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Original Research Article

DEMOGRAPHIC AND SOCIO-FAMILIAL CORRELATES OF ADHD IN CHILDREN ATTENDING A PSYCHIATRY OUTPATIENT DEPARTMENT OF A TERTIARY CARE CENTER

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ABSTRACT

Background: Attention-deficit/hyperactivity disorder (ADHD) is a common neurodevelopmental condition among children, with presentation influenced by demographic and socio-familial factors. Understanding these associations is essential for timely diagnosis and intervention. **Materials and Methods:** A cross-sectional study was conducted among 50 children diagnosed with ADHD at the psychiatry outpatient department of a tertiary care center in Pune over one year. Diagnostic confirmation was based on DSM-IV-TR criteria and the ADHD Rating Scale IV. Data were collected using a semi-structured proforma encompassing age, gender, family type, and socioeconomic status. Statistical analysis was performed using SPSS version 11.5. **Result:** The overall prevalence of ADHD was 9.29%. While boys exhibited a higher prevalence (10.91%) compared to girls (6.53%), the difference was not statistically significant ($p = 0.124$). ADHD diagnosis was equally distributed between the two age groups (5–9 years: 9.06%; ≥10 years: 9.60%). However, boys presented at a significantly younger age (8.62 ± 2.68 years) than girls (11.38 ± 2.69 years, $p = 0.002$). A significant association was found between age group and gender of affected children ($p = 0.0019$). Most children were from nuclear families (88%) and the upper lower socioeconomic class (44%). **Conclusion:** The study reinforces that gender and socio-familial context can influence age at presentation and diagnosis of ADHD. While prevalence across age and gender appeared similar, boys were more likely to be diagnosed earlier. Socioeconomic disadvantage and nuclear family settings were commonly observed, underlining the need for inclusive screening approaches that consider these contextual variables.

INTRODUCTION

Attention-deficit/hyperactivity disorder (ADHD) is a prevalent neurodevelopmental condition defined by persistent patterns of inattention, hyperactivity, and impulsivity that interfere with functioning and development across multiple settings.[1] Globally, ADHD affects approximately 8% of children and adolescents, although prevalence estimates vary due to differing diagnostic tools and cultural contexts.[2]

Gender differences are consistently observed, with boys being diagnosed more frequently than girls. While boys often present with externalizing symptoms such as hyperactivity and impulsivity, girls tend to exhibit more internalized features like inattention, which are less likely to prompt clinical evaluation.[3] As a result, ADHD in females often remains under-recognized or diagnosed at a later age.[4]

Age at symptom onset and clinical presentation also plays a critical role in diagnosis. Hyperactive and impulsive behaviors are typically more pronounced in early childhood, whereas attentional deficits become more evident with increasing academic demands in later years.[5] These developmental changes, coupled with gender-specific presentation, contribute to variability in the age of diagnosis.

Socio-familial factors such as family structure and socioeconomic status (SES) further influence ADHD detection and management. Children from nuclear families or lower SES backgrounds may experience higher ADHD prevalence and poorer access to early intervention services.[6] Parental education level and awareness are also pivotal in timely recognition and referral for psychiatric evaluation.[7]

In this context, the present study aims to assess the prevalence and presentation of ADHD among children attending a psychiatry outpatient clinic, with

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particular emphasis on the influence of age, gender, family structure, and SES on ADHD detection.

MATERIALS AND METHODS

This cross-sectional study was carried out in the psychiatry outpatient services of a government-affiliated tertiary care teaching hospital located centrally in Pune. The institution functions as the primary referral center in the region and is one of the few government setups authorized to provide disability certification for children, thereby attracting a diverse clinical population. A total of fifty children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) were recruited for the study over a one-year period from February 2013 to January 2014. Children presenting with behavioral issues, scholastic difficulties, or those referred from schools were considered for enrollment. Inclusion in the study required that participants be between the ages of five and seventeen years and meet the diagnostic criteria for ADHD according to the research guidelines set forth in the DSM-IV-TR. Screening was initially performed using the ADHD Rating Scale IV, and cases that met threshold scores were subsequently confirmed through structured clinical interviews. Written informed consent was obtained from the parents or legal guardians of all participants after explaining the purpose and procedures of the study.

Following the diagnostic confirmation, a detailed evaluation was undertaken using a semi-structured format. This involved comprehensive documentation of demographic characteristics, developmental milestones, perinatal history, behavioral observations, family structure, and the presence of any associated comorbidities. Socioeconomic classification was carried out using the Revised Kuppuswamy Scale (2012), which incorporates parental education, occupation, and household income to determine socio-economic status.

Each child underwent a thorough clinical and neurological examination, including assessment for dysmorphic features and soft neurological signs. Cognitive functioning was evaluated using the Binet-Kamat Test (BKT), which is a culturally adapted tool for assessing intelligence in Indian children. For identifying coexisting psychiatric conditions, the DSM-IV-TR diagnostic criteria were again applied.

The data collected were tabulated and subjected to statistical analysis using the Statistical Package for the Social Sciences (SPSS), version 11.5. The primary aim was to evaluate the demographic and socio-familial correlates associated with ADHD presentation in this clinical population, with particular attention to age, gender, family type, and socioeconomic status.

RESULTS

Among the 538 children attending the psychiatry outpatient department, the overall prevalence of Attention Deficit Hyperactivity Disorder (ADHD) was found to be 9.29%. When assessed across age groups, children aged 5–9 years exhibited a prevalence of 9.06%, while those aged 10 years and above had a slightly higher prevalence of 9.60%. However, the association between age group and ADHD prevalence was statistically non-significant ($\chi^2 = 0.004$, $p = 0.947$), indicating no meaningful difference in prevalence between younger and older children (Table 1). Gender-wise comparison showed a higher prevalence among males (10.91%) compared to females (6.53%), but this difference also did not reach statistical significance ($\chi^2 = 2.36$, $p = 0.124$). Overall, the findings suggest that ADHD was more frequently diagnosed in boys than in girls, though not significantly so (Table 1).

Table 1: Age- and Gender-Specific Prevalence of ADHD

Subgroup	Total Cases	ADHD Cases	Prevalence (%)	Chi-square	P-value
Age (years)					
5–9	309	28	9.06	0.004	0.947
≥10	229	22	9.60		
Gender					
Female	199	13	6.53	2.36	0.124
Male	339	37	10.91		
Total	**538**	**50**	**9.29**		

The mean age of presentation was significantly different between the genders. Males presented at a younger average age (8.62 ± 2.68 years) than females (11.38 ± 2.69 years), and this difference was statistically significant ($t = 3.193$, $p = 0.002$), suggesting a possible delay in diagnosis or recognition of symptoms in females (Table 2).

Table 2: Average Age of Presentation in Males and Females

Gender	Mean Age ± SD (years)	*t*-value	*P*-value
Female	11.38 ± 2.69	3.193	0.002
Male	8.62 ± 2.68		
Total	**9.34 ± 2.93**		

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A cross-tabulation of age group and gender among children diagnosed with ADHD revealed a significant association. The majority of boys (26 out of 37) presented in the 5–9 year age group, while girls were evenly distributed across the two age groups. A statistically significant association between age and gender was observed (χ^2 = 9.639, p = 0.0019), indicating that boys were more likely to be diagnosed at a younger age, whereas girls were more commonly identified later (Table 3).

Table 3: Association between Age and Gender

Age (years)	Boys	Girls	Total	Chi-square	P-value
5–9	26	2	28	9.639	0.0019
≥10	11	11	22		
Total	**37**	**13**	**50**		

Family characteristics of children diagnosed with ADHD showed that the vast majority belonged to nuclear families (88%), while only 12% came from joint families. In terms of religious affiliation, 88% were Hindu, followed by 8% Muslim and 4% Christian. Socio-economic status revealed that 44% of the children were from upper lower class families, followed by 22% from lower middle class, 18% from upper class, and 16% from upper middle class. This distribution suggests that ADHD was more commonly identified in children from nuclear families and socio-economically disadvantaged backgrounds (Table 4).

Table 4: Family characteristics of ADHD children

Variable	n	%
Family Type		
Joint	12	12
Nuclear	88	88
Religion		
Christian	4	4
Hindu	88	88
Muslim	8	8
Socio-Economic Status		
Upper	18	18
Upper Middle	16	16
Lower Middle	22	22
Upper Lower	44	44

DISCUSSION

Our study investigated the interplay of demographic and socio-familial factors in ADHD presentation among pediatric psychiatric outpatients. We observed that male children were diagnosed at a significantly younger age compared to females, mirroring prior research indicating a >3-fold earlier diagnosis in boys and a diagnostic delay of several years for girls.[8,9] This discrepancy may reflect historical diagnostic frameworks shaped primarily by male symptom profiles, such as hyperactivity and impulsivity, which are more readily recognized in younger children, unlike the subtler inattentive manifestations seen in many girls.[8,10,11]

The documented gender differences also have significant clinical implications. Girls often exhibit inattentive and internalizing symptom profiles that are less disruptive and therefore less likely to prompt early referral.[12] Our findings support this trend, with female participants presenting later, consistent with prior literature indicating that females tend to be diagnosed significantly after males, sometimes well into adolescence or adulthood.[8,9]

Socioeconomic status (SES) emerged as a potentially influential factor in ADHD identification. Our sample was predominantly drawn from lower SES backgrounds, aligning with evidence that environmental deprivation, limited neighborhood resources, and economic stress correlate with higher ADHD symptom severity and increased referral rates in children.[13,14] Socioeconomic disadvantage, via mechanisms proposed in the Family Stress Model, may exacerbate ADHD-related behaviors while diminishing access to early intervention.[14] This supports our observation that a high percentage of ADHD cases originated from economically challenged households.

Family structure also appeared relevant; the predominance of nuclear families in our cohort may suggest sociocultural patterns in care seeking or referral practices. Though existing research primarily emphasizes single-parent or disrupted family forms, our results invite further investigation on whether joint family systems—often more common in South Asian settings—afford greater support or delay recognition of symptoms.

Collectively, these findings underscore the importance of adopting a nuanced approach to ADHD diagnosis—one that extends beyond symptom monitoring to account for demographic, gender, and socioeconomic influences. Early and equitable recognition is essential for both male and female patients, and tailored diagnostic frameworks are needed to better capture late-presenting or inattentive phenotypes. Intervention strategies should also integrate social determinants of health—particularly in lower SES and resource-limited

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settings—to ensure timely identification and management of ADHD. Future investigations should include longitudinal designs to explore how SES and family structure mediate outcomes, and qualitative studies to understand gendered help-seeking behaviors. Such research will help address systemic barriers and reduce disparities in ADHD recognition and treatment.

CONCLUSION

This study underscores the complex factors influencing ADHD diagnosis, including gender, age, socioeconomic status, and family structure. Males were diagnosed earlier, while females often presented later, likely due to elusive symptoms. Most cases were from nuclear families and lower socioeconomic groups, highlighting the role of social context in diagnosis. Despite similar prevalence across demographics, age at diagnosis varied. These findings call for more inclusive screening strategies and further research in broader populations.

REFERENCES

1. Thomas R, Sanders S, Doust J, Beller E, Glasziou P. Prevalence of attention-deficit/hyperactivity disorder: a systematic review and meta-analysis. Pediatrics. 2015 Apr;135(4):e994-1001. doi: 10.1542/peds.2014-3482.
2. Willcutt EG. The prevalence of DSM-IV attention-deficit/hyperactivity disorder: a meta-analytic review. Neurotherapeutics. 2012 Jul;9(3):490-9. doi: 10.1007/s13311-012-0135-8.
3. Mowlem F, Agnew-Blais J, Taylor E, Asherson P. Do different factors influence whether girls versus boys meet ADHD diagnostic criteria? Sex differences among children with high ADHD symptoms. Psychiatry Res. 2019 Feb; 272:765-773. doi: 10.1016/j.psychres.2018.12.128.
4. Ramtekkar UP, Reiersen AM, Todorov AA, Todd RD. Sex and age differences in attention-deficit/hyperactivity disorder symptoms and diagnoses: implications for DSM-V and ICD-11. J Am Acad Child Adolesc Psychiatry. 2010 Mar;49(3):217-28. e1-3.
5. Barkley RA, editor. Attention-deficit hyperactivity disorder: a handbook for diagnosis and treatment. 4th ed. New York: The Guilford Press; 2015.
6. Lawrence D, Hafekost J, Johnson SE, Saw S, Buckingham WJ, Sawyer MG, Ainley J, Zubrick SR. Key findings from the second Australian Child and Adolescent Survey of Mental Health and Wellbeing. Aust N Z J Psychiatry. 2016 Sep;50(9):876-86. doi: 10.1177/0004867415617836.
7. Scahill L, Schwab-Stone M. Epidemiology of ADHD in school-age children. Child Adolesc Psychiatr Clin N Am. 2000 Jul;9(3):541-55.
8. Platania NM, Starreveld DEJ, Wynchank D, Beekman ATF, Kooij S. Bias by gender: exploring gender-based differences in the endorsement of ADHD symptoms and impairment among adult patients. Front Glob Womens Health. 2025 Mar 20; 6:1549028. doi: 10.3389/fgwh.2025.1549028.
9. Martin J. Why are females less likely to be diagnosed with ADHD in childhood than males? Lancet Psychiatry. 2024 Apr;11(4):303-310. doi: 10.1016/S2215-0366(24)00010-5.
10. Babinski DE. Sex Differences in ADHD: Review and Priorities for Future Research. Curr Psychiatry Rep. 2024 Apr;26(4):151-156. doi: 10.1007/s11920-024-01492-6.
11. Boseley S. What is ADHD, how do you get a diagnosis and can you only treat it with drugs? All your questions answered by experts [Internet]. The Guardian. 2024 Nov 29 [cited 2025 Jul 9].
12. Jones H. Do ADHD symptoms differ in boys and girls? Verywell Health [Internet]. 2025 Apr 1 [cited 2025 Jul 9].
13. Michaëlsson M, Yuan S, Melhus H, Larsson SC. The impact and causal directions for the associations between diagnosis of ADHD, socioeconomic status, and intelligence by use of a bi-directional two-sample Mendelian randomization design. BMC Med. 2022; 20:106. doi:10.1186/s12916-022-02314-3.
14. Omura M, Cortese S, Bailhache M, Navarro MC, Melchior M, van der Waerden J, Heude B, de Lauzon-Guillain B, Galera C. Associations between symptoms of attention-deficit hyperactivity disorder, socioeconomic status and asthma in children. Npj Ment Health Res. 2024 Apr 16;3(1):22. doi: 10.1038/s44184-024-00064-z.

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