impulsivity, and hyperactivity. ADHD is also often associated with extreme temperamental characteristics such as negative mood, short persistence, low frustration tolerance, excitability, and a quick temper. Of particular clinical significance is that parents of children with ADHD very often experience considerable stress in their parenting roles. Such stress typically is much greater than that found among families of normal controls.

Materials and Methods: Study had a longitudinal designed. 52 mothers and 48 fathers of 6-12 years aged children with psychiatric diagnosis of ADHD, who had come or referred to psychiatric clinic in Sir T. hospital Bhavnagar were eligible to participate and were randomly recruited in the study, in time phase of 12 months. All the children who were brought to the clinic with chief complaints of inattention and hyperactivity were evaluated using the DSM V criteria to confirm the diagnosis. Ascertainment of ADHD diagnosis was made using gold-standard criteria based on the Diagnostic and Statistical Manual of Mental Disorders, edition 5. Depression, Anxiety and Stress Scale - 21 Items (DASS-21) was employed for the present purpose to tap emotional distress of caregivers of ADHD children. $p<0.05$ is considered to be statistically significant.

Results: 100 participants containing mothers and fathers of children with ADHD child were involved in this study Out of 100 participants 19% of them suffering from depression, 11% were suffering from anxiety and as much as 43% of them suffering from stress in their daily life. Which indicate significantly higher mean stress score in mother compare to father.

Conclusion: Our study shows significantly higher prevalence of stress and anxiety in mother compare to father. Variable like level of education also significantly affect level of stress and anxiety in parents with individual with higher level of education having lower prevalence of stress and anxiety in their life.

Keywords: ADHD, impulsivity, hyperactivity

Introduction

Attention deficit hyperactivity disorder (ADHD) is a chronic and pervasive condition that begins in childhood and is characterized by inattention, impulsivity, and hyperactivity [(1)]. Attention deficit hyperactivity disorder (ADHD) is one of the most common neuro-psychological disorders in school children and young adults [(2)]. When present, ADHD very often can be highly disruptive, adversely affecting many areas of child psychosocial functioning [(3)]. For example, virtually all children with ADHD display significant academic underachievement [(4)]. Symptoms typically associated with ADHD are an inability to sustain attention, impulsivity, distractibility, difficulty concentrating, and poor monitoring skills.
ADHD is also often associated with extreme temperamental characteristics such as negative mood, short persistence, low frustration tolerance, excitability, and a quick temper. Comorbidity or coexistence with other disorders such as learning disabilities, depression, and conduct disorder is also common [(5)].

Although a direct causal connection has yet to be firmly established, there is correlational evidence suggesting that ADHD impacts far more than the functioning of the child. Parent functioning may be affected as well. Of particular clinical significance is that parents of children with ADHD very often experience considerable stress in their parenting roles. Such stress typically is much greater than that found among families of normal controls [(6)]. The effects of ADHD are not confined to the individual alone, but go beyond and can affect his/her immediate social context, especially the school and family context. In the school setting, the student–teacher relationship was significant in preventing students' risk of school failure or hyperactive–impulsive behaviours in ADHD. In the family context, on the other hand, ADHD is commonly associated with elevated levels of parenting stress because the parents' perceptions of the demands of their role as parents exceed their resources to cope with them [(7)].Since the behavioural problems of ADHD children are considerable, their parents especially their mothers have more stress than parents of normal children [(8)]. Whether this stress emanates directly from the child's ADHD is unclear at present. Clinical experience would suggest that it probably does, at least to some degree, given the increased caretaking demands that children with ADHD impose on their parents. These include more frequent displays of noncompliance, related to the child's difficulties in following through on parental instructions [(9)]. Despite its intuitive appeal, it would seem overly simplistic to view the child's ADHD as the sole determinant of elevated parenting stress. Many other child factors presumably are involved. In line with this contention, some researchers have speculated that the defiant behaviour of ADHD children is an especially potent contributor to parenting stress [(10)]. Several works have been carried out on the bidirectional relationship (parent-to-child and child-to-parent processes) between parenting stress and child/adolescent's ADHD symptoms: some studies point out that family problems (such as parental stress) can increase both the symptoms of ADHD and the psychological maladjustment of children [(11)].
The present study analysed the influence of child/adolescent and family/contextual variables on parenting stress. The age of the children may affect the course of the disorder and how it is perceived by adults [(12)]. Parenting stress has been found to be associated with a range of negative outcomes for children including insecure attachment and behaviour. In reviewing ADHD children interaction with their mothers, it is observed that in the conditions of conducting assignments, the conflict between parent and child increases and child compliance and mother responsiveness decrease and mothers become more negative and act more in a wrong way [(13)].

Several works have shown the powerful association of perceived social support with both parental styles and child/adolescent ADHD symptoms (or conduct problems): Families of

children with ADHD perceive more social isolation and report lower perceive socialsupport than control families [14]. This is remarkably important considering that child/adolescent's conduct problems augmented when perceived social support diminished [15]. The role of social support as a stress-related factor has also been investigated. Some studies have shown that social support is inversely related to and is an important predictor of the levels of stress experienced by mothers [16].

Materials and Methods

- **Study site and sample recruitment:**

Study had a longitudinal designed and was conducted at the child and adolescent psychiatric clinic in Sir T. hospital Bhavnagar.52 mothers and 48 fathers of 6-12 years aged children with psychiatric diagnosis of ADHD, who had come or referred to psychiatric clinic in Sir T. hospital Bhavnagar were eligible to participate and were randomly recruited in the study, in time phase of 12 months. This was done directly with a well-trained psychiatrist. All the children who were brought to the clinic with chief complaints of inattention and hyperactivity were evaluated using the DSM V criteria to confirm the diagnosis. The diagnoses were made by one board child and adolescent psychiatrist.

Eligibility criteria included: 1) Parents with ADHD children aged between 6 and 12 years. 2) Parents with children of ADHD with co-morbid intellectual defects. (mild/moderate). 3) Parents willingness to participate in the study with their children.
4) Having at most 4 children and 5) parents who are living together.

The cases would be **excluded** from the study when the diagnosis of severe mental retardation, autism and other developmental disorders were made on ADHD children. All parents not giving consent for the study. Parents with some chronic medical illness. Parents with other co-morbid psychiatric condition.

- **Study instruments:**

Details of demographics such as age, education, residence, education level and the number of children were collected by a researcher-made questionnaire. Ascertainment of ADHD diagnosis was made using gold-standard criteria based on the Diagnostic and Statistical Manual of Mental Disorders, edition 5. Depression, Anxiety and Stress Scale - 21 Items (DASS-21) was employed for the present purpose to tap emotional distress of caregivers of ADHD children. There are 21 questions in DASS-21, seven questions for each one of stress, anxiety, and depression. The rate was divided into normal or having symptoms of stress, anxiety, or depression. Each item is measured on a four-point Likert scale ranging from 0 ("Did not apply to me at all") to 3 ("Applied to me very much"). Diagnosis is then confirming by using Diagnostic andStatistical Manual of Mental Disorders, edition 5.
Qualitative data will be expressed as percentages and qualitative data will be expressed as mean+/- standard deviation. The statistical analysis will be done with Graph Pad. InStat version 3.06(San Diego, California, USA). Proportions of participants will be compared by using Chi-square test.

RESULTS

100 participants containing mothers and fathers of children with ADHD child were involved in this study.

Sociodemographic data:

Table 1 summarises the characteristics of the family members that completed the study. The

mean age of participants was 37.53. and the median was 37 years (27–51 years).

Sociodemographic data of the family member that completes the survey and of the families.

Table 1.1: Characteristics of patients based on depression status. *

Variable	Depression status			
		Yes (n= 19)	No (n=81)	p Value
Age (years)	Mean = 37.5	37.42	37.60	0.717
Gender	Male(n=48)	6	42	0.1813
	Female(n=52)	13	39	
Residence	Rural(n=68)	15	53	0.3879
	Urban(n=32)	4	28	
Number of children	1(n=10)	2	8	0.4694
	2(n=62)	9	53	
	3(n=25)	7	18	
	4(n=3)	1	2	
Number of children having psychiatric illness	1(n=95)	17	78	0.520
	2(n=5)	2	3	
Education level	Illiterate (n=30)	9	21	0.294
	Primary (n=36)	5	31	
	Secondary (n=23)	4	19	
	Graduate(n=11)	1	10	
Type of family	Nuclear family (n=52)	7	45	0.224
	Joint family(n=48)	12	36	
P/H of psychiatric illness	Yes(n=3)	1	2	0.520
	No(n=97)	18	79	
F/H of psychiatric illness	Yes(n=9)	0	9	0.281
	No(n=91)	19	72	

Table 1.2: Characteristics of patients based on Anxiety status. *

Variable	Anxiety status			
		Yes (n=11)	No (n=89)	p Value
Age (years)	Mean = 37.5	38.45	37.40	0.493
Gender	Male(n=48)	1	47	0.0156
	Female(n=52)	10	42	
Residence	Rural(n=68)	6	62	0.501
	Urban(n=32)	5	27	
	1(n=10)	1	9	
	2(n=62)	5	57	

Number of children	3(n=25)	4	21	0.436
	4(n=3)	1	2	
Number of children having psychiatric illness	1(n=95)	10	85	0.509
	2(n=5)	1	4	
Education level	Illiterate (n=30)	4	26	0.072
	Primary (n=36)	7	29	
	Secondary (n=23)	0	23	
	Graduate(n=11)	0	11	

* Values are shown as mean ± standard deviation or number of patients, unless otherwise specified. p Value was calculated by Chi square test or Mann-Whitney U test.

Table 1.3 Characteristics of patients based on Stress status. *

Variable	**Stress status**			
		Yes (n=43)	**No (n=57)**	**p Value**
Age (years)	Mean = 37.5	36.93	38.05	0.250
Gender	Male(n=48)	15	33	0.037
	Female(n=52)	28	24	
Residence	Rural(n=68)	33	35	0.158
	Urban(n=32)	10	22	
Number of children	1(n=10)	4	6	0.762
	2(n=62)	25	37	
	3(n=25)	12	13	
	4(n=3)	2	1	
Number of children having psychiatric illness	1(n=95)	40	55	0.745
	2(n=5)	3	2	
Education level	Illiterate (n=30)	18	12	0.0459
	Primary (n=36)	16	20	
	Secondary (n=23)	5	18	
	Graduate(n=11)	4	7	
Type of family	Nuclear family(n=52)	20	32	0.452
	Joint family(n=48)	23	25	
P/H of psychiatricillness	Yes(n=3)	2	1	0.803
	No(n=97)	41	56	
F/H of psychiatricillness	Yes(n=9)	6	3	0.250
	No(n=91)	37	54	

* Values are shown as mean ± standard deviation or number of patients, unless otherwise specified. p Value was calculated by Chi square test or Mann-Whitney U test.
Diagnosis of depression, anxiety and stress was made by using DASS 21 scoring and then confirm by using fifth edition of the Diagnostic and Statistical Manual of Mental Disorders. $p<0.05$ is considered to be statistically significant.

Participants were grouped into depression present (n=19) and not present (n=81) in table 1.1 according to Depression, Anxiety and Stress Scale - 21 Items (DASS-21), which were not statistically significantly associated in any variables. Participants were grouped into Anxiety present (n=11) and not present (n=89) in table 1.2 according to Depression, Anxiety and Stress

Scale - 21 Items (DASS-21). there was statistically significant difference(p=0.0156), like mothers having significantly higher prevalence of anxiety compare to father, in children of ADHD.

Participants were grouped into stress present (n=43) and not present (n=57) in table 1.3 according to Depression, Anxiety and Stress Scale - 21 Items (DASS-21). there was statistically significant difference(p=0.037), like mothers having significantly higher prevalence of stress compare to father, in children of ADHD. Also, statistically significant difference(p=0.0459) in variable like education level. There were significantly higher chances of stress in less educated individuals compare to well-educated individuals.

2. Recommended cut-off scores for conventional severity labels (normal, moderate, severe) are as follows:

Severity	Depression		Anxiety		Stress	
	Range	Individuals	Range	Individuals	Range	Individuals
Normal	0-9	81	0-7	89	0-14	57
Mild	10-13	6	8-9	4	15-18	22
Moderate	14-20	7	10-14	6	19-25	15
Severe	21-27	5	15-19	1	26-33	4
Extremely severe	28+	1	20+	0	34+	2

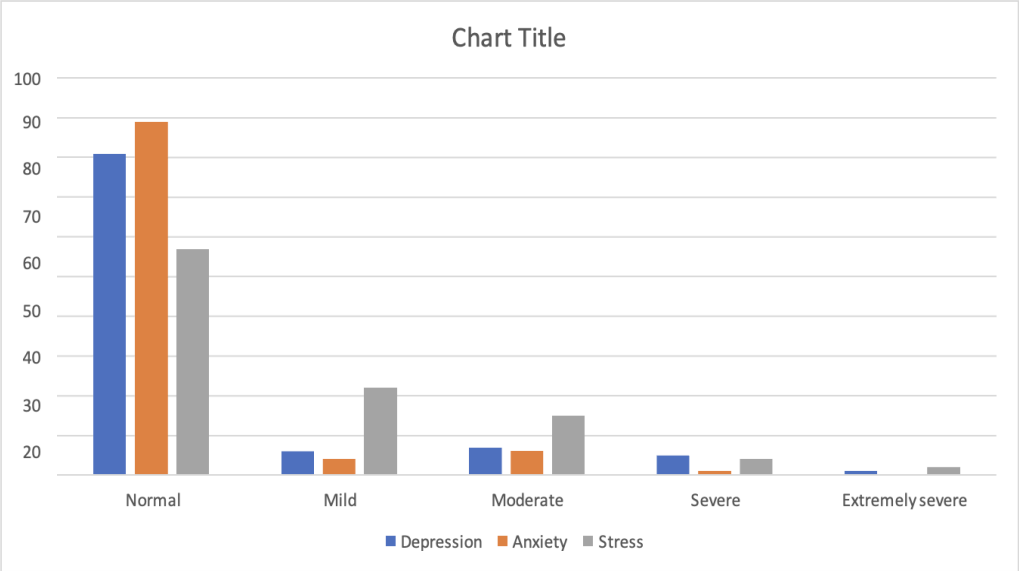

Figure 2.1: showing different severity of depression in participants.

This clearly suggestive of high level of stress present in parents of ADHD compare to depression and anxiety. Also, severity of stress is comparatively high.

Table 3. comparison of mean DASS score in mother and father individually. *

	MALE	FEMALE	P VALUE
Mean DASS depression score	6.4	7.8	0.35
Mean DASS anxiety score	3.9	4.9	0.38
Mean DASS stress score	13.20	16.03	0.040

NA=not applicable

Diagnosis of depression, anxiety and stress was made by using DASS 21 scoring and then confirm by using fifth edition of the Diagnostic and Statistical Manual of Mental Disorders. $p<0.05$ is considered to be statistically significant. Which indicate significantly higher mean stress score in mother compare to father.

Table 3. comparison of mean DASS score in mother and father individually.

	MALE	FEMALE	P VALUE
Mean DASS depression score in individual with depression.	**17**	**17.53**	**0.964**
Mean DASS anxiety score in individual with anxiety.	**NA**	**11**	**NA**
Mean DASS stress score in individual with stress.	**19.5**	**20.8**	**0.473**

*NA= not applicable

Values are shown as mean ± standard deviation or Number of patients, unless otherwise specified. p value was calculated by Mann-Whitney U test. Diagnosis of psychiatric disorders was made by using DASS 21 scoring and then confirm by using fifth edition of the Diagnostic and Statistical Manual of Mental Disorders. $p<0.05$ is considered to be statistically significant. This table clearly suggest that mean DASS score is somewhat similar in both mother and father.

Discussion

Several studies have demonstrated the negative impact of ADHD not only on the affected individual, but also on the other members of the family unit, as it is frequently associated with disrupted interpersonal relationships, a lower perceived family cohesion, greater conflict, and a higher incidence of depressive disorders and of separation and divorce in parents (16-19). As it is clearly stated by Theule et at. [17],the behaviour of children and adolescents with ADHD implies great difficulties to parents for their education, generating high levels of family stress which affect parental physical and mental health and parenting practices. Which is consistent with our study which clearly indicate higher level of depression, anxiety and stress in parents of child with ADHD.

In order to reduce the stress of parents it is necessary to know the factors affecting parental stress.in our study we found that factors like mean age, number of children, and residence either in rural or urban did not significantly affect parental stress and depression. But level of education does have significant impact on level anxiety and also in stress (though not significantly). Our study found that individual with lower level of education (illiterate, primary school) having more prevalence of stress and anxiety among them compare to those with higher level of education (secondary school, graduate).

A study of 222 elementary school children and their parents showed that the ADHD group showed higher levels of behavioural problems, parenting stress, and maternal depression than the normal group. Moreover, there were significant relationships between ADHD scores and parenting stress, maternal depression, internal behavioural problems, and external problems [18].When comparing mothers and fathers with ADHD children, mothers of ADHD children were more significantly stressed. This has been noted in other studies where mothers had dramatically higher scores than fathers in numerous scales assessing anxiety, stress and depression. mothers are the primary parent involved in the caretaking of their children. Juggling the demands of the workforce and caring for the family places additional parenting stress on these mothers [19].Similarly, our results also show significantly higher level of stress

(p=0.037) and anxiety (0.0153) in mother compare to father.

To the knowledge of the authors, there have been no studies assessing the influence or association of having a caretaker and impact on parents with ADHD children. This is because most of the studies were conducted in the West, which is unlike Asian populations where extended family members such as grandparents are common caregivers as the children grow up, marry, and continue to live in extended family homes. This variable was also taken into consideration in this study but we found no significant different in stress (p=0.45), depression (p=0.22) and anxiety (p=0.88) level in parents who living in nuclear family compare to those lives in joint family who have supports of grandparents in care-taking of ADHD child.

Limitation of study:

- Several limitations of the present study should be mentioned: our study was longitudinal; our sample size was limited.
- Other limitation was the use of only DASS scoring to diagnosis depression, anxiety and stress.so there are chances of missing some cases.

Also, this study didn't cover all possible variable which can affect parental stress like severity of ADHD in child, level of stress before and after starting ADHD treatment inchild.

- Furthermore, causation of parenting stress cannot be inferred as the study was quasi-experimental in design.
- Being a cross sectional study, cause – effect relationship can't be established with this study.
- Small sample size.

Conclusion

Out of 100 participants 19% of them suffering from depression, 11% were suffering from anxiety and as much as 43% of them suffering from stress in their daily life. Significantly higher prevalence of stress and anxiety in mother compare to father. We also found that variable like level of education also significantly affect level of stress and anxiety in parents with individual with higher level of education having lower prevalence of stress and anxiety in their life. We also found in this study that variable like family support, which would consider to be affecting parenting style have no significant effect on parenting stress.

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