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Self-reported adult Attention Deficit Hyperactivity Disorder symptoms among college students

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Abstract

Objective—Report the distribution of scores from the Adult ADHD Self Report Scale (ASRS) and estimate the prevalence of self-reported Attention Deficit Hyperactivity Disorder (ADHD) symptoms as compared to clinical diagnoses.

Participants—1,080 college students, divided into three groups: 1) no ADHD diagnosis ($n=972$), 2) diagnosed with ADHD but no current pharmacologic treatment ($n=54$), 3) diagnosed with ADHD with current pharmacologic treatment ($n=54$).

Methods—The ASRS was administered during the fourth annual interview of an ongoing longitudinal cohort study.

Results—As expected, individuals who were never clinically diagnosed with ADHD had lower ASRS scores ($m=4.0$, $SD=3.3$) than individuals diagnosed with ADHD who were either under current pharmacologic treatment ($m=7.9$, $SD=4.0$) or not under treatment ($m=6.3$, $SD=3.7$). Overall, 10.3%_{wt} of individuals without an existing clinical diagnosis of ADHD had high levels of ADHD symptoms.

Conclusions—A substantial minority of undiagnosed individuals may benefit from a clinical assessment for ADHD.

Keywords

Adult ADHD Self Report Scale (ASRS); Attention Deficit Hyperactivity Disorder (ADHD); ADHD Symptoms; College Students; Undiagnosed ADHD

Attention Deficit Hyperactivity Disorder (ADHD) affects 4.5 million children in the U.S., or 7.8% of the school-age population.¹ While symptoms are thought to improve with age, one-third to one-half of children diagnosed with ADHD experience symptoms that persist into adulthood.^{2, 3} Prevalence estimates for diagnosed adult ADHD in the general U.S. population range from 4.4% to 5.2%;^{4–6} however, these figures likely underestimate the true magnitude of the disorder given the diagnostic challenges of identifying ADHD in adults.⁷

Very little data is available on the prevalence of ADHD symptoms among college students. Studies estimate between 3% and 7% of college students meet criteria for ADHD, although some lack a clinical diagnosis because they have not sought treatment.^{8–10} While a few studies

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report prevalence estimates, none describe the prevalence of ADHD symptoms among students who have never been diagnosed, and not all studies use measures with demonstrated reliability and validity. This study used data from a large cohort of college students to estimate the prevalence of self-reported ADHD symptoms, as measured by the adult ADHD Self-Report Scale (ASRS),¹¹ a valid instrument to measure adult ADHD.

METHODS

Data were derived from the College Life Study (CLS), an ongoing longitudinal study of health-related behaviors among college students at a large public mid-Atlantic university since 2004. The sample was ascertained in their first year of college and followed up annually via personal interviews, regardless of continued college attendance. Individuals reporting drug involvement prior to college were deliberately oversampled; however sampling weights relating the sample back to the general population of first-year college students were calculated by dividing the number of screened individuals in each gender-race-drug use cell by the corresponding number of sampled individuals. Participants received \$50 for each interview. The study was approved by the IRB, written informed consent was obtained, and a federal Certificate of Confidentiality was obtained. More information on methods is presented elsewhere.¹² ADHD symptoms were measured via self-report questionnaire during the 2007–2008 academic year, corresponding in most cases to participants' fourth year of college. The response rate was 88% ($n=1,097$). Seventeen participants (1.6%) were excluded due to missing data, yielding a final sample size of 1,080 (46.2% male, 71.7% White). Participants' were aged 21 to 23 at the time of their fourth interview, and 92% were still enrolled at the same university.

Measures

Adult Attention Deficit Hyperactivity Disorder (ADHD)—Adult Attention Deficit Hyperactivity Disorder (ADHD) was measured with the ASRS,¹¹ an 18-item scale based on DSM-IV criteria.¹³ Participants are asked to rate the frequency of ADHD symptoms. Consistent with Kessler et al.,¹¹ the scale was scored by summing the number of symptoms endorsed at a certain severity level, which differed based on the items (*sometimes*, *often*, or *very often* qualified for items 1–3, 9, 12, 16, and 18, and *often*, or *very often* for items 4–8, 10, 11, 13–15, and 17). Scores of 0–3 and 4–8 denoted “low” and “moderate” ADHD symptoms, respectively, and a score of nine or higher fell into the “clinical” range, indicating the participant might benefit from a clinical assessment for ADHD. The ASRS has demonstrated good reliability and validity in clinical and community samples.^{14, 15}

RESULTS

In the overall sample, the mean number of ADHD symptoms endorsed on the ASRS scale fell into the moderate range (score of 4–8; $m=4.3$, $SD=3.5$). Individuals who had never been diagnosed with ADHD reported the lowest number of symptoms ($m=4.0$, $SD=3.3$) compared to those diagnosed with ADHD but not currently under pharmacologic treatment ($m=6.3$, $SD=3.7$) and those currently prescribed a medication to treat ADHD ($m=7.9$, $SD=4.0$). All three groups reported significantly more inattention symptoms, on average, than hyperactive symptoms. Overall 12.3%_{wt} of participants fell into the highest category of ASRS scores. Figure 1 shows that while the majority of individuals (53.9%_{wt}) in the group without a diagnosis of ADHD scored in the low range on the ASRS, 10.3%_{wt} fell into the clinical range.

COMMENT

The average ASRS score in the sample was 4.3. Approximately 12.3%_{wt} of the entire sample had ASRS scores in the clinical range, indicating that clinical screening for ADHD would be appropriate. Although this estimate is slightly higher than earlier estimates of adult ADHD in

college students,^{8–10} it may be explained by the inclusion of both current college students and young adults who began college classes and then later left college (either voluntarily or because they were unable to meet the academic standards of the university). Additionally, 10.3%_{wt} of those without a previous diagnosis of ADHD scored in the clinical range of the ASRS, providing the first estimate of college students without a diagnosis of ADHD who might benefit from a clinical evaluation.

Limitations

This study had several limitations, the most noteworthy being that the study was conducted using a sample from a single university, and may not be generalizable to all university students. Data was collected via self-report and is subject to recall bias. In addition, although not a limitation, it is important to note that while we can say with confidence that individuals scoring in the “clinical” range of the ASRS are experiencing a higher number of ADHD symptoms than those in other ranges, only a clinical assessment can definitively determine whether or not these individuals meet DSM-IV criteria for ADHD. Finally, data on other comorbid psychiatric disorders were not considered in this examination, and mental health conditions with symptoms overlapping those of ADHD (such as some anxiety disorders) may affect ASRS scores.

Conclusions

Using a clinically validated tool, this study reports the distribution of self-reported ADHD symptoms among a college sample. High levels of ADHD symptoms—as measured by the ASRS—were prevalent in about 10.3%_{wt} of students who were never diagnosed with ADHD. Identifying individuals at high-risk for ADHD who may benefit from a comprehensive clinical assessment is valuable since ADHD treatment might mitigate a variety of negative outcomes prevalent in young adults, including substance abuse and dependence,^{4, 16} poor academic and occupational functioning,^{6, 17, 18} and antisocial behavior.^{17, 19} Future research should investigate clinical validations of previously undiagnosed ADHD in college students, and possible reasons for the prevalence of untreated ADHD symptoms.

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Figure 1.
Distribution of Adult ADHD Self-Report Scale (ASRS) scores among college students who have never been diagnosed with Attention Deficit Hyperactivity Disorder (ADHD)