

Original article

**Psychiatric morbidity in the parents of children with Attention Deficit
Hyperactivity Disorder**

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Abstract

Background: Attention deficit hyperactivity disorder (ADHD) is one of the most common mental disorders of childhood and adolescence. Due to chronic and pervasive natures, parents find difficulties in dealing with the behavioral problems of such children. A number of studies have shown that parents of ADHD children display substantial psychiatric morbidity in the form of depression, anxiety, and substance abuse.

Aim: To examine psychiatric morbidity in parents of children with ADHD.

Methods: Thirty parents (one parent either mother or father for each ADHD child was selected) were screened for psychological distress by applying GHQ-12. Those parents who had score of ≥ 2 on GHQ-12 and/or history of substance use were subjected to SCAN-based interview which evaluated psychiatric morbidity in them.

Results: The results of this study suggest that 46.67% of parents of children with ADHD had the presence of a psychiatric diagnosis in which the most common psychiatric diagnosis was depressive disorder (26.67%) which is several times higher than the general population. One-fourth of the parents of children with ADHD (26%) had substance use disorders.

Conclusion: In our study, nearly half of the parents had psychiatric morbidities, mainly depressive and anxiety disorders, and nearly a quarter of the parents had substance use disorders.

Keywords: ADHD, parents, psychiatric morbidity

Introduction

Attention deficit hyperactivity disorder (ADHD) is a behavioral and neurocognitive condition characterized by inattention, hyperactivity, and impulsivity that is inappropriate to the developmental stage [1]. Inattention refers to the difficulty in attending or responding to tasks and being more distracted than others of the same age [2]. The hyperactivity-impulsivity dimension refers to difficulty in controlling impulses and inhibiting activity levels to meet the demands of the situation [2]. ADHD is common disorders among school-aged children (prevalence 3%-5%) [3].

Parenting is one of the most demanding responsibilities of adult life [4]. Parents of children with ADHD experience greater stress as these children disregard parental requests, commands, and rules; fight with siblings; disturb neighbours; and engage in frequent negative encounters with school teachers and principals [5]. This stress becomes important when it is elevated to such an extent that it negatively impacts parenting practices and eventually disturbs the parent-child relationship. Studies have shown that the disturbed parent-child relationship due to child's impulsive, non-compliant, and emotional behaviour on the parent, rather than from the effects of the parent's behaviour on the child [6].

Traditionally, research on the psychopathology of parents of ADHD children has focused mainly on mothers. However, recent data suggests that the externalizing problems in ADHD are associated with both maternal and paternal psychopathology [7]. But the clinical pattern differs depending on whether the affected parent is the father or the mother [8]. Mothers tend

to show symptoms of depression and anxiety more commonly than fathers and fathers have more tendency to problems related to substance abuse especially alcohol abuse [9]. It has been seen that behavioral problems of the child may intensify parental drinking, which in turn may exacerbate the child's psychopathology leading to the development of this vicious cycle [10]. In a family where one of the parents has psychiatric morbidity as a consequence of ADHD-related stress and is not able to complete tasks related to childcare, the child's basic daily needs get neglected [11]. Thus, it is of extreme importance that parental stress and psychiatric morbidity is recognized at the earliest so that interventions can be developed that might minimize the strain on these families. After performing an exhaustive online search, the authors discovered only a few studies from India that looked explicitly for psychiatric morbidity among parents of ADHD children. Therefore, this study was aimed to assess the psychiatric morbidity in parents of children with ADHD.

Methodology

Setting and Participants: A cross-sectional study using random sampling was conducted at a tertiary mental health institution in Delhi after approval from the institutional ethics committee. The study included ADHD children, aged 5-12 years (pre-teenage children) along with their parents. Cases were taken from Child and Adolescent Psychiatry clinic which is held only once a week at this institute. Data were collected from January to September 2017. Time taken for each case varied between 1.30-2 hours depending on the level of cooperation. Hence, one case who met the inclusion and exclusion criteria was selected randomly for the study. Thus, the researcher conducted the study on 30 cases of ADHD along with their parents. Assent of the participants was obtained, in addition to parental consent, before conducting the study.

The current research included pre-teenage children between the ages of 5 and 12 years old, of either gender, who were diagnosed with ADHD according to DSM-IV TR criteria. The research

excluded institutionalized children, children with other neuropsychiatric comorbidities, and children with any current or previous debilitating medical condition.

The study included parents (either mother or father) between the ages of 18 and 50 who were involved in the care of the child (who had been staying with his or her child and involved in the child's daily needs) and who could understand the language used (Hindi or English). The research excluded parents who had another family member with a psychiatric disorder, chronic physical condition, or impairment, as well as parents who had a history of chronic medical illness or disability or psychiatric illness prior to the onset of ADHD in their children.

Tools

Socio-demographic proforma: A semi-structured proforma was used to collect detailed information about the socio-demographic parameters of the parents as well as children.

DSM IV-TR criteria [12]: DSM IV-TR criteria were applied for the diagnosis of ADHD as a part of a comprehensive clinical assessment. DSM-IV TR was preferred over ICD-10 because ICD 10 sets more stringent criteria for the diagnosis of ADHD and the prevalence rate is very less using ICD 10. DSM-IV TR criteria has good to moderate inter-rater and test-retest reliability for diagnosis of ADHD in children. It also has excellent construct validity [13].

Conners Rating Scale-Revised (CRS-R) [14]: It was developed by C. Keith Conners. The Conners Rating Scale-Revised (CRS-R) version is a paper and pencil screening questionnaire, designed to be completed by parents and teachers to assist in evaluating children for ADHD. It is used as part of a comprehensive examination to assess the severity of ADHD and is easily administered and scored. Parents' shorter version containing 27 items was used in the current study. Each item scores between 0-3 and the total score range between 0-81. This scale has excellent psychometric properties in identifying symptoms of inattention and hyperactivity and differentiates ADHD from other illnesses mimicking ADHD.

General Health questionnaire-12(GHQ-12) [15]: It is a short version comprising 12 items of the 60-item instrument developed in 1970. There are 12 items in the test which detects mental health issues in the past four weeks. It has been comprehensively used in different settings and different cultures. It was used as a screening instrument in our study to detect psychological distress among parents.

Schedules for Clinical Assessment in Neuropsychiatry (SCAN) based clinical interview [16]: The SCAN is a diagnostic interview schedule that was developed within the framework of the WHO and NIMH joint project on the diagnosis and classification of mental disorders, alcohol, and related problems. It is an outgrowth of the Present State Examination (PSE) which was first developed in the 1960s and has undergone 9 revisions. Test-retest reliabilities for SCAN diagnoses of anxiety and depression were good to excellent on both DSM-IV and ICD-10 criteria. In our research, parents' psychiatric morbidity was measured using a SCAN-based clinical interview, in which the clinical interview was conducted on the line of various sections of SCAN to enhance the thoroughness of clinical interview.

Procedure

The study was cross-sectional in design involving interviews of ADHD children along with their parents. A random sampling method was used to select cases. After screening only one participant (child with ADHD) who met our study criteria was selected from the child and adolescent psychiatric clinic. Diagnosis of ADHD was made after a comprehensive clinical assessment. For this, DSM-IV diagnostic criteria [12] were used and Conner's Rating Scale [14] was applied to assess the severity of ADHD. The presence of co-morbidities including conduct disorder, oppositional defiant disorder, intellectual disability, specific developmental disorder of language, learning, and motor skills, autism spectrum disorder were excluded by comprehensive clinical assessment. Then after applying inclusion and exclusion criteria and explaining the purpose of the study, those parents who gave consent were included in the study.

Parents were screened for psychological distress by applying GHQ-12 [15]. Parents who screened positive on GHQ-12 were subjected to SCAN-based clinical interview [16]. Since GHQ-12 does not screen persons with a history of substance use, thus SCAN was also applied to the parents who had a history of substance use. Subsequently, psychiatric morbidity amongst parents was evaluated using SCAN-based clinical interview.

Statistical analysis

A master chart was prepared using the Statistical Package for Social Sciences, version 23 (SPSS 23), and data recorded on the scoring sheet of SPSS was coded as an appropriate variable on the master chart. For comparison of two continuous variables between two groups paired/unpaired t-test was used. For comparing categorical data Chi-square test was used. All statistical tests were done in liaison with a qualified statistician.

Results

Table 1 and 2 demonstrate the socio-demographic characteristics of children with ADHD and their parents. The average age of children with ADHD in our study was 8.00. Males accounted for 93.3% of all children, while females accounted for just 6.67%. The average age of the parents in our sample was in their mid-30s, with 43.3% of the parents being fathers and 56.7% being mothers.

Table-1: Socio-demographic profile of children with ADHD

Profile of children	Mean \pm SD / Frequency (%)	
Age	8.00 \pm 2.244	
Gender	Male	28 (93.33)
	Female	02 (6.67)
Education	\leq Primary	25(83.33)
	>Primary	05 (16.66)
Religion	Hindu	28 (93.33)
	Others	02 (6.67)
Family type	Nuclear	14 (46.67)
	Joint	16 (53.33)

Table-2: Socio-demographic profile of parents of children with ADHD

Profile of parents	Mean \pm SD / Frequency (%)		
Age	34.50 \pm 4.281		
Gender	Male	13 (43.33)	
	Female	17 (56.67)	
Education	\leq Secondary	16 (53.33)	
	\geq Senior secondary	14 (46.67)	
Occupation	Male	Unemployed	02 (6.67)
		Employed	11 (36.66)
	Female	Homemaker	08 (26.67)
		Employed	09 (30)

Table-3 depicts the clinical profile of children with ADHD. On the Conners scale, the severity of ADHD in children was measured, and it was discovered that 53.3% of children had a severe form of ADHD, 30% of children had ADHD of moderate severity, and 16.67% of children had a mild form of ADHD. In our sample, the majority of ADHD children (50%) were primarily hyperactive; 30% of children were diagnosed with combined type of ADHD, and 20% of children were diagnosed with an inattentive type of ADHD.

Table-3: Clinical profile of children with ADHD

Variables	Mean \pm SD / Frequency (%)
CRS score (0-81)	35.90 \pm 14.644 (16-59)
<i>Severity of ADHD</i>	<i>n (%)</i>
(a) Mild	05 (16.67)
(b) Moderate	09(30)
(c) Severe	16 (53.33)
<i>Type of ADHD</i>	<i>n (%)</i>
(a) Predominantly inattentive	06 (20)
(b) Predominantly hyperactive	15 (50)
(c) Combined	09 (30)
<i>Duration of symptoms (years)</i>	<i>n (%)</i>
(a) <2	10 (33.33)
(b) 2-5	18 (60)
(c) >5	02 (6.67)

Table-4 shows the distribution of psychiatric diagnosis and substance use diagnosis in

parents of children with ADHD. On the SCAN interview, it was discovered that 46.67% of ADHD parents had a psychiatric diagnosis, with depressive disorder being the most common (26.67%) psychiatric disorder, followed by mixed anxiety and depressive disorder (13.33%) and generalized anxiety disorder (6.67%). As shown in the table, 26.67% of parents had a substance use diagnosis, with 16.67% of parents having tobacco use disorder and 10% having alcohol use disorder.

Table-4: Distribution of psychiatric diagnosis and substance use diagnosis in parents of children with ADHD

Psychiatric/substance use disorder diagnosis	Parents (N=30) n (%)
GHQ \geq 2 score	14 (43.33)
SCAN positive	18 (60)
No psychiatric diagnosis	16 (53.33)
Presence of psychiatric diagnosis	14 (46.67)
Depressive disorder	08 (26.67)
Generalized anxiety disorder	02 (6.67)
Mixed anxiety and depressive disorder	04 (13.33)
No substance use diagnosis	22 (73.33)
Presence of substance use diagnosis	08 (26.67)
Alcohol use disorder	03 (10)
Tobacco use disorder	05 (16.67)
Only substance use diagnosis	04 (13.33)
Psychiatric diagnosis with co-morbid substance use diagnosis	04 (13.33)

*SCAN was applied on parents who had GHQ \geq 2 and/or on parents who had a history of substance use

As shown in table 5, there is a statistically significant relationship between the severity of ADHD symptoms and the magnitude of psychiatric diagnosis in the parents ($p = 0.010$), with the severity of ADHD raising the magnitude of psychiatric diagnosis in the parents. However, the association is statistically non-significant in terms of substance use diagnosis in our study.

Table-5: Association of severity of ADHD with SCAN based diagnosis in parents

Severity of ADHD	Psychiatric diagnosis		Total	χ^2 / Fisher test	P
	Absent	Present			
Mild	04	01	05	-	#0.336
Moderate	07	02	09	-	#0.118
Severe	05	11	16	6.718	0.010*
Severity of ADHD	Substance use diagnosis		Total	χ^2 / Fisher test	P
	Absent	Present			
Mild	04	01	05	-	#1.000
Moderate	06	03	09	-	#0.666
Severe	12	04	16	-	#1.000

#Fischer exact t test used, * $p \leq 0.05$ is significant

Discussion

The current study evaluated psychiatric morbidity among parents of children with ADHD. The results of this study suggest that the burden of psychiatric disorders in parents of children with ADHD is about 46.67%, which is substantially higher than the general population rates as per National Mental Health Survey of India (NMHS 2015-2016) [17]. These results seem to be consistent with findings reported by studies done by Kadesjo et al. [18] and Soltanifar et al. [19]. In our study, the majority (26.67%) of the parents had depressive disorder followed by mixed anxiety and depressive disorder (13.33%), and generalized anxiety disorder (6.67%). In a study done by Durukan et al., authors found that Beck's Depression Inventory (BDI) scores and Beck's Anxiety Inventory (BAI) scores were significantly higher in case group than control group [20]. They commented in their study that higher levels of depression and anxiety were natural results for mothers of ADHD children in view of ADHD being a chronic illness. The authors also concluded that mothers of children with ADHD use dysfunctional coping and thus their depressive and anxiety symptoms might continue. In another study in the parents of ADHD children, the most common psychiatric disorder was mood disorder and prevalence of depression was 48% in mothers and 43% in fathers [21].

Our findings regarding psychiatric disorders in the parents confirm the results of previous research studies which have demonstrated more parental depression and anxiety and higher stress levels in parents of children with ADHD [22-32]. However, further evaluation was not done by many previous studies to ascertain whether these parents really fulfilled the criteria for syndromal anxiety and depression. But our study applied a diagnostic tool such as SCAN to diagnose syndromal psychiatric disorders. In our study, we also found significant association ($p=0.010$) between psychiatric diagnosis in parents and Connor's score in respective children. It is postulated that with the increase in severity of ADHD symptoms, the anxiety and depression symptoms tend to increase [25].

Concerning substance use diagnosis, nearly a quarter of the parents had substance use diagnosis which is similar to the prevalence of substance use disorder in the general population according to NMHS (2015-2016) of India [17]. The authors found that the majority of parents (16%) in our study had tobacco use disorder, which is identical to the NMHS results. In our sample, 10% of parents of children with ADHD had an alcohol use diagnosis which is higher than the general population. This is close to the results of Pelham et al. [10], who found that the prevalence of alcohol problems is higher among fathers of boys with ADHD and/or conduct disorder/oppositional defiant disorder (CD/ODD) than among fathers of boys without these disorders. This may reflect the stressed parents' tendency to use substances to feel better and forget stressful situations imposed by their children's deviant behaviour. According to previous studies done by Margari and Cunningham, depressive and anxiety disorders are more prevalent in mothers than in fathers, and alcohol-related issues are more common in fathers than in mothers [9, 25].

Due to its chronic nature, ADHD causes a significant stress for the parents. Our study shows that both parents are at increased risk for psychiatric problems and that their problems are equally associated with their offspring problems. The association between parental symptoms

and ADHD symptoms of children may be due to parental inconsistency, poor quality of attachment or other parenting issues. Therefore, the holistic treatment for children with ADHD should include comprehensive assessment of children as well as parents, and timely management of parental problems.

Our research study has a few limitations. Because this was a tertiary care hospital-based study, the patients referred here are of high severity and have chronic refractory illness; as a result, the findings of this study cannot be generalized to the population at large. Another limitation is the lack of use of a clinical interview form (e.g., K-SADS) to rule out comorbidities in children.

Future research could compare psychiatric morbidity among the parents (mothers and fathers) of children with ADHD. More research is needed to determine whether the presence of psychiatric disorders in parents of children with ADHD is linked to biological predispositions or poor parenting in the management of their children. Studies in the future could also focus on parental psychopathology and the relationship between different types of ADHD.

To conclude, psychiatric morbidity, in terms of depressive and anxiety disorders, is seen in nearly half of the parents of children with ADHD, which is almost six times more than in the general population. The presence of substance use disorder was present in one-fourth of the parents of children with ADHD, which is similar when compared to the general population.

Conflict of Interest: None declared

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