ORIGINAL RESEARCH

Knowledge, Attitudes, and Practice Patterns of Health Professionals Toward Medical and Non-medical Stimulant Use by Young Adults

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Background: **The role of family physicians (FPs) and college health professionals (CHPs) in stimulant treatment and nonmedical use of stimulants is not clear.**

Objective: **To investigate the current practices, concerns, needs, beliefs, barriers, and facilitators to appropriate pharmacological treatment of teens and young adults with attention deficit hyperactivity disorder (ADHD) and prevention of nonmedical use and diversion.**

Methods: **A cross-sectional survey developed by the project team and experts in the field, delivered to national sample of FPs and CHPs.**

Results: **A total of 794 completed surveys were analyzed. The average age of respondents was 51.6 ± 10.3 years; 50.6% of the respondents were female. The majority of CHPs (80.6%) reported they spend 75% to 100% of their time with patients age 17 to 24 years and 74.0% of FPs reported they spend less than 25% of their time with this age group. The majority (91.7%) of the respondents indicated that untreated ADHD affects quality of life, and 76.4% indicated untreated ADHD is often associated with risky behaviors. More CHPs than FPs always refer out for ADHD diagnosis (70.7% vs 52.1%; $P < .001$). Most respondents (81.2%) were concerned with ADHD medication diversion, and 84.2% believed that diversion or abuse is a problem overall. Respondents indicated they are unprepared to provide patient education on decisions about pharmacotherapy or behavioral therapy choices for adult ADHD.**

Conclusion: **There is an opportunity to enhance safety and effectiveness of ADHD management in young adults. Additional resources and interventions are needed to improve medication management, reduce misuse, and ensure safe and appropriate use of stimulants. (J Am Board Fam Med 2020;33: 59–70.)**

Keywords: **Adolescent, Attention Deficit Hyperactivity Disorder, Central Nervous System Stimulants, Cross-Sectional Studies, Family Physicians, Patient Safety, Quality of Life, Surveys and Questionnaires, Universities, Young Adult**

Attention deficit hyperactivity disorder (ADHD) is a common neurodevelopmental disorder affecting about 3% to 10% of school-aged children and adolescents.[1–3] Nearly half of the children and adolescents with ADHD continue to have symptoms of the disorder in adulthood.[4,5] Stimulants are the most common medications prescribed for ADHD, and pharmacological treatment has shown a posi-

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Conflict of interest: none declared.

The authors have full control of all primary data and that they agree to allow the journal to review their data if requested.

Ethical approval: All procedures performed in this study involving human participants were in accordance with the ethical standards of the institutional AAFP IRB and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Prior presentations: The findings reported in this work have not been previously published and that the manuscript is not being simultaneously submitted elsewhere. The preliminary results were previously presented as a poster at the

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tive impact on outcomes, long-term prognosis, and quality of life in children and adults with a diagnosis of ADHD. One important consideration related to stimulant medications is the appropriate use of these medications and their potential for abuse. Recent research has documented that the nonmedical use of prescription stimulants is a substantial and growing problem among young adults and college students.[6–8] Nonmedical use of stimulants on college campuses is a well-documented problem.[9,10] Physicians have been identified as the second most frequent source of the misused stimulants.[11] It is important to understand the role the health care professionals play in treating ADHD in young adults, and their potential role in prevention of nonmedical use of stimulants.

Even though ADHD patients have stimulant medications prescribed by both primary care providers and providers in college health centers, there is very little research on commonalities and differences in the way the settings manage ADHD, prescribe and monitor medications, and prevent inappropriate use of stimulants.

The objective of this article is to present methodology and results of a provider survey on the current care practices, concerns, needs, beliefs, barriers, and facilitators to appropriate pharmacological treatment, and the prevention of nonmedical use of stimulants among teens and young adults age 17 to 26 years. The survey study intended to provide descriptive data on primary care providers and providers in college health centers and was not designed to test any specific a priori hypothesis.

Methods

Study Overview

This study was a cross-sectional survey of national samples of members of American Academy of Family Physicians (AAFP) and members of the American College Health Association (ACHA). The study was approved by the AAFP Institutional Review Board (IRB).

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Sample and Setting

The study was conducted with 1) a random sample of the AAFP nonretired members who reside in the United States, spend at least 50% of their time in direct patient care, and have responsibility for the care of teenagers and young adults (n = 2000; AAFP members, family physicians [FPs]); and 2) the segment of ACHA college health professionals working in student health centers (n = 573; ACHA members, college health professionals [CHPs]). At the time of the survey, the AAFP membership database included 68,300 active members working in primary care. The ACHA membership database included 2931 health care professionals working at college health centers across the United States. The ACHA target group included all registered members from all regions of the United States, from the sections of Advanced Practice Clinicians, Clinical Medicine, Nurse-Directed Health Services, and Nursing. The makeup of the final ACHA sample included 91 physicians, 369 nursing professionals, 24 other specialists (clinical psychologists, social workers), and 12 physician assistants; 77 had no identified role or credentials. Only the health professionals from these 2 samples, and not their young-adult and student patients, were invited to participate in this survey.

Survey Development

The project team developed a survey in collaboration with 3 ADHD experts (a family physician, a pediatrician, and an ADHD research expert). We followed the best practices in survey development and reporting described by Kelley et al.[12] The details of the survey development and administration methodology are described in Appendix 1. Briefly, the survey was developed based on key themes derived from the literature review. The survey included the following constructs: knowledge and belief; practice; risk management; strategies, and resources. Initially, 77 survey items were developed; these were further refined into a 43-item questionnaire. We piloted the 43-item survey with 10 practicing physicians to evaluate their comprehension of the questions and answer choices. The final survey consisted of 42 items. We created 2 versions of the survey: article and online. The survey was administered between October 27, 2015, and January 31, 2016.

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Statistical Analyses

After the data were cleaned for duplicates and errors and scale items were recoded for consistency, descriptive statistics (overall, AAFP members, and ACHA members) for all questions were completed. For the binary and multiple-choice questions, the data are reported as counts and percentage. For the 5-point Likert scale questions, the mean and SD was calculated for each group for each question. The lower the value of the mean, the more agreeable the statement is to the group's perceptions, feelings, or knowledge (for example, the scale 1 = Describes me completely/Always/Very likely to 5 = Does not describe me at all/Never/Very unlikely). For the analysis, 95% CIs (not shown) and *t*-tests comparing AAFP members and ACHA members were completed for the Likert scale questions of interest. For the yes/no and multiple-select questions of interest, χ^2 tests comparing AAFP members and ACHA members were completed. An α of 0.05 was used throughout the analysis. When a statistically significant difference existed between FPs and CHPs, it is specified in the results; if no difference was identified, the data are presented for all respondents combined. All analyses were conducted with SPSS (IBM SPSS Statistics for Windows, Version 22.0., Armonk, NY). Select questions are included in the results. All responses are included in Appendix 2.

Results

Participant Characteristics

Overall, 817 participants returned surveys, including 678 AAFP members and 139 ACHA members (response rates: 33.9% and 24.3%, respectively). Several surveys were excluded from the analysis due to duplicate entries, incomplete surveys, or the respondent indicated she/he was retired, leaving the valid final sample of 794 respondents included in the analyses. Most of the surveys (n = 726; 91.4%) were completed on article and the remainder (n = 68; 8.6%) were completed online.

The average age of respondent was 51.6 ± 10.3 years, and the majority (80.0%) of respondents indicated their race/ethnicity was white (FPs: 79.0%; CHPs: 84.7%) with no differences between the groups (Table 1). Overall, slightly over half (50.6%) of the respondents were female with more female participants among CHPs (80.2% vs 44.8% among FPs, $P < .01$). More CHPs than FPs indicated that they are employed by a hospital, clinic, or university (82.9% vs 45.5%; $P < .01$). The majority of CHPs (80.6%) reported they spend 75% to 100% of their time with patients 17 to 24 years of age; 74.0% of FPs reported they spend less than 25% of their time with the patient in this age group ($P < .01$).

The sample of AAFP members in this study was largely representative of the overall AAFP membership based on gender, race, and years since residency, with the only exception of age distribution: the AAFP survey respondents were more evenly split between the 4 age categories than the overall AAFP member demographics (< 40 years old: 15.9% vs 47.1%; 40 to 49 years old: 24.3% vs 18.1%; 50 to 59 years old: 33.6% vs 15.6%; 60 years and older: 26.1% vs 19.1%). The representativeness of the ACHA respondents could not be established due to limited available data.

Knowledge and Belief

The majority (80.6%) of respondents estimated ADHD prevalence to be between 1% and 10% in adults, with more CHPs than FPs estimating a higher prevalence of ADHD in adults and college students ($P < .01$). Although 54.4% of participants believed that ADHD is overdiagnosed in teens and young adults, 78.6% reported it is "likely or very likely" that they have adult patients with undiagnosed ADHD in their practice. The majority (91.7%) of the respondents indicated that untreated ADHD affects quality of life, and 76.4% indicated untreated ADHD is often associated with risky behaviors. More FPs than CHPs indicated ADHD is easy to "fake" for drug-seeking patients, and it is difficult to determine when a patient is "faking" the symptoms of ADHD (66.7% vs 50.8%, $P < .01$; and 64.5% vs 43.1%, $P < .01$, respectively).

Overall, respondents agreed that stimulants have the potential for abuse (98.7%) and that stimulants are addictive (71.7%). The majority of respondents (81.2%) were concerned with ADHD medication diversion, and 84.2% believed that diversion or abuse is a problem. Almost all know the correct definition of misuse, abuse, and diversion (97.9%, 95.8%, and 95.6%, respectively). Over three fourths (83.6%) agree that the legal consequences of diversion are serious, and 81.2% agree that it is important to educate about the legal ramifications of diversion.

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Table 1. Respondent Demographic Characteristics

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Clinician Age Group			
<40 years old	104 (15.9)	12 (9.4)	116 (14.9)
40 to 49 years old	159 (24.3)	35 (27.6)	194 (24.8)
50 to 59 years old	220 (33.6)	52 (40.9)	272 (34.8)
60 years and older	171 (26.1)	28 (22.0)	199 (25.5)
Total	*654*	*127*	*781*
			t = −0.62
Gender			
Male	364 (55.2)	26 (19.8)	390 (49.4)
Female	295 (44.8)	105 (80.2)	400 (50.6)
Total	*659*	*131*	*790*
			X^2 = 0.00
Race/Ethnicity			
American Indian or Alaskan Native	10 (1.5)	2 (1.5)	12 (1.5)
Asian	53 (8.0)	3 (2.3)	56 (7.1)
Black or African American	25 (3.8)	7 (5.3)	32 (4.0)
Spanish, Hispanic, or Latino	18 (2.7)	0 (0.0)	18 (2.3)
White	524 (79.0)	111 (84.7)	635 (80.0)
Native Hawaiian or Pacific Islander	1 (0.2)	5 (3.8)	6 (0.8)
Multiple races	21 (3.2)	0 (0.0)	21 (2.6)
Some other race or origin	11 (1.7)	3 (2.3)	14 (1.8)
Total	*663*	*131*	*794*
			t = −1.68
Practice Region (Census Region)			
Northeast	75 (11.5)	44 (34.1)	119 (15.2)
Midwest	212 (32.4)	28 (21.7)	240 (30.7)
South	219 (33.5)	44 (34.1)	263 (33.6)
West	148 (22.6)	13 (10.1)	161 (20.6)
Total	*654*	*129*	*783*
			t = 5.08*
Years since residency			
0 to 10 years	156 (23.9)	20 (19.0)	176 (23.2)
11 to 20 years	192 (29.4)	43 (41.0)	235 (31.0)
21 to 30 years	184 (28.1)	26 (24.8)	320 (27.7)
31 years or more	122 (18.7)	16 (15.2)	138 (18.2)
Total	*654*	*105*	*759*
			t = 0.53
Which of the following duties account for most of your time in a typical week?			
Outpatient primary care in office-based practice	523 (79.6)	70 (55.6)	593 (75.7)
Administration or managerial tasks not directly related to patient care	16 (2.4)	16 (12.7)	32 (4.1)
Research	1 (0.2)	0 (0.0)	1 (0.1)
Teaching	15 (2.3)	0 (0.0)	15 (1.9)
Urgent Care	26 (4.0)	4 (3.2)	30 (3.8)
Emergency Care	21 (3.2)	0 (0.0)	21 (2.7)
Other	55 (8.4)	36 (28.6)	91 (11.6)
Total	*657*	*126*	*783*
			t = −4.22*

Continued

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Table 1. Continued

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Which of the following best describes your role in the ownership of your primary clinical practice?			
A full or partial owner of your practice	199 (30.1)	2 (1.6)	201 (25.4)
Employee of a physician-owned practice	70 (10.6)	6 (4.7)	76 (9.6)
Employee of a hospital, clinic, or university	301 (45.5)	107 (82.9)	408 (51.6)
Employee of a managed care organization or insurance company	36 (5.4)	1 (0.8)	37 (4.7)
None of these	55 (8.3)	13 (10.1)	68 (8.6)
Total	*661*	*129*	*790*
			t = −7.90*
About how much of your time in practice is spent working with patients 17 to 24 years of age?			
None	11 (1.7)	1 (0.8)	12 (1.5)
Less than 25%	490 (74.0)	5 (3.9)	495 (62.6)
25% to 49%	127 (19.2)	7 (5.4)	134 (16.9)
50% to 74%	14 (2.1)	12 (9.3)	26 (3.3)
75% to 100%	17 (2.6)	104 (80.6)	121 (15.3)
Other	3 (0.5)	0 (0.0)	3 (0.4)
Total	*662*	*129*	*791*
			t = −33.48*

AAFP, American Academy of Family Physicians; ACHA, American College Health Association.
*$P < .05$.

For FPs, the most frequent patient characteristics that are associated with abuse or diversions were history of drug use (80.8%), history of mental illness (61.1%), and male gender (49.3%). For CHPs, most frequent patient characteristics that are associated with abuse or diversions were: history of drug use (62.1%), competitive school or program (61.3%), and male gender (45.2%). The respondents believed that most patients only occasionally are engaged in nonmedical use or diversion of stimulants and much fewer patients engage very frequently. Fewer CHPs than FPs believed that their patients never or rarely engage in misuse, abuse, or diversion (8.2% vs 17.0%; 19.6% vs 25.7%; and 17.5% vs 30.0%, respectively).

Practice

In describing evaluation, diagnosis, and treatment for adult ADHD, more CHPs than FPs always refer out for diagnosis (70.7% vs 52.1%, $P < .05$), seek expert consultation for diagnosis and treatment (48.0% vs 19.1%, $P < .05$), never initiate drug therapy (42.2% vs 15.1%, $P < .05$), and never use a stimulant as their first choice for ADHD treatment (37.6% vs 13.1%, $P < .05$). More than one third of respondents reported that they never follow medication treatment recommendations (38.6%), and more than half always discuss effects and side effects of stimulants with patients (54.0%). See Table 2.

More FPs than CHPs reported they felt comfortable prescribing stimulants (3.17 ± 1.20 vs 3.64 ± 1.37, $P < .05$), tended to try medication even when uncertain (4.51 ± 0.77 vs 4.79 ± 0.50, $P < .05$), and believed treatment should be withdrawn if side effects emerge (2.72 ± 1.12 vs 3.42 ± 1.20, $P = .05$). More FPs than CHPs were not concerned with suicidal ideation or depression when prescribing stimulants (4.5 ± 0.9 vs 4.77 ± 0.7, $P < .05$). About a quarter of FPs (23.0% vs 11.5% of CHPs) believed "medication holidays" were acceptable, with the differences in FPs' responses compared with CHPs' (2.5 ± 1.23 vs 3.3 ± 1.38, $P < .05$; see Table 2).

When asked about specific stimulant medications approved for treatment of ADHD in adults, for 9 medications (brand names) included in the survey, CHPs selected "not applicable" more frequently than FPs (44.2% vs 14.1%, $P < .05$). Top 2 medications prescribed by most FPs (Figure 1) versus most CHPs (Figure 2) more than 50% of the time were Adderall XR and Adderall (25% and

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Table 2. Analysis Results of Likert Scale Questions

	AAFP		ACHA		Differences		
	Mean	SD	Mean	SD	Mean	SD	T
Please select how often you offer or perform any of the following with the patients with ADHD in your practice:							
Seek expert consultation in diagnosing and treating.	2.52	1.09	1.91	1.04	0.61	0.11	5.77*
Follow a medication treatment algorithm such as the Texas algorithm or other recommendations.	3.88	1.11	3.55	1.47	0.33	0.14	2.26*
Make a specific visit to evaluate for ADHD	2.52	1.33	2.92	1.73	−0.40	0.17	−2.40*
Initiate any type of drug therapy for ADHD	3.04	1.10	3.78	1.33	−0.75	0.13	−5.79*
Use a stimulant as your first choice for ADHD treatment.	2.73	1.14	3.49	1.39	−0.76	0.14	−5.54*
Combine medication with other treatment recommendations such as organizational skills training, behavioral counseling.	2.65	1.15	2.83	1.44	−0.19	0.14	−1.34
Discuss side effects with patients.	1.71	1.04	1.99	1.22	−0.28	0.12	−2.35*
Please select how well each of the following describes you:							
I feel comfortable about prescribing stimulant medication.	3.17	1.20	3.64	1.37	−0.47	0.14	−3.45*
I tend to try medication even when uncertain about the diagnosis.	4.51	0.77	4.79	0.50	−0.28	0.06	−5.03*
I believe treatment should be withdrawn if side effects emerge.	2.72	1.12	3.42	1.20	−0.70	0.12	−6.09*
The emergence of common side effects does not alter my treatment plan.	3.95	1.02	3.94	1.08	0.02	0.11	0.14
I am not prescribing stimulant medications because I have many concerns about side effects.	4.48	1.00	4.52	0.95	−0.04	0.10	−0.41
I always screen for depression before prescribing ADHD medication.	2.62	1.25	2.77	1.61	−0.15	0.16	−0.91
I always screen for suicidal ideation before prescribing ADHD medication.	2.64	1.30	2.76	1.63	−0.12	0.16	−0.76
I am not concerned with suicidal ideation or depression when prescribing ADHD medication.	4.50	0.91	4.77	0.66	−0.27	0.07	−3.70*
I believe “medication holidays” are acceptable.	2.52	1.23	3.31	1.38	−0.79	0.14	−5.70*
The following questions pertain to the college students 17 to 26 years of age. Please select how well each of the following statements describes you:							
I always ask about patient’s use of other substances.	2.16	1.11	1.86	1.08	0.30	0.11	2.74*
I always discuss the stimulant diversion and misuse with my ADHD patients.	2.66	1.29	2.51	1.48	0.15	0.15	1.03
I always suggest available resources and support services (behavioral therapy, counseling) to my patients with ADHD.	2.55	1.24	2.04	1.21	0.51	0.12	4.15*
How often do you feel education about ADHD or ADHD medication should occur?	2.91	1.21	3.39	1.10	−0.48	0.12	−4.11*
How well do you feel you are equipped to provide patient education about each of the following:							
Nature of ADHD	2.56	0.88	2.58	0.95	−0.03	0.09	−0.28
Effects and side-effects of stimulant medications.	2.35	0.84	2.38	0.94	−0.04	0.09	−0.39
Decisions about pharmacotherapy or behavioral therapy choices.	2.61	0.88	2.69	1.09	−0.08	0.11	−0.78
General expectations for college life such as stress, academic performance, conduct, life skills and preparation strategies.	2.44	0.87	1.90	0.82	0.54	0.08	6.41*
Risky behaviors, drug abuse, medication misuse and prevention strategies.	2.52	0.83	2.24	0.94	0.28	0.09	3.08*

AAFP, American Academy of Family Physicians; ACHA, American College Health Association; ADHD, attention deficit hyperactivity disorder; SD, Standard deviation; T, T-value (t-statistic).
The mean was calculated for each group for each question. The lower the value of the mean, the more the agreeable the statement is to the group’s perceptions, feelings, or knowledge. Scale is 1 to 5 with 1 = Describes me completely/Always/Very likely to 5 = Does not describe me at all/Never/Very unlikely.
*$P < .05$.

25% vs 25% and 16.9% respectively). Among FPs and CHPs, the most frequent factors associated with prescribing a certain medication were: previous success with the same medicine (75.2% vs 49.6%), comfort with medicine (74.4% vs 43.0%), insurance coverage or coverage restrictions (72.8%

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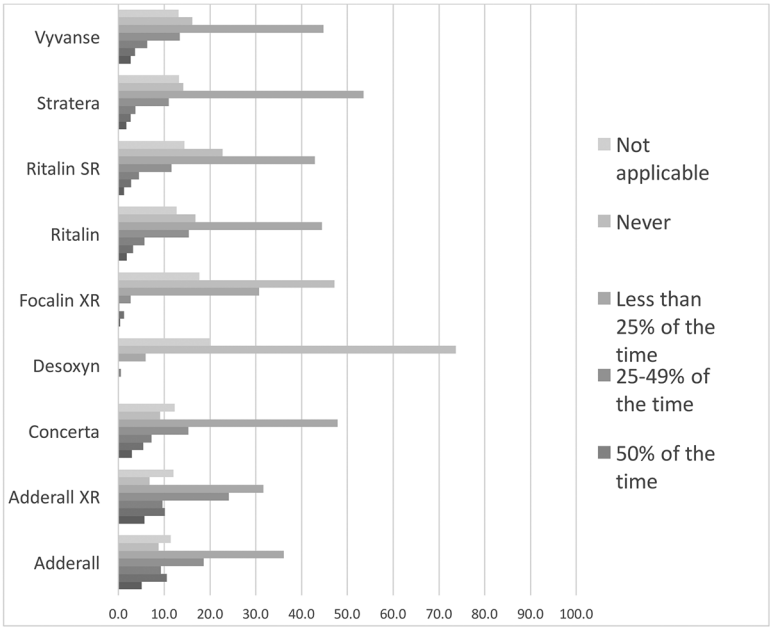
Figure 1. FPs' frequency in prescribing ADHD medications. Abbreviations: FPs, family physicians; ADHD, attention deficit hyperactivity disorder.

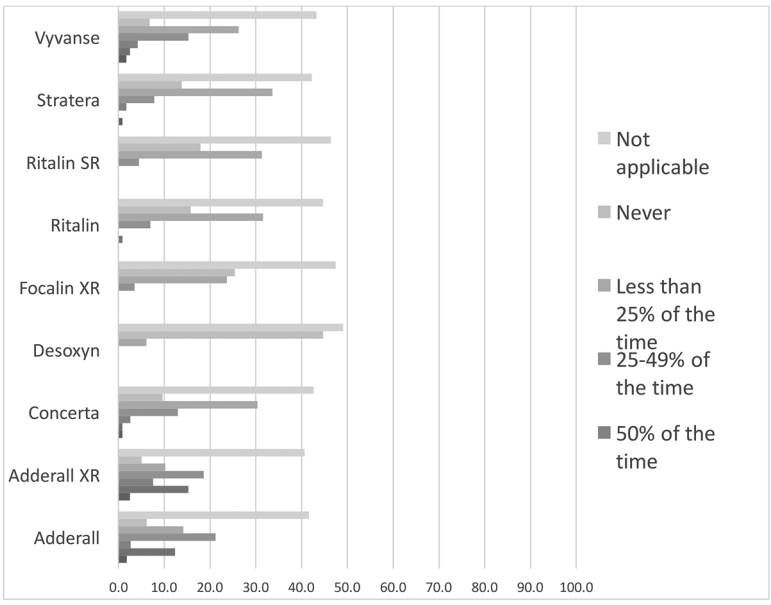


vs 42.1%), and cost of medication (62.7% vs 39.7%). More CHPs than FPs selected evidence-based guidelines (36.6% vs 31.8%) as 1 of the factors associated with prescribing a certain medication. More FPs than CHPs selected own experience (40.4% vs 20.7%) and patient preferences as important factors (36.8% vs 19.8%).

Risk Management

When asked specifically about misuse and diversion risk management in college students, CHPs more often than FPs would ask about a patient's other substance use (1.86 ± 1.1 vs 2.16 ± 1.1; $P < .05$) and suggest available resources to their ADHD patients (2.04 ± 1.2 vs 2.55 ± 1.2; $P < .05$). In monitoring

Figure 2. CHPs' frequency in prescribing ADHD medications. Abbreviations: CHPs, college health professionals; ADHD, attention deficit hyperactivity disorder.



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their patients' medication compliance, more FPs than CHPs indicated that they use a state medication registry (62.1% vs 40.2%, $P < .05$), random drug testing (42.3% vs 21.3% $P < .05$), and pill counts (18.6% vs 9.8%, $P < .05$, see Table 3).

Most participants indicated that they feel responsible for educating patients with ADHD, with more FPs than CHPs agreeing with this responsibility (95.1% vs 90.4%; $P = .04$). The majority of participants agreed that they are responsible for educating about the legal, health, social, and physical risks of misuse and the mental effects of not using the medicine properly (see Table 3).

Strategies and Resources

Both FPs and CHPs indicated that the best way to educate patients was through education or counseling at the visits where the prescription was given (83.8%). More CHPs than FPs (16.1% vs 6.4%;

Table 3. Analysis Results of Binary Scale Questions

			Pearson χ^2	
	AAFP, %	ACHA, %	Value	Sig.
How do you monitor your ADHD patient's medication compliance (please select all that apply):				
I use a state medication registry to track patient prescription drug use.	62.1	40.2	20.31	0.00*
I use random urine drug testing (UDT).	42.3	21.3	18.96	0.00*
I use pill counts.	18.6	9.8	5.48	0.02*
Which factors contribute to your decisions on which stimulant medication to use (can choose more than one answer):				
Preference for fast acting over slow release stimulants.	9.3	14.9	3.42	0.06
Preference for slow release over fast acting stimulants.	40.1	35.5	0.9	0.34
Do you feel it is your responsibility to educate patients with ADHD?	95.1	90.4	4.36	0.04*
If yes, what do you feel you are responsible for?				
Educating about legal risks of misusing the medicine.	67.2	74.3	2.23	0.14
Educating about the health and physical risks of misusing the medicine.	92.2	88.5	1.72	0.19
Educating about the mental effects of not using the medicine properly.	73.2	72.6	0.02	0.89
Educating about how misusing medicine can affect social life and relationships such as family, job, friends and significant others.	63.6	66.4	0.32	0.57
What do you feel is the best way to educate patients about ADHD (please select all that apply):				
Pamphlets and handouts.	47.9	38.7	3.54	0.06
Education or counseling session at visits where prescription is written.	83	87.9	1.86	0.17
Give the patient links to web resources.	46.7	48.4	0.13	0.72
Mass media such as television and magazines.	6.4	4	1.01	0.32
Social media such as Facebook and Twitter.	6.4	16.1	13.43	0.00*
What do you feel you personally should be doing to reduce the misuse of ADHD medications (please select all that apply):				
Evaluate each patient with suspected ADHD to confirm diagnosis before prescribing.	83.5	67.2	17.42	0.00*
Refer all ADHD patients to mental health professionals for care.	26.9	37.7	5.87	0.02*
Educate patients with ADHD about how the stimulants should and should not be used.	76.9	79.5	0.38	0.54
Provide clear instructions regarding sharing and selling medications to patients with ADHD.	67.4	59.8	2.62	0.11
Provide specific instructions on how to dispose of any unneeded medications.	39.7	43.4	0.58	0.45
Strictly monitor patient's prescription medication use with urine drug tests and state registries.	49	28.7	16.93	0.00*
Educate all patients of college age about misuse and risk of misusing stimulants.	66.5	76.2	4.49	0.03*
Discourage "medication holidays."	11.1	18	4.53	0.03*

AAFP, American Academy of Family Physicians; ACHA, American College Health Association; ADHD, attention deficit hyperactivity disorder.
*$P < .05$.

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$P < .01$) indicated social media was a way to educate patients about ADHD (see Table 3).

When asked about which aspects of patient education the respondents are more or less comfortable in providing, some FPs and CHPs reported they were well equipped to handle patient education on the nature of ADHD, effects and side effects of stimulants, and decisions about therapy choices. Compared with FPs, more CHPs indicated they are equipped to provide patient education on general expectations for college life and on risky behaviors, drug abuse, medication misuse, and prevention strategies (see Table 2). However, there were areas where the majority of FPs and CHPs feel they are somewhat unprepared to not prepared at all. For FPs, the majority indicated they are unprepared in the areas of:

- Decisions about pharmacotherapy or behavioral therapy choices (52.9%)
- Risky behaviors, drug abuse, medication misuse, and prevention strategies (52.4%)
- Nature of ADHD (50.7%).

For CHPs, the majority indicated they are unprepared in the areas of:

- Decisions about pharmacotherapy or behavioral therapy choices (59.5%)
- Nature of ADHD (58.9%)
- Effects and side effects of stimulant medications (50.4%).

When asked about provider education strategies, FPs and CHPs indicated that Continuing Medical Education (CME)/conferences (93.2%), journal articles (73.7%), other physicians/peer groups (58.7%), and professional associations (56.3%) would all have the potential to impact physicians' views on misuse prevention. Over one quarter of all respondents (27.0%) indicated that media (TV, Internet) may also influence physicians' views on abuse, misuse, and diversions issues.

Discussion

FPs and CHPs play an important role in the management of teens and young adults with ADHD and stimulant prescribing.[13,14] Several qualitative studies reported on physicians' challenges related to adult ADHD diagnosis, management, and treatment, and some explored issues related to misuse, abuse, and diversion.[15–17] To our knowledge, this is the first US national and systematic description of FPs' and CHPs' self-reported perceptions and practice patterns focusing on pharmacological treatment and prevention of nonmedical use and diversion of stimulants among teens and young adults. This article presents and discusses the survey results and highlights selected findings and their implications while also presenting the detailed report of all collected data for further interpretations. The most significant key findings are highlighted below.

Similar to previous studies, we found that an overwhelming majority of surveyed FPs and CHPs whose patient populations include teens, young adults, and college students agree that untreated ADHD negatively affects quality of life.[3,18,19] However, many FPs and CHPs in our study believe that some of their patients may have undiagnosed and untreated ADHD. These results suggest a continued need to support appropriate identification of untreated ADHD among adults and young adults. Effective detection of ADHD in adults needs to consider reported difficulties among many providers with identifying patients with ADHD who actually have symptoms and would benefit from treatment from those who may "fake" the symptoms to gain access to stimulants for nonmedical use.[20,21] This difficulty expressed by the clinicians may be due to generally low to moderate levels of competence and comfort of primary care practitioners with assessment and diagnosis of ADHD in teens and adults.[22–24] Many participants reported they always refer out for diagnosis and seek expert consultation for treatment.

Most participants agree that diversion or abuse of stimulant medications is a problem and feel responsible for educating patients about legal, health, and physical risks of stimulant use and misuse. While half of participants believed that patients occasionally engaged in abuse, diversion and misuse of stimulants, FPs reported believing their patients engaged less frequently in nonmedical use

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than what CHPs believed. Unlike FPs, significantly more CHPs believe that patients with ADHD frequently or very frequently divert their medications by giving them to friends or selling them. Recent studies show that around 70% of college students who have a prescription for stimulants diverted medication at least once in their lifetime, mostly via sharing.[25,26] Similar patterns have been reported for misuse; while most students do use their ADHD medication as prescribed, misuse and diversion is not uncommon.[27] Even though only a very small percentage of prescription holders engages in frequent diversion, abuse, or misuse of their medications, nonmedical use-related behaviors should be identified, and prevention efforts aimed at reducing these behaviors should be considered.

The results of our study point to some potential areas where future initiatives for quality improvement, research, and education can be considered. For example, in describing their practices, only half of participants reported always discussing medication effects and side effects with their patients, and many do not feel well prepared in discussing all treatment options with the patients. Not many prescribers use drug compliance monitoring strategies such as state medical registries, urine drug tests, and pill counts. These observations provide an opportunity to support providers with tools and resources on responsible patient education, shared decision making, and risk reduction.

Overall, FPs and CHPs were similar in many aspects related to evaluation and management of ADHD. Noticeable differences were identified, however, with the FPs reporting using stimulants as first choice and feeling confident with stimulant prescribing more often than CHPs. It is important to note that while many CHPs see patients with ADHD, the majority reported that they do not prescribe stimulants or initiate any drug therapy for ADHD. Even though we have not explored the actual reasons in the survey, this may be due to limited prescription privileges to psychologists and other health professionals on campus. This finding highlights the need for further explorations and programs to support transition of care across services for young adults with ADHD via either accessible referral resources or alternative care transition models to address potential discontinuity of mental health care and gaps in treatment.[28]

Our results are consistent with other studies that identified physicians' low level of confidence in medication management of ADHD with high level of concerns about stimulant medications.[29] Although more FPs than CHPs felt comfortable with prescribing stimulants, many FPs reported they prescribe based on their own success and comfort with medications and their own clinical judgment rather than evidence-based guidelines. These findings are not surprising, as there are no evidence-based primary care–focused US-specific treatment algorithms and practice guidelines for adult ADHD in the US. Moreover, only one third of prescribers reported they consider patient preferences when deciding on which medication to use. This points to the need to establish evidence-based practice guidelines and shared decision making guides that account for the balance of harms and benefits of all available treatment options.

In addition, due to the lack of treatment standards and adult ADHD quality metrics, the reported practices and resulting quality of care are difficult to assess.[30] For instance, some of the reported practices are not supported by sufficient level of evidence. For example, "medication holidays" were approved/encouraged by the substantial number of the providers in our study, though there is a paucity of research on the benefits and potentials risks of "medication holidays" among adults.[31]

Overall, FPs and CHPs are concerned with stimulant abuse, misuse, and diversion, and would benefit from additional information, education, and practice support through Continuing Medical Education (CME) opportunities, journal publications, conferences, and professional associations. The results of this study suggest that education, research, quality improvement, and prevention initiatives need to continue to focus on nonmedical use reduction to ensure safe and appropriate use of stimulants among young adults.

This study has some limitations that may affect the generalizability of results. The sociodemographic and practice characteristics of the FPs sample are comparable to the AAFP membership. However, it is not possible to generalize these results to FPs who are not AAFP members or the CHPs who did not participate in the survey. Furthermore, our study only involved family practice physicians and college health professionals. Pediatricians and other physician specialties involved in treating teenagers and young adults of college age

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with ADHD were not included. Despite the relatively high response rate for physicians, there might still be a response bias; the physicians with higher interest in mental health might have chosen to participate, hence their statements possibly may not be reflective of those who have low interest in mental health and ADHD, in particular.

This study was based on clinicians' self reports and did not evaluate knowledge and clinical behavior by objective measures. The relationship between opinions/attitudes and clinical behavior is controversial.[32,33] To that end, we do not know to what extent the self-reported practices correlate with the objective measures of clinicians' performance or quality of care, whether the occasional diversion or misuse of stimulant medications among young adults are viewed by physicians as benign, and what actions, if any, the clinicians actually choose when providing care to their actual patients. In addition, we did not guide our participants to think of specific patients or situations when answering questions and were limited in our ability to explore in depth factors that may have influenced the responses, including those related to the local ecosystems and infrastructure, the prescribing privileges, prioritizing treatment selection for specific subgroups of patients, local policies and mandates, and other factors related to participant's specific settings.

Finally, there are very few published reliable instruments assessing FPs' and CHPs' opinions, knowledge, and attitudes about ADHD and nonmedical use of stimulants. The survey instrument was developed and subsequently tested by the project team to include a limited number of questions related to only 4 constructs and to assure item relevance and comprehension. We did not evaluate the reliability and the validity of the survey instrument.

Conclusion

The results of this survey are an important step toward documenting knowledge on topics related to ADHD pharmacotherapy and nonmedical use of stimulants in young adults in family medicine and college health clinics. Additional resources and interventions are needed to address identified gaps for quality improvement related to medication management, misuse reduction, and interprofessional collaborations and continuation of care to ensure safe and appropriate use of stimulants. The result of this project will lead to better understanding of what strategies need to be implemented to improve ADHD care and to prevent and reduce issues related to inappropriate use of stimulants.

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References

1. Kessler RC, Adler L, Barkley R, et al. The prevalence and correlates of adult ADHD in the United States: results from the National Comorbidity Survey Replication. Am J Psychiatry 2006; 163:716–23.
2. Simon V, Czobor P, Bálint S, Mészáros A, Bitter I. Prevalence and correlates of adult attention-deficit hyperactivity disorder: meta-analysis. Br J Psychiatry 2009;194:204–11.
3. Weyandt LL, DuPaul G. ADHD in college students. J Atten Disord 2006;10:9–19.
4. Biederman J, Petty CR, Evans M, Small J, Faraone SV. How persistent is ADHD? A controlled 10-year follow-up study of boys with ADHD. Psychiatry Res 2010;177:299–304.
5. Faraone SV, Biederman J, Mick E. The age-dependent decline of attention deficit hyperactivity disorder: a meta-analysis of follow-up studies. Psychol Med 2006;36:159–65.
6. McCabe SE, West BT, Teter CJ, Boyd CJ. Trends in medical use, diversion, and nonmedical use of prescription medications among college students from 2003 to 2013: connecting the dots. Addict Behav 2014;39:1176–82.
7. Verdi G, Weyandt LL, Zavras BM. Non-medical prescription stimulant use in graduate students: relationship with academic self-efficacy and psychological variables. J Atten Disord 2016;20:741–53.
8. Wilens TE, Adler LA, Adams J, et al. Misuse and diversion of stimulants prescribed for ADHD: a systematic review of the literature. J Am Acad Child Adolesc Psychiatry 2008;47:21–31.
9. Arria AM, Caldeira KM, O'Grady KE, Vincent KB, Johnson EP, Wish ED. Nonmedical use of prescription stimulants among college students: associations with attention-deficit-hyperactivity disorder and polydrug use. Pharmacotherapy 2008;28:156–69.
10. Arria AM, DuPont RL. Nonmedical prescription stimulant use among college students: why we need to do something and what we need to do. J Addict Dis 2010;29:417–26.

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11. Chen LY, Strain EC, Crum RM, Storr CL, Mojtabai R. Sources of nonmedically used prescription stimulants: differences in onset, recency and severity of misuse in a population-based study. Drug Alcohol Depend 2014;145:106–12.
12. Kelley K, Clark B, Brown V, Sitzia J. Good practice in the conduct and reporting of survey research. Int J Qual Health Care 2003;15:261–6.
13. Post RE, Kurlansik SL. Diagnosis and management of adult attention-deficit/hyperactivity disorder. Am Fam Physician 2012;85:890–6.
14. Meaux JB, Green A, Broussard L. ADHD in the college student: a block in the road. J Psychiatr Ment Health Nurs 2009;16:248–56.
15. Knutson KC, O'Malley M. Adult attention-deficit/hyperactivity disorder: A survey of diagnosis and treatment practices. J Am Acad Nurse Pract 2010; 22:593–601.
16. Weisler RH, Goodman DW. Assessment and diagnosis of adult ADHD: clinical challenges and opportunities for improving patient care. Primary Psychiatry 2008;15(11), 53–64.
17. Colaneri N, Keim S, Adesman A. Physician practices to prevent ADHD stimulant diversion and misuse. J Subst Abuse Treat 2017;74:26–34.
18. Agarwal R, Goldenberg M, Perry R, IsHak WW. The quality of life of adults with attention deficit hyperactivity disorder: a systematic review. Innov Clin Neurosci 2012;9:10–21.
19. Coghill, D. The impact of medications on quality of life in attention-deficit hyperactivity disorder: a systematic review. CNS Drugs 2010;24:843–66.
20. Sullivan BK, May K, Galbally L. Symptom exaggeration by college adults in attention-deficit hyperactivity disorder and learning disorder assessments. Appl Neuropsychol 2007;14:189–207.
21. Sansone RA, Sansone LA. Faking attention deficit hyperactivity disorder. Innov Clin Neurosci 2011;8: 10–3.
22. Faraone SV, Spencer TJ, Montano CB, Biederman J. Attention-deficit/hyperactivity disorder in adults: a survey of current practice in psychiatry and primary care. Arch Intern Med 2004;164:1221–6.
23. Lamberg, L. ADHD often undiagnosed in adults: appropriate treatment may benefit work, family, social life. JAMA 2003;290:1565–7.
24. Tatlow-Golden M, Prihodova L, Gavin B, Cullen W, McNicholas F. What do general practitioners know about ADHD? Attitudes and knowledge among first-contact gatekeepers: systematic narrative review. BMC Fam Pract 2016;17:129.
25. Garnier LM, et al. Sharing and selling of prescription medications in a college student sample. J Clin Psychiatry 2010;71:262–9.
26. Gallucci AR, Martin RJ, Usdan SL. The diversion of stimulant medications among a convenience sample of college students with current prescriptions. Psychol Addict Behav 2015;29:154–61.
27. Rabiner DL, Anastopoulos AD, Costello EJ, Hoyle RH, McCabe SE, Swartzwelder HS. The misuse and diversion of prescribed ADHD medications by college students. J Atten Disord 2009;13:144–53.
28. Young S, Murphy CM, Coghill D. Avoiding the 'Twilight Zone': recommendations for the transition of services from adolescence to adulthood for young people with ADHD. BMC Psychiatry 2011;11:174.
29. Stockl KM, Hughes TE, Jarrar MA, Secnik K, Perwien AR. Physician perceptions of the use of medications for attention deficit hyperactivity disorder. J Manag Care Pharm 2003;9:416–23.
30. Faraone SV, Silverstein MJ, Antshel K, et al. The Adult ADHD Quality Measures Initiative. J Atten Disord. 2019;23:1063–78.
31. Ibrahim K, Donyai P. Drug holidays from ADHD medication: international experience over the past four decades. J Atten Disord 2015;19:551–68.
32. Montaño DE, Phillips WR. Cancer screening by primary care physicians: a comparison of rates obtained from physician self-report, patient survey, and chart audit. Am J Public Health 1995;85:795–800.
33. Cabana MD, et al. Why don't physicians follow clinical practice guidelines? A framework for improvement. JAMA 1999;282:1458–65.

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Appendix

Detailed Survey Development and Administration Methodology

Construct Development (Key Issues)

The project team developed a survey with collaboration with 3 experts in treating ADHD (a family physician, a pediatrician, and an ADHD research expert). The survey was developed based on key themes derived from the literature review data (See below for search criteria). The literature review was conducted in March-June, 2015, and resulted in 668 initial articles. The research team assessed the article titles and abstracts for eligibility, and reviewed full texts of 36 to inform the contents of the survey. The articles were eligible if they included survey methodology and survey results on a topic of ADHD and medical and nonmedical use of stimulants. The reporting of results of the literature review is beyond the scope of this work. The survey included the following constructs: knowledge and belief; practice; risk management; strategies and resources.

Search Terms

("attention deficit disorder with hyperactivity"[MeSH Terms] OR "attention deficit disorder with hyperactivity"[All Fields] OR "adhd"[All Fields] OR "Attention Deficit and Disruptive Behavior Disorders"[MeSH Terms] OR "Attention Deficit and Disruptive Behavior Disorders"[All Fields]) AND ("treatment"[All Fields] OR "guidelines"[All Fields] OR "treatment guidelines"[All Fields] OR "recommendation"[All Fields] OR "best practice"[All Fields] OR "current practice"[All Fields] OR "clinical decision algorithm"[All Fields]) AND "adult"[MeSH Terms] AND "2009/10/09"[PDAT] : "2014/10/07"[PDAT] AND English[lang].

Draft Survey Questions

Survey items under each construct were developed based on existing items extracted from the literature review and from information derived from an expert panel. The process resulted in 77 survey items plus a demographics section; these were further refined into a 43-item questionnaire.

Pilot and Refine the Questionnaire

We piloted the 43-item survey with 10 practicing physicians to evaluate their comprehension of the questions and answer choices. The pilot group also rated the quality of each question on a 5-point scale (excellent, very good, good, fair and poor) and provided suggestions for improvement. After revisions, the final survey consisted of 42 items including 9 items collecting respondents' demographic information and 1 open-ended question that asks respondents to share any thoughts about the topic of ADHD or stimulant misuse, abuse, or diversion among young adults.

We created 2 versions of the survey: article and on-line. The survey included a header with the AAFP brand, and was formatted to be compatible with the AAFP's optical scanner (Fujitsu fi-6670), the scanning software (ScandAll Pro, Fujitsu Computer Products of America, Inc., Sunnyvale, CA), and the data entry/reading software (ReMark, Remark, Malvern, PA). We also created an on-line version of the survey using Novi Survey. The on-line survey used the same question order, though formatting varied slightly to account for user-friendly experience on-line.

Survey Administration

Each survey was coded with the study identification number. The surveys were mailed with a formal AAFP cover letter and a prepaid return envelope. A 2-dollar bill was included with each survey.

An email, with a link to the survey, was sent just before the initial mailing on October 27, 2015, to those members with email addresses. The web link was offered as an alternative to completing the article form. An email reminder was sent to nonresponders 2 weeks following the initial mailing. A second article survey was mailed to nonresponders 5 weeks from the first mailing. The survey was closed on January 31, 2016. Completed surveys were sorted and scanned and manually corrected for mis-scanned responses and hand keyed for open ended answers.

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Appendix Table 1. Based on Your Understanding, How Prevalent is ADHD in Adults?

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Less than 1%	51 (7.7)	2 (1.6)	53 (6.7)
1% to 5%	330 (50.1)	41 (32.0)	371 (47.1)
6% to 10%	215 (27.3)	49 (38.3)	264 (33.5)
11% to 20%	50 (6.4)	22 (17.2)	72 (9.1)
Greater than 20%	11 (1.4)	12 (9.4)	23 (2.9)
Other	2 (0.3)	2 (1.6)	4 (0.5)
Total	*659*	*128*	*787*

AAFP, American Academy of Family Physicians; ACHA, American College Health Association; ADHD, attention deficit hyperactivity disorder.

Appendix Table 2. Based on Your Best Understanding, How Prevalent is ADHD Among College Students?

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Less than 1%	39 (5.9)	2 (1.6)	41 (5.2)
1% to 5%	281 (42.7)	28 (22.4)	309 (39.5)
6% to 10%	250 (38.0)	53 (42.4)	303 (38.7)
11% to 20%	72 (10.9)	27 (21.6)	99 (12.6)
Greater than 20%	16 (2.4)	15 (12.0)	31 (4.0)
Total	*658*	*125*	*783*

AAFP, American Academy of Family Physicians; ACHA, American College Health Association; ADHD, attention deficit hyperactivity disorder.

Appendix 3. How Likely Is it That You Have Adult Patients with Undiagnosed ADHD in Your General Practice?

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Very likely	197 (30.1)	41 (32.3)	238 (30.4)
Likely	316 (48.2)	61 (48.0)	377 (48.2)
Neither likely nor unlikely	67 (10.2)	10 (7.9)	77 (9.8)
Unlikely	63 (9.6)	11 (8.7)	74 (9.5)
Very unlikely	12 (1.8)	4 (3.1)	16 (2.0)
Total	*655*	*127*	*782*

AAFP, American Academy of Family Physicians; ACHA, American College Health Association; ADHD, attention deficit hyperactivity disorder.

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Appendix 4. Please Select to What Extent You Agree or Disagree with the Following Statements

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
ADHD is overdiagnosed in teens and young adults.			
Strongly agree	99 (15.1)	15 (12.1)	114 (14.7)
Agree	264 (40.4)	45 (36.3)	309 (39.7)
Neither agree nor disagree	172 (26.3)	35 (28.2)	207 (26.6)
Disagree	114 (17.4)	29 (23.4)	143 (18.4)
Strongly disagree	5 (0.8)	0 (0.0)	5 (0.6)
Total	*654*	*124*	*778*
Untreated ADHD affects quality of life.			
Strongly agree	171 (26.4)	39 (31.5)	210 (27.2)
Agree	419 (64.8)	78 (62.9)	497 (64.5)
Neither agree nor disagree	47 (7.3)	7 (5.6)	54 (7.0)
Disagree	4 (0.6)	0 (0.0)	4 (0.5)
Strongly disagree	6 (0.9)	0 (0.0)	6 (0.8)
Total	*647*	*124*	*771*
Untreated ADHD is often associated with risky behaviors.			
Strongly agree	131 (20.3)	34 (27.9)	165 (21.5)
Agree	361 (56.0)	60 (49.2)	421 (54.9)
Neither agree nor disagree	124 (19.2)	24 (19.7)	148 (19.3)
Disagree	24 (3.7)	4 (3.3)	28 (3.7)
Strongly disagree	5 (0.8)	0 (0.0)	5 (0.7)
Total	*645*	*122*	*767*
ADHD is easy to "fake" for drug-seeking patients.			
Strongly agree	106 (16.4)	13 (10.5)	119 (15.5)
Agree	325 (50.3)	50 (40.3)	375 (48.7)
Neither agree nor disagree	146 (22.6)	40 (32.3)	186 (24.2)
Disagree	67 (10.4)	21 (16.9)	88 (11.4)
Strongly disagree	2 (0.3)	0 (0.0)	7 (0.3)
Total	*646*	*124*	*770*
It is difficult to determine when a patient is "faking" the symptoms of ADHD.			
Strongly agree	69 (10.7)	6 (4.9)	75 (9.8)
Agree	347 (53.8)	47 (38.2)	394 (51.3)
Neither agree nor disagree	156 (24.2)	42 (34.1)	198 (25.8)
Disagree	71 (11.0)	28 (22.8)	99 (12.9)
Strongly disagree	2 (0.3)	0 (0.0)	2 (0.3)
Total	*645*	*123*	*768*

AAFP, American Academy of Family Physicians; ACHA, American College Health Association; ADHD, attention deficit hyperactivity disorder.

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Appendix 5. Please Select How Often You Offer or Perform Any of the Following with the Patients with ADHD in Your Practice

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Seek expert consultation in diagnosing and treating.			
Always	123 (19.1)	59 (48.0)	182 (23.7)
Very often	210 (32.6)	26 (21.1)	236 (30.7)
Sometimes	192 (29.8)	31 (25.2)	223 (29.0)
Rarely	91 (14.1)	4 (3.3)	95 (12.4)
Never	29 (4.5)	3 (2.4)	32 (4.2)
Total	*645*	*123*	*768*
Follow a medication treatment algorithm such as the Texas algorithm or other recommendations.			
Always	14 (2.2)	13 (11.4)	27 (3.6)
Very often	74 (11.6)	20 (17.5)	94 (12.5)
Sometimes	129 (20.2)	21 (18.4)	150 (19.9)
Rarely	180 (28.2)	11 (9.6)	191 (25.4)
Never	242 (37.9)	49 (43.0)	291 (38.6)
Total	*639*	*114*	*753*
Make a specific visit to evaluate for ADHD.			
Always	166(25.9)	39 (32.8)	205 (27.0)
Very often	211 (33.0)	22 (18.5)	233 (30.7)
Sometimes	109 (17.0)	9 (7.6)	118 (15.5)
Rarely	70 (10.9)	7 (5.9)	77 (10.1)
Never	84 (13.1)	42 (5.5)	126 (16.6)
Total	*640*	*119*	*759*
Initiate any type of drug therapy for ADHD.			
Always	28 (4.4)	7 (5.8)	35 (4.6)
Very often	192 (30.0)	21 (17.5)	213 (28.0)
Sometimes	246 (38.4)	16 (13.3)	262 (34.4)
Rarely	72 (12.2)	23 (19.2)	101 (13.3)
Never	97 (15.1)	53 (44.2)	150 (19.7)
Total	*641*	*120*	*761*
Use a stimulant as your first choice for ADHD treatment.			
Always	44 (6.9)	9 (7.7)	53 (7.0)
Very often	304 (47.9)	27 (23.1)	331 (44.0)
Sometimes	149 (23.5)	23 (19.7)	172 (22.9)
Rarely	55 (8.7)	14 (12.0)	69 (9.2)
Never	83 (13.1)	44 (37.6)	127 (16.9)
Total	*635*	*117*	*752*
Combine medication with other treatment recommendations such as organizational skills training, behavioral counseling.			
Always	92 (14.4)	23 (19.2)	115 (15.2)
Very often	238 (37.2)	37 (30.8)	275 (36.2)
Sometimes	176 (27.5)	26 (21.7)	202 (26.6)
Rarely	70 (11.0)	5 (4.2)	75 (9.9)
Never	63 (9.9)	29 (24.2)	92 (12.1)
Total	*639*	*120*	*759*
Discuss effects and side effects of stimulants with patients.			
Always	353 (55.2)	61 (50.0)	414 (54.3)
Very often	196 (30.6)	24 (19.7)	220 (28.9)
Sometimes	42 (6.6)	21 (17.2)	63 (8.3)
Rarely	19 (3.0)	9 (7.4)	28 (3.7)
Never	30 (4.7)	7 (5.7)	37 (4.9)
Total	*640*	*122*	*762*

AAFP, American Academy of Family Physicians; ACHA, American College Health Association; ADHD, attention deficit hyperactivity disorder.

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Appendix 6. Please Select to What Extent You Agree or Disagree with the Following Statements

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
ADHD often occurs with another mental health problem.			
Strongly agree	102 (15.8)	20 (16.1)	122 (15.9)
Agree	378 (58.6)	62 (50.0)	440 (57.2)
Neither agree nor disagree	122 (18.9)	31 (25.0)	153 (19.9)
Disagree	40 (6.2)	10 (8.1)	50 (6.5)
Strongly disagree	3 (0.5)	1 (0.8)	4 (0.5)
Total	*645*	*124*	*769*
Stimulants have the potential for abuse.			
Strongly agree	353 (54.5)	71 (57.3)	424 (54.9)
Agree	289 (44.6)	49 (39.5)	338 (43.8)
Neither agree nor disagree	4 (0.6)	3 (2.4)	7 (0.9)
Disagree	2 (0.3)	1 (0.8)	3 (0.4)
Strongly disagree	0 (0.0)	0 (0.0)	0 (0.0)
Total	*648*	*124*	*772*
Stimulants are additive.			
Strongly agree	161 (24.9)	36 (29.0)	197 (25.6)
Agree	302 (46.7)	53 (42.7)	355 (46.1)
Neither agree nor disagree	133 (20.6)	25 (20.2)	158 (20.5)
Disagree	49 (7.6)	10 (8.1)	59 (7.7)
Strongly disagree	1 (0.2)	0 (0.0)	1 (0.1)
Total	*646*	*124*	*770*
There is a clear difference between diversion, misuse and abuse.			
Strongly agree	122 (18.9)	28 (22.6)	150 (19.5)
Agree	295 (45.6)	59 (47.6)	354 (45.9)
Neither agree nor disagree	121 (18.7)	23 (18.5)	144 (18.7)
Disagree	98 (15.1)	13 (10.5)	111 (14.4)
Strongly disagree	11 (1.7)	1 (0.8)	12 (1.6)
Total	*647*	*124*	*771*
Diversion or abuse is a problem overall.			
Strongly agree	190 (29.4)	21 (16.9)	211 (27.4)
Agree	357 (55.3)	80 (64.5)	437 (56.8)
Neither agree nor disagree	82 (12.7)	18 (14.5)	100 (13.0)
Disagree	16 (2.5)	5 (4.0)	21 (2.7)
Strongly disagree	1 (0.2)	0 (0.0)	1 (0.1)
Total	*646*	*124*	*770*
Diversion is a more serious issue than misuse or abuse.			
Strongly agree	61 (9.5)	16 (12.9)	77 (10.0)
Agree	168 (26.1)	37 (29.8)	205 (26.7)
Neither agree nor disagree	304 (47.3)	52 (41.9)	356 (46.4)
Disagree	103 (16.0)	17 (13.7)	120 (15.6)
Strongly disagree	7 (1.1)	2 (1.6)	9 (1.2)
Total	*643*	*124*	*767*
The legal consequences of diversion for both yourself and patient are serious.			
Strongly agree	173 (26.7)	43 (35.5)	216 (28.1)
Agree	366 (56.6)	60 (49.6)	426 (55.5)
Neither agree nor disagree	90 (13.9)	15 (12.4)	105 (13.7)
Disagree	16 (2.5)	3 (2.5)	19 (2.5)
Strongly disagree	2 (0.3)	0 (0.0)	2 (0.3)
Total	*647*	*121*	*768*

Continued

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Appendix 6. Continued

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
You have concerns about diversion with ADHD medications.			
Strongly agree	164 (25.4)	37 (30.3)	201 (26.2)
Agree	360 (55.8)	62 (50.8)	422 (55.0)
Neither agree nor disagree	92 (14.3)	20 (16.4)	112 (14.6)
Disagree	29 (4.5)	2 (1.6)	31 (4.0)
Strongly disagree	0 (0.0)	1 (0.8)	1 (0.1)
Total	*645*	*122*	*767*

AAFP, American Academy of Family Physicians; ACHA, American College Health Association; ADHD, attention deficit hyperactivity disorder.

Appendix 7. Based on Your Best Understanding, for Each Statement Below Please Select Whether the Definition is True or False

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Misuse is intentional or unintentional use of stimulants in a way other than prescribed.			
TRUE	635 (98.4)	116 (95.1)	751 (97.9)
FALSE	10 (1.6)	6 (4.9)	16 (2.1)
Total	*645*	*122*	*767*
Abuse is the recurrent nonmedical use of stimulants to alter one's state of consciousness ("get high").			
TRUE	616 (95.8)	118 (95.9)	734 (95.8)
FALSE	27 (4.2)	5 (4.1)	32 (4.2)
Total	*643*	*123*	*766*
Diversion is redirection of a stimulant from its lawful purpose to nonmedical or illicit use.			
TRUE	615 (95.6)	117 (95.1)	732 (95.6)
FALSE	28 (4.4)	6 (4.9)	34 (4.4)
Total	*643*	*123*	*766*

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Appendix 8. Please Select All That Apply When Evaluating a Patient Prior to Prescribing Medical Treatment for ADHD

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
I prescribe after confirming that patients' complaints are consistent with ADHD symptoms via an office visit.			
Not Selected	268 (41.6)	102 (82.9)	370 (48.2)
Selected	377 (58.4)	21 (17.1)	398 (51.8)
Total	*645*	*123*	*768*
I prescribe after the first evaluation without any confirmatory data.			
Not Selected	600 (93.0)	123 (100.0)	723 (94.1)
Selected	45 (7.0)	0 (0.0)	45 (5.9)
Total	*645*	*123*	*768*
I wait for the evaluation report.			
Not Selected	369 (57.2)	75 (75)	444 (57.8)
Selected	276 (42.8)	48 (48)	324 (42.2)
Total	*645*	*123*	*768*
I use multiple sessions to determine if treatment is necessary.			
Not Selected	492 (76.3)	104 (84.6)	596 (77.6)
Selected	153 (23.7)	19 (15.4)	172 (22.4)
Total	*645*	*123*	*768*
I refer out for diagnosis.			
Not Selected	309 (47.9)	36 (29.3)	345 (44.9)
Selected	336 (52.1)	87 (70.7)	423 (55.1)
Total	*645*	*123*	*768*
None of the above.			
Not Selected	636 (98.6)	121 (98.4)	757 (98.6)
Selected	9 (1.4)	2 (1.6)	11 (1.4)
Total	*645*	*123*	*768*
Not applicable.			
Not Selected	605 (93.8)	102 (82.9)	707 (92.1)
Selected	40 (6.2)	21 (17.1)	61 (7.9)
Total	*645*	*123*	*768*

Appendix 9. When You Are Following a Patient for Their ADHD Medication, How Frequently Do You See Them for Follow-Up Monitoring?

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Every month	130 (20.1)	44 (35.8)	174 (22.6)
Every 3 months	327 (50.5)	30 (24.4)	357 (46.3)
Every 6 months	99 (15.3)	4 (3.3)	103 (13.4)
Every year	14 (2.2)	0 (0.0)	14 (1.8)
When they decide to make an appointment	1 (0.2)	0 (0.0)	1 (0.1)
Never	1 (0.2)	1 (0.8)	2 (0.3)
Not applicable	76 (11.7)	44 (35.8)	120 (15.6)
Total	*648*	*123*	*771*

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Appendix 10. How Do You Monitor Your ADHD Patient's Medication Compliance? (Please Select All That Apply)

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
I use a state medication registry to track patient prescription drug use.			
Not Selected	241 (37.9)	73 (59.8)	314 (41.4)
Selected	395 (62.1)	49 (40.2)	444 (58.6)
Total	*636*	*122*	*758*
I use random urine drug testing (UDT).			
Not Selected	367 (57.7)	96 (78.7)	463 (61.1)
Selected	269 (42.3)	26 (21.3)	295 (38.9)
Total	*636*	*122*	*758*
I use urine drug testing (UDT) at every monitoring visit for a patient on ADHD medications.			
Not Selected	603 (94.8)	119 (97.5)	722 (95.3)
Selected	33 (5.2)	3 (2.5)	36 (4.7)
Total	*636*	*122*	*758*
I use pill counts.			
Not Selected	518 (81.4)	110 (90.2)	628 (82.8)
Selected	118 (18.6)	12 (9.8)	130 (17.2)
Total	*636*	*122*	*758*
Not applicable.			
Not Selected	497 (78.1)	66 (54.1)	563 (74.3)
Selected	139 (21.9)	56 (45.9)	195 (25.7)
Total	*636*	*122*	*758*
Other.			
Not Selected	577 (90.7)	106 (86.9)	683 (90.1)
Selected	59 (9.3)	16 (13.1)	75 (9.9)

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Appendix 11. How Do You Evaluate Whether Your Treatment Is Working? (Please Select All That Apply)

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Patient self-report.			
Not Selected	88 (13.6)	42 (34.1)	130 (16.9)
Selected	558 (86.4)	81 (65.9)	639 (83.1)
Total	*646*	*123*	*769*
Report cards for young adults.			
Not Selected	440 (68.1)	105 (85.4)	545 (70.9)
Selected	206 (31.9)	18 (14.6)	224 (29.1)
Total	*646*	*123*	*769*
Work performance evaluations.			
Not Selected	519 (80.3)	115 (93.5)	634 (82.4)
Selected	127 (19.7)	8 (6.5)	135 (17.6)
Total	*646*	*123*	*769*
Ask their significant other.			
Not Selected	395 (61.1)	115 (93.5)	510 (66.3)
Selected	251 (38.9)	8 (6.5)	259 (33.7)
Total	*646*	*123*	*769*
Ask their parents.			
Not Selected	281 (43.5)	115 (93.5)	396 (51.5)
Selected	365 (56.5)	8 (6.5)	373 (48.5)
Total	*646*	*123*	*769*
Not applicable.			
Not Selected	555 (85.9)	82 (66.7)	637 (82.8)
Selected	91 (14.1)	41 (33.3)	132 (17.2)
Total	*646*	*123*	*769*
Other.			
Not Selected	593 (91.8)	111 (90.2)	704 (91.5)
Selected	53 (8.2)	12 (9.8)	65 (8.5)
Total	*646*	*123*	*769*

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Appendix 12. How Frequently Do You Reassess Your Patients with ADHD if They Are:

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Children (0 to 13 y.o.).			
Monthly	72 (11.4)	5 (4.6)	77 (10.4)
Every 2 to 3 months	207 (32.9)	6 (5.5)	213 (28.8)
Every 3 to 6 months	164 (26.0)	2 (1.8)	166 (22.5)
Every 6 to 9 months	29 (4.6)	1 (0.9)	30 (4.1)
Never	5 (0.8)	1 (0.9)	6 (0.8)
Not applicable	153 (24.3)	94 (86.2)	247 (33.4)
Total	*630*	*109*	*739*
Teenagers (13 to 18 y.o.).			
Monthly	74 (11.8)	19 (17.1)	93 (12.6)
Every 2 to 3 months	201 (32.0)	12 (10.8)	213 (28.8)
Every 3 to 6 months	191 (30.4)	6 (5.4)	197 (26.7)
Every 6 to 9 months	42 (6.7)	1 (0.9)	43 (5.8)
Never	2 (0.3)	1 (0.9)	3 (0.4)
Not applicable	118 (18.8)	72 (64.9)	190 (25.7)
Total	*628*	*111*	*739*
Young adult (17 to 26 y.o.).			
Monthly	58 (9.2)	35 (30.2)	93 (12.5)
Every 2 to 3 months	205 (32.5)	20 (17.2)	225 (30.2)
Every 3 to 6 months	208 (33.0)	15 (12.9)	223 (29.9)
Every 6 to 9 months	66 (10.5)	4 (3.4)	70 (9.4)
Never	2 (0.3)	1 (0.9)	3 (0.4)
Not applicable	91 (14.4)	41 (35.3)	132 (17.7)
Total	*630*	*116*	*746*
Adult (26 and older y.o.).			
Monthly	47 (7.5)	15 (13.4)	62 (8.4)
Every 2 to 3 months	173 (27.5)	22 (19.6)	195 (26.4)
Every 3 to 6 months	215 (34.2)	18 (16.1)	233 (31.5)
Every 6 to 9 months	96 (15.3)	4 (3.6)	100 (13.5)
Never	3 (0.5)	2 (1.8)	5 (0.7)
Not applicable	94 (15.0)	51 (45.5)	145 (19.6)
Total	*628*	*112*	*740*
On ADHD stimulant medication.			
Monthly	67 (10.7)	34 (30.4)	101 (13.6)
Every 2 to 3 months	202 (32.1)	20 (17.9)	222 (30.0)
Every 3 to 6 months	212 (33.7)	13 (11.6)	225 (30.4)
Every 6 to 9 months	61 (9.7)	3 (2.7)	64 (8.6)
Never	2 (0.3)	1 (0.9)	3 (0.4)
Not applicable	85 (13.5)	41 (36.6)	126 (17.0)
Total	*629*	*112*	*741*
Just initiating treatment.			
Monthly	424 (67.5)	58 (52.3)	482 (65.2)
Every 2 to 3 months	81 (12.9)	3 (2.7)	84 (11.4)
Every 3 to 6 months	21 (3.3)	0 (0.0)	21 (2.8)
Every 6 to 9 months	5 (0.8)	2 (1.8)	7 (0.9)
Never	2 (0.3)	1 (0.9)	3 (0.4)
Not applicable	95 (15.1)	47 (42.3)	142 (19.2)
Total	*628*	*111*	*739*

Continued

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Appendix 12. Continued

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
In their first 2 years of treatment.			
Monthly	54 (8.6)	23 (20.7)	77 (10.5)
Every 2 to 3 months	235 (37.6)	28 (25.2)	263 (35.7)
Every 3 to 6 months	215 (34.4)	14 (12.6)	229 (31.1)
Every 6 to 9 months	35 (5.6)	4 (3.6)	39 (5.3)
Never	2 (0.3)	2 (1.8)	4 (0.5)
Not applicable	84 (13.4)	40 (36.0)	124 (16.8)
Total	*625*	*111*	*736*
Stable on treatment after 2 years.			
Monthly	18 (2.9)	14 (12.6)	32 (4.4)
Every 2 to 3 months	150 (24.1)	20 (18.0)	170 (23.2)
Every 3 to 6 months	227 (36.4)	23 (20.7)	250 (34.1)
Every 6 to 9 months	141 (22.6)	13 (11.7)	154 (21.0)
Never	3 (0.5)	1 (0.9)	4 (0.5)
Not applicable	84 (13.5)	40 (36.0)	124 (16.9)
Total	*623*	*111*	*734*

Appendix 13. Based on Your Best Understanding, How Frequently Do Patients Engage in Any of the Following:

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Misuse ADHD medication.			
Very frequently	21 (3.3)	5 (4.1)	26 (3.4)
Frequently	111 (17.3)	32 (26.2)	143 (18.7)
Occasionally	401 (62.5)	75 (61.5)	476 (62.3)
Rarely	105 (16.4)	8 (6.6)	113 (14.8)
Never	4 (0.6)	2 (1.6)	6 (0.8)
Total	*642*	*122*	*764*
Abuse prescribed stimulants.			
Very frequently	17 (2.6)	5 (4.1)	22 (2.9)
Frequently	93 (14.5)	22 (18.0)	115 (15.0)
Occasionally	368 (57.2)	71 (58.2)	439 (57.4)
Rarely	162 (25.2)	22 (18.0)	184 (24.1)
Never	3 (0.5)	2 (1.6)	5 (0.7)
Total	*643*	*122*	*765*
Diversion of prescribed stimulants to friends or sell to other people.			
Very frequently	21 (3.3)	8 (6.7)	29 (3.8)
Frequently	86 (13.4)	30 (25.0)	116 (15.3)
Occasionally	341 (53.3)	61 (50.8)	402 (52.9)
Rarely	184 (28.7)	19 (15.8)	203 (26.7)
Never	8 (1.3)	2 (1.7)	10 (1.3)
Total	*640*	*120*	*760*

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Appendix 14. Why Do You Think People Misuse ADHD Medication? (Please Select All That Apply):

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Lack of knowledge about effects vs side effects.			
Not Selected	375 (59.4)	67 (53.2)	442 (58.4)
Selected	256 (40.6)	59 (46.8)	315 (41.6)
Total	*631*	*126*	*757*
Feeling the medicine isn't working appropriately or losing effectiveness.			
Not Selected	214 (33.9)	58 (46.0)	272 (35.9)
Selected	417 (66.1)	68 (54.0)	485 (64.1)
Total	*631*	*126*	*757*
To "get high" or because of how the medicine makes them feel.			
Not Selected	388 (61.5)	82 (65.1)	470 (62.1)
Selected	243 (38.5)	44 (34.9)	287 (37.9)
Total	*631*	*126*	*757*
Unintentionally not remembering the recommendations.			
Not Selected	508 (80.5)	101 (80.2)	609 (80.4)
Selected	123 (19.5)	25 (19.8)	148 (19.6)
Total	*631*	*126*	*757*
For performance enhancement.			
Not Selected	164 (26.0)	35 (27.8)	199 (26.3)
Selected	467 (74.0)	91 (72.2)	558 (73.7)
Total	*631*	*126*	*757*
For losing weight.			
Not Selected	283 (44.8)	72 (57.1)	355 (46.9)
Selected	348 (55.2)	54 (42.9)	402 (53.1)
Total	*631*	*126*	*757*
To pull an "all-nighter."			
Not Selected	288 (45.6)	41 (32.5)	329 (43.5)
Selected	343 (54.4)	85 (67.5)	428 (56.5)
Total	*631*	*126*	*757*
To enhance academic performance.			
Not Selected	270 (42.8)	36 (28.6)	306 (40.4)
Selected	361 (57.2)	90 (71.4)	451 (59.6)
Total	*631*	*126*	*757*
Other.			
Not Selected	552 (87.5)	113 (89.7)	665 (87.8)
Selected	79 (12.5)	13 (10.3)	92 (12.2)
Total	*631*	*126*	*757*

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Appendix 15. Based On Your Best Understanding, Please Select the Characteristics of Patients That Predict Abuse or Diversion? (Please Select All That Apply):

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
History of drug use.			
Not Selected	123 (19.2)	47 (37.9)	170 (22.2)
Selected	518 (80.8)	77 (62.1)	595 (77.8)
Total	*641*	*124*	*765*
Low income.			
Not Selected	467 (72.9)	106 (85.5)	573 (74.9)
Selected	174 (27.1)	18 (14.5)	192 (25.1)
Total	*641*	*124*	*765*
Non-white race.			
Not Selected	472 (73.6)	102 (82.3)	574 (75.0)
Selected	169 (26.4)	22 (17.7)	191 (25.0)
Total	*641*	*124*	*765*
History of mental illness.			
Not Selected	250 (39.0)	77 (62.1)	327 (42.7)
Selected	391 (61.0)	47 (37.9)	438 (57.3)
Total	*641*	*124*	*765*
Male gender.			
Not Selected	325 (50.7)	68 (54.8)	393 (51.4)
Selected	316 (49.3)	56 (45.2)	372 (48.6)
Total	*641*	*124*	*765*
Affiliation with a fraternity or sorority.			
Not Selected	492 (76.8)	86 (69.4)	578 (75.6)
Selected	149 (23.2)	38 (30.6)	187 (24.4)
Total	*641*	*124*	*765*
Low GPA.			
Not Selected	570 (88.9)	101 (81.5)	671 (87.7)
Selected	71 (11.1)	23 (18.5)	94 (12.3)
Total	*641*	*124*	*765*
Competitive school or program.			
Not Selected	433 (67.6)	48 (38.7)	481 (62.9)
Selected	208 (32.4)	76 (61.3)	284 (37.1)
Total	*641*	*124*	*765*
Other.			
Not Selected	600 (93.6)	115 (92.7)	715 (93.5)
Selected	41 (6.4)	9 (7.3)	50 (6.5)
Total	*641*	*124*	*765*

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Appendix 16. Please Select How Well Each of the Following Describes You:

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
I feel comfortable about prescribing stimulant medication.			
Describes me completely	43 (6.8)	9 (7.8)	52 (7.0)
Describes me well	164 (26.1)	19 (16.5)	183 (24.6)
Describes me fairly well	174 (27.7)	23 (20.0)	197 (26.5)
Describes me somewhat	136 (21.6)	17 (14.8)	153 (20.6)
Does not describe me at all	112 (17.8)	47 (40.9)	159 (21.4)
Total	*629*	*115*	*744*
I tend to try medication even when uncertain about the diagnosis.			
Describes me completely	3 (0.5)	0 (0.0)	3 (0.4)
Describes me well	16 (2.5)	1 (0.9)	17 (2.3)
Describes me fairly well	40 (6.4)	2 (1.7)	42 (5.6)
Describes me somewhat	166 (26.4)	17 (14.7)	183 (24.6)
Does not describe me at all	403 (64.2)	96 (82.8)	499 (67.1)
Total	*628*	*116*	*744*
I believe serious uncommon side effects may influence my prescribing practice.			
Describes me completely	43 (6.9)	8 (7.0)	51 (6.9)
Describes me well	78 (12.4)	14 (12.2)	92 (12.4)
Describes me fairly well	141 (22.5)	19 (16.5)	160 (21.6)
Describes me somewhat	219 (34.9)	39 (33.9)	258 (34.8)
Does not describe me at all	146 (23.3)	35 (30.4)	181 (24.4)
Total	*627*	*115*	*742*
I believe treatment should be withdrawn if side effects emerge.			
Describes me completely	88 (14.1)	7 (6.1)	95 (12.9)
Describes me well	205 (33.0)	21 (18.4)	226 (30.7)
Describes me fairly well	155 (24.9)	29 (25.4)	184 (25.0)
Describes me somewhat	142 (22.8)	31 (27.2)	173 (23.5)
Does not describe me at all	32 (5.1)	26 (22.8)	58 (7.9)
Total	*622*	*114*	*736*
The emergence of common side effects does not alter my treatment plan.			
Describes me completely	8 (1.3)	2 (1.8)	10 (1.4)
Describes me well	50 (8.0)	11 (9.6)	61 (8.3)
Describes me fairly well	143 (22.9)	24 (21.1)	167 (22.6)
Describes me somewhat	185 (29.6)	32 (28.1)	217 (29.4)
Does not describe me at all	238 (38.1)	45 (39.5)	283 (38.3)
Total	*624*	*114*	*738*
I am not prescribing stimulant medications because I have many concerns about side effects.			
Describes me completely	23 (3.7)	2 (1.8)	25 (3.4)
Describes me well	21 (3.4)	6 (5.4)	27 (3.7)
Describes me fairly well	30 (4.8)	6 (5.4)	36 (4.9)
Describes me somewhat	112 (17.9)	16 (14.3)	128 (17.4)
Does not describe me at all	439 (70.2)	82 (73.2)	521 (70.7)
Total	*625*	*112*	*737*
I always screen for depression before prescribing ADHD medication.			
Describes me completely	128 (20.6)	33 (29.7)	161 (22.0)
Describes me well	196 (31.5)	29 (26.1)	225 (30.7)
Describes me fairly well	148 (23.8)	11 (9.9)	159 (21.7)
Describes me somewhat	85 (13.7)	7 (6.3)	92 (12.6)
Does not describe me at all	65 (10.5)	31 (27.9)	96 (13.1)
Total	*622*	*111*	*733*

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Appendix 16. Continued

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
I always screen for suicidal ideation before prescribing ADHD medication.			
Describes me completely	145 (23.4)	35 (31.3)	180 (24.7)
Describes me well	168 (27.2)	27 (24.1)	195 (26.7)
Describes me fairly well	139 (22.5)	12 (10.7)	151 (20.7)
Describes me somewhat	97 (15.7)	6 (5.4)	103 (14.1)
Does not describe me at all	68 (11.0)	32 (28.6)	100 (13.7)
Total	*617*	*112*	*729*
I am not concerned with suicidal ideation or depression when prescribing ADHD medication.			
Describes me completely	9 (1.5)	0 (0.0)	9 (1.2)
Describes me well	22 (3.6)	3 (2.7)	25 (3.4)
Describes me fairly well	56 (9.1)	5 (4.5)	61 (8.4)
Describes me somewhat	94 (15.2)	7 (6.3)	101 (13.8)
Does not describe me at all	437 (70.7)	97 (86.6)	534 (73.2)
Total	*618*	*112*	*730*
I often conduct the reassessment via an alternative encounter (email, phone, telemedicine, remote virtual meeting, etc.)			
Describes me completely	12 (2.0)	5 (4.5)	17 (2.3)
Describes me well	21 (3.4)	7 (6.3)	28 (3.9)
Describes me fairly well	35 (5.7)	4 (3.6)	39 (5.4)
Describes me somewhat	78 (12.7)	11 (9.9)	89 (12.3)
Does not describes me at all	469 (76.3)	84 (75.7)	553 (76.2)
Total	*615*	*111*	*726*
I believe "medication holidays" are acceptable.			
Describes me completely	143 (23.0)	13 (11.5)	156 (21.3)
Describes me well	208 (33.5)	23 (20.4)	231 (31.5)
Describes me fairly well	126 (20.3)	25 (22.1)	151 (20.6)
Describes me somewhat	92 (14.8)	20 (17.7)	112 (15.3)
Does not describe me at all	52 (8.4)	32 (28.3)	84 (11.4)
	621	*113*	*734*

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Appendix 17. Please Select How Likely or Unlikely Is Each of the Following Situations:

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
You would prescribe ADHD medication for a problem patient (e.g., patient with a history of substance abuse, mental illness, non-compliant, etc.).			
Very likely	0 (0.0)	2 (1.9)	2 (0.3)
Likely	18 (2.9)	1 (0.9)	19 (2.6)
Neither likely nor unlikely	47 (7.5)	14 (13.1)	61 (8.3)
Unlikely	248 (39.6)	32 (29.9)	280 (38.2)
Very unlikely	313 (50.0)	58 (54.2)	371 (50.6)
Total	*626*	*107*	*733*
You give your patients more than a 30 day supply of their ADHD stimulant medications.			
Very likely	12 (1.9)	3 (2.7)	15 (2.0)
Likely	87 (14.0)	5 (4.5)	92 (12.6)
Neither likely nor unlikely	48 (7.7)	10 (9.1)	58 (7.9)
Unlikely	129 (20.7)	19 (17.3)	148 (20.2)
Very unlikely	347 (55.7)	73 (66.4)	420 (57.3)
Total	*623*	*110*	*733*
You give refills on ADHD medications.			
Very likely	18 (3.0)	10 (10.4)	28 (4.1)
Likely	131 (22.1)	8 (8.3)	139 (20.2)
Neither likely nor unlikely	54 (9.1)	14 (14.6)	68 (9.9)
Unlikely	322 (54.3)	48 (50.0)	370 (53.7)
Very unlikely	68 (11.5)	16 (16.7)	84 (12.2)
Total	*593*	*96*	*689*
If a patient is on a stimulant, you add other non-stimulant ADHD medication.			
Very likely	5 (0.8)	0 (0.0)	5 (0.7)
Likely	85 (13.8)	6 (5.8)	91 (12.6)
Neither likely nor unlikely	159 (25.8)	28 (27.2)	187 (26.0)
Unlikely	181 (29.3)	23 (22.3)	204 (28.3)
Very unlikely	187 (30.3)	46 (44.7)	233 (32.4)
Total	*617*	*103*	*720*
If a patient is on a stimulant, you prescribe a second stimulant.			
Very likely	0 (0.0)	0 (0.0)	0 (0.0)
Likely	6 (1.0)	1 (1.0)	7 (1.0)
Neither likely nor unlikely	31 (5.0)	10 (9.5)	41 (5.7)
Unlikely	143 (23.2)	22 (21.0)	165 (22.9)
Very unlikely	436 (70.8)	72 (68.6)	508 (70.5)
Total	*616*	*105*	*721*
If a patient is on a non-stimulant, you add a stimulant.			
Very likely	5 (0.8)	2 (2.0)	7 (1.0)
Likely	119 (19.6)	11 (11.0)	130 (18.4)
Neither likely nor unlikely	171 (28.1)	28 (28.0)	199 (28.1)
Unlikely	151 (24.8)	17 (17.0)	168 (23.7)
Very unlikely	162 (26.6)	42 (42.0)	204 (28.8)
Total	*608*	*100*	*708*
If someone is misusing stimulant medication, you inquire about if they are using other substances (including alcohol).			
Very likely	300 (48.5)	61 (57.5)	361 (49.9)
Likely	254 (41.1)	30 (28.3)	284 (39.2)

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Appendix 17. Continued

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Neither likely nor unlikely	33 (5.3)	2 (1.9)	35 (4.8)
Unlikely	9 (1.5)	1 (0.9)	10 (1.4)
Very unlikely	22 (3.6)	12 (11.3)	34 (4.7)
Total	*618*	*106*	*724*
You ask all adult patients with ADHD about use of other substances.			
Very likely	329 (52.9)	58 (54.2)	387 (53.1)
Likely	211 (33.9)	34 (31.8)	245 (33.6)
Neither likely nor unlikely	57 (9.2)	5 (4.7)	62 (8.5)
Unlikely	6 (1.0)	1 (0.9)	7 (1.0)
Very unlikely	19 (3.1)	9 (8.4)	29 (3.8)
Total	*622*	*107*	*729*

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Appendix 18. How Often Do You Prescribe Each of the Following Medications for Teenage and Young Adult Patients with ADHD?

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Adderall.			
75% to 100% of the time	31 (5.1)	3 (1.8)	33 (4.6)
51% to 74% of the time	65 (10.6)	14 (12.4)	79 (10.9)
50% of the time	57 (9.3)	3 (2.7)	60 (8.3)
25% to 49% of the time	114 (18.6)	24 (21.2)	138 (19.0)
Less than 25% of the time	221 (36.1)	16 (14.2)	237 (32.7)
Never	54 (8.8)	7 (6.2)	61 (8.4)
Not applicable	70 (11.4)	47 (41.6)	117 (16.1)
Total	*612*	*113*	*725*
Adderall XR.			
75% to 100% of the time	35 (5.7)	3 (2.5)	38 (5.2)
51% to 74% of the time	62 (10.1)	18 (15.3)	80 (10.9)
50% of the time	59 (9.6)	9 (7.6)	68 (8.3)
25% to 49% of the time	148 (24.1)	22 (18.6)	170 (23.2)
Less than 25% of the time	195 (31.7)	12 (10.2)	207 (28.2)
Never	42 (6.8)	6 (5.1)	48 (6.5)
Not applicable	74 (12.0)	48 (40.7)	122 (16.6)
Total	*615*	*118*	*733*
Concerta.			
75% to 100% of the time	17 (2.9)	1 (0.9)	18 (2.5)
51% to 74% of the time	32 (5.4)	1 (0.9)	33 (4.6)
50% of the time	43 (7.2)	3 (2.6)	46 (6.5)
25% to 49% of the time	91 (15.3)	15 (13.0)	106 (14.9)
Less than 25% of the time	285 (47.9)	35 (30.4)	320 (45.1)
Never	54 (9.1)	11 (9.6)	65 (9.2)
Not applicable	73 (12.3)	49 (42.6)	122 (17.2)
Total	*595*	*115*	*710*
Desoxyn.			
75% to 100% of the time	0 (0.0)	0 (0.0)	0 (0.0)
51% to 74% of the time	0 (0.0)	0 (0.0)	0 (0.0)
50% of the time	3 (0.5)	0 (0.0)	3 (0.4)
25% to 49% of the time	0 (0.0)	0 (0.0)	0 (0.0)
Less than 25% of the time	33 (5.9)	7 (6.1)	40 (5.9)
Never	412 (73.7)	51 (44.7)	463 (68.8)
Not applicable	111 (19.9)	56 (49.1)	167 (24.8)
Total	*559*	*114*	*673*
Focalin XR.			
75% to 100% of the time	2 (0.4)	0 (0.0)	2 (0.9)
51% to 74% of the time	7 (1.2)	0 (0.0)	7 (1.0)
50% of the time	1 (0.2)	0 (0.0)	1 (0.1)
25% to 49% of the time	15 (2.7)	4 (3.5)	19 (2.8)
Less than 25% of the time	173 (30.7)	27 (23.7)	200 (29.5)
Never	226 (47.2)	29 (25.4)	295 (43.5)
Not applicable	100 (17.7)	54 (47.7)	154 (22.7)
Total	*564*	*114*	*678*
Ritalin.			
75% to 100% of the time	11 (1.8)	0 (0.0)	11 (1.5)
51% to 74% of the time	19 (3.2)	1 (0.9)	20 (2.8)
50% of the time	34 (5.7)	0 (0.0)	34 (4.8)

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Appendix 18. Continued

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
25% to 49% of the time	92 (15.4)	8 (7.0)	100 (14.1)
Less than 25% of the time	265 (44.4)	36 (31.6)	301 (42.3)
Never	100 (16.8)	18 (15.8)	118 (16.6)
Not applicable	76 (12.7)	51 (44.7)	127 (17.9)
Total	*597*	*114*	*711*
Ritalin SR.			
75% to 100% of the time	7 (1.2)	0 (0.0)	7 (1.0)
51% to 74% of the time	16 (2.8)	0 (0.0)	16 (2.3)
50% of the time	26 (4.5)	0 (0.0)	26 (3.8)
25% to 49% of the time	67 (11.6)	5 (4.5)	72 (10.4)
Less than 25% of the time	248 (42.9)	35 (31.3)	283 (41.0)
Never	131 (22.7)	20 (17.9)	151 (21.9)
Not applicable	83 (14.4)	52 (46.4)	135 (19.6)
Total	*578*	*112*	*690*
Stratera.			
75% to 100% of the time	10 (1.7)	1 (0.9)	11 (1.5)
51% to 74% of the time	16 (2.7)	0 (0.0)	16 (2.2)
50% of the time	22 (3.7)	2 (1.7)	24 (3.4)
25% to 49% of the time	66 (11.0)	9 (7.8)	75 (10.5)
Less than 25% of the time	320 (53.5)	39 (33.6)	359 (50.3)
Never	85 (14.2)	16 (13.8)	101 (14.1)
Not applicable	79 (13.2)	49 (42.2)	128 (17.9)
Total	*598*	*116*	*714*
Vyvanse.			
75% to 100% of the time	16 (2.7)	2 (1.7)	18 (2.5)
51% to 74% of the time	22 (3.6)	3 (2.5)	25 (3.5)
50% of the time	38 (6.3)	5 (4.2)	43 (6.0)
25% to 49% of the time	81 (13.4)	18 (15.3)	99 (13.7)
Less than 25% of the time	270 (44.8)	31 (26.3)	301 (41.7)
Never	97 (16.1)	8 (6.8)	105 (14.6)
Not applicable	79 (13.1)	51 (43.2)	130 (18.0)
Total	*603*	*118*	*721*

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Appendix 19. Which Factors Contribute to Your Decisions on Which Stimulant Medication to Use (Can Choose More Than One Answer):

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Comfort with medicine.			
Not Selected	160 (25.3)	69 (57.0)	229 (30.4)
Selected	473 (74.7)	52 (43.0)	525 (69.6)
Total	*633*	*121*	*754*
Previous success with same medicine.			
Not Selected	157 (24.8)	61 (50.4)	218 (28.9)
Selected	476 (75.2)	60 (49.6)	536 (71.1)
Total	*633*	*121*	*754*
Patient preference.			
Not Selected	400 (63.2)	97 (80.2)	497 (65.9)
Selected	233 (36.8)	24 (19.8)	257 (34.1)
Total	*633*	*121*	*754*
Organizational culture.			
Not Selected	595 (94.0)	114 (94.2)	709 (94.0)
Selected	38 (6.0)	7 (5.8)	45 (6.0)
Total	*633*	*121*	*754*
Insurance coverage or coverage restrictions			
Not Selected	172 (27.2)	70 (57.9)	242 (32.1)
Selected	461 (72.8)	51 (42.1)	512 (67.9)
Total	*633*	*121*	*754*
Cost.			
Not Selected	236 (37.3)	73 (60.3)	309 (41.0)
Selected	397 (62.7)	48 (39.7)	445 (59.0)
Total	*633*	*121*	*754*
Preference for branded over generic.			
Not Selected	604 (95.4)	116 (95.9)	720 (95.5)
Selected	29 (4.6)	5 (4.1)	34 (4.5)
Total	*633*	*121*	*754*
Preference for generic over branded.			
Not Selected	444 (70.1)	95 (78.5)	539 (71.5)
Selected	189 (29.9)	26 (21.5)	215 (28.5)
Total	*633*	*121*	*754*
Evidence-based guidelines.			
Not Selected	432 (68.2)	77 (63.6)	509 (67.5)
Selected	201 (31.8)	44 (36.4)	245 (32.5)
Total	*633*	*121*	*754*
Own experience.			
Not Selected	377 (59.6)	96 (79.3)	473 (62.7)
Selected	256 (40.4)	25 (20.7)	281 (37.3)
Total	*633*	*121*	*754*
Preference for fast acting over slow release stimulants.			
Not Selected	574 (90.7)	103 (85.1)	677 (89.8)
Selected	59 (9.3)	18 (14.9)	77 (10.2)
Total	*633*	*121*	*754*
Preference for slow release over fast acting stimulants.			
Not Selected	379 (59.9)	78 (64.5)	457 (60.6)
Selected	254 (40.1)	43 (35.5)	297 (39.4)
Total	*633*	*121*	*754*

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Appendix 19. Continued

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Not applicable.			
Not Selected	573 (90.5)	78 (64.5)	651 (86.3)
Selected	60 (9.5)	43 (35.5)	103 (13.7)
Total	*633*	*121*	*754*
Other.			
Not Selected	597 (94.3)	103 (85.1)	700 (92.8)
Selected	36 (5.7)	18 (14.9)	54 (7.2)
Total	*633*	*121*	*754*

Appendix 20. How Often Do You Use Any of the Following to Monitor for Possible Medication Abuse in Your ADHD Patients:

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
I use a state medication registry to tract patient prescription drug use.			
Always	167 (26.9)	28 (24.8)	195 (26.6)
Very frequently	178 (28.7)	19 (16.8)	197 (26.8)
Occasionally	124 (20.0)	6 (5.3)	130 (17.7)
Rarely	31 (5.0)	5 (4.4)	36 (4.9)
Never	48 (7.7)	10 (8.8)	58 (7.9)
Not applicable	73 (11.8)	45 (39.8)	118 (16.1)
Total	*621*	*113*	*734*
I use random urine drug testing (UDT).			
Always	76 (12.3)	5 (4.4)	81 (11.1)
Very frequently	97 (15.7)	3 (2.7)	100 (13.7)
Occasionally	137 (22.2)	19 (16.8)	156 (21.3)
Rarely	106 (17.2)	11 (9.7)	117 (16.0)
Never	133 (21.5)	27 (23.9)	160 (21.9)
Not applicable	69 (11.2)	48 (42.5)	117 (16.0)
Total	*618*	*113*	*731*
I use urine drug testing for all patients with ADHD without exceptions.			
Always	51 (8.6)	9 (8.2)	60 (8.5)
Very frequently	62 (10.5)	4 (3.6)	66 (9.4)
Occasionally	69 (11.6)	4 (3.6)	73 (10.4)
Rarely	87 (14.7)	11 (10.0)	98 (13.9)
Never	231 (39.0)	32 (29.1)	263 (37.4)
Not applicable	93 (15.7)	50 (45.5)	143 (20.3)
Total	*593*	*110*	*703*
I rely on patient self-reports.			
Always	79 (13.3)	18 (16.1)	97 (13.8)
Very frequently	220 (37.1)	24 (21.4)	244 (34.6)
Occasionally	107 (18.0)	16 (14.3)	123 (17.4)
Rarely	60 (10.1)	7 (6.3)	67 (9.5)
Never	61 (10.3)	8 (7.1)	69 (9.8)
Not applicable	66 (11.1)	39 (34.8)	105 (14.9)
Total	*593*	*112*	*705*

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Appendix 21. The Following Questions Pertain to the College Students 17 to 26 Years of Age. Please Select How Well Each of the Following Statements Describes You:

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
I remain the primary prescriber for patients with ADHD on medication going to college.			
Describes me completely	46 (7.5)	9 (8.0)	55 (7.6)
Describes me well	159 (25.9)	15 (13.3)	174 (23.9)
Describes me fairly well	150 (24.4)	14 (12.4)	164 (22.6)
Describes me somewhat	118 (19.2)	8 (7.1)	126 (17.3)
Does not describe me at all	141 (23.0)	67 (59.3)	208 (28.6)
Total	*614*	*113*	*727*
I always help/advise patients find a doctor in the college location for their ADHD medication needs.			
Describes me completely	44 (7.2)	32 (27.8)	76 (10.5)
Describes me well	103 (16.9)	23 (20.0)	126 (17.4)
Describes me fairly well	107 (17.6)	19 (16.5)	126 (17.4)
Describes me somewhat	148 (24.3)	10 (8.7)	158 (21.9)
Does not describe me at all	206 (33.9)	31 (27.0)	237 (32.8)
Total	*608*	*115*	*723*
I always ask patients if they are seeing another doctor for their ADHD medications.			
Describes me completely	137 (22.2)	53 (45.3)	190 (25.9)
Describes me well	196 (31.8)	31 (26.5)	227 (31.0)
Describes me fairly well	115 (18.7)	12 (10.3)	127 (17.3)
Describes me somewhat	85 (13.8)	7 (6.0)	92 (12.6)
Does not describe me at all	83 (13.5)	14 (12.0)	97 (13.2)
Total	*616*	*117*	*733*
I always ask patients about their stimulant use.			
Describes me completely	149 (24.3)	44 (36.4)	193 (26.3)
Describes me well	226 (36.8)	44 (36.4)	270 (36.7)
Describes me fairly well	123 (20.0)	14 (11.6)	137 (18.6)
Describes me somewhat	63 (10.3)	8 (6.6)	71 (9.7)
Does not describe me at all	53 (8.6)	11 (9.1)	64 (8.7)
Total	*614*	*121*	*735*
I always ask about patient's use of other substances.			
Describes me completely	202 (32.6)	58 (48.3)	260 (35.2)
Describes me well	222 (35.9)	37 (30.8)	259 (35.0)
Describes me fairly well	120 (19.4)	14 (11.7)	134 (18.1)
Describes me somewhat	44 (7.1)	6 (5.0)	50 (6.8)
Does not describe me at all	31 (5.0)	5 (4.2)	36 (4.9)
Total	*619*	*120*	*739*
I always discuss the stimulant diversion and misuse with my ADHD patients.			
Describes me completely	137 (22.3)	43 (36.1)	180 (24.5)
Describes me well	168 (27.3)	24 (20.2)	192 (26.2)
Describes me fairly well	143 (23.3)	20 (16.8)	163 (22.2)
Describes me somewhat	100 (16.3)	12 (10.1)	112 (15.3)
Does not describe me at all	67 (10.9)	20 (16.8)	87 (11.9)
Total	*615*	*119*	*734*
I always suggest available resources and support services (behavioral therapy, counseling) to my patients with ADHD.			
Describes me completely	142 (23.2)	52 (43.3)	194 (26.5)

Continued

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Appendix 21. Continued

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Describes m well	188 (30.7)	34 (28.3)	222 (30.3)
Describes me fairly well	140 (22.8)	20 (16.7)	160 (21.8)
Describes me somewhat	88 (14.4)	5 (4.2)	93 (12.7)
Does not describe me at all	55 (9.0)	9 (7.5)	64 (8.7)
Total	*613*	*120*	*733*

Appendix 22. What Do You Feel Is the Best Way to Educate Patients about ADHD (Please Select All That Apply):

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Pamphlets and handouts			
Not Selected	327 (52.1)	76 (61.3)	403 (53.6)
Selected	301 (47.9)	48 (38.7)	349 (46.4)
Total	*628*	*124*	*752*
Education or counseling session at visits where prescription is written.			
Not Selected	107 (17.0)	15 (12.1)	122 (16.2)
Selected	521 (83.0)	109 (87.9)	630 (83.8)
Total	*628*	*124*	*752*
Give the patient links to web resources.			
Not Selected	335 (53.3)	64 (51.6)	399 (53.1)
Selected	293 (46.7)	60 (48.4)	353 (46.9)
Total	*628*	*124*	*752*
Mass media such as television and magazines.			
Not Selected	588 (93.6)	119 (96.0)	707 (94.0)
Selected	40 (6.4)	5 (4.0)	45 (6.0)
Total	*628*	*124*	*752*
Social media such as Facebook and Twitter.			
Not Selected	588 (93.6)	104 (83.9)	692 (92.0)
Selected	40 (6.4)	20 (16.1)	60 (8.0)
Total	*628*	*124*	*752*
Other.			
Not Selected	594 (94.6)	116 (93.5)	710 (94.4)
Selected	34 (5.4)	8 (6.5)	42 (5.6)
Total	*628*	*124*	*752*
Do you feel it is your responsibility to educate patients with ADHD?			
No	31 (4.9)	12 (9.6)	43 (5.7)
Yes	604 (95.1)	113 (90.4)	717 (94.3)
Total	*635*	*125*	*760*

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Appendix 23. If Yes to Question 32, What Do You Feel You Are Responsible For (Please Select All That Apply):

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Educating about legal risks of misusing the medicine.			
Not Selected	198 (32.8)	29 (25.7)	227 (31.7)
Selected	406 (67.2)	84 (74.3)	490 (68.3)
Total	*604*	*113*	*717*
Educating about the health and physical risks of misusing the medicine.			
Not Selected	47 (7.8)	13 (11.5)	60 (8.4)
Selected	557 (92.2)	100 (88.5)	657 (91.6)
Total	*604*	*113*	*717*
Educating about the mental effects of not using the medicines properly.			
Not Selected	162 (26.8)	31 (27.4)	193 (26.9)
Selected	442 (73.2)	82 (72.6)	524 (73.1)
Total	*604*	*113*	*717*
Educating about how misusing medicine can affect social life and relationships such as family, job, friends and significant others.			
Not Selected	220 (36.4)	38 (33.6)	258 (36.0)
Selected	384 (63.6)	75 (66.4)	459 (64.0)
Total	*604*	*113*	*717*
None of the above.			
Not Selected	591 (97.8)	109 (96.5)	700 (97.6)
Selected	13 (2.2)	4 (3.5)	17 (2.4)
Total	*604*	*113*	*717*
Other.			
Not Selected	587 (97.2)	106 (93.8)	693 (96.7)
Selected	17 (2.8)	7 (6.2)	24 (3.3)
Total	*604*	*113*	*717*

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Appendix 24. If No to Question 32, Who Do You Feel Is Responsible (Please Select All That Apply):

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Psychologist or other mental health counselor who is doing any counseling in conjunction with the medicine for treatment.			
Not Selected	10 (31.3)	3 (25.0)	13 (29.5)
Selected	22 (68.8)	9 (75.0)	31 (70.5)
Total	*32*	*12*	*44*
The other health care provider who prescribed the medication in the first place.			
Not Selected	15 (46.9)	4 (33.3)	19 (43.2)
Selected	17 (53.1)	8 (66.7)	25 (56.8)
Total	*32*	*12*	*44*
The patient themselves.			
Not Selected	23 (71.9)	8 (66.7)	31 (70.5)
Selected	9 (28.1)	4 (33.3)	13 (29.5)
Total	*32*	*12*	*44*
It is not anyone's responsibility.			
Not Selected	30 (93.8)	10 (83.3)	40 (90.9)
Selected	2 (6.3)	2 (16.7)	4 (9.1)
Total	*32*	*12*	*44*
Unsure.			
Not Selected	29 (90.6)	12 (100.0)	41 (93.2)
Selected	3 (9.4)	0 (0.0)	3 (6.8)
Total	*32*	*12*	*44*
Other.			
Not Selected	29 (90.6)	11 (91.7)	40 (90.9)
Selected	3 (9.4)	1 (8.3)	4 (9.1)
Total	*32*	*12*	*44*

Appendix 25. Do You Feel it Is Your Responsibility to Prevent Misuse of ADHD Medications?

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
No	12 (6.8)	0 (0.0)	12 (5.7)
Yes	165 (93.2)	32 (100.0)	197 (94.3)
Total	*177*	*32*	*209*

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Appendix 26. What Do You Feel You Personally Should Be Doing to Reduce the Misuse of ADHD Medications (Please Select All That Apply):

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Evaluate each patient with suspected ADHD to confirm diagnosis before prescribing.			
Not Selected	104 (16.5)	40 (32.8)	144 (19.2)
Selected	525 (83.5)	82 (67.2)	607 (80.8)
Total	*629*	*122*	*751*
Refer all ADHD patients to mental health professionals for care.			
Not Selected	460 (73.1)	76 (62.3)	536 (71.4)
Selected	169 (26.9)	46 (37.7)	215 (28.6)
Total	*629*	*122*	*751*
Educate patients with ADHD about how the stimulants should and should not be used.			
Not Selected	145 (23.1)	25 (20.5)	170 (22.6)
Selected	484 (76.9)	97 (79.5)	581 (77.4)
Total	*629*	*122*	*751*
Provide clear instructions regarding sharing and selling medications to patients with ADHD.			
Not Selected	205 (32.6)	49 (40.2)	254 (33.8)
Selected	424 (67.4)	73 (59.8)	497 (66.2)
Total	*629*	*122*	*751*
Provide specific instructions on how to dispose of any unneeded medications.			
Not Selected	379 (60.3)	69 (56.6)	448 (59.7)
Selected	250 (39.7)	53 (43.4)	303 (40.3)
Total	*629*	*122*	*751*
Strictly monitor patient's prescription medication use with urine drug tests and state registries.			
Not Selected	321 (51.0)	87 (71.3)	408 (54.3)
Selected	308 (49.0)	35 (28.7)	343 (45.7)
Total	*629*	*122*	*751*
Educate all patients of college age about misuse and risk of misusing of stimulants.			
Not Selected	211 (33.5)	29 (23.8)	240 (32.0)
Selected	418 (66.5)	93 (76.2)	511 (68.0)
Total	*629*	*122*	*751*
Discourage "medication holidays."			
Not Selected	559 (88.9)	100 (82.0)	659 (87.7)
Selected	70 (11.1)	22 (18.0)	92 (12.3)
Total	*629*	*122*	*751*
Other.			
Not Selected	602 (95.7)	116 (95.1)	718 (95.6)
Selected	27 (4.3)	6 (4.9)	33 (4.4)
Total	*629*	*122*	*751*

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Appendix 27. How Often Do You Feel Education about ADHD or ADHD Medication Should Occur?

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Yearly	115 (18.2)	11 (8.9)	126 (16.7)
Quarterly	109 (17.2)	16 (13.0)	125 (16.6)
Every 6 months	154 (24.4)	20 (16.3)	174 (23.0)
Every time a prescription is given	222 (35.1)	66 (53.7)	288 (38.1)
Never	1 (0.2)	0 (0.0)	1 (0.1)
Other	31 (4.9)	10 (8.1)	41 (5.4)
Total	*632*	*123*	*755*

Appendix 28. Do You Think it's Important to Educate About the Legal Ramifications of Diversion?

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
No	17 (2.7)	2 (1.6)	19 (2.5)
Yes	508 (79.9)	110 (88.0)	618 (81.2)
Unsure	111 (17.5)	13 (10.4)	124 (16.3)
Total	*636*	*125*	*761*

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Appendix 29. How Well Do You Feel You Are Equipped to Provide Patient Education about Each of the Following:

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
Nature of ADHD.			
Extremely well prepared	57 (9.0)	19 (15.3)	76 (10.0)
Well prepared	256 (40.3)	32 (25.8)	288 (37.9)
Somewhat prepared but can use help	257 (40.5)	58 (46.8)	315 (41.5)
Unprepared and can use substantial help	42 (6.6)	12 (9.7)	54 (7.1)
Not prepared at all	23 (3.6)	3 (2.4)	26 (3.4)
Total	*635*	*124*	*759*
Effects and side-effects of stimulant medications.			
Extremely well prepared	79 (12.4)	26 (21.1)	105 (13.9)
Well prepared	312 (49.1)	35 (28.5)	347 (45.8)
Somewhat prepared but can use help	205 (32.3)	53 (43.1)	258 (34.0)
Unprepared and can use substantial help	23 (3.6)	7 (5.7)	30 (4.0)
Not prepared at all	16 (2.5)	2 (1.6)	18 (2.4)
Total	*635*	*123*	*758*
Decisions about pharmacotherapy or behavioral therapy choices.			
Extremely well prepared	46 (7.3)	19 (15.7)	65 (8.7)
Well prepared	251 (39.8)	30 (24.8)	281 (37.4)
Somewhat prepared but can use help	260 (41.3)	49 (40.5)	309 (41.1)
Unprepared and can use substantial help	47 (7.5)	15 (12.4)	62 (8.3)
Not prepared at all	26 (4.1)	8 (6.6)	34 (4.5)
Total	*630*	*121*	*751*
General expectation for college life such as stress, academic performance, conduct, life skills and preparation strategies.			
Extremely well prepared	71 (11.4)	44 (35.5)	115 (15.4)
Well prepared	274 (43.9)	51 (41.1)	325 (43.4)
Somewhat prepared but can use help	226 (36.2)	27 (21.8)	253 (33.8)
Unprepared and can use substantial help	37 (5.9)	1 (0.8)	38 (5.1)
Not prepared at all	16 (2.6)	1 (0.8)	17 (2.3)
Total	*624*	*124*	*748*
Risky behaviors, drug abuse, medication misuse and prevention strategies.			
Extremely well prepared	63 (10.0)	31 (25.0)	94 (12.6)
Well prepared	237 (37.6)	42 (33.9)	279 (37.0)
Somewhat prepared but can use help	283 (44.8)	43 (34.7)	326 (43.2)
Unprepared and can use substantial help	35 (5.5)	6 (4.8)	41 (5.4)
Not prepared at all	13 (2.1)	2 (1.6)	15 (2.0)
Total	*631*	*124*	*755*

Appendix 30. Does Media Coverage Have the Potential to Affect Physician Views on Misuse Prevention?

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
No	54 (8.5)	12 (9.5)	66 (8.6)
Yes	422 (66.1)	80 (63.5)	502 (65.7)
Unsure	162 (25.4)	34 (27.0)	196 (25.7)
Total	*638*	*126*	*764*

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Appendix 31. Please Select from the List What Would Have the Potential to Affect Physician Views on Misuse Prevention (Please Select All That Apply):

	AAFP, N (%)	ACHA, N (%)	Total, N (%)
CME/conferences.			
Not Selected	46 (7.3)	5 (4.2)	51 (6.8)
Selected	588 (92.7)	114 (95.8)	702 (93.2)
Total	*634*	*119*	*753*
Drug representative meetings.			
Not Selected	496 (78.2)	95 (79.8)	591 (78.5)
Selected	138 (21.8)	24 (20.2)	162 (21.5)
Total	*634*	*119*	*753*
Media (TV, internet).			
Not Selected	461 (72.7)	89 (74.8)	550 (73.0)
Selected	173 (27.3)	30 (25.2)	203 (27.0)
Total	*634*	*119*	*753*
Other physicians (peer groups).			
Not Selected	255 (40.2)	56 (47.1)	311 (41.3)
Selected	379 (59.8)	63 (52.9)	442 (58.7)
Total	*634*	*119*	*753*
Professional associations.			
Not Selected	283 (44.6)	46 (38.7)	329 (43.7)
Selected	351 (55.4)	73 (61.3)	424 (56.3)
Total	*634*	*119*	*753*
Journal articles.			
Not Selected	167 (26.3)	31 (26.1)	198 (26.3)
Selected	467 (73.7)	88 (73.9)	555 (73.7)
Total	*634*	*119*	*753*
Other.			
Not Selected	606 (95.6)	113 (95.0)	719 (95.5)
Selected	28 (4.4)	6 (5.0)	34 (4.5)
Total	*634*	*119*	*753*

CME, Continuing Medical Education.

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