Screening, Brief Intervention, and Referral to Treatment for Adolescents

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Abstract: Drug, alcohol, and tobacco use is highly prevalent among high school students in United States, and adolescents, even those without a substance use disorder, are at high risk of morbidity and mortality related to use of these substances. The primary care setting provides access to adolescents, and the health maintenance visit provides a private, confidential setting in which patients expect to discuss health-related behaviors and receive advice. This article reviews guidelines for identifying and managing adolescent substance use in the primary care setting, including screening, brief intervention, and referral to treatment.

(*J Addict Med* 2008;2: 215–221)

Drug, alcohol, and tobacco use is highly prevalent among high school students in United States. In the 2007 Monitoring the Future study, 41.8% of 12th graders, 31% of 10th graders, and 14.2% of 8th graders reported lifetime use of marijuana, 55.1%, 41.2%, and 17.9%, respectively, reported having ever been drunk, and 12.3% of high school seniors reported daily smoking.[1] Although these numbers have shown small declines over recent years, the proportion of adolescents who have used drugs, alcohol, and tobacco remains significant. Adolescents who are not enrolled in school have even higher rates of use of these substances.

Adolescents, even those without a substance use disorder, are at high risk of morbidity and mortality associated with drug and alcohol use. According to the Web-based Injury Statistics Query and Reporting System, 73% of all mortality in 10- to 24-year olds between 1999 and 2004 was related to motor vehicle crashes, other unintentional injuries, homicides, and suicides, all of which are related to alcohol and drug use.[2] The National Highway Transportation Safety Administration reported that in 2004, 20% of drivers under age 20 involved in motor vehicle fatalities had a positive blood alcohol concentration ≥0.01 indicating alcohol consumption, and the median blood alcohol concentration was 0.12. Because adolescents more often engage in heavy episodic ("binge") drinking compared with adults, they are likely at higher risk of unintentional injury than adults.

Substance use typically begins in adolescence as do substance use disorders. The 2006 National Household Survey on Drug Use and Health found that nearly 58% of all new illicit drug users were under 18 years of age, and the average age of initiation of use was 19 years.[3] Adolescents are developmentally vulnerable to developing substance use disorders. Hingson et al[4] found that the percentage of adolescent drinkers who eventually developed a lifetime alcohol use disorder was inversely correlated with age; 47% of those who started drinking alcohol before age 13 developed an alcohol use disorder in their lifetime, whereas only 9% of people who started drinking after their 21st birthday did so. Additionally, although 2.4% of adults over age 21 met criteria for alcohol abuse or dependence in 2006, this percentage was over 16% for 12- to 14-year olds, 9% for 15- to 17-year olds, and 4.3% among those aged 18–20 years.[3]

The traditional emphasis of substance abuse intervention has been placed on either universal prevention strategies aimed at those who have never initiated use[5] or specialist treatment for those who are dependent.[6] Little attention has been paid to the large group of adolescents who use drugs but are not, or not yet, dependent and who could successfully reduce their drug use through "early intervention."[7,8] Providing universal screening and brief intervention within primary care is a promising strategy to reduce problems caused by substance abuse.[9] Universal screening also helps to identify early those teens who require a referral to more intensive treatment.

The yearly health maintenance visit provides a private, confidential setting in which patients may reasonably expect to discuss health-related behaviors and receive advice. This article reviews guidelines for identifying and managing adolescent substance use in the primary care setting, including screening, brief intervention, and referral to treatment (SBIRT).

SCREENING

Screening can be defined as a procedure generally applied to populations, and intended to identify individuals at risk for a certain disease or condition. The American Academy of Pediatrics,[10] the Maternal Child Health Bureau,[11] and

Received for publication June 26, 2008; accepted August 14, 2008.
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ISSN: 1921-0629/08/0204-0215

the Society for Adolescent Medicine[12] all recommend universal screening of adolescents for drug, alcohol, and tobacco use at every yearly health maintenance visit. However, research by the American Academy of Pediatrics found that less than 50% of fellows of the American Academy of Pediatrics self-report compliance with these guidelines, and less than 25% report screening all adolescents for driving after drinking or using drugs.[13]

Van Hook et al[14] conducted focus groups with pediatricians from a variety of practice settings and types (urban, rural, school-based health centers, HMO, and group practice) and found the most common reasons reported for failure to screen adolescents included lack of time to conduct the necessary screens, lack of training in how to proceed when a screen is positive, perceived lack of treatment and referral sources, and unfamiliarity with available screening tools. All of these reasons for failure to screen are related to inadequate clinician training in the management of substance use disorders. A national survey of residency training directors conducted in 1997 found that only about half of all residency training programs and only one third of pediatric residency training programs required training in the diagnosis and treatment of substance use disorders.[15] Work by Kokotailo et al[16,17] has demonstrated significant increases in screening when pediatrics residents receive experiential training in screening for substance use disorders. The National Institute on Drug Abuse has recently placed emphasis on developing training programs to teach residents techniques in SBIRT. SBIRT is appropriate for patients of all ages, though developmentally appropriate tools and strategies should be selected. SBIRT for adolescents begins with opening questions that ask about alcohol and other drug use and use of developmentally appropriate, validated screening strategies.

Opening Questions

Questions about use of drugs and alcohol are a component of the HEADSS psychosocial interview for adolescents[18] (see Fig. 1), which is included by the American Medical Association in their "Guidelines for Adolescent Preventive Services."[12] Every adolescent should be asked yearly about use of tobacco and those who report use should receive an office-based intervention. The "5 A's" (ask, advise, assess, assist, and arrange) method has been demonstrated effective in reducing tobacco use. A review of this intervention is beyond the scope of this article; the reader is referred to the review by Kenford and Fiore[19] for a thorough discussion. Screening for alcohol and drug use should begin with 3 unambiguous questions: (1) "Have you ever drank alcohol?" (2) "Have you ever smoked marijuana?" and (3) "Have you ever used another substance to get high, including illicit drugs, over the counter preparations, prescription medications, inhalants, herbs, or plants?" To maximize the sensitivity each question begins with "Have you ever . . .," unless the patient is well known to the interviewer in which case the questions begin with "Since your last appointment with me . . ." Clinicians should avoid ambiguous questions, such as "Do you drink/smoke?" as answers to these questions may be interpreted differently by patient and clinician.[20] Patients who answer "no" to all of the opening questions should be asked about riding with an intoxicated driver (such as the "C" question from the CRAFFT) and given appropriate advice (see below).

Formal Screening Tools

If any of the opening question is answered "yes," the clinician should administer a formal screen developmentally appropriate and validated for use with adolescents. Wilson et al[21] has found that even experienced adolescent medicine specialists have poor sensitivity identifying risk of a substance use disorder when relying on clinical impressions alone. Many validated screening tools to identify individuals at risk for a substance use problem or disorder are available, including the MAST,[22] the AUDIT,[23] the DAST,[24] the POSIT,[25] and the CRAFFT.[26] The CRAFFT, a 6-item questionnaire that quickly screens simultaneously for alcohol and other drug use disorders, and has been recommended by the American Academy of Pediatrics for use with adolescents.[27]

CRAFFT is a mnemonic acronym with each letter standing for a key word in the 6 questions (see Fig. 2). The CRAFFT screen consists of 2 parts: the CAR question, which is asked of all adolescents, and the RAFFT questions, which are only asked for those who answered "yes" to any of the opening questions. Each "yes" response on CRAFFT is scored 1 point. A score of 2 or greater is a positive screen, and

- Home
- Education and employment
- Activities
- Drugs
  - 1. "Have you ever drank alcohol?"
  - 2. "Have you ever smoked marijuana?"
  - 3. "Have you ever used another substance to get high, including illicit drugs, over the counter preparations, prescription medications, inhalants, herbs or plants?"
- Sexuality
- Suicide/Depression

FIGURE 1. The HEADSS psychosocial interview[18] with opening questions for drugs and alcohol.

During the past 12 months have you ever:

- Ridden in a **CAR** driven by someone, including yourself, who was high or had been using alcohol or drugs?
- Used alcohol or drugs to **RELAX**, feel better about yourself, or fit in?
- Used alcohol or drugs while you are by yourself, **ALONE**?
- **FORGOTTEN** things you did while using alcohol or drugs?
- Had your **FAMILY** or **FRIENDS** tell you that you should cut down on your drinking or drug use?
- Gotten into **TROUBLE** while you were using alcohol or drugs

FIGURE 2. The CRAFFT questions.

indicates that the adolescent is at high risk for having an alcohol- or drug-related disorder. The CRAFFT was developed by combining promising questions from longer screens for substance use, and then using stepwise linear regression analysis to identify 6 items whose total combined score was highly correlated with the Personal Involvement with Chemicals Scale (Pearson r 0.84, $P < 0.01$), and correctly classified 86% of participants.[26] Subsequent research demonstrated that the criterion validity in identifying any abuse/dependence diagnosis for CRAFFT ≥ 2 is sensitivity 0.80 (95% CI 0.72–0.89); specificity 0.86 (0.83–0.89), positive predictive value 0.53 (0.44–0.61); and negative predictive value 0.96 (0.94–0.98). Validity was not significantly affected by age, gender, or race/ethnicity.[28] The sensitivity of the CRAFFT is similar to the longer AUDIT and POSIT tests, and much higher than the CAGE when used with adolescents.[29]

OFFICE-BASED INTERVENTIONS

Brief interventions are typically defined as a small number (ie,1–5) of short sessions (ie, ranging from a few minutes up to an hour) directed at changing the patient's behavior. Interventions may be as simple as giving advice to low-risk patients, to brief counseling for those at higher risk. Counseling techniques are often based on motivational interviewing[30] and use of the Stages of Change Theory model.[31] Studies have found that brief interventions can assist heavy-drinking, non–alcohol-dependent adults reduce their drinking,[32] are often as effective as more intensive interventions,[33–37] and that the effects of the intervention persist over time.[38] Brief interventions also show promise for women who in some studies had superior outcomes compared with men following brief intervention for heavy drinking.[39] This may bode well for application of brief interventions to adolescent medical clinic populations, which have a high proportion of female patients. One meta-analysis of 32 studies reported that the average effect size of brief interventions was approximately 27%.[40] One large trial was conducted by Fleming et al[41] in a network of primary care practices in Wisconsin, providing evidence that a brief intervention can be widely applied within a clinical network.

There is early evidence supporting the use of brief interventions for drug use. In an Australian study, Lang et al[42] reported that a single integrated brief intervention resulted in a marked reduction in self-reported cannabis use among self-defined problem users. Copeland et al[43] similarly reported that cannabis users presented a range of serious health and social problems, and were attracted to a brief cognitive-behavioral intervention aimed at reducing their use. A Canadian study by Breslin et al[44] found that participation in an assessment and brief intervention for young substance users was associated with reduced use, reduced consequences, and increased confidence in high-risk situations up to 6 months later.

Although brief interventions have been widely recommended for adolescents,[45–48] few studies have been conducted in this age group. One early study found that a brief monitoring intervention was as effective as 12 weeks of counseling among Native American adolescents.[49] Several studies have shown brief interventions effective in reducing risk, drinking rates, and harmful behaviors among college-aged youth.[50–54] Baer et al[50] found that a single session of feedback and advice compared favorably to a more intensive intervention in reducing alcohol-related risks among heavy-drinking college students. Similarly, Marlatt et al[51] reported that a motivational interviewing approach resulted in reduction in both drinking rates and harmful consequences, when applied in a sample of high-risk college students. Borsari and Carey[52] found that college-aged drinkers who received a brief intervention exhibited a notable reduction on number of drinks consumed per week, number of times drinking alcohol in the past month, and frequency of binge drinking in the past month, and that students were willing and interested to participate in the study. Myers found a motivational enhancement approach promising in helping teen substance abusers decrease or quit smoking, and Waldron et al[55] reported that a

family-based intervention appeared promising for reducing substance use among 14- to 17-year olds. Wagner et al[56] studied the effectiveness of a school-based intervention among 14- to 18-year olds, and found that 10% of students' substance use stopped completely, 33% "decreased a lot," and 42% "decreased a little." Monti et al[57] conducted a randomized 2-group trial of a 45-minute motivational intervention (MI) among 18- to 19-year-old patients admitted to a hospital emergency ward. At the 6-month follow-up, MI patients were significantly less likely than those who received standard care to report drinking and driving, motor vehicle moving violations, and alcohol-related injuries and problems. Moreover, these risk-reduction effects were maintained at the 12-month follow-up period and treatment effects seemed to cross over to marijuana use as well.[54] Among younger adolescents (13–17-year olds), those who received standard care were 3 times more likely than those who received MI to be drinking and driving at the 3-month follow-up period and benefits were still detectable at the 12-month follow-up.[54] In addition, those who were most resistant to change seemed to differentially benefit from MI. Overall, results of these studies support the use of brief interventions to reduce drug and alcohol use by adolescents who are at high risk but do not meet criteria for a substance use disorder, and a variety of counseling styles have been shown to be effective in different settings.

Although brief interventions are quite promising, they need to be modified to fit the needs of both providers and patients in nonacute medical office settings, and, particularly with adolescents, to accommodate all levels of substance use involvement. Furthermore, the content of brief interventions must be specified so that clinicians can employ them in practice. Little has been previously published on the use of brief physician advice as a preventative intervention, despite widespread recommendations for anticipatory guidance in pediatric practice.[10,11,58] In a recent study conducted in a network of primary care practices that serve adolescents, Knight et al[59] estimated that of all 12- to 18-year-old patients presenting for primary care approximately 57% reported abstinence, 19% nonproblematic use, 14% problematic use, 7% met formal diagnostic criteria for abuse and 3% met formal diagnostic criteria for dependence. Brief interventions in pediatric primary care should include praise and encouragement for maintaining abstinence, brief advice to reduce drug use and associated risk for those who have initiated use but screen as low risk and a brief assessment using motivational techniques for those who screen as high risk.

Maintaining Abstinence-Praise and Encouragement

Few studies have been published on the effects of praise and encouragement in promoting healthy behavior, despite the widespread use of positive reinforcement in child behavior management.[60] However, educational studies show positive effects of praise and encouragement on student behaviors.[61–63] In addition, compliments and statements that affirm the client's strengths and efforts to make healthy choices are recommended strategies for building provider-patient rapport.[30] Therefore, clinicians should use this quick and simple technique in an effort to promote abstinence for adolescents who have not begun to use drugs or alcohol. For adolescents who answer no to the 3 opening questions the clinician should give praise for not using and encouragement to remain abstinent, and then ask about riding with an intoxicated driver (such as the CAR question of the CRAFFT screen). Patients who answer no to driving/riding with an intoxicated driver should be reminded of the hazards of driving under the influence (particularly for older teens) or riding with a driver who has been using, and encouraged to discuss educational materials such as "Contract for Life"[64] with their parents. The Contract for Life (http://www.sadd.org/contract.htm) is a document that asks adolescents to commit to avoiding driving while intoxicated or riding with an intoxicated driver and parents to commit to providing or arranging transportation for their child in a time of need.

Brief Advice

The health belief model[65] proposes that perceived vulnerability to negative outcomes is a determining factor in the decision to engage in any health-promoting or health-harming behavior. Results from studies of adolescent smoking cessation show that risk perceptions are positively associated with intention to quit and with making quit attempts.[66,67] Furthermore, patients presenting for a health maintenance visit are likely to expect to receive medical advice from their physician, and may be willing to accept and process the information. Patients who have used alcohol or drugs but screen as low risk should receive a recommendation to stop using substances entirely followed by brief advice linking substance use to negative health effects. For example, statements such as, "Alcohol and marijuana can make you gain weight," "Marijuana directly affects your brain and can hurt your school performance and your future," or "Marijuana smoking is more deleterious to your health and a greater cancer risk than smoking tobacco" maintain the focus on the health effects of alcohol and drug use which may be most acceptable to patients in the context of a routine check up. Giving advice may be more useful than motivational interviewing for low-risk adolescents. Motivational interviewing is based on exploring an individual's negative feelings and ambivalence towards unhealthful behaviors, but teens who do not perceive that they have problems associated with their use may not have developed this ambivalence, leaving little for the interviewer to explore.

Driving/Riding While Intoxicated Contract

If an adolescent reports driving risk, the clinician should ask the adolescent to commit to a contract to avoid driving/riding while intoxicated, such as the Contract for Life (http://www.sadd.org/contract.htm), and plan a follow-up visit. Driving or riding with an intoxicated driver poses a serious and immediate risk to adolescents.[2] The clinician should schedule a follow-up visit to ensure that the adolescent does not continue to engage in driving risk. Although clinicians should generally protect the confidentiality of their adolescent patients, they have the obligation to inform a parent or other adult if an adolescent poses a serious risk to self or others. Given the magnitude of the risk related to

driving while intoxicated, clinicians should consider breaking confidentiality and informing parents if they cannot assure that the patient will eliminate driving risk. Patients must also be informed of this consideration.

Assessment Using Motivational Techniques

When an adolescent screens positive for high-risk drug use the clinician should complete a substance use assessment that focuses on the pattern of use, perceived negative consequences of use, and attempts to stop using, to determine whether a substance use disorder such as abuse or dependence is present.[68] These open-ended questions encourage the adolescent to talk about perceived negative consequences of drug use, an important strategy in motivational interviewing,[30] and an important first step towards intervention. For example, an adolescent may report a drop in academic performance with marijuana use or black outs associated with binge drinking. During the interview, the clinician can assess the adolescent's current attitude towards change,[20,31,69,70] which may be helpful in guiding further intervention.

Statements expressing personal concern, caring, empathy, and promoting patient's self-efficacy are recommended strategies for behavioral change,[30] but primary care providers do not always express their concern and caring explicitly to their adolescent patients. When conducting an assessment, clinicians should give voice to their concern by using messages such as "I am very worried about you" for drug-using teens. This sentiment may help to prepare adolescents who are high-risk substance users to accept the next step toward treatment. The personal relationship between physician and patient has been recognized as a key factor in patients' willingness to follow medical advice and as an essential component of primary care.[71] Several studies have identified trust in the physician as a cornerstone in the physician-patient relationship and a significant predictor of continuity, adherence, and patient satisfaction.[71–73]

All adolescents who screen positive for high-risk drug use should be issued an "abstinence challenge," or if they refuse, a "controlled use trial" (ie, use limited to certain days of the week and certain periods of time). Patients who are unwilling to stop or reduce their drug use, or who do not believe they can do so should be referred for substance-abuse treatment. Patients who agree to abstinence or decreased use should have follow-up visits with their primary physician to determine whether they have been successful, and if further treatment recommendations would be helpful.

REFERRAL TO TREATMENT

Teens who are not willing or able to engage in a brief intervention should be referred either to an allied mental health professional (such as a social worker, psychologist, or other counselor in the primary care setting) or to a substance-abuse treatment program appropriate for adolescents for further support. Appropriate substance-abuse treatment programs for adolescents should be scientifically based, family oriented, and developmentally appropriate. Treatment facilities for children and adolescents should have staff with adequate experience in dealing with these age groups; adolescents should not be placed into treatment facilities designed for adults. The American Academy of Pediatrics recommends that treatment programs for adolescents should meet the following criteria[74]:

a. Treatment professionals should be knowledgeable in the treatment of addictions and adolescent behavior and development, and the ratio of patients to staff should be low.
b. The program includes comprehensive evaluation and appropriately manages or refers the patient for any associated medical, emotional, or behavioral problems identified.
c. The program views drug and alcohol abuse as a primary disease rather than a symptom.
d. Drug use is a chronic disease, and a drug-free environment is essential.
e. Support and self-help groups are integral parts of treatment and should be led by professionals; adolescent groups should be separate from adult groups.
f. As progress is made in the program, patients have an opportunity to continue academic and vocational education and are assisted in restructuring family, school, and social life.
g. The program should be as close to home as possible to facilitate family involvement, even though separation of the adolescent from the family may be indicated initially. The entire family should be involved in treatment. The program should relate to parents and patients with compassion and concern.
h. Follow-up and continuing care should be an integral part of treatment planning.

Adolescents who are at risk for withdrawing from alcohol or benzodiazepines should be immediately referred for medically supervised detoxification because withdrawal from these substances can be life threatening and best practice guidelines require inpatient level of care. Guidelines for medical management of withdrawal have been well established by adult practitioners and the same guidelines can be used for adolescents.[75] Teens with underlying medical disorders that are at risk for withdrawing from opioids, cocaine, or amphetamines should also be medically supervised, because risk of relapse during withdrawal is very high.

Continued substance use by an adolescent should be seen as a symptom of a chronic disorder and an indication for more treatment rather than a reason for dismissal from a treatment program. Abstinence should be the ultimate goal for adolescents entering treatment programs. Patients who are committed to abstinence but who are unable to discontinue drug use may require a higher level of care even within the treatment system.

SUMMARY

Screening, brief intervention, and referral to treatment (SBIRT) is a practical strategy for managing adolescent substance use in the primary care setting. Screening tools and intervention strategies must be brief, easy to administer, developmentally appropriate, and effective with adolescents. This review attempts to synthesize and translate research

results into practical strategies via a logical framework that addresses the educational deficiencies and perceived barriers to including substance abuse screening and interventions within routine health maintenance for adolescents. More work is necessary to test the effectiveness of these strategies in the primary care setting.

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