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PRACTICE PARAMETER FOR THE ASSESSMENT AND TREATMENT OF CHILDREN AND ADOLESCENTS WITH SUBSTANCE USE DISORDERS

ABSTRACT

This practice parameter describes the assessment and treatment of children and adolescents with substance use disorders and is based on scientific evidence and clinical consensus regarding diagnosis and effective treatment as well as on the current state of clinical practice. This parameter considers risk factors for substance use and related problems, normative use of substances by adolescents, the comorbidity of substance use disorders with other psychiatric disorders, and treatment settings and modalities. **Key words:** substance abuse, substance dependence, adolescents, evaluation, treatment, practice parameter.

ATTRIBUTION

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This parameter was reviewed at the member forum at the 2002 annual meeting of the American Academy of Child and Adolescent Psychiatry.

During January to April 2004 a consensus group reviewed and finalized the content of this practice parameter. The consensus group consisted of representatives of relevant AACAP components as well as independent experts: William Bernet, M.D., Chair; Oscar G. Bukstein, M.D., author of the parameter; Sandra Stock, M.D., and Joseph Beitchman, M.D., representatives of the Work Group on Quality Issues; Thomas F. Anders, M.D., representative of the AACAP Council; Steven L. Jaffe, M.D., and Shashi Bhatia, M.D., representatives of the AACAP Assembly of Regional Organizations; Ramon Solhkhah, M.D., chair of the AACAP Committee on Substance Abuse and Addictions; Deborah R. Simkin, M.D., former chair of the AACAP Committee on Substance Abuse and Addictions; and Kristin Kroeger Ptakowski, Director of Clinical Affairs, AACAP. Members of the consensus group were asked to identify any conflicts of interest they may have with respect to their role in reviewing and finalizing the content of this practice parameter. One or more of the consensus group members were on the speakers bureau for one or more of the following pharmaceutical companies: Abbott, Eli Lilly, GlaxoSmithKline, Janssen, Ortho-McNeil, Pfizer, Shire, and Wyeth.

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INTRODUCTION

Alcohol and drug use is a common behavior among adolescents in the United States and other developed countries. A significant number of adolescents manifest problems with their substance use and may meet diagnostic criteria for a substance use disorder (SUD). The treatment of adolescent SUDs has begun to reflect the multifaceted nature of antecedents that lead to SUDs. These multiple problems need to be targeted for effective treatment. An empirical literature of treatment research for adolescents is emerging and provides clinicians with models and guidance for intervention with this often-difficult population.

METHODOLOGY

The list of references for this parameter was developed by searching *PsycINFO*, *MedLine*, and *Psychological Abstracts*; by reviewing the bibliographies of book chapters and review articles; by asking colleagues for suggested source materials; and from the previous version of this parameter. The searches conducted in March 2003 used the following text words: substance abuse, adolescents, and treatment. The search covered the period 1990 to 2003 and yielded about 400 articles. Each of these references was reviewed, and only the most relevant or representative were included in this document.

DEFINITIONS

In this parameter, the term “adolescents” will refer to older children and adolescents. “Parent” refers to parent or legal guardian. The terminology in this practice parameter is consistent with the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (*DSM-IV-TR*) (American Psychiatric Association, 2001). The term “substance use disorders” encompasses both substance abuse and substance dependence under the *DSM-IV-TR* category of substance-related disorders. SUDs are defined for alcohol, amphetamine (or amphetamine-like), caffeine, cannabis, cocaine, hallucinogens, inhalants, nicotine, opioids, phencyclidine (or phencyclidine-like), and sedative, hypnotic, or anxiolytic agents.

Although the *DSM-IV-TR* diagnoses of substance abuse and substance dependence assist clinicians in identifying adolescents with pathological patterns of substance use, the *DSM-IV-TR* criteria, developed for adults, have not been established as applicable to adolescents (Martin and Winters, 1998). While *DSM-IV-TR* remains the guide for determining substance-use-related pathology in adolescents, it is important to recognize the frequent differences between the most common manifestations of the diagnoses of substance abuse and dependence in adolescents versus adults. While substance use is a necessary prelude to abuse or dependence and early onset of regular use further increases the risk for SUDs, substance use per se is not sufficient for a diagnosis of abuse or dependence.

The diagnosis of *substance abuse* requires evidence of a maladaptive pattern of substance use with clinically significant levels of impairment or distress. Impairment means an inability to meet major role obligations, leading to reduced functioning in one or more major areas of life,

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risk-taking behavior, an increase in the likelihood of legal problems due to possession, and exposure to hazardous situations. *Substance dependence* requires a substantial degree of involvement with a substance as evidenced by the adolescent's meeting at least three criteria from a group of seven criteria such as withdrawal, tolerance, and loss of control over use.

CLINICAL PRESENTATION

Despite similarities to adults in physical size and abilities, most adolescents have not obtained mature levels of cognitive, emotional, social, or physical growth. They are challenged by the developmental tasks of forming a separate identity and preparing for appropriate societal and individual roles including job, marriage, and family. Within a developmental context, adolescents experiment with a wide range of attitudes and behaviors including the use of psychoactive substances. Most adolescents experiment with using substances such as alcohol and cigarettes and a portion of these later advance to the use of marijuana; a smaller portion proceed to the use of other drugs (Kandel, 2002). The early onset of substance use and a more rapid progression through the stages of substance use are among the risk factors for the development of SUDs (Robins and McEvoy, 1990).

Youth who present with substance use and frequent intoxication often manifest significant levels of acute change in mood, cognition, and behavior (Bukstein and Tarter, in press). Behavioral changes may include disinhibition, lethargy, hyperactivity or agitation, somnolence, and hypervigilance. Changes in cognition may include impaired concentration, changes in attention span, and perceptual and overt disturbances in thinking such as delusions. Mood changes can range from depression to euphoria. The manifestations of substance use and intoxication vary with the type of substance(s) used, the amount used during a given time period, the setting and context of use, and a host of characteristics of the individual such as experience with the substance, expectations of drug effect, and the presence or absence of other psychopathology.

A hallmark of SUDs in adolescents is impairment in psychosocial and academic functioning (Martin and Winters, 1998). Impairment can include family conflict or dysfunction, interpersonal conflict, and academic failure. Associated characteristics include deviant and risk-taking behavior and comorbid psychiatric disorders such as conduct, attention-deficit/hyperactivity, mood, anxiety, and learning disorders (Bukstein et al., 1989; King et al., 2000; Lewinsohn et al., 1993). Almost all psychoactive substances, including those available to adults such as alcohol and nicotine, are illegal for adolescents to obtain, possess, and use. Certain of the negative consequences of substance use for adolescents follow from the illegal nature of these substances rather than from their actual use.

The course of SUDs in adolescents is variable (Jaffe and Simkin, 2002; Jaffe and Solhkhah, 2004). Adolescents with abuse often decrease or discontinue use in late adolescence or early adulthood, while those with dependence and more risk factors are more likely to continue to meet criteria for one or more SUDs.

EPIDEMIOLOGY

Although the use of many substances among adolescents has declined substantially in recent years, substances such as opiates, LSD, inhalants, and steroids have shown periodic increases among youth in the past several decades (University of Michigan, 2003). In community

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studies, the lifetime diagnosis of alcohol abuse ranged from 0.4% in the Great Smoky Mountain Study (Costello et al., 1996) to 9.6% in the National Comorbidity Study (Kessler et al., 1994), respectively. The lifetime diagnosis of alcohol dependence ranged from 0.6% (Costello et al., 1996) to 4.3% in the Oregon Adolescent Depression Project (Lewinsohn et al., 1996). The lifetime prevalence of drug abuse or dependence has ranged from 3.3% in 15-year-olds to 9.8% in 17- to 19-year-olds (Kashani et al., 1987; Reinherz et al., 1993). It is notable that the age at which experimentation begins has been gradually declining, especially for inhalants.

RISK FACTORS

The literature on the development of substance use and SUDs in adolescents has identified an assortment of individual, peer, family, and community risk factors (Brook et al., 1989; Newcomb, 1997). These risk factors reflect both genetic and environmental influences (Kendler et al., 1999; Weinberg et al., 1998). Put in a developmental context, genetic predispositions to affective, cognitive, and behavioral dysregulation and other temperamental deviations are exacerbated by family and peer factors and the developmental issues of puberty leading to substance use and pathological use (Dawes et al., 2000; Tarter et al., 1999). Psychopathology, especially in the form of early onset of disruptive behavior disorders, mood and anxiety disorders may be associated with the etiology of SUDs (Armstrong and Costello, 2002; Loeber, 1988).

Developmental factors that contribute to early use or to continuing use include common adolescent feelings of being invulnerable, issues of autonomy, and peer influences or “peer pressure.” Emerging evidence suggests that childhood sexual abuse and other traumatic life events may be risk factors for later SUDs (Kendler et al., 2000). Children and preadolescents are particularly susceptible to cultural factors such as media promotion of substance use, which may influence the initial use of such gateway substances as tobacco (Resnik, 1990; Saffer, 2002).

PREVENTION

Most prevention efforts are based on various theoretical models of adolescent substance use/abuse development. Research has established a number of empirically-based prevention interventions that primarily involve strengthening resilience factors and reducing risk factors for the development of SUDs (National Institute on Drug Abuse, 2003). Early intervention for psychopathology in youth at risk for SUDs is critical to prevent early-onset substance use and SUDs.

RECOMMENDATIONS

Each recommendation in this parameter is identified as falling into one of the following categories of endorsement, indicated by an abbreviation in brackets following the statement. These categories indicate the degree of importance or certainty of each recommendation.

[MS] “Minimal Standards” are recommendations that are based on substantial empirical evidence (such as well-controlled, double-blind trials) or overwhelming clinical consensus. Minimal standards are expected to apply more than 95% of the time, i.e., in almost all cases. When the practitioner does not follow this standard in a particular case, the medical record should indicate the reason.

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[CG] “Clinical Guidelines” are recommendations that are based on empirical evidence (such as open trials, case studies) and/or strong clinical consensus. Clinical guidelines apply approximately 75% of the time. These practices should always be considered by the clinician, but there are exceptions to their application.

[OP] “Options” are practices that are acceptable, but not required. There may be insufficient empirical evidence to support recommending these practices as minimal standards or clinical guidelines. In some cases they may be the perfect thing to do, but in other cases they should be avoided. If possible, the practice parameter will explain the pros and cons of these options.

[NE] “Not endorsed” refers to practices that are known to be ineffective or contraindicated.

The recommendations of this parameter are based on a thorough review of the literature as well as clinical consensus. The following coding system is used to indicate the nature of the research that supports the recommendations.

[rdb] “Randomized, double-blind clinical trial” is a study of an intervention in which subjects are randomly assigned to either treatment or control groups and both subjects and investigators are blind to the assignments.

[rct] “Randomized clinical trial” is a study of an intervention in which subjects are randomly assigned to either treatment or control groups.

[ct] “Clinical trial” is a prospective study in which an intervention is made and the results are followed longitudinally.

CONFIDENTIALITY

Recommendation 1. *The clinician should observe an appropriate level of confidentiality for the adolescent during the assessment and treatment [MS].*

Adolescents are more likely to provide truthful information if they believe their information, at least detailed information, will not be shared. Prior to the adolescent interview, the clinician should review exactly what information the clinician is obliged to share and with whom. Although it is obvious to the clinician that a court-ordered evaluation means a full report to the judge or probation officer, the adolescent may not be aware of this. The clinician should explicitly inform the adolescent of this requirement. Typically, a clinician should inform the adolescent that a threat of danger to self or others will force the clinician to inform a responsible adult, usually the parents. The clinician should be knowledgeable about local and Federal laws that limit what information may be released. Most states have confidentiality laws that restrict the information that the clinician is allowed to share with anyone unless the adolescent provides consent. This includes information about deviant behavior such as selling drugs, who sells the adolescent drugs, and peer behaviors. The clinician should encourage and support the adolescent’s revealing the extent of substance use and other problems to parents. In other cases, the clinician should discuss what information the adolescent will allow the clinician to reveal such as a general recommendation for treatment or impressions rather than a detailed report of specific deviant and substance use behaviors.

SCREENING

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Recommendation 2. *The mental health assessment of older children and adolescents requires screening questions about the use of alcohol and other substances of abuse [MS].*

In the face of problems in one or more domains of adolescent functioning, clinicians and educational professionals who work with youth often need to screen for the need for more comprehensive evaluation. At the very least, screening involves asking about substance use. Asking about quantity and frequency, the presence of adverse consequences of use, and the adolescent's attitude toward use are basic lines of screening inquiry. Several examples of screening instruments with established psychometric properties are listed in Table 1.

EVALUATION

Recommendation 3. *If the screening raises concerns about substance use, the clinician should conduct a more formal evaluation to determine the quantity and frequency of use and consequences of use for each substance used and whether the youth meets criteria for SUD(s) [MS].*

The goal of the evaluation is to determine whether the adolescent is using one or more substances, what effects substance use has on various domains of the adolescent's psychosocial functioning, and whether the problem fits diagnostic criteria for substance abuse or dependence. To be considered a disorder, substance use must produce some level of dysfunction in one or more domains of the adolescent's life. These include psychiatric/behavioral, family, school/vocational, recreational/leisure, and medical domains (Tarter, 1990; Rahdert, 1991). Because of the covert nature of substance use, optimal assessment often requires information from a variety of sources including the adolescent, parents (or other caregivers), other family members, school, any involved social agencies, and previous treatment records.

The attitude of the clinician should be nonjudgmental and flexible regarding the order of the interview elements in order to insure a valid report of substance use and associated problems.

The parent should be able to provide information about a family history of SUDs and other psychiatric disorders, family functioning, stressors and supports, as well as community resources and risks.

Detailed assessment of the adolescent's substance use behavior is an essential element of the interview. Inquiry into patterns of use should include information about the age at onset and progression of use for specific substances; circumstances, frequency, and variability of use; and the types of agents used. The clinician should ask about both direct and indirect consequences of use in the domains of family, school/vocational, social, and psychological functioning and medical problems. The interviewer should also inquire about the context of use, which pertains to the adolescent's view of substance use, the adolescent's expectancies of use, the usual times and places of substance use, peer attitudes and use patterns, common behavioral or emotional antecedents and consequences of use, and the adolescent's overall social milieu. Such an inquiry can take the form of a functional analysis, considering both antecedents and consequences of the substance use behaviors. Finally, the clinician should ask about the adolescent's view of his or her substance use as a potential problem, document past or current attempts to control or stop substance use, and review the criteria for substance abuse and dependence (substance-specific). Evaluating the adolescent's readiness for treatment or stage of change may help determine the initial treatment goals or level of care.

The differential diagnosis of adolescent SUDs requires consideration that the reported domains of dysfunction attributed to substance use may actually be due to premorbid or concur-

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rent problems such as disruptive behavior disorders, family issues, or academic problems. The frequent comorbidity of SUDs and other psychiatric disorders necessitates a comprehensive review of past and present psychopathology including a review of psychiatric symptoms and treatment history. Riggs and Davies (2002) suggest a timeline approach to sort out the relationship between comorbid psychopathology, substance use, and developmental events and to assist in formulating a differential diagnosis and comprehensive treatment plan.

The interview with the adolescent also includes elements common to all assessments of emotional and behavioral problems of adolescents (American Academy of Child and Adolescent Psychiatry, 1997). A comprehensive developmental, social, and medical history is a part of any complete assessment involving adolescents (Winters, 2001). Particularly important is a review of HIV risk factors including sexual and other high-risk behaviors. Clinicians may use a variety of structured interviews and rating scales with established psychometric properties to supplement interview information (see Table 2 for examples).

Recommendation 4. *Toxicology, through the collection of bodily fluids or specimens, should be a routine part of the formal evaluation and ongoing assessment of substance use both during and after treatment [MS].*

Toxicological tests of bodily fluids, usually urine but also blood, and hair samples to detect the presence of specific substances should be part of the formal evaluation and the ongoing assessment of substance use (see Table 3). The optimal use of urine screening requires proper collection techniques including visualization of obtaining the sample, evaluation of positive results, and a specific plan of action should the specimen be positive for the presence of substance(s) (Cole, 1997; Casavant, 2002). The clinician should establish rules regarding the confidentiality of the results prior to testing. Because of the limited time a drug will remain in the urine and possible adulteration, a negative urine does not indicate that the youngster does not use drugs.

TREATMENT

Recommendation 5. *Adolescents with SUDs should receive specific treatment for their substance use [MS].*

Reviews of the literature of adolescent treatment outcome have concluded that treatment is better than no treatment (Williams et al., 2000; Deas and Thomas, 2001). In the year following treatment, patients reported decreased heavy drinking, marijuana and other illicit drug use, and criminal involvement as well as improved psychological adjustment and school performance (Hser et al., 2001; Grella et al., 2001). Longer duration of treatment is associated with several favorable outcomes. Pretreatment factors associated with poorer outcomes (usually substance use and relapse to use) are non-Caucasian race, increased seriousness of substance use, criminality, and lower educational status. The in-treatment factors predictive of outcome are time in treatment, involvement of family, use of practical problem-solving, and provision of comprehensive services such as housing, academic assistance, and recreation. Posttreatment variables that are thought to be the most important determinants of outcome include association with nonusing peers and involvement in leisure time activities, work, and school. Variables reported to be most consistently related to successful outcome are treatment completion, low pretreatment use, and peer and parent social support and nonuse of substances.

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In terms of empirical support for specific treatment modalities, family therapy approaches have the most supporting evidence (Stanton & Shadish, 1997; Williams & Chang, 2000), although individual approaches such as cognitive behavioral therapy (CBT) both alone and with motivational enhancement have shown to be efficacious (Azrin et al., 2001 [rct]; Dennis et al., in press [rct]; Kaminer et al., 1998b, 1999 [rct]; Waldron et al., 2001 [rct]). Community reinforcement approaches utilizing contingency contracting and vouchers also appear to be promising (Azrin et al., 1994 [ct]; Corby et al., 2000 [ct]; Godley et al., 2002 [rct]; Kaminer, 2000). Self-support groups can be encouraged as adjuncts to these treatment modalities.

The primary goal for the treatment of adolescents with SUDs is achieving and maintaining abstinence from substance use. While abstinence should remain the explicit, long-term goal for treatment, a realistic view recognizes both the chronicity of SUDs in some populations of adolescents and the self-limited nature of substance use and substance use-related problems in others. Given these considerations, harm reduction may be an interim, implicit goal of treatment. Included in the concept of harm reduction is a reduction in the use and adverse effects of substances, a reduction in the severity and frequency of relapses, and improvement in one or more domains of the adolescent's functioning (e.g., academic performance or family functioning). While adolescents may not be initially motivated to stop substance use, the attainment of skills to deal with substance use may provide the adolescent with greater self-efficacy to not only reduce use but also ultimately move toward the goal of abstinence. Although harm reduction may be an interim goal of treatment, "controlled use" of any nonprescribed substance of abuse should never be an explicit goal in the treatment of adolescents. Control of substance use should not be the only goal of treatment. A broad concept of rehabilitation involves targeting associated problems and domains of functioning for treatment. Integrated interventions that concurrently deal with coexisting psychiatric and behavioral problems, family functioning, peer and interpersonal relationships, and academic/vocational functioning not only will produce general improvements in psychosocial functioning, but most likely will yield improved outcomes in the primary treatment goal of achieving and maintaining abstinence.

On-going assessment of outcomes is important. The critical variables regarding current substance use are the use of specific substances during and following treatment with reference to the number of days use per month, average amount per occasion, and maximum amount per occasion. Assessment of outcomes may also include determining the youngster's compliance with treatment and involvement in 12-step programs.

Based on the combination of empirical research and current clinical consensus, the clinician dealing with adolescents with SUDs should develop a treatment plan that utilizes modalities that target: (1) motivation and engagement; (2) family involvement to improve supervision, monitoring, and communication between parents and adolescent; (3) improved problem solving, social skills, and relapse prevention; (4) comorbid psychiatric disorders through psychosocial and/or medication treatments; (5) social ecology in terms of increasing prosocial behaviors, peer relationships, and academic functioning; and 6) adequate duration of treatment and follow up care.

Recommendation 6. *Adolescents with SUDs should be treated in the least restrictive setting that is safe and effective [MS].*

Treatment of adolescents with SUDs can take place at one of several levels of care, reflecting intensity of treatment and restriction of movement (AACAP, 2001). Factors affecting the

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choice of treatment setting include the following: (1) the need to provide a safe environment and the ability of the adolescent to care for himself; (2) motivation and willingness of the adolescent and his family to cooperate with treatment; (3) the adolescent's need for structure and limit-setting that cannot be provided in a less restrictive environment; (4) the existence of additional medical or psychiatric conditions; (5) the availability of specific types of treatment settings for adolescents; (6) the adolescent's and his family's preferences for a particular setting; and (7) treatment failure in a less restrictive setting or level of care. Although residential programs, including therapeutic communities (Jainchill et al., 2000), have a place in the range of setting options, community intervention settings, if feasible, may offer optimal generalization of treatment gains. Even in the community, alternative sites such as home and school are being increasingly used (Brown, 2001; Wagner and Waldron, 2001).

Recommendation 7. *Family therapy or significant family/parental involvement in treatment should be a component of treatment of SUDs [MS].*

Family interventions are critical to the success of any treatment approach for adolescents with SUDs (Stanton and Shadish, 1997; Waldron, 1997) since a number of family-related factors – such as parental substance use or abuse, poor parent-child relationships, low perceived parental support, poor communication, and poor parent supervision and management of the adolescent's behavior – have been identified as risk factors for the development of substance abuse among adolescents. Three domains of predictors that have figured prominently in longitudinal studies of the etiology of adolescent substance use and SUDs are particularly relevant: characteristics of the parent-child relationship; parental effectiveness; and parental SUDs. Conflict between parents and adolescents, insufficient parental monitoring, inconsistent or otherwise ineffective discipline, child abuse/neglect, and parental alcoholism or other substance abuse have all been found to be robust correlates and predictors of adolescent substance use and SUDs (Hawkins et al., 1992).

Although there are many approaches to family intervention for substance abuse treatment, they have common goals: providing psychoeducation about SUDs, which decreases familial resistance to treatment and increases motivation and engagement; assisting parents and family to initiate and maintain efforts to get the adolescent into appropriate treatment and achieve abstinence; assisting parents and family to establish or reestablish structure with consistent limit-setting and careful monitoring of the adolescent's activities and behavior; improving communication among family members; and getting other family members into treatment and/or support programs.

Family therapy is the most studied modality in the treatment of adolescents with SUDs. Based on the limited number of comparative studies, outpatient family therapy appears to be superior to other forms of outpatient treatment (Deas and Thomas, 2001; Waldron, 1997; Williams and Chang, 2000). Among the forms of family therapy having support based on controlled studies are functional family therapy (Alexander et al., 1990 [rct]; Friedman, 1989 [rct]), brief Strategic Family Therapy (Szapocznik et al., 1983 [rct], 1988 [rct]), Multisystemic Therapy (MST) (Henggeler et al., 1991 [rct], 2002 [rct]), family systems therapy (Joanning et al., 1992 [rct]), and Multidimensional Family Therapy (Liddle et al., 2001 [rct]; Dennis et al., 2002 [rct]). An integrated behavioral and family therapy model that combines a family systems model and cognitive-behavioral therapy also appears efficacious (Waldron et al., 2001 [rct]).

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Despite the importance of family interventions, treatment can be effective without participation of the adolescent (Waldron et al., 2001; Dennis et al., in press). Similarly, interventions with the adolescent alone (e.g., CBT or CBT plus MET) are also effective (Dennis et al., in press; Kaminer et al., 1998, 1999).

Recommendation 8. *Treatment programs and interventions should develop procedures to minimize treatment dropout and to maximize motivation, compliance, and treatment completion [CG].*

Treatment completion is the treatment variable most consistently related to positive outcome (Alford et al., 1991; Hser et al., 2001; Williams and Chang, 2000). Related variables are motivation and compliance, which are also related to better outcomes (Cady et al., 1996). Adolescent perceptions can also contribute to whether the youth will be engaged in treatment; this suggests that specialized, adolescent-focused engagement interventions are necessary.

Modifications of motivational interviewing or enhancement techniques for adolescents have shown promise for both evaluation and treatment based on limited treatment studies (Colby et al., 1998 [rct]; Monti et al., 1999 [rct], 2001). This nonjudgmental, nondirective strategy is designed to move the adolescent to a “stage of change” in which the youngster is more receptive to treatment or behavior change. Motivational interviewing and other brief interventions may serve to heighten motivation, increase self-efficacy, and provide personalized feedback and education tailored to specific substances and comorbid problems such as psychiatric disorders.

Specific engagement procedures have been incorporated as part of many family-based interventions (Dakof et al., 2001 [rct]; Diamond et al., 1999; Santisteban et al. 1996 [rct]; Szapocznik et al., 1988 [rct]; Waldron, 1997 [rct]; Waldron et al., 2001 [rct]). Other family-based treatments such as multidimensional family therapy (Rowe et al., 2002) and MST (Henggeler et al., 1996; Randell et al., 2001) also have strong engagement goals and components.

Recommendation 9. *Medication can be used when indicated for the management of craving and withdrawal and for aversion therapy [OP].*

Medications used to target alcohol-related cravings (e.g., naltrexone, acamprostate, ondansetron) are increasingly used among adults and have been effective in case reports in adolescents (Solhkhah and Wilens, 1998). Their efficacy in adolescents has yet to be tested in controlled trials. These and aversive agents such as disulfiram could be considered for use in treatment-resistant adolescents.

Similarly, the use of medications to treat alcohol, benzodiazepine, or opiate withdrawal using such medications such as benzodiazepines (alcohol), or clonidine and buprenorphine (opiates) is not based on empirical research in adolescents but rather on research and experience with adults. Clinicians should use caution in considering pharmacological treatment for adolescents with comorbid SUDs and psychiatric disorders. The presence of SUDs or substance use may increase the potential for intentional or unintentional overdose with certain psychotropic medications, especially in combination with some substances of abuse.

Recommendation 10. *Treatment should encourage and develop peer support, especially regarding the nonuse of substances [CG].*

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Having a supportive environment, especially parents and peers who do not use substances, is important for optimal outcomes (Brown et al., 2001; Myers et al., 1995).

A controversial element of traditional treatment programs is the widespread use of group treatment. There is substantial evidence that group treatment can have significant negative effects on outcomes (Dishion et al., 2001). Emerging data suggest this iatrogenic effect may be limited to more deviant, conduct-disordered youth who nevertheless make up a substantial portion of the adolescent SUD treatment population. Other studies show positive effects for group modalities (Dennis et al., 2002 [rct]; Kaminer and Burlison, 1999 [rct]; Waldron et al., 2001 [rct]). Clinicians should take caution when forming groups for treatment and should consider alternative family-based or other modalities for more deviant youth.

Recommendation 11. *Twelve-step approaches may be used as a basis for treatment. Attendance at Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) groups comprise an adjunct to professional treatment of SUDs and should be encouraged [CG].*

Twelve-step approaches, using AA and NA as a basis for treatment, are perhaps the most common approaches for treatment and treatment programs in the United States. Attendance in aftercare treatment or self-support groups (e.g., AA or NA) is related to positive outcomes in several studies of adolescent SUD treatment (Alford et al., 1991; Williams and Chang, 2000; Winters et al., 2000). Several other studies have found that attendance at self-support or aftercare groups is associated with higher rates of abstinence and other measures of improved outcome, when compared with those not participating in such groups following treatment (Brown et al., 1994).

Twelve-step programs can be defined as having adolescents work on specific steps toward recovery, attendance at self-support groups (AA or NA), and obtaining the assistance of a sponsor who is another person in recovery from substance use problems. Developmentally appropriate, specific twelve-step programs and self-support groups offer several benefits including a recovering (i.e., non-substance-using) peer group, available sponsors, and other types of support (Jaffe, 1990, 2001). Although 12-step programs may be effective for many adolescents, they have not been subject to controlled clinical trials.

Recommendation 12. *Programs/interventions should attempt to provide comprehensive services in other domains (e.g., vocational, recreational, medical, family, and legal) [CG].*

Programs with more comprehensive services such as vocational counseling, recreational activities, and medical services (including birth control) have better outcomes than programs without those services (Hser et al., 1999; Williams and Chang, 2000). As per the success of MST, programs that deal with the social ecology or total life circumstances of the adolescent are likely to produce more lasting benefits than those that do not.

COMORBIDITY

Recommendation 13. *Adolescents with SUDs should receive thorough evaluation for comorbid psychiatric disorders [MS].*

Significant rates of adolescents with coexisting SUDs and psychiatric disorders (disruptive behavior disorders, mood disorders, and anxiety disorders) are reported in both clinical and

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general populations (Armstrong and Costello, 2002; Grella et al., 2001; Lewinsohn et al., 1993; Simkin, 2004). Certain psychiatric disorders such as disruptive behavior disorders and depressive disorders may increase the risk for the development of SUDs. Although researchers and clinicians have proposed the concept of adolescents using illicit substances as a form of self-medication for dysphoria or other psychiatric symptoms no definitive studies are available (Bukstein & Tarter, in press). Furthermore, the comorbidity of psychiatric disorders – particularly conduct disorder and, to a lesser extent, major depressive disorder – may have an effect on substance use and related problems both at baseline and at follow-up and may impair an adolescent's ability to effectively engage in treatment (Riggs and Whitmore, 1999). Evidence suggests that depression increases the rate and rapidity of relapse (Cornelius et al., 2003). When compared with non-comorbid youth with SUDs, the 63% of youth with comorbid disorders were more likely to be alcohol or other drug dependent and have more problems with family, school, and criminal involvement; they were more likely to use marijuana and hallucinogens and engage in delinquent behavior in the 12 months after treatment (Grella et al., 2001).

Disruptive behavior disorders are the most common psychiatric disorders diagnosed in adolescents with SUDs. Conduct disorder, including the component of aggression, usually precedes and accompanies adolescent SUD (Huizinga and Elliot, 1981; Loeber, 1988). ADHD is also often present in youth with SUDs (Wilens et al., 1994). Several studies have also linked SUDs with learning disabilities and sensory processing problems in adolescents (Tapert et al., 2002).

Mood disorders, particularly depression, frequently have onset both preceding and consequent to the onset of substance use and SUDs in adolescents (Armstrong and Costello, 2002). The prevalence of depressive disorders in these studies of clinical populations ranged from 24% to more than 50%. SUDs among adolescents are also a risk factor for suicidal behaviors, including ideation, attempts, and completed suicide (Crumley, 1990; Lewinsohn et al., 1996).

A number of studies of clinical populations show high rates of anxiety disorders, especially posttraumatic stress disorder and social phobia, among youth with SUDs, ranging from 7% to more than 40% (Clark et al, 1995; Grella et al., 2001). Bulimia nervosa is also frequently associated with adolescents having SUDs (von Ranson et al., 2002). SUDs are very common among individuals, especially young and chronically impaired, who have a diagnosis of schizophrenia (Kutcher et al., 1992).

Recommendation 14. *Comorbid conditions should be appropriately treated [MS].*

It is essential to treat psychiatric disorders that are comorbid with SUDs (PLNDP, 2002). Although the effects of integrated mental health and SUD treatment awaits more empirical study, the optimal treatment of adolescents with SUD and psychiatric comorbidity presumably involves an integration of treatment modalities rather than merely concurrent or consecutive treatment with specific modalities for either SUD or psychiatric disorder(s) (Riggs and Davies, 2002).

Many cognitive-behavioral (CBT) modalities effective with adolescents with conduct disorder also are relevant for youth with coexisting SUDs (Kazdin, 1995). CBT can include elements directed toward substance use such as relapse prevention but also generic issues such as social skills, anger control, and problem-solving.

Recent emerging research and experience suggest that pharmacotherapy can be used safely and effectively in adolescents with SUDs (Bukstein and Kithas, 2002; Solhkhah and Wilens, 1998). Open trials with pemoline and bupropion for ADHD and fluoxetine for depression in a population

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of drug-dependent delinquents have shown promise (Riggs et al., 1996 [ct], 1997 [ct], 1998 [ct]). More recently, a double-blind, placebo-controlled trial of a stimulant medication demonstrated the efficacy of medication improving ADHD symptoms in adolescents with comorbid ADHD and SUD. This study also demonstrated that medication treatment of ADHD alone, without specific SUD or other psychosocial treatment, did not decrease substance use (Riggs et al., 2004 [rdb]). Lithium, in a randomized controlled trial (Geller et al., 1998 [rdb]), and serotonergic reuptake inhibitors, in open trials (Cornelius et al., 2001 [ct]; Riggs et al. 1997 [ct]), have produced significant improvements in adolescents with SUDs and comorbid mood disorders.

Some commonly used pharmacological agents, such as psychostimulants and benzodiazepines, have inherent abuse potential. The risk of abuse of a therapeutic agent either by the adolescent, his peer group, or family members should prompt a thorough assessment of the risk of this outcome (e.g., history of abuse of the agent, family/parental history of substance abuse or antisocial behavior). Often, parental or adult supervision of medication administration can alleviate concerns about potential abuse. The clinician should also consider alternative agents to psychostimulants, such as atomoxetine or bupropion, with a lower potential for abuse. The newer long-acting stimulant preparations may offer less potential for abuse or diversion due to their form of administration and the ability to more easily monitor and supervise once-a-day dosing. However, their abuse potential has yet to be fully ascertained. Although many anxiety symptoms or disorders in adolescents can be treated successfully with psychosocial methods such as behavior therapy, the use of selective serotonin reuptake inhibitors, tricyclic antidepressants, or buspirone is preferred over the use of benzodiazepines.

AFTERCARE

Recommendation 15. *Programs and interventions should provide or arrange for post-treatment aftercare [CG].*

SUDs are often chronic disorders requiring ongoing intervention. Participation in after-care services following treatment in a program is related to improved outcomes (Williams et al., 2000). Adolescents attending more intensive aftercare programs involving case management and community reinforcement were more likely than those who did not receive these services to be abstinent from marijuana and reduce their alcohol use at 3 months post-discharge (Godley et al., 2001 [rct], 2002 [rct]). After the acute treatment for substance use, ongoing attention should be paid to comorbid psychopathology and other comprehensive needs of the adolescent and his family. Self-support groups such as Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) are often an element of aftercare.

SCIENTIFIC DATA AND CLINICAL CONSENSUS

Practice parameters are strategies for patient management, developed to assist clinicians in psychiatric decision-making. AACAP practice parameters, based on evaluation of the scientific literature and relevant clinical consensus, describe generally accepted approaches to assess and treat specific disorders or to perform specific medical procedures. These parameters are not intended to define the standard of care; nor should they be deemed inclusive of all proper meth-

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ods of care or exclusive of other methods of care directed at obtaining the desired results. The clinician – after considering all the circumstances presented by the patient and his or her family, the diagnostic and treatment options available, and available resources – must make the ultimate judgment regarding the care of a particular patient.

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REFERENCES

References with an asterisk are particularly recommended.

- Alexander JF, Waldon HB, Newberry AM, Liddle, N (1990), The functional family therapy model. In: *Family Therapy for Adolescent Drug Abuse*, Friedman AS, Granick S, eds. Lexington, MA: Lexington Books, pp 183-200
- Alford GS, Koehler RA, Leonard J (1991), Alcoholics anonymous-narcotics anonymous model inpatient treatment of chemically dependent adolescents: A 2-year outcome study. *J Stud Alcohol* 52: 118-126
- American Academy of Child and Adolescent Psychiatry (1997), Practice Parameters for the Psychiatric Assessment of Children and Adolescents. *J Am Acad Child Adolesc Psychiatry* 36: 4S-20S
- American Academy of Child and Adolescent Psychiatry (2001), *Child and Adolescent Level of Care Utilization System (CALOCUS) for Psychiatric and Addiction Services*, Washington, DC: AACAP
- American Psychiatric Association (2001), *Diagnostic and Statistic Manual of Mental Disorders*, Fourth Edition, Text Revision (*DSM-IV-TR*). Washington, D.C.: American Psychiatric Press
- Armstrong, TD, Costello, EJ (2002), Community studies on adolescent substance use, abuse, or dependence and psychiatric comorbidity. *J Consult Clin Psychology* 70: 1224-1239
- Azrin NH, Donohue B, Teichner GA, Crum T, Howell J, DeCato LA (2001), A controlled evaluation and description of individual-cognitive problem solving and family-behavior therapies in dually-diagnosed conduct-disordered and substance-dependent youth. *J Child Adolesc Sub Abuse* 11: 1-43
- Brook JS, Nomura C, Cohen P (1989), A network of influences on adolescent drug involvement: Neighborhood, school, peer, and family. *Genetic, Social, and General Psychology Monographs* 115: 125-145
- Brown S A, Myers MG, Lippke L, Tapert, SF, Stewart DG, Vik PW (1998), Psychometric evaluation of the customary drinking and drug use record (CDDR): A measure of adolescent alcohol and drug involvement. *J Stud Alcohol* 59: 427-438
- *Brown SA, D'Amico EJ, McCarthy DM and Tapert SF (2001), Four-year outcomes from adolescent alcohol and drug treatment. *J Stud Alcohol* 62: 381-388
- Brown SA, Myers MG, Mott MA, Vik PW (1994), Correlates of success following treatment for adolescent substance abuse. *Applied and Preventive Psychology* 3: 61-73
- Brown, SA (2001), Facilitating change for adolescent alcohol problems: A multiple options approach. In: *Innovations in adolescent substance abuse interventions*, Wagner, EF, Waldron, HB, eds. Amsterdam, Netherlands: Pergamon/Elsevier Science, pp 169-187
- Bukstein O, Kithas J (2002), Adolescent substance use disorders. In: *Child Adolescent Psychopharmacology*, Rosenberg D, Davanzo, PA, Gershon S, eds. Marcel-Dekker, pp 675-710
- Bukstein OG, Brent DA, Kaminer Y (1989), Comorbidity of substance abuse and other psychiatric disorders in adolescents. *Am J Psychiatry* 146: 1131-1141

American Academy of Child and Adolescent Psychiatry

- Bukstein OG, Tarter RE (in press), Substance use disorders in children and adolescents. In: *Textbook of Pediatric Neuropsychiatry*, 2nd Edition, Coffey, E, ed. New York: American Psychiatric Press, pp 595-616
- Cady, ME, Winters, KC, Jordan, DA, Solberg, KB, Stinchfield, RD (1996), Motivation to change as a predictor of treatment outcome for adolescent substance abusers. *J Child Adolesc Sub Abuse* 5: 73-91
- Casavant, MJ (2002), Urine drug screening in adolescents. *Pediatr Clin North Am* 49: 317-327
- Clark DB, Bukstein OG, Smith MG, Kaczynski N, Mezzich AC, Donovan JE (1995), Identifying anxiety disorders in adolescents hospitalized for alcohol abuse or dependence. *Psychiatric Services* 46: 618-620
- Colby SM, Monti P, Barnett N, Rohsenow D, Weissman K, Spirito A, Woolard RH, Lewander, WJ (1998), Brief motivational interviewing in a hospital setting for adolescent smoking: A preliminary study. *J Consult Clin Psychol* 66: 574-578
- Cole, E J (1997). New developments in biological measures of drug prevalence. In: *Validity of Self-Reported Drug Use: Improving the Accuracy of Survey Estimates* NIDA Research Monograph 167, Harrison L, Hughes, A, eds. Rockville, MD: NIDA, pp 108-130
- Corby EA, Roll JM, Ledgerwood DM, Schuster CR (2000) Contingency management interventions for treating the substance abuse of adolescents: A feasibility study. *Experimental & Clinical Psychopharmacology*, 8, 371-376
- Cornelius JR, Bukstein OG, Birmaher B, Salloum IM, Lynch K, Pollock NK, Gershon S, Clark D (2001), Fluoxetine in adolescents with major depression and an alcohol use disorder: An open label trial. *Addictive Behaviors* 26: 735-739
- Cornelius, JR, Maisto, SA, Martin, CS, Bukstein, OG, Salloum, IM, Daley, DC, Wood, DS, Clark, D (2003), Major depression associated with earlier alcohol relapse in treated teens with AUD. *Addictive Behaviors* 28: 381-386
- Costello JE, Angold A, Burns, BJ, Stangl DK, Tweed DL, Erkanli A, Wotrthman CM (1996), The smoky, mountains study of youth: goals, design, methods, and the prevalence of *DSM-III-R* disorders. *Arch Gen Psychiatry* 53: 1129-1136
- Crumley FE (1990), Substance abuse and adolescent suicidal behavior. *J Am Med Assoc* 263: 3051-3056
- Dakof GA, Tejada M, Liddle HA (2001), Predictors of engagement in adolescent drug abuse treatment. *J the Am Acad Child Adolesc Psychiatry* 40: 274-281
- Dawes MA, Antelman SM, Vanyukov MM, Giancola P, Tarter RE, Susman EJ, Mezzich A, Clark DB (2000), Developmental sources of variation in liability to adolescent substance use disorders. *Drug Alcohol Depend* 6: 3-14
- Deas D, Thomas, SE (2001), An overview of controlled studies of adolescent substance abuse treatment. *Am J Addictions* 10: 178-189
- Dennis, ML (1998), *Global Appraisal of Individual Needs (GAIN) manual: Administration, Scoring and Interpretation*, (Prepared with funds from CSAT TI 11320). Bloomington, IL: Lighthouse Publications
- Dennis ML, Titus JC, Diamond G, Donaldson J, Godley SH, Tims FM, Webb C, Kaminer Y, Babor T, Roebuck MC, Godley MD, Hamilton N, Liddle H, Scott CK. (2002), The Cannabis Youth Treatment (CYT) experiment: Rationale, study design, and analysis plans. *Addiction* 97: 16-34

American Academy of Child and Adolescent Psychiatry

- Dennis N, Godley SH, Diamond G, Tims FM, Babor T, Donaldson J, Liddle H, Titus JC, Kaminer Y, Webb C, Hamilton N, Funk R (in press) The Cannabis Youth Treatment (CYT) study: Main findings from two randomized trials. *Journal of Substance Abuse Treatment*
- Diamond, GM, Liddle, HA, Hogue, A, Dakof, GA (1999). Alliance-building interventions with adolescents in family therapy: A process study. *Psychotherapy: Theory, Research, Practice, Training* 36: 355-368
- Dishion T, Poulin F, Burraston B (2001), Peer group dynamics associated with iatrogenic effects in group interventions with high-risk young adolescents. In: *The role of friendship in psychological adjustment. New directions for child and adolescent development, No. 91*, Nangle, DW, Erdley, CA, eds. San Francisco, CA, US: Jossey-Bass Inc, pp 79-92
- Friedman AS, Utada A (1989), A method for diagnosing and planning the treatment of adolescent drug abusers (The Adolescent Drug Abuse Diagnosis {ADAD} Instrument). *J Drug Educ* 19: 285-312
- Geller B, Cooper TB, Sun K, Zimmermann B, Frazier J, Williams M, Heath J (1998), Double-blind and placebo-controlled study of lithium for adolescent bipolar disorders with secondary substance dependency. *J Am Acad Child Adolesc Psychiatry* 37: 171-178
- Godley SH, Godley M, Dennis M (2001), The Assertive Aftercare Protocol for adolescent substance abusers. In: *Innovations in adolescent substance abuse interventions*, Wagner EF, Waldron HB, eds., pp 313-331
- Godley MD, Godley SH, Dennis ML, Funk R, Passeti LL (2002), Preliminary outcomes from the Assertive continuing care experiment for adolescents discharged from residential treatment. *J Subst Abuse Treat*, 23: 21-32
- *Grella CE, Hser Y, Joshi V, Rounds-Bryant J (2001), Drug treatment outcomes for adolescents with comorbid mental and substance use disorders. *J Nerv Ment Dis* 189: 384-392
- Gruenewald PJ, Klitzner M (1991), Results of a preliminary POSIT analyses. In: *Adolescent Assessment Referral System Manual*, Radhert, E, ed. Rockville, MD: National Institute on Drug Abuse
- Hawkins J D, Catalano RF, Miller JY (1992), Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychol Bull* 112:64-105
- Henggeler SW, Pickrel SG, Brondino MJ, Crouch JL (1996), Eliminating (almost) treatment dropout of substance abusing or dependent delinquents through home-based multisystemic therapy. *Am J Psychiatry* 153:427-428
- Henggeler SW, Borduin CM, Melton GB, Mann BJ, Hall JA, Cone L, Fucci BR (1991), Effects of multisystemic therapy on drug use and abuse in serious juvenile offenders: A progress report from two outcome studies. *Family Dynamics of Addiction Quarterly* 1:40-51
- Henggeler SW, Pickrel SG, Brondino MJ, Crouch JL (1996), Eliminating (almost) treatment dropout of substance abusing or dependent delinquents through home-based multisystemic therapy. *Am J Psychiatry* 153:427-428
- Henggeler SW, Clingempeel WG, Brondino MJ, Pickrel SG (2002), Four-year follow up of Multisystemic Therapy with substance abusing and substance-dependant juvenile offenders. *J Am Acad Child Adolesc Psychiatry* 41: 868-874

American Academy of Child and Adolescent Psychiatry

- Hser, Y, Joshi, V, Anglin, MD and Fletcher, B (1999), Predicting posttreatment cocaine abstinence for first-time admissions and treatment repeaters. *Am J Public Health* 89: 666-671
- *Hser Y, Grella CE, Hubbard RL, Hsieh S, Fletcher BW, Brown BS, Anglin M (2001), An evaluation of drug treatments for adolescents in 4 US cities. *Arch Gen Psychiatry* 58: 689-695
- Huizinga D, Elliot DS (1981), *A Longitudinal Study of Drug Use and Delinquency in a National Sample of Youth: An Assessment of Causal Order. Project Report No. 16, A National Youth Study*. Boulder CO: Behavioral Research Institute
- Jaffe SL (1990), *Step Workbook for Adolescent Chemical Dependency Recovery: A Guide To The First Five Steps*. American Academy of Child and Adolescent Psychiatry, Washington DC: American Psychiatric Press, Inc.
- Jaffe, S (2001), *Adolescent Substance Abuse Intervention Workbook: Taking a First Step*. Washington, DC: American Psychiatric Press
- Jaffe SL, Simkin DR (2002), Alcohol and drug abuse in children and adolescents. In: *Child and Adolescent Psychiatry: A Comprehensive Textbook*, Lewis M, Ed. Philadelphia, PA: Lippincott Williams and Wilkins, pp 895-911
- Jaffe SL, Solhkhah R. (2004), Substance abuse disorders. In: *Textbook of Child and Adolescent Psychiatry*, Wiener JM and Dulcan MK, eds. Washington DC: American Psychiatric Publishing, Inc., pp 795-812
- Jainchill, N, Hawke, J, De Leon, G, Yagelka, J (2000), Adolescents in therapeutic communities: One-year posttreatment outcomes. *J Psychoactive Drugs* 32: 81-94
- Joanning H, Quinn W, Thomas F, Mullen R (1992), Treating adolescent drug abuse: A comparison of family system therapy, group therapy and family drug education. *J Marital Fam Therapy* 18: 345-356
- Kaminer Y, Blitz C, Burleson JA, Sussman J (1998a), The Teen Treatment Services Review (T-TSR). *J Subst Abuse Treat* 15: 291-300
- Kaminer Y, Burleson JA, Blitz C, Sussman J, Rounsaville BJ (1998b), Psychotherapies for adolescent substance abusers: A pilot study. *J Nerv Ment Dis* 186: 684-690
- Kaminer Y, Burleson JA (1999), Psychotherapies for adolescent substance abusers: 15-month follow-up of a pilot study. *Am J Addictions* 8: 114-119
- Kaminer Y. (2000) Contingency management reinforcement procedures for adolescent substance abuse. *Journal of the American Academy of Child & Adolescent Psychiatry*, 39, 1324-1326.
- Kandel, D (2002), *Stages and Pathways of Drug Involvement: Examining the Gateway Hypothesis*. Cambridge, UK: Cambridge University Press
- Kashani JH, Beck NC, Hooper EW, Fallahi C, Corcoran CM, McAllister JA, Rosenberg TK, Reid JC (1987), Psychiatric disorders in a community sample of adolescents. *Am J Psychiatry* 144: 584-589
- Kazdin AE (1995), *Conduct Disorder, 2nd Edition*. Newbury Park CA: Sage
- Kendler KS, Karkowski LM, Corey LA, Prescott CA, Neale MC (1999), Genetic and environmental risk factors in the etiology of illicit drug initiation and subsequent misuse in women. *Br J Psychiatry* 175: 351-356
- Kendler KS, Bulik CM, Silberg J, Hettema JM, Myers J, Prescott CA (2000), Childhood sexual abuse and adult psychiatric and substance use disorders in women: An epidemiological and cotwin control analysis. *Arch Gen Psychiatry* 57: 953-959.

American Academy of Child and Adolescent Psychiatry

- Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S, Wittchen HU (1994), Lifetime and 12-month prevalence of *DSM-III-R* psychiatric disorders in the United States: Results from the National Comorbidity Study. *Arch Gen Psychiatry* 51: 8-19
- King RD, Gaines LS, Lambert EW, Summerfelt WT, Bickman L (2000), The co-occurrence of psychiatric substance use diagnoses in adolescents in different service systems: Frequency, recognition, cost, and outcomes. *J Behav Health Serv Res* 27: 417-430
- Knight JR, Sherritt L, Shrier LA, Harris SK, Change G (2002), Validity of the CRAFFT substance abuse screening test among adolescent clinic patients. *Arch Pediatr Adolesc Med* 156: 607-614
- Kutcher, S, Kachur, E, Marton, P, Szalai, J; et al. (1992), Substance abuse among adolescents with chronic mental illnesses: A pilot study of descriptive and differentiating features. *Canadian Journal of Psychiatry - Revue Canadienne de Psychiatrie* 37: 428-431
- Lewinsohn PM, Hops H, Roberts RE, Seeley JR (1993), Adolescent psychopathology: I. Prevalence and incidence of depression and other *DSM-III-R* disorders in high school students. *J Abnorm Psychol* 102: 133-144
- Lewinsohn PM, Rohde P, Seeley JR (1996), Alcohol consumption in high school adolescents: Frequency of use and dimensional structure of associated problems. *Addiction* 91: 375-390
- Liddle HA, Dakof GA, Parker K, Diamond GS, Barrett K, Tejada M (2001), Multidimensional family therapy for adolescent substance abuse: Results of a randomized clinical trial. *Am J Drug Alcohol Abuse* 27: 651-687
- Loeber R (1988), Natural histories of conduct problems, delinquency and associated substance use. In: *Adv Clin Child Psychol*, Vol. 11, Lahey BB, Kazdin AE, eds. New York, NY: Plenum Press, pp 73-124
- Martin CS, Winters KC (1998), Diagnosis and assessment of alcohol use disorders among adolescents. *Alcohol Health Res World* 22: 95-105
- Metzger D, Kushner H, McLellan AT (1991), *Adolescent Problem Severity Index*. Philadelphia, University of Pennsylvania
- Meyers K, McLellan AT, Jaeger JL, Pettinati A (1995), The development of the Comprehensive Addiction Severity Index for Adolescents (CASI-A): An interview for assessing multiple problems of adolescents. *J Subs Abuse Treat* 12: 181-193
- Monti PM, Colby SM, Barnett NP, Spirito A N, Rohsenow DJ, Myers M, Woolard R, Lewander, W (1999), Brief intervention for harm reduction with alcohol-positive older adolescents in a hospital emergency department. *J Consut Clin Psychol* 67: 989-994
- Monti PM, Colby SM, O'Leary TA (2001), *Adolescents, Alcohol, and Substance Abuse: Reaching Teens through Brief Interventions*. New York, NY, US: The Guilford Press
- Myers MG, Brown SA, Mott MA (1995), Preadolescent conduct disorder behaviors predict relapse and progression of addiction for adolescent alcohol and drug abusers. *Alcohol Clin Exp Res* 19: 1528-1536
- National Institute on Drug Abuse (NIDA) (2003), Preventing Drug Use among Children and Adolescents: A Research-Based Guide: A Research-Based Guide for Parents, Educators, and Community Leaders, *Second Edition*. Rockville, MD: NIDA/NIH

American Academy of Child and Adolescent Psychiatry

- Newcomb, MD (1997), Psychosocial predictors and consequences of drug use: A developmental perspective within a prospective study. *J. Addict. Dis* 16: 1-89
- Physician Leadership on National Drug Policy (PLNDPP) (2002). *Adolescent Substance Abuse: A Public Health Priority*. Providence, RI: PLNDP.
- Rahdert E (1991), *The Adolescent Assessment and Referral System Manual*. DHHS Publication No. (ADM) 91-1735 Rockville, MD: National Institute on Drug Abuse.
- Randall J, Henggeler SW, Cunningham PB, Rowland MD, Swenson C (2001), Adapting multi-systemic therapy to treat adolescent substance abuse more effectively. *Cognit Behav Practice* 8: 359-366
- Reinherz HZ, Giaconia RM, Lefkowitz ES, Pakiz B, Frost AK (1993), Prevalence of psychiatric disorders in a community population of older adolescents. *J Am Acad Child Adolesc Psychiatry* 32: 369-377
- Resnik H (1990), *Youth and Drugs: Society's Mixed Messages*. Rockville, MD: Office for Substance Abuse Prevention, U.S. Department of Health and Human Services
- Riggs PD, Leon SL, Mikulich SK, Pottle LC (1998), An open trial of bupropion for ADHD in adolescents with substance use disorders and conduct disorder. *J Am Acad Child Adolesc Psychiatry* 37: 1271-1278
- Riggs PD, Davies R (2002), A clinical approach to treatment of depression in adolescents with substance use disorders and conduct disorder. In: *Clinical Perspectives*, Jellinek M, ed. *J Am Acad Child Adolesc Psychiatry* 41: 1253-1255
- Riggs PD, Hall SK, Mikulich-Gilbertson SK, Lohman M, Kayser A (2004), A randomized controlled trial of pemoline for attention-deficit/hyperactivity disorder in substance-abusing adolescents. *J Amer Acad Child Adolesc Psychiatry* 43: 420-429
- Riggs P D, Whitmore EA (1999), Substance use disorders and disruptive behavior disorders. In: *Disruptive behavior disorders in children and adolescents. Review of psychiatry series*. 18:133-173, Hendren, RL ed. Washington, DC, US: American Psychiatric Press 18: 133-173
- Riggs PD, Mikovich SK, Coffman LM, Crowley TJ (1997), Fluoxetine in drug-dependant delinquents with major depression: An open trial. *J Child Adolesc Psychopharm* 7: 87-95
- Riggs PD, Thompson LL, Mikulich SK, Whitmore EA, Crowley TJ (1996), An open trial of pemoline in drug-dependant delinquents with attention-deficit hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry* 35: 1018-1024
- Robins LN, McEvoy L (1990), Conduct problems as predictors of substance abuse. In: *Straight and Devious Pathways from Childhood to Adulthood*, Robins LN, Rutter M, eds. Cambridge, England: Cambridge University Press, pp 182-204
- Rowe CL, Liddle HA, McClintic K, Quille T (2002), Integrative treatment development: Multi-dimensional family therapy for adolescent substance abuse. In: *Comprehensive Handbook of Psychotherapy*, Kaslow F, Lebow J, eds. New York: John Wiley and Sons 4, pp 133-161
- Saffer H (2002), Alcohol advertising and youth. *J Stud Alcohol* 4: 173-181
- Santisteban, DA, Szapocznik, J, Perez-Vidal, A, Kurtines, WM, Murray, EJ, LaPerriere, A, (1996), Efficacy of intervention for engaging youth and families into treatment and some variables that may contribute to differential effectiveness. *J Fam Psychol* 10: 35-44

American Academy of Child and Adolescent Psychiatry

- Simkin D (2004), Adolescent substance abuse. In: *Kaplan and Sadock's Comprehensive Textbook of Psychiatry*, Sadock BJ and Sadock VA, Eds. Philadelphia, PA: Lippincott, Williams and Wilkins
- Solhkhah R, Wilens TE (1998), Pharmacotherapy of adolescent alcohol and other drug use disorders. *Alcohol Health & Research World* 22: 122-125
- Stanton MD, Shadish WR (1997), Outcome, attrition, and family-couples treatment for drug abuse: A meta-analysis and review of the controlled, comparative studies. *Psychological Bulletin* 122: 170-191
- Szapocznik J, Kurtines WM, Foote FH, Perez-Vidal A, Hervis O (1983), Conjoint versus one-person family therapy: Some evidence for the effectiveness of conducting family therapy through one person. *J Consult Clin Psychol* 51: 889-899
- Szapocznik J, Perez-Vidal A, Briskman AL, Foote FH, Santisteban D, Hervis O (1988), Engaging adolescent drug abusers and their families in treatment. *J Consult Clin Psychol* 56: 552-557
- Tapert, SF, Baratta, BS, Abrantes, BA, Brown, SA (2002), Attention dysfunction predicts substance involvement in community youth. *J Amer Acad Child Adolesc Psychiatry* 41: 690-686
- Tarter RE (1990), Evaluation and treatment of adolescent substance abuse: A decision tree method. *Am J Drug Alcohol Abuse* 6: 1-46
- Tarter RE, Vanyukov M, Giancola P, Dawes M, Blackson T; Mezzich A, Clark DB (1999), Etiology of early age onset substance use disorder: A maturational perspective. *Dev Psychopathol* 11: 657-683
- University of Michigan (2003), *2003 Monitoring the Future Survey*. Ann Arbor: Institute for Social Research.
- von Ranson KM, Iacono WG, McGue M (2002), Disordered eating and substance use in an epidemiological sample: I. Associations within individuals. *Int J Eat Disord* 31: 389-403
- *Wagner EF, Waldron HB (2001), *Innovations in Adolescent Substance Abuse Interventions*. Amsterdam, Netherlands: Pergamon/Elsevier Science Inc
- Waldron HB (1997), Adolescent substance abuse and family therapy outcome: A review of randomized trials. In: *Adv Clin Child Psychology*, Ollendick TH, Prinz RJ, eds. New York: Plenum Vol 19, pp 199-234
- Waldron HR, Slesnick N, Brody JL, Turner CW, Peterson T R (2001), Treatment Outcomes for Adolescent Substance Abuse at 4- and 7-Month Assessments. *J Consult Clin Psychol* 69: 802-813
- Weinberg NZ, Rahdert E, Colliver JD, Glantz MD (1998), Adolescent substance abuse: A review of the past 10 years. *J Am Acad Child Adolesc Psychiatry* 37: 252-261
- Wilens TE, Biederman J, Spencer TJ, Frances RJ (1994), Comorbidity of attention-deficit disorder and psychoactive substance use disorders. *Hosp Comm Psychiatry* 45: 421-435
- Williams RJ, Chang SY (2000), A comprehensive and comparative review of adolescent substance abuse treatment outcome. *Clin Psychol: Sci Pract* 7: 38-166
- Winters KC (1992), Development of an adolescent substance abuse screening questionnaire. *Addict Behav* 17: 479-490
- Winters KC, Stinchfield RD, Opland E (2000), The effectiveness of the Minnesota Model approach in the treatment of adolescent drug abusers. *Addiction* 95: 601-612

American Academy of Child and Adolescent Psychiatry

Winters, KC (2001), Assessing adolescent substance use problems and other areas of functioning: State of the Art. In: *Adolescents, alcohol, and substance abuse: Reaching teens through brief interventions*, Monti PM, Colby SM, O'Leary TA, eds. New York, NY, US: The Guilford Press, pp 80-108

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**TABLE 1: SELECTED INSTRUMENTS FOR SCREENING
OF SUBSTANCE USE PROBLEMS IN ADOLESCENTS**

Instrument	Reference	Comments
<i>CRAFFT</i>	Knight et al., 2002	6 items; brief screen for primary care professionals
<i>The Drug Use Screening Inventory-Adolescents (DUSI-A)</i>	Tarter, 1990	159 items; documents the level of involvement with a variety of drugs and quantifies severity of consequences associated with drug use
<i>Problem Oriented Screening Instrument for Teenagers (POSIT)</i>	Gruenewald and Klitzner, 1991	139 items; designed to identify problems and potential need for service in 10 functional areas, including substance use and abuse
<i>Personal Experience Screening Questionnaire (PESQ)</i>	Winters, 1992	40 items; screens for the need for further assessment of drug use disorders

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TABLE 2: SELECTED INSTRUMENTS FOR EVALUATION OF SUBSTANCE USE PROBLEMS IN ADOLESCENTS

Instrument	Reference	Comments
<i>Adolescent Drug Abuse Diagnosis (ADAD)</i>	Friedman and Utada, 1989	Provides severity ratings on multiple domains of functioning
<i>Adolescent Problem Severity Index (APSI)</i>	Metzger et al., 1991	Provides severity ratings on multiple domains of functioning
<i>Teen Addiction Severity Index (T-ASI)</i>	Kaminer et al., 1998a	Provides severity ratings on multiple domains of functioning
<i>Comprehensive Adolescent Severity Inventory for Adolescents (CASI-A)</i>	Meyers et al., 1995	Provides severity ratings on multiple domains of functioning
<i>Global Appraisal of Individual Needs (GAIN)</i>	Dennis, 1998	Documents SUD and other psychiatric diagnoses; placement criteria; health, mental distress, and environment; and service utilization outcomes. A brief version allows for screening and an outcome version provides information about critical outcome variables.
<i>Customary Drinking and Drug Use Record (CDDR)</i>	Brown et al., 1998	Current and lifetime measures of 4 alcohol and other drug-related domains
<i>Adolescent Diagnostic Interview (ADI)</i>	Winters & Henley, 1993	Assesses symptoms associated with SUDs. Obtains diagnoses, substance use history, and psychosocial functioning

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TABLE 3: URINE TOXICOLOGY

Substance	Half-life (hr)	Detection after Last Use (days)
Amphetamines	10-15	1-2
Barbiturates	20-96	3-14
Benzodiazepines	20-90	2-9
Cocaine	0.8-6.0	0.2-4
Methaqualone	20-60	7-14
Opiates	2-4	1-2
Phencyclidine (PCP)	7-16	2-8
Cannabinoids (THC)	10-40	2-8 (acute) 14-42 (chronic)
Drugs not usually tested: LSD, psilocybin, MDMA, MDA, other designer drugs		