

# Issues in the Diagnosis and Treatment of Adult ADHD by Primary Care Physicians

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## ABSTRACT

**Introduction:** The objective of this article is to compare primary care physicians' (PCPs') experiences with diagnosing and treating adult attention-deficit/hyperactivity disorder (ADHD) versus other mental health disorders.

**Methods:** Four hundred PCPs who have patients with ADHD, bipolar disorder, depression, generalized anxiety disorder (GAD), or obsessive-compulsive disorder completed a public release survey assessing their experiences and attitudes on diagnosing and treating these disorders.

**Results:** Forty-eight percent of PCPs felt uncomfortable diagnosing adult ADHD and 44% reported that there were no clear diagnostic criteria. Seventy-five percent rated the quality and accuracy of existing adult ADHD diagnostic tools as either poor or fair. Seventy-two percent reported that ADHD is easier to diagnose in children than adults. Sixty-five percent reported deferring to specialists to diagnose adult ADHD, compared to 2% for depression and 3% for GAD. Eighty-five percent reported that they would be more comfortable diagnosing and treating adult ADHD if thorough, straightforward screening tools were validated and if there were effective medications that were neither stimulants nor controlled substances.

**Discussion:** While this survey indicated that adult ADHD is generally accepted by PCPs, the results also indicate that PCPs are sig-

## FOCUS POINTS

- This article explores new findings about issues with diagnosing and treating attention-deficit/hyperactivity disorder (ADHD) in adults by primary care physicians (PCPs).
- Despite a high rate of prevalence and significant impairments, most adults with ADHD have not been diagnosed and remain untreated.
- PCPs had less training and had lower comfort levels treating adults with ADHD than with depression and anxiety disorders.
- PCPs were more likely to refer adult patients with ADHD to specialists for diagnosis and/or treatment than they were for adult patients with major depressive disorder or generalized anxiety disorder.
- PCPs would be more likely to diagnose adult ADHD if quick, easy-to-use screening tools were developed and validated.

nificantly less likely to diagnose and treat ADHD in adults without deferring to a specialist, when compared to GAD and depression. The recent development of new screening tools for adult ADHD as well as non-stimulant and novel stimulant medications may reduce PCPs' reliance on specialist referrals.

**Conclusion:** This study highlights a potential need for PCPs for increased education and training in adult ADHD. As the study was conducted 6 years ago, follow-up investigations into the current PCP awareness of adult ADHD are indicated.

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## INTRODUCTION

Attention-deficit/hyperactivity disorder (ADHD) is a chronic and commonly occurring neuropsychiatric disorder that is usually first diagnosed in childhood and is associated with an inability to sustain attention and/or an inability to regulate motor behavior.<sup>1</sup> Research has shown ADHD to negatively impact attention,<sup>2,3</sup> behavioral inhibition,<sup>2,3</sup> memory,<sup>2,3</sup> and functional outcomes<sup>2,4-8</sup> in many settings of daily life including home,<sup>2,9</sup> school,<sup>2,5</sup> work,<sup>2,5</sup> driving,<sup>5,10</sup> and interpersonal relationships.<sup>5,10</sup>

The prevalence of ADHD in children is approximately 6% to 8% world wide<sup>11</sup> and it is estimated that 66% continue to meet full criteria or partial criteria with significant impairment as adults, indicating that as many as 8 million adults in the United States have the disorder.<sup>4,12-15</sup> The National Comorbidity Survey Replication (NCS-R), a nationally representative survey conducted in the US between 2001–2003 of ~10,000 English-speaking household residents ≥18 years of age, demonstrated that the prevalence of ADHD in adults in the US is ~4.4%.<sup>16</sup>

While recognition of adult ADHD has grown recently in the medical community and general population, the disorder remains under-recognized and under-treated when compared to other commonly occurring mental health disorders such as mood, anxiety, or substance use disorders.<sup>17</sup> Results from a 2005 survey found that ~1.5 million adults in the US were diagnosed with and receiving treatment for ADHD, indicating that only 1 in 4 adults with the disorder have been diagnosed and are receiving adequate medical attention.<sup>18</sup> The NCS-R found that >40% of respondents who met the criteria for ADHD reported that they had not been previously diagnosed with the disorder despite seeing a healthcare professional in the previous year.<sup>16,19</sup> In fact, only 10% of the sample with ADHD had received treatment for the disorder within the year prior to the interview.<sup>16</sup> Furthermore, only 25% of respondents with ADHD who had received treatment within the previous year for a mental health or substance use disorder reported also receiving treatment for ADHD.<sup>16</sup>

The principal goal of this study was to examine the experiences and attitudes of primary care physicians (PCPs) regarding the diagnosis and treatment of ADHD in adults through a public release survey. For some portions of the survey, PCPs were asked to also rate their experiences and attitudes regarding other disorders such as major depressive disorder (MDD), generalized anxiety disorder (GAD), bipolar disorder, and obsessive-compulsive disorder (OCD).

## METHODS

The survey was approved by the New York University School of Medicine Institutional Board of Research Associates.

Participants in the survey included 400 PCPs recruited randomly from the master directory of the American Medical Association. Physicians were selected using the following criteria. First, they were currently practicing as part of a family, general, or internal medicine practice. Second, they had been practicing for at least 2 years. Last, they were currently treating at least 30 adult patients per week with any combination of the target disorders, which were ADHD, bipolar disorder, MDD, GAD, or OCD. These disorders were chosen because they are commonly occurring, impairing disorders characterized by low rates of diagnosis and adequate treatment among patients in treatment.<sup>20-22</sup>

Potential participants were mailed an invitation to participate in an online survey. Each invitation explained the purpose of the research in general terms and contained a unique password and URL to access the survey. Passwords were provided for security purposes and to prevent duplicate responding. The survey was made available online from May 14–May 28, 2003 by Harris Interactive. Physicians completing the survey received a \$40 honorarium. Fewer than 40% of physicians who received the invitation completed the survey. Demographic information of the physicians can be found in Table 1.

The survey asked the physicians to rate the following items on a five-point scale from lowest (ie, poor) to highest (ie, extremely knowledgeable/thorough): their knowledge of the target disorders; the quality of their education and/or training received regarding the target disorders; their perceptions regarding specific aspects relating to the diagnosis and treatment of adult ADHD (ie, adult ADHD is more difficult to diagnose than childhood ADHD); their per-

**TABLE 1**  
**PHYSICIAN DEMOGRAPHICS**

Mean number of patients in practice >18 years of age	2,407.1
Mean number of years since residency	13.4
<i>Medical Specialty</i>	%
Family Practice	53
Internal Medicine	40
General Practice	7
<i>Practice Setting</i>	%
Single-specialty group	33
Solo practice	27
Multi-specialty group	20
Outpatient clinic	11
Hospital-based practice	9
Other	1

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ception regarding the quality of diagnostic tools available for the target disorders; and their perception regarding the importance of specific qualities/parameters necessary for an effective screening tool for adult ADHD. Lastly, physicians were asked to rate the frequency that they refer patients to a specialist for the treatment of each of the target disorders and the reasons why they collaborate with or defer to a specialist when diagnosing adult ADHD.

All reported significance refers to 95% confidence, using unweighted data. Descriptive results are reported for all analyses. For the purposes of explanation, a data reduction was performed when presenting results for items rated on a five-point scale and results are hereafter presented only for the two highest-rated items.

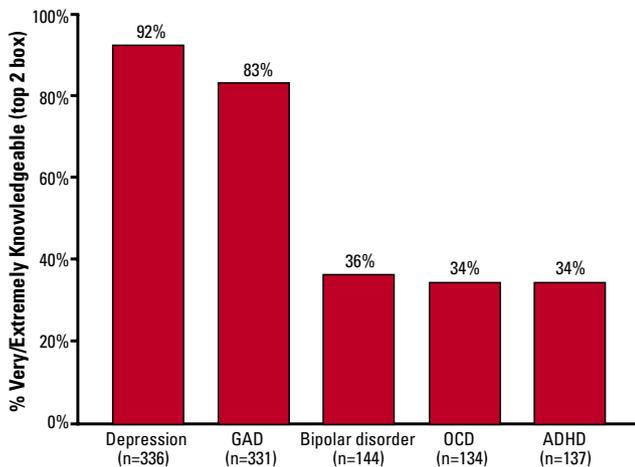
**TABLE 2**  
**PATIENT ROSTER**

Target Conditions	Mean Number of Patients	Mean Number of Patients per Week
Depression	215.7	29.8
GAD	150.0	22.0
Bipolar disorder	26.8	6.5
ADHD	23.7	5.9
OCD	22.3	4.8

GAD=generalized anxiety disorder; ADHD=attention-deficit hyperactivity disorder; OCD=obsessive-compulsive disorder.

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**FIGURE 1**  
**PERCEIVED KNOWLEDGE OF THE TARGET DISORDERS**



GAD=generalized anxiety disorder; OCD=obsessive-compulsive disorder; ADHD=attention-deficit/hyperactivity disorder.

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## RESULTS

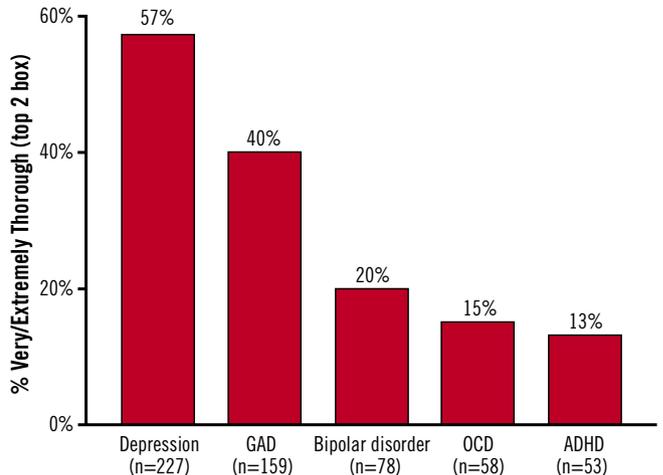
### Knowledge Differential

Respondents reported that they saw significantly more patients in an average week with depression and GAD than any of the other three target disorders (Table 2). This correlated with the finding that respondents consider themselves significantly more knowledgeable about both MDD and GAD than they are about bipolar disorder, OCD, or ADHD (Figure 1). Only 34% of respondents answered that they were either very or extremely knowledgeable about adult ADHD (Figure 1). Furthermore, only 13% of respondents reported that they had received very or extremely thorough clinical training in adult ADHD which was significantly less than all of the other target disorders except for OCD (Figure 2). Seventy-seven percent of physicians reported that they believe that adult ADHD is not well understood by the medical community (Figure 3).

### Knowledge and Understanding of Adult ADHD in Primary Care

Somewhat contrary to the reported lack of knowledge and understanding of adult ADHD, only 26% of respondents concurred that ADHD is a condition that the vast majority of children outgrow (Figure 3). However, 72% reported that it is more difficult to diagnose ADHD in adulthood than in childhood (Figure 3). Nearly half of respondents reported that they were not confident in

**FIGURE 2**  
**PERCEIVED EDUCATION IN TARGET DISORDERS**

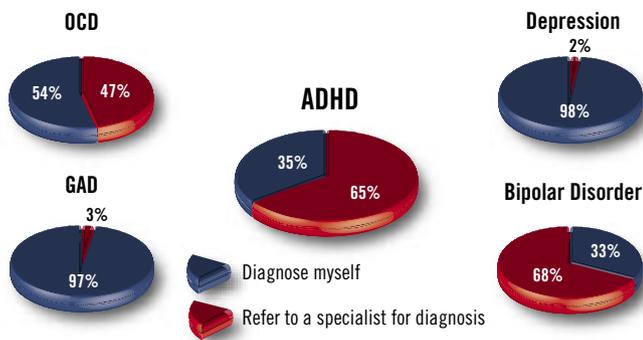


GAD=generalized anxiety disorder; OCD=obsessive-compulsive disorder; ADHD=attention-deficit/hyperactivity disorder.

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their ability to diagnose ADHD in adults (48%) and believe that there are no clear criteria for diagnosing adults with the disorder (44%; Figure 3). Seventy-three percent of respondents reported that the underlying symptoms of ADHD are similar in children and adults but the manifestations of these symptoms differ throughout the life course (Figure 3).

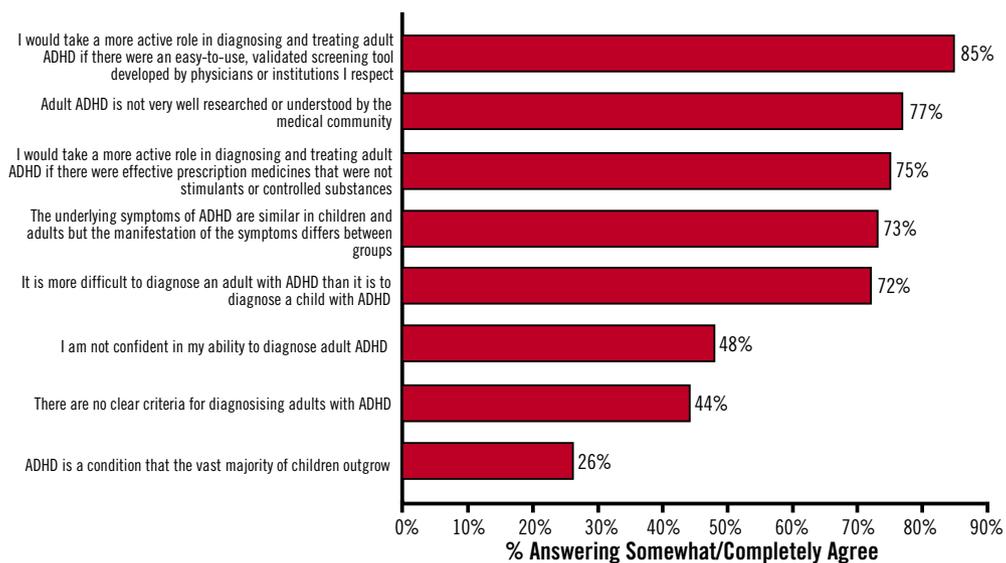
**FIGURE 4**  
**PERCENTAGE OF PCPS WHO DIAGNOSE THEMSELVES OR REFER TO SPECIALISTS FOR DIAGNOSIS**



PCPs=primary care physicians; OCD=obsessive-compulsive disorder; ADHD=attention-deficit/hyperactivity disorder; GAD=generalized anxiety disorder.

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**FIGURE 3**  
**PERCEPTIONS OF ADULT ADHD**



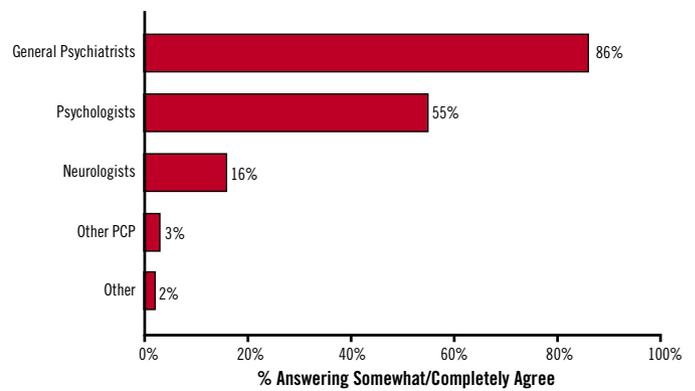
ADHD=attention-deficit/hyperactivity disorder.

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**Dependence on Referrals**

Only 35% of respondents reported that they would diagnose adult ADHD without referring patients to a specialist, whereas the vast majority reported that they would diagnose major depression (98%) and GAD (97%) themselves (Figure 4). Respondents reported that they were most likely to refer

**FIGURE 5**  
**TYPES OF PHYSICIANS/SPECIALISTS THAT PCPS ARE LIKELY TO COLLABORATE WITH OR DEFER TO WHEN DIAGNOSING ADULT PATIENTS WITH ADHD**



PCPs=primary care physicians; ADHD=attention-deficit/hyperactivity disorder.

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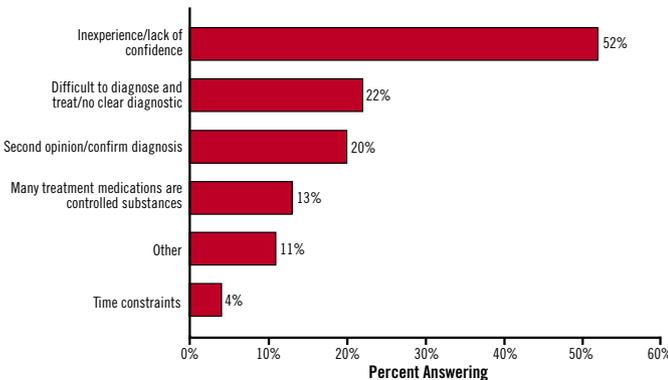
adult patients seeking a diagnosis of ADHD to either a psychiatrist (86%) or psychologist (55%; Figure 5). Fifty-two percent of respondents attributed inexperience or lack of confidence as the primary reason for collaborating with or deferring to specialists when diagnosing adult ADHD, and 22% reported that they believed adult ADHD to have no clear diagnostic criteria (Figure 6). Furthermore, only 5% of respondents reported that they make the final decision regarding medication when treating adult ADHD with 42% report-

ing that they collaborate with specialists and 53% reporting that they refer their adult ADHD patients to specialists.

### Need for an Adult ADHD Screening Tool

Ratings of the quality of adult ADHD screening tools were significantly worse compared to screening tools for the other

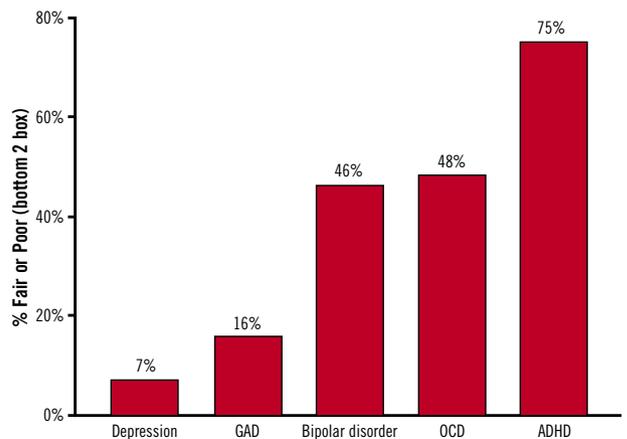
**FIGURE 6**  
**PCPS' REASONS FOR COLLABORATING WITH OR DEFERRING TO SPECIALISTS WHEN DIAGNOSING ADHD**



PCPs=primary care physicians.

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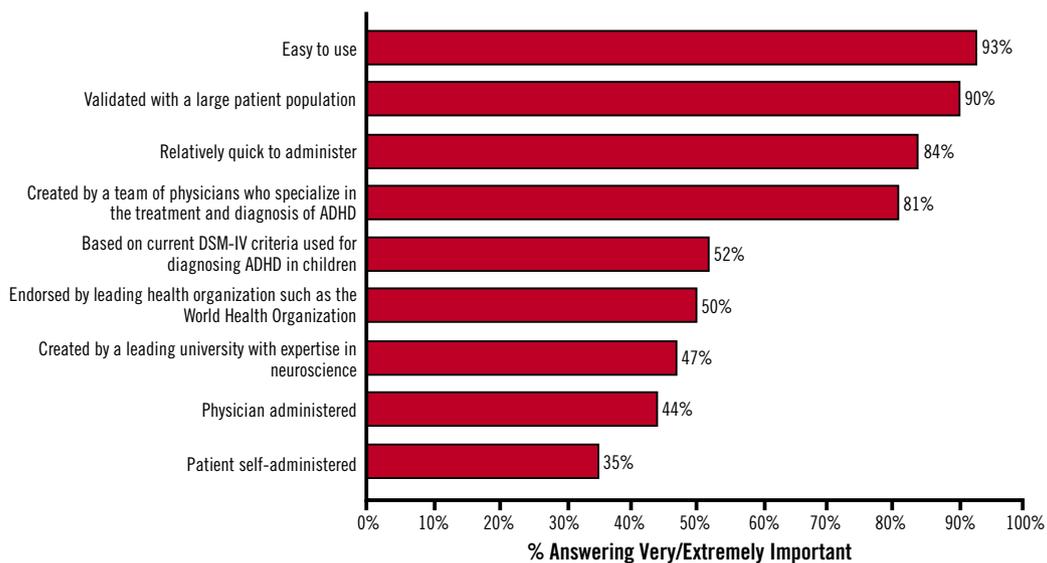
**FIGURE 7**  
**PERCEIVED QUALITY AND ACCURACY OF DIAGNOSTIC TOOLS OF TARGET DISORDERS**



GAD=generalized anxiety disorder; OCD=obsessive-compulsive disorder; ADHD=attention-deficit hyperactivity disorder.

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**FIGURE 8**  
**PCPS' PERCEPTION OF THE IMPORTANT QUALITIES OF A SCREENING TOOL FOR ADULT ADHD**



PCPs=primary care physicians; ADHD=attention-deficit/hyperactivity disorder; DSM-IV=Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition.

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target disorders. Seventy-five percent of respondents reported that they thought the quality and accuracy of diagnostic tools for adult ADHD was either poor or fair (Figure 7). Eighty-five percent of respondents indicated that they would take a more active role in diagnosing and treating adult ADHD if an easy-to-use, relatively quick to administer screening tool was developed and validated by physicians or institutions they respect (Figure 8). However, only ~50% of respondents indicated that screening tools for adult ADHD should be based on the current *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*<sup>23</sup> criteria for diagnosing ADHD in children (Figure 8).

### Need for Alternative Treatments

A significant number of respondents (13%) reported that they refer adult ADHD patients to specialists for treatment because many of the pharmacologic treatments, such as methylphenidate and amphetamines, are psychostimulants and controlled substances (Figure 6). Seventy-five percent of respondents indicated that they would take a more active role in diagnosing and treating adult ADHD if effective, non-stimulant medications that were not controlled substances were available (Figure 3).

## DISCUSSION

While the results of this survey indicate that adult ADHD is generally accepted by PCPs, it also highlighted a need within the primary care community for more education and training in diagnosing and treating adults with the disorder. Although the majority of respondents reported that they thought the underlying symptoms of ADHD are the same for children and adults, they indicated that they thought adults manifest these symptoms differently than children and that the disorder is more difficult to diagnose in adulthood than in childhood. This difficulty may be partially attributed to the *DSM-IV* criteria for ADHD, which often reflect behavior in school or playground settings, being the same for both children and adults.<sup>6,24-27</sup>

Although the willingness of PCPs to diagnose and treat adult ADHD without deferring to a specialist was strikingly low when compared with MDD and GAD, the majority of respondents reported that they would be more active in diagnosing and treating adult ADHD if they had an easy-to-use, validated screening tool. It should be noted that since this survey was conducted, the Adult ADHD Self-Report (ASRS) v1.1 Screener has been developed and validated. The ASRS v1.1 Screener uses adult-specific, context-based language to identify adults at risk for ADHD.<sup>28,29</sup> The ASRS v1.1 Screener is self-administered and contains the six symptoms of ADHD psychometrically determined to be most predictive

of the disorder.<sup>19,29</sup> The ASRS v1.1 Screener has shown good sensitivity and specificity and has a positive predictive value between 57% and 93%.<sup>29,30</sup> The ASRS is also available in an 18-item format (ASRS v1.1 Symptom Checklist), which contains the 18 items corresponding to the adult presentation of ADHD symptoms in the *DSM-IV*. The ASRS v1.1 Screener and Symptom Checklist are copyrighted by the World Health Organization and are available at no cost on the Internet.<sup>31,32</sup>

The majority of respondents also reported that they would be more active in treating adult ADHD if non-stimulant medications that were not controlled substances were available. Around the same time that this survey was conducted, the first non-stimulant medication, atomoxetine, was approved and released for the treatment of adult ADHD. Additionally, the first pro-drug stimulant, lisdexamfetamine dimesylate, with a reduced overdose toxicity and drug tampering, was recently approved for the treatment of pediatric and adult ADHD.<sup>33-37</sup> Together with the availability of novel extended-release formulations of traditional psychostimulants and the advent of non-stimulant and safer stimulant medications as viable treatment options, the reluctance to treat adult ADHD amongst the primary care community may be reduced.

There were several limitations to the current investigation. First, <40% of the selected PCPs completed the survey, which may indicate a selection bias. Second, the survey was conducted in 2003 and there has likely been an increase in the awareness and familiarity of adult ADHD amongst PCPs as well as the general population. Third, advances made in the understanding of adult ADHD in the scientific community as well as the development of new diagnostic/symptom assessment scales and medications may have had a positive impact on the willingness of PCPs to diagnose and treat the disorder in adults.

## CONCLUSION

Although the prevalence of adult ADHD is comparable to that of MDD and GAD, this survey highlighted a potential need amongst PCPs for more education and training in adult ADHD. However, follow-up investigations into the current PCP awareness of adult ADHD are needed as new, easy-to-use screening tools for adult ADHD and non-stimulant and novel stimulant medications have been developed in the 6 years since the survey was conducted. **PP**

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