Adolescent Substance Use and Abuse: Recognition and Management

KIM S. GRISWOLD, MD, MPH; HELEN ARONOFF, MD, MAT; JOAN B. KERNAN, BS; and LINDA S. KAHN, PhD
State University of New York at Buffalo School of Medicine and Biomedical Sciences, Buffalo, New York

Substance abuse in adolescents is undertreated in the United States. Family physicians are well positioned to recognize substance use in their patients and to take steps to address the issue before use escalates. Comorbid mental disorders among adolescents with substance abuse include depression, anxiety, conduct disorder, and attention-deficit/hyperactivity disorder. Office-, home-, and school-based drug testing is not routinely recommended. Screening tools for adolescent substance abuse include the CRAFFT questionnaire. Family therapy is crucial in the management of adolescent substance use disorders. Although family physicians may be able to treat adolescents with substance use disorders in the office setting, it is often necessary and prudent to refer patients to one or more appropriate consultants who specialize specifically in substance use disorders, psychology, or psychiatry. Treatment options include anticipatory guidance, brief therapeutic counseling, school-based drug-counseling programs, outpatient substance abuse clinics, day treatment programs, and inpatient and residential programs. Working within community and family contexts, family physicians can activate and oversee the system of professionals and treatment components necessary for optimal management of substance misuse in adolescents. (*Am Fam Physician.* 2008;77(3):331-336. Copyright © 2008 American Academy of Family Physicians.)

About 1.1 million American adolescents (ages 12 through 17) met substance abuse treatment criteria in 2001, yet fewer than 100,000 received treatment.[1] Substance abuse is associated with an increased risk of motor vehicle crashes, emergency department admissions, and suicide.[2] Although the scope of substance abuse may be daunting, family physicians are well positioned to recognize and address the problem in adolescents.[3]

The Substance Abuse and Mental Health Services Administration has proposed considering substance use as minimal or experimental use with minimal consequences, and substance abuse as regular use or abuse with several and more severe consequences.[4] Substance use disorders are maladaptive patterns of use accompanied by clinically significant impairment or distress. The *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. rev., is the major guideline for assessing problematic substance use *(Table 1)*,[5] although criteria have not yet been established for adolescents.[6]

Scope and Prevalence

Substance use before age 18 is associated with an eightfold greater likelihood of developing substance dependence in adulthood.[2] Adults who began to use alcohol before age 15 are five times more likely to report previous-year alcohol dependence or abuse than those who began alcohol use at age 21 or older.[7] In community samples, lifetime prevalence estimates for adolescent alcohol abuse range from 0.6 to 4.3 percent.[6,8,9] Prevalence estimates for adolescent substance abuse or dependence range from 3.3 percent in 15-year-olds to 9.8 percent in 17- to 19-year-olds.[6] The rate of illicit drug use among youths 12 to 17 years of age was 9.9 percent in 2005; dependence or abuse of illicit drugs was 4.7 percent; and the rate of alcohol dependence or abuse was 5.5 percent.[10] One study found that only 35 percent of adolescents reported discussing substance use with their primary care physicians, although 65 percent of the sample said they wanted to.[1]

Estimated rates of comorbid mental illness among adolescents with substance use disorders range from 60 to 75 percent.[11,12] Among adolescents with no prior substance use, the rates of first-time use of alcohol and other substances in the previous year are higher in those who had depression than in those who did not.[13] Other commonly documented comorbid mental disorders

SORT: KEY RECOMMENDATIONS FOR PRACTICE

Clinical recommendation	*Evidence rating*	*References*	*Comments*
Cultural and ethnic factors affect patterns of substance misuse and treatment response in adolescents who use substances.	B	19, 20	Case-control study and RCT
Screening for substance use is recommended for all adolescents.	C	6	Recommendation from consensus-based practice guideline
Motivational interviewing is effective in adolescents.	A	23, 25	Consistent findings from RCTs and recommendation from evidence-based practice guideline
Primary care treatment for adolescent substance abuse should occur in conjunction with treatment from psychiatrists or other mental health experts.	A	6, 33, 34	Consistent findings from RCTs and recommendation from evidence-based practice guideline

RCT = randomized controlled trial.

A = consistent, good-quality patient-oriented evidence; B = inconsistent or limited-quality patient-oriented evidence; C = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, see http://www.aafp.org/afpsort.xml.

include conduct disorder, oppositional defiant disorder, attention-deficit/hyperactivity disorder, anxiety, and post-traumatic stress disorder (particularly in girls).[11,12,14]

Etiology and Pathophysiology

Factors contributing to adolescent substance use and misuse evolve from a complex relationship between personal and community variables.[15] Genetic vulnerability may be influenced by environmental factors,[9] and psychological dysregulation (i.e., delayed development of behavioral, emotional, or cognitive regulation) may explain a correlation between childhood mental disorders and substance use problems in adolescents.[16-18] Other variables predicting adolescent substance use disorders include parents' poor parenting skills, parental substance use, and childhood mistreatment.[9]

Cultural and ethnic factors affect patterns of substance misuse and recovery among adolescents. One cross-sectional study showed ethnic and gender substance use patterns in adolescents.[19] A controlled trial involving juvenile Hispanic offenders showed that cultural factors such as discrimination, acculturation, and ethnic pride influence treatment outcome; for example, youth with greater "ethnic pride" responded better to treatment, and youth with greater "ethnic mistrust" showed a lesser response to treatment.[20] References highlighting cultural issues can be found at http://www.attc-ne.org/pubs/ccsat.pdf *(Table 2)*.

A principal factor in the pathophysiology of substance use leading to addiction is neurophysiologic reinforcement. One such reward pathway involves dopaminergic neurons, which lead to increased levels of dopamine, serotonin, and norepinephrine.[21] Adolescents are at greater risk of neuropathology as a result of substance abuse because their brains are still developing.[16]

Screening and Diagnosis

Parents or teachers may refer adolescents to a physician because of behavioral changes that affect school performance or social functioning, such as verbal or physical

Table 1. Diagnostic Criteria for Substance Abuse

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aggression, academic difficulties, impulsivity, hyperactivity, depressed mood, and poor social skills. Such behavioral changes often are indicative of substance abuse.[6]

Although many family physicians feel unprepared to diagnose substance abuse,[22] practice parameters for the assessment and management of substance use disorders recommend screening all adolescents for use of alcohol and other substances.[6] The CRAFFT questionnaire is a brief, reliable tool for adolescent substance abuse screening[23] *(Table 3*[24]*)*. Many free informational resources can be made available in physician's offices *(Table 2)*. Some practices have private waiting rooms for adolescents where they can look up information or pick up brochures about health-related topics.

If screening indicates the possibility of substance use, the physician can conduct a more in-depth evaluation in the office or refer the patient to a subspecialist. It is important to evaluate the adolescent for co-occurring mental illness. A family history of substance use and psychiatric disorders should be taken. The physician should ask about school performance, social and psychological functioning, peer attitudes, substance use patterns, consequences of use, and willingness for treatment.

If the patient reports substance experimentation, the physician can outline the risks of such behaviors. If the problem seems more severe, the approach should be more intensive to elicit responses from the patient.

Table 2. Adolescent Substance Abuse Resources

General information
National Institute on Drug Abuse Web site: http://www.nida.nih.gov/students.html
SAMHSA's National Clearing House for Alcohol and Drug Information: Tips for Teens Free alcohol and drug informational brochures Web site: http://ncadistore.samhsa.gov/catalog/pubseries.aspx
SAMHSA's National Mental Health Information Center Comprehensive information on children's mental health, hotlines, and links to other useful sites Web site: http://mentalhealth.samhsa.gov
Support and treatment
Al-Anon Help for families and friends of alcoholics Web site: http://www.al-anon.alateen.org
Alateen (part of Al-Anon) Recovery program for young persons; groups sponsored by Al-Anon members Web site: http://www.al-anon.alateen.org/alateen.html
Hazelden Alcohol and drug addiction treatment Web site: http://www.hazelden.org
Jaffe SL. Step *Workbook for Adolescent Chemical Dependency Recovery: A Guide to the First Five Steps.* Washington, D.C.: American Academy of Child and Adolescent Psychiatry, 1990
Cultural factors
Addiction Technology Transfer Center of New England. *Cultural Competence in Substance Abuse Treatment, Policy Planning, and Program Development: An Annotated Bibliography* Reference for cultural competency and substance use Web site: http://www.attc-ne.org/pubs/ccsat.pdf

SAMHSA = Substance Abuse and Mental Health Services Administration.

Motivational interviewing is suggested as a way to open an exchange with the adolescent and develop conditions for positive change.[25] Interviewing domains include assessment and feedback; negotiation and goal setting; behavioral modification techniques; self-help directions; and follow-up and reinforcement.[26] For example, physicians might ask adolescents what their friends do for fun, if they experiment with alcohol or drug use, or if they feel pressure from their peers to experiment. Alternatively, physicians might ask patients what they have learned about alcohol or drug use, and if they have any questions. Physicians can listen and encourage adolescents to maintain positive peer relationships and avoid friends who make poor choices. Brief interventions can make a positive difference,[27] because the longer adolescents defer experimentation, the less likely they are to develop long-term substance use problems.

CONFIDENTIALITY

Confidentiality and the need for legal protection for adolescents contribute to the underreporting of substance use disorders.[1,28] It is important to interview the patient without the presence of a parent for at least part of the visit.[29] Physicians must assure patients of their concern for privacy if a trusting relationship is to be developed.[30] Each state has laws that establish confidentiality rules, and states vary in their laws allowing minors to give consent for substance abuse treatment. Physicians should be aware of their state's laws when providing health care to adolescents.

Table 3. The CRAFFT Questionnaire: A Brief Screening Test for Adolescent Substance Abuse

C – Have you ever ridden in a **C**AR driven by someone (including yourself) who was "high" or who had been using alcohol or drugs?
R – Do you ever use alcohol or drugs to **R**ELAX, feel better about yourself, or fit in?
A – Do you ever use alcohol or drugs while you are **A**LONE?
F – Do you ever **F**ORGET things you did while using alcohol or drugs?
F – Do your family or **F**RIENDS ever tell you that you should cut down on your drinking or drug use?
T – Have you gotten into **T**ROUBLE while you were using alcohol or drugs?

NOTE: *Two or more "yes" answers suggests a significant problem.*

Adapted with permission from the Center for Adolescent Substance Abuse Research, CeASAR, Children's Hospital Boston. The CRAFFT questions. http://www.slp3d2.com/rwj_1027/webcast/docs/screentest.html. Accessed June 14, 2007.

LABORATORY TESTING

The American Academy of Pediatrics does not recommend routine office-, home-, or school-based drug testing.[31] However, toxicologic testing may be an important part of ongoing assessment of substance use and abuse during and after treatment. Confidentiality guidelines should be followed rigorously.[6]

Treatment

The treatment of adolescents with substance abuse should take into account age, sex, ethnicity, cultural background, and readiness to change.[4] It involves a system of professionals and therapeutic components, as well as family and community support.

FAMILY AND COMMUNITY

Parents are integral to the management of substance use disorders in adolescents. The physician should screen parents for substance use and abuse and refer those who screen positive to an adult treatment program. Family therapy is crucial, and the provision of family support and strength building is well within the realm of family practice.[32] The family physician should work with parents to remove alcohol from the home and keep narcotic pain medications locked away.

Peer groups play a vital role in promoting abstinence as well as abuse. Unsupervised adolescents are likely to seek out peers of similar backgrounds. While undergoing treatment, patients will be involved in new peer groups that are committed (at least superficially) to sobriety and that can support one another in remaining abstinent. The physician can encourage participation in activities such as sports, after-school clubs, and volunteerism to maximize positive peer interactions and healthy lifestyles and minimize antisocial connections.

The physician should be knowledgeable about community programs for children whose parents have substance use disorders. Programs such as Alateen can often be of help to children and adolescents *(Table 2)*.

REFERRAL AND CONSULTATION

Although the family physician may treat adolescents with substance use disorders in the office setting, it is often necessary and prudent to refer them to outside professionals. Treatment options include anticipatory guidance, brief therapeutic counseling, school-based drug-counseling programs, outpatient substance abuse clinics, day treatment programs, and inpatient and residential programs. Referral depends on the severity of abuse, comorbid psychiatric diagnoses, family and social issues, whether the youth has been involved in the juvenile justice system, motivation, and support, as well as the availability of treatments in the community. This has been termed "patient–treatment matching."[33]

Substance Use Disorders. It is imperative that the physician identify a network of competent and trustworthy treatment professionals, including child and adolescent psychiatrists, psychologists, and social workers, who specialize in adolescent addiction, as well as outpatient and inpatient substance detoxification and rehabilitation programs. This may involve advocating with managed care organizations to get sufficiently intensive and continuing treatment for the patient.

There will be many opportunities to follow up with the adolescent referred to outside treatment. For example, when the adolescent presents with an acute medical problem, the physician can ask how substance abuse treatment is progressing. If the adolescent has discontinued treatment (as is often the case), the physician may be able to intervene. It is the physician's responsibility to validate the adolescent's concerns while encouraging compliance.

Comorbid Disorders. Because anxiety, depression, and disruptive behavior disorders are common comorbid diagnoses with substance abuse, it can be helpful to determine when the symptoms first occurred. This may involve a review of school records and reports from other treatment professionals.

Abstinence from substance use for at least one month can help determine whether the substance use disorder

or the psychiatric diagnosis is primary. However, this could delay the decision to initiate psychotropic medications, which is unacceptable in adolescents with depression, bipolar disorder, or psychosis, or when there are concerns of lethality. Therefore, referral to a child and adolescent psychiatrist should be concurrent with ongoing substance abuse treatment in adolescents with comorbidities. If psychiatric consultation is not readily available, the family physician should collaborate closely with therapists, such as child psychologists or social workers, to stabilize the psychiatric condition, and the physician should take responsibility for medication management *(Table 4[34])*. Although abstinence from substance use should precede the use of psychotropic medication, there is a risk that untreated psychiatric illness will impede treatment initiation, precipitate early dropout, or interfere with achievement of abstinence.[34]

When psychiatric stability is achieved, the physician and mental health collaborators should develop a plan for monitoring substance use and for regular exchange of information.

ASSESSMENT OF SUICIDE RISK

Ongoing lethality assessment is of great importance throughout substance abuse treatment for adolescents. The physician should ask about suicidal ideation, intention, or planning. Adolescents who are intoxicated are at high risk of successful suicide and of hurting others through accidents or violence.[35] While intoxicated, an adolescent who has just broken up with a romantic partner or who has failed an examination may act against others in a way he or she would not when unimpaired. The family physician should ask about the accessibility of guns or other weapons and recommend to parents that these be removed from the adolescent's possession. If the physician determines that harm is imminent, the adolescent should be hospitalized.

Table 4. Principles of Medication Management for Adolescents with Substance Abuse

Establish mechanisms to closely monitor medication compliance, adverse effects, target symptom response (e.g., depression, anxiety), and ongoing substance use (self-report and toxicology)
Monitor compliance with substance abuse treatment
Monitor patient treatment motivation, behavior changes, and psychosocial functioning
Provide information about potential interactions between medications and substance of abuse
Use medication with good safety profiles, low abuse potential, and once-a-day dosing

Information from reference 34.

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The Authors

KIM S. GRISWOLD, MD, MPH, is an associate professor of family medicine and psychiatry at the State University of New York (SUNY) at Buffalo School of Medicine and Biomedical Sciences. She received a master's degree in public health from Yale University, New Haven, Conn., and completed a family practice residency at Buffalo (N.Y.) General Hospital.

HELEN ARONOFF, MD, MAT, is an associate professor of clinical psychiatry at the SUNY–Buffalo School of Medicine and Biomedical Sciences, where she completed her medical degree, a residency in general psychiatry, and a fellowship in child and adolescent psychiatry.

JOAN B. KERNAN, BS, is a research associate in the Department of Family Medicine at the SUNY–Buffalo School of Medicine and Biomedical Sciences.

LINDA S. KAHN, PhD, is the director of evaluation and a research assistant professor in the Department of Family Medicine at the SUNY–Buffalo School of Medicine and Biomedical Sciences. She holds adjunct faculty positions in the Departments of Psychiatry and Anthropology at SUNY–Buffalo. She earned a master's degree and doctorate in anthropology from the University of California, Berkeley.

Address correspondence to Kim Griswold, MD, MPH, The State University of New York at Buffalo School of Medicine and Biomedical Sciences, Department of Family Medicine, 462 Grider St., Buffalo, NY 14215 (e-mail: griswol@buffalo.edu). Reprints are not available from the authors.

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