

## ADHD Spectrum among Female Dental Students: An Observational Study at Watim Medical and Dental Hospital, Rawat

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### ABSTRACT

**Objective:** To determine the prevalence and range of Attention Deficit Hyperactivity Disorder (ADHD) traits among female dental students at Watim Medical and Dental Hospital, Rawat.

**Methods:** An observational cross-sectional study was conducted from February 2025 to July 2025, at the Department of Community and Preventive Dentistry Watim Medical and Dental Hospital, Rawat. The Adult ADHD Self-Report Scale (ASRS-v1.1), which has been validated, was administered to the 120 enrolled female dental students. The outcome variables were the prevalence of the different types of spectrum ADHD (inattentive, hyperactive/impulsive, and combined) as well as severity (mild, moderate, severe) and variables of study demographics which included age, year of study, residence status (hostelite/day scholar), and academic performance. Descriptive data analysis was done and results were presented in tabulated form.

**Results:** 112 of the 120 participants completed the questionnaire, which translates to a 93.3% response rate. The prevalence of ADHD traits was 28.6% (n=32), and the most prevalent subtype was inattentive (53.1%), followed by combined (31.2%) and hyperactive/impulsive (15.6%). The ADHD traits were markedly prevalent in the first and second year students as compared to the final year students. Hostelite students showed a higher prevalence (34.4%) as compared to day scholars (22.2%).

**Conclusion:** A considerable number of female dental students showed tendencies towards the ADHD spectrum, especially the inattentive variant. This highlights the importance of tailored screenings, proactive counseling, and the implementation of appropriate academic frameworks. These measures should be instituted within the wider healthcare and dental education frameworks

**Keywords:** ADHD, dental students, inattentive type, female students, observational study.

### 1. INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is a common neurodevelopmental disorder characterized by symptoms of

inattention, hyperactivity, and impulsivity, persisting into adulthood in approximately 60% of cases<sup>1</sup>. Female students often present with subtler inattentive features rather than overt hyperactivity, leading to underdiagnosis and academic underperformance<sup>2</sup>.

In medical and dental students, ADHD traits can impact learning outcomes, concentration during clinical rotations, and stress coping mechanisms<sup>3</sup>. Although research on ADHD in medical students has gained attention globally, there is limited literature focusing on female dental students in South Asia.

This study aimed to assess the prevalence and spectrum of ADHD traits among female dental students at Watim Medical and Dental Hospital, Rawat, providing baseline evidence for academic and psychological support interventions.

## 2. OBJECTIVES

1. To determine the prevalence of ADHD spectrum traits among female dental students.
2. To identify the distribution of ADHD subtypes (inattentive, hyperactive/impulsive, combined).
3. To assess the association of ADHD traits with demographic and academic variables.

## 3. METHODOLOGY

**Study Design:** Observational cross-sectional study.

**Study Setting and Duration:** Watim Medical and Dental Hospital, Rawat, from February 2025 to July 2025

**Study Population:** All female students enrolled in BDS program (1st year to final year). **Sample Size:** The required sample size was calculated using the WHO sample size calculator version 2.0, keeping 95% confidence level, anticipated population proportion of 30%<sup>5</sup>, and 5% margin of error, which yielded a minimum sample size of 109. To compensate for non-response, 120 students were approached, and 112 participated (response rate 93.3%). **Sampling Technique:** Non-probability consecutive sampling was applied, enrolling all eligible and consenting female dental students from 1st to final year during the study period.

### Inclusion Criteria:

Female BDS students of all years.

Willing to participate with informed consent.

### Exclusion Criteria:

- Students with pre-diagnosed psychiatric illnesses other than ADHD.
- Incomplete questionnaires.

**Data Collection Tool:** Adult ADHD Self-Report Scale (ASRS-v1.1), validated internationally<sup>4</sup>.

### Outcome Variables (with operational definitions):

- ADHD Spectrum (Yes/No): Positive if scoring  $\geq$  cut-off on ASRS screening.
- Subtype: Classified as inattentive, hyperactive/impulsive, or combined type.
- Severity: Mild, moderate, severe (based on ASRS scoring bands).
- Demographics: Age ( $\leq 20$ , 21–23,  $\geq 24$ ), year of study (1st–final), residence (hostelite/day scholar), academic performance ( $\geq 70\%$ ,  $< 70\%$ ).

**Data Analysis:** Descriptive statistics with frequency and percentage. Results displayed in tables.

## 4. RESULTS

Out of 120 students approached, 112 completed the study (response rate 93.3%). The mean age of participants was 21.8 years ( $\pm 2.1$  SD). Majority (46.4%) were in the age group of 21–23 years, with nearly equal distribution between junior (1st–2nd year) and senior (3rd–final year) classes. More than half were hostelites (57.1%), while 42.9% were day scholars. Academically, 60.7% had marks  $\geq 70\%$ .

The prevalence of ADHD spectrum traits was found to be 28.6% (n=32). Among these, inattentive subtype was the most common (53.1%), followed by combined (31.2%) and hyperactive/impulsive (15.6%). ADHD traits were slightly more common among younger students ( $\leq 20$  years: 33.3%) and hostelites (34.4%) compared to day scholars (22.2%). Notably, students with academic performance  $< 70\%$  had a significantly higher prevalence of ADHD (45.5%) compared to those with  $\geq 70\%$  (17.6%). These findings suggest that inattentiveness is a prominent challenge among female dental students and may negatively influence academic outcomes, particularly in the early years of study and in hostel environments<sup>6–9</sup>.

**Table 1: Demographic Characteristics of Participants (n=112)**

Variable	Frequency (n)	Percentage (%)
Age ≤ 20	36	32.1
Age 21–23	52	46.4
Age ≥ 24	24	21.4
1st–2nd Year	54	48.2
3rd–Final Year	58	51.8
Hostelite	64	57.1
Day Scholar	48	42.9
Academic ≥70%	68	60.7
Academic <70%	44	39.3

\*Similar distributions were reported in dental colleges of Pakistan and Middle East, reflecting comparable demographic spread of female medical students <sup>6,7</sup>.\*

**Table 2: Prevalence and Subtypes of ADHD Spectrum (n=112)**

ADHD Variable	Frequency (n)	Percentage (%)
ADHD Spectrum Present	32	28.6
Inattentive subtype	17	53.1*
Hyperactive/Impulsive	5	15.6*
Combined subtype	10	31.2*

\*Comparable subtype distributions have been observed in female medical students globally, where inattentive presentation predominates <sup>8,9</sup>.\*

**Table 3: Distribution of ADHD Spectrum by Demographics (n=32 ADHD positive cases)**

Variable	ADHD Positive (%)
Age ≤ 20 (n=36)	12 (33.3%)
Age 21–23 (n=52)	13 (25.0%)
Age ≥ 24 (n=24)	7 (29.1%)
1st–2nd Year (n=54)	18 (33.3%)
3rd–Final Year (n=58)	14 (24.1%)
Hostelite (n=64)	22 (34.4%)
Day Scholar (n=48)	10 (22.2%)
Academic ≥70% (n=68)	12 (17.6%)
Academic <70% (n=44)	20 (45.5%)

\*The significant association between lower academic scores and ADHD spectrum positivity has also been highlighted in other South Asian and Western medical student cohorts<sup>10,11</sup>.\*

## 5. DISCUSSION

This study found that 28.6% of female dental students demonstrated ADHD spectrum traits, predominantly of the inattentive subtype. Similar prevalence rates have been reported in medical undergraduates internationally, ranging from 20–35%<sup>5,6</sup>. The predominance of the inattentive subtype aligns with gender-based literature, where females often exhibit internalized symptoms (inattention, daydreaming) rather than external hyperactivity<sup>7,8</sup>.

Our results also showed higher ADHD prevalence among junior-year students (33.3%), suggesting a potential link between transitional stress, workload, and attention deficits. A Korean study among medical students similarly highlighted first- and second-year students at greater risk<sup>9</sup>. Hostelite students demonstrated higher ADHD prevalence (34.4%) compared to day scholars (22.2%). This may reflect lifestyle disruptions, lack of parental supervision, and poor sleep hygiene associated with hostel life<sup>10</sup>. Furthermore, poor academic performance (<70%) was strongly associated with ADHD spectrum positivity (45.5%). This supports existing evidence that ADHD traits impair academic productivity in medical education<sup>11</sup>.

Our study is limited by its single-institution sample size and reliance on self-reported scales without clinical interviews. Nevertheless, it provides a valuable baseline for mental health screening policies in dental colleges.

## 6. CONCLUSION

ADHD spectrum traits are prevalent among female dental students, with inattentive subtype being most common. Academic underperformance and hostel residence were significantly associated factors. Screening and counseling interventions within dental institutions may improve academic outcomes and mental health.

### Authors' Contribution:

Concept & Design of Study: Meher Moin, Noor Liza Rashid, Barrira Masood.

Drafting: Zaid Waqar, Barrira Masood.

Data Analysis: Shagoofa Zulfiqar, Barrira Masood, Ariba Jalbani.

Critical Review: Ariba Jalbani, Meher Moin, Zaid Waqar, Barrira Masood.

Final Approval of version: All above approved the final version.

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