


Questioning the Specificity of ASRS-v1.1 to Accurately Detect ADHD in Substance Abusing Populations

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Abstract

Objective: To assess the specificity of the Adult ADHD Self-Report Scale (ASRS-v1.1) in detecting ADHD among individuals with substance use disorders (SUDs). **Method:** A chart review of 183 SUD patients was conducted. Patients were screened for ADHD with the ASRS-v1.1 and were later assessed by a psychiatrist specialized in ADHD. **Results:** Among SUD patients scoring positive results on the ASRS-v1.1 for the presence of ADHD, the ADHD diagnosis could only be confirmed in 26% of the sample by an expert psychiatrist. **Conclusion:** The ASRS-v1.1 reports low specificity in detecting ADHD among SUD populations. (*J. of Att. Dis.* 2012; 16(8) 661-663)

Keywords

ADHD, substance use disorders, Adult ADHD Self-Report Scale, diagnosis, specificity

Introduction

ADHD is a highly prevalent neurobehavioral disorder affecting an estimated 7.8% of children aged 4 to 7 years and 4.4% of adults in the United States (Kollins, 2008). Increasing scientific evidence suggests that ADHD is a significant risk factor for substance use disorders (SUDs), including alcohol and drug and nicotine dependence (Kollins, 2008; Wilens, 2004).

ADHD is considerably difficult to diagnose in adults (Murphy & Adler, 2004) and is further complicated by concomitant SUD (Faraone et al., 2007). Prevalence rates suggest that 15% to 50% of adults with SUD receive a comorbid diagnosis of ADHD (Mick, Fried, & Wilens, 2007; Wilens & Biederman, 2006). However, it has also been argued that within this population, certain symptoms attributed to ADHD may, in fact, more appropriately reflect properties of SUDs (Faraone et al., 2007). For example, impulsivity, irritability, restlessness, and boredom are both consequential of drug use and characteristic of psychiatric disorders (Pani et al., 2010) such as ADHD. Studies have suggested that there is an overrepresentation of ADHD diagnosis among the teenage and adult SUD population (Wilens & Biederman, 2006). In line with this theory, Pani and colleagues (2010) suggested that for individuals suffering from SUDs, symptoms of anxiety, mood, and impulsivity should be considered part of the diagnosis rather than be regarded as separate entities. The authors suggest that misinterpreting

psychiatric symptoms common to both addiction and mental disorders may lead to higher rates of misdiagnosis (Pani et al., 2010).

Given the elevated rates of ADHD diagnosis among SUD individuals, we decided to assess the utility of the Adult ADHD Self-Report Scale (ASRS-v1.1) Symptom Checklist in screening ADHD in this particular population. The ASRS-v1.1 is known to be an effective measure for detecting ADHD in the general population with a sensitivity of 68.7% and a specificity of 99.5% (Kessler et al., 2007). However, its efficacy among a comorbid population remains questionable and warrants investigation.

Method

A retrospective study was conducted on the profiles of all newly admitted SUD patients ($N = 183$) in a multidisciplinary rehabilitation center from January 2008 to August 2009. The medical director of the clinic authorized the screening of medical records and all data were made anonymous. All patients met criteria for Axis I diagnosis

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of SUD based on the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association [APA], 1994) for alcohol, amphetamines, benzodiazepines, cannabis, cocaine, and/or opiates. SUD diagnoses were completed with urine drug screenings, measurements of gamma-glutamyl transferase and carbohydrate-deficient transferrin blood levels, as well as the Drug Abuse Screening Test (Gavin, Ross, & Skinner, 1989), the Alcohol Use Disorder Identification Test (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001), and the Michigan Alcohol Screening Test (Selzer, 1971). Readmitted patients with known diagnoses were excluded from the analysis. Patients were screened 1 week to 14 days postadmission, once symptoms of acute withdrawal had subsided, with a battery of psychometric tests, including the ASRS-v1.1 for ADHD. The ASRS-v1.1 is a standardized questionnaire based on *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; APA, 2000) criteria. It is composed of 18 questions, 6 of which are most predictive of ADHD symptoms. When taken together, this subset of 6 questions forms the ASRS-v1.1 Screener and Part A of the Symptom Checklist. The 12 remaining questions form Part B of the Symptom Checklist. A result was considered positive for those who scored 4 or more on Part A of the Symptom Checklist. Part B is not commonly used for diagnostic purposes; however, it does provide additional cues to symptom frequency and is viewed as a guideline for further probing into patient symptoms. This scale was chosen among others for its time efficiency, cost-effectiveness, and internal consistency for the investigator-administered and patient-administered scales (Murphy & Adler, 2004).

Patients with positive results on the ASRS-v1.1 ($n = 43$) had one or more of the following SUDs (abuse or dependence): alcohol ($n = 24$), cannabis ($n = 16$), cocaine ($n = 11$), opiates ($n = 6$), benzodiazepines ($n = 4$), and amphetamines ($n = 2$). Following stabilization, an assessment was conducted by a psychiatrist specialized in ADHD and comorbid disorders to confirm the primary screening and provide a preliminary diagnosis. The psychiatrist's evaluation was based on *DSM-IV* (APA, 1994) criteria. Family members of suspected ADHD patients were also interviewed to acquire collateral information on patient behavior patterns. A consensus on the final diagnosis was reached following discussion between the psychiatrist and the clinical team.

Results

Among the 183 SUD inpatients admitted to the rehabilitation center between January 2008 and August 2009, 43 received a positive result on the ASRS-v1.1 for ADHD. Following psychiatric evaluation and discussion among the clinical team, consensus was reached and ADHD was

confirmed in only 11 out of the 43 patients, representing only 6% of our initial sample. We calculated the positive predictive value of the ASRS-v1.1 to determine the number of true positives (TP) yielded from this screening tool. TP are defined as the number of individuals who scored positively on the ASRS-v1.1 and who did in fact have ADHD. False positives (FP) are defined as the number of individuals who scored positively on the ASRS-v1.1 but who in fact did not have ADHD. Thus, the ASRS-v1.1 correctly identified 25.58% of individuals as having ADHD in our sample of substance abusers.

All patients with final ADHD diagnosis tested positively on the ASRS-v1.1; therefore, no patient passed undetected by this screening tool. The sensitivity in our sample proved to be 100%, meaning that the ASRS-v1.1 will never fail to detect ADHD among a SUD population. However, there is a great likelihood of overestimation of ADHD cases within this population. No patient had been diagnosed with ADHD prior to this assessment.

Discussion

SUDs complicate the diagnosis and treatment of ADHD. The ASRS-v1.1 revealed a high rate of FP among our SUD population. Arguably, this screening tool may reflect low specificity in detecting ADHD in individuals suffering from addiction. Our findings support the argument put forth by Pani and colleagues (2010) that psychiatric symptoms shared by addiction and mental disorders may lead to elevated rates of double diagnosis. Although the ASRS-v1.1 seems to be a fair screening tool for detecting ADHD in the general population, it may be insufficient in identifying symptoms of ADHD when applied to patients suffering from addiction.

Conclusion

Tools such as the ASRS-v1.1 were designed to assist in the screening of ADHD. Our results have shown that within a SUD population, the ASRS-v1.1 has low specificity, which is reflected in the high rate of misdiagnoses found in our sample. Limitations include designing the study as a chart review, utilizing a relatively small sample size, and potential physician expectations. Clinicians accustomed to evaluating patients with SUD may overlook ADHD symptoms that bear close resemblance to behavioral abnormalities witnessed in the cycle of addiction (i.e., intoxication, withdrawal, etc.). Replication of these results is necessary. To compare the interrater reliability, researchers could use a more rigid methodology where two interviewers, blind to ASRS-v1.1 results, would make independent diagnoses. Using this method would provide greater evidence against the specificity of ASRS-v1.1 within this particular population. Last, we believe that it would be important for future

studies to examine if a pattern of symptoms emerged among SUD individuals who acquired a positive score on the ASRS-v1.1. This may suggest that certain symptom criteria within the ASRS-v1.1 may be more likely met by both ADHD and SUD populations. This report was conducted to shed light on the importance of screening SUD patients for other psychiatric comorbidities including ADHD and to comment on current assessment tools, such as the ASRS-v1.1, which may be insufficient for substance abusing populations. Further research on SUD populations showing signs of ADHD is warranted to improve diagnostic criteria and treatment.

Authors' Note

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Declaration of Conflicting Interests

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References

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Babor, T., Higgins-Biddle, J., Saunders, J., & Monteiro, M. (2001). *The Alcohol Use Disorder Identification Test: Guidelines for use in primary care* (2nd ed.). Geneva, Switzerland: World Health Organization.
- Faraone, S. V., Wilens, T. E., Petty, C., Antshel, K., Spencer, T., & Biederman, J. (2007). Substance use among ADHD adults: Implications of late onset and subthreshold diagnoses. *American Journal on Addictions, 16*, 24-34.
- Gavin, D., Ross, H., & Skinner, H. (1989). Diagnostic validity of the Drug Abuse Screening Test in the assessment of DSM-III drug disorders. *British Journal of Addiction, 84*, 301-307.
- Kessler, R., Adler, L., Gruber, M., Sarawate, C., Spencer, T., & Van Brunt, D. L. (2007). Validity of the World Health Organization Adult ADHD Self-Report Scale (ASRS) Screener in a representative sample of health plan members. *International Journal of Methods in Psychiatric Research, 16*, 52-65.
- Kollins, S. H. (2008). A qualitative review of issues arising in the use of psychostimulant medications in patients with ADHD and co-morbid substance use disorders. *Current Medical Research & Opinion, 24*, 1345-1357.
- Mick, E., Fried, R., & Wilens, T. (2007). ADHD and co-occurring substance use disorders: New clinical insights and emerging therapies. *American Society of Addiction Medicine, 1*-16.
- Murphy, K., & Adler, L. (2004). Assessing attention-deficit/hyperactivity disorder in adults: Focus on Rating Scales. *Journal of Clinical Psychiatry, 65*, 12-17.
- Pani, P., Maremmani, I., Trogu, E., Gessa, G., Ruiz, P., & Akiskal, H. S. (2010). Delineating the psychic structure of substance abuse and addictions: Should anxiety, mood and impulse-control dysregulation be included? *Journal of Affective Disorders, 122*, 185-197.
- Selzer, M. (1971). The Michigan Alcoholism Screening Test: The quest for a new diagnostic instrument. *American Journal of Psychiatry, 127*, 1653-1658.
- Wilens, T. (2004). Impact of ADHD and its treatment on substance abuse in adults. *Journal of Clinical Psychiatry, 65*, 38-45.
- Wilens, T., & Biederman, J. (2006). Alcohol, drugs, and attention-deficit/hyperactivity disorder: A model for the study of addictions in youth. *Journal of Psychopharmacology, 20*, 580-588.

Bios

Jean-Pierre Chiasson is the founder and medical director of Clinique Nouveau Départ, a clinic in Montreal specialised in the treatment of addiction disorders and comorbidity. He is a fellow of the American Society of Addiction Medicine (ASAM), certified by the Canadian Society of Addiction Medicine (CSAM) and a Medical Review Officer (MRO). He has been working in the field of addiction for over thirty years.

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