

Emerging Models of Effective Adolescent Substance Abuse Treatment

BY MICHELLE K. WHITE, MS, WILLIAM L. WHITE, MA, AND MICHAEL L. DENNIS, PhD

Increased substance-use experimentation and substance-related problems among adolescents during the 1990s led to a significant increase in the number of youth seeking treatment services in the United States. In the wake of these trends, addiction counselors have been challenged to respond to the needs of clients who present with lowered age of problem development and problems of greater severity and complexity. Fortunately, there is a growing body of research to help addiction counselors meet this challenge.

The number of published studies evaluating the effectiveness of adolescent substance abuse treatment has grown tremendously over the past 30 years, with most of that growth occurring since 1997. More than 65 percent of all adolescent treatment effectiveness studies were published within the past 5 years, with 14 published studies between 1970 and 1997, and 26 studies published between 1998-2002 (Dennis, 2002). The earlier studies were methodologically limited by small sample size, unmanualized treatment approaches, and marginal follow-up rates (Dennis, Dawud-Noursi, Muck & McDermeit, 2003; Ozechowski & Liddle, 2000). These weaknesses limited their scientific integrity and replicability, as did the fact that most of the tested interventions were of adolescent responses to treatment models originally developed for adults (Deas & Thomas, 2001; Muck, Zempolich, et al.,

2001). In response to these issues, the Center for Substance Abuse Treatment (CSAT), National Institute on Drug Abuse (NIDA), and National Institute on Alcohol Abuse and Alcoholism (NIAAA)¹ began funding adolescent-specific treatment studies during the 1990s. In what has been called a renaissance of knowledge in the field (White, Dennis, & Tims, 2002), more than 100 adolescent treatment studies have been funded by these three agencies since 2002 (Dennis, November 2002).

In this article, we provide a summary of emerging models of adolescent substance abuse treatment drawn from 34 epidemiological, clinical, and pharmacological studies originally reviewed in "The Effectiveness of Adolescent Substance Abuse Treatment: A Brief Summary of Studies through 2001" (Dennis & White, 2002) prepared for Drug Strategies' "Treating Teens: A Guide to Adolescent Drug Programs" (2003). The full report (available at www.drugstrategies.org) includes a detailed abstract of each study and additional summary materials.

Reviewing the literature

To identify these 34 studies, we examined 21 prior literature reviews and bibliographies, and then conducted electronic searches using the major literature search databases. We then circulated the list among a large cadre of adolescent substance abuse

treatment researchers and practitioners who are members of the Society for Adolescent Substance Abuse Treatment Effectiveness (SASATE) (see Muck & Butler, page 13 of this issue, for further information) electronic mailing list to identify additional published studies. The resulting review focused particularly on studies of the effectiveness of adolescent substance abuse treatment; the review does not include evaluations of corrections-based treatment programs, prevention programs, early intervention programs, or school/recreational/camp-type programs.

Description of included studies

The studies in this review varied in purpose, scope, duration of intervention and duration of post-treatment follow-up. The majority of studies (21) compared two or more behavioral treatment models within or across levels of care in a single program setting; 10 studies evaluated particular approaches across multiple sites, and three tested pharmacological treatments with a small number of participants. The studies included:

- 10 studies of outpatient behavioral therapies
- 9 studies of outpatient family therapies
- 8 studies of "other" outpatient therapies
- 8 studies of "other" short-term residential programs
- 5 studies of "other" long-term residential programs
- 4 studies of residential 12-step programs
- 3 studies of therapeutic community programs
- 3 studies of psychopharmacological treatments
- 3 studies of continuing care programs
- 2 studies of treatment engagement programs
- 1 study of a 12-step centered outpatient therapy²

Behavior therapies included Adolescent Community Reinforcement Approach (ACRA), Adolescent Group Therapy (AGT), Cognitive Behavior Therapy (CBT), Motivational Enhancement Therapy (MET) and Relapse Prevention (RP). Family therapies

included Conjoint Family Therapy (CFT), Functional Family Therapy (FFT), Family Systems Therapy (FST), Multidimensional Family Therapy (MDFT), and Multi-Systemic Therapy (MST). "Other" programs using blended approaches included Chestnut Health System's outpatient program and Thunder Road's short-term residential program. Twelve-step models were described as Chemical Dependency (CD) Counseling, Hazelden Model, or Minnesota Model programs. Therapeutic communities approaches included Dynamic Youth Services, Gateway, Operation PAR, and Phoenix Academy.

Psychopharmacological studies tested the effects of treating adolescent substance use disorders with lithium, sertraline, and fluoxetine. Continuing care models studied included the Assertive Continuing Care (ACC) approach. Engagement programs included the Strategic Structural Systems Approach. Many of the treatment manuals used within these studies are available from the following Web sites:

- Chestnut Health System's bookstore: www.chestnut.org/li/bookstore
- United States Department of Health and Human Services and SAMHSA's National Clearinghouse for Alcohol and Drug Information: www.health.org
- SAMHSA's Model Programs Web site: <http://modelprograms.samhsa.gov>

The number of research participants fluctuated from study to study. For example, one controlled trial of sertraline included 10 participants, while a large multisite study of 30 inpatient and residential programs followed 1,483 adolescents. The number of follow-up interviews conducted and length of follow-up period also varied greatly. Six studies completed interviews at treatment intake and treatment completion only. Of the 29 studies that conducted later follow-up interviews, 10 studies followed up with participants for only 6 months or less after treatment intake, and only four studies followed up with participants for longer than 15 months after treatment intake. Three of these four had 5-year fol-

low-up periods. Follow-up rates also varied significantly, with one study following up only 25 percent of participants, and two studies achieving 100 percent follow-up rates (at only 3 months post-intake).

The average follow-up rate across all studies and all follow-up periods was 80 percent. Initial treatment effects reported ranged from an increase of 15 percent in drug use following treatment to a reduction in drug use of up to 67 percent during the active phase of treatment. This averaged out to a 30 percent reduction of drug use across all of the studies reviewed. Long-term effects, in the few studies that measured them, showed evidence of both sustained effects of treatment in some adolescents and deteriorating effects over time in others, with most adolescents moving in and out of relapse and recovery, rather than remaining stationary either in recovery or relapse.

Lessons learned from the literature

Despite tremendous diversity among the studies described in the previous section, several consistent findings are summarized below:

1) *Adolescents need developmentally appropriate assessment tools and treatment protocol.* While the field has advanced in taking into account the special developmental needs of adolescents, research studies underscore the significant differences that exist between adolescent and adult substance use disorders and their effective treatment.

2) *Multiple co-occurring problems are the norm among adolescents with substance abuse problems.* This near-universal finding calls for both the use of global (multidimensional) assessment instruments and the use of integrated multi-agency, multidisciplinary service teams. In addition, several adolescent case studies of between 1 and 5 subjects indicate that medication may be used to effectively treat depression and other mental health disorders that co-exist with addiction. These findings, if confirmed, underscore the potential of integrated

psychiatric and substance abuse treatment teams in the treatment of adolescent substance use disorders. (See Kaminer, pages 62-68, for more information on co-occurring disorders in adolescents.)

3) *Adolescents are involved in multiple systems competing to control their behavior.* Most adolescents with substance use disorders are trying to meet the needs and demands of many — family, peers, school, work, the criminal justice system, and often mental health and behavioral health counselors/program

requirements, but researchers to date have not adequately studied adolescents' lives in their contexts, instead looking only from the view of the treatment system. The Robert Wood Johnson Foundation has launched "Reclaiming Futures," an innovative approach with juveniles in the justice system in 10 U.S. cities. The comprehensive, integrated approach builds from an ecological model and seeks to use community collaborations to improve upon current attempts to treat the large number of adolescents in the juvenile justice sys-

tem who also abuse alcohol and/or drugs (see pages 69-73 of this issue, for more information).

4) *Adolescents' responses to treatment are highly variable.* Treatment effects range from no effect to sustained abstinence and all points in between (e.g., early abstinence followed by clinical deterioration, clinical deterioration followed by sustained abstinence, cycling in and out of abstinence and substance use).

5) *Relapse and continued problems are the norm among adolescents who have received substance abuse treatment.* Although treatment interventions produce positive and sustained effects in some adolescents, relapse continues to be common following treatment, particularly in the first 3-12 months after treatment. Recovery for many adolescents takes multiple attempts and episodes of care spanning many years. This finding suggests the need for assertive post-treatment monitoring, sustained recovery support services, and early re-intervention when indicated.

6) *The most effective treatment models share common elements.* The most effective treatment models in the studies reviewed here addressed engagement and motivation for treatment; used a manual-guided, developmentally appropriate treatment protocol; involved families in the treatment process; utilized more quality assurance and clinical supervision; and were assertive in providing continued care after treatment.

7) *Common elements also exist among interventions that showed no change or minimal change in substance use or symptoms.* Interventions that relied on passive referrals, educational units alone, "probation services as usual," or unstandardized "outpatient services as usual" did not produce reductions in drug use or related problems.

In short, we are learning much about the nature and complexity of adolescent substance use disorders, and we are beginning to find more effective approaches for their treatment. Research to date suggests that the most effective

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adolescent treatments of the future will use multi-dimensional assessment tools and assertive systems of outreach and engagement; will be multidisciplinary, developmentally appropriate, family-centered, and closely supervised for model fidelity and appropriate individualization; and will use systems of assertive continuing care and support following acute intervention and problem stabilization.

Applying the research

While the Drug Strategies review is purposefully not all-inclusive and our search stopped with published findings at the end of 2001, it yields several striking findings about the state of adolescent treatment research:

Federal and state support

The growing level of federal and state support for adolescent substance abuse treatment research is historically unprecedented and should reap substantial dividends in the very near future. That explosion of new knowledge will potentially widen the gap between clinical research and clinical practice and create growing demands for the use of evidence-based clinical protocol in the treatment of adolescent substance use disorders.

Technology transfer

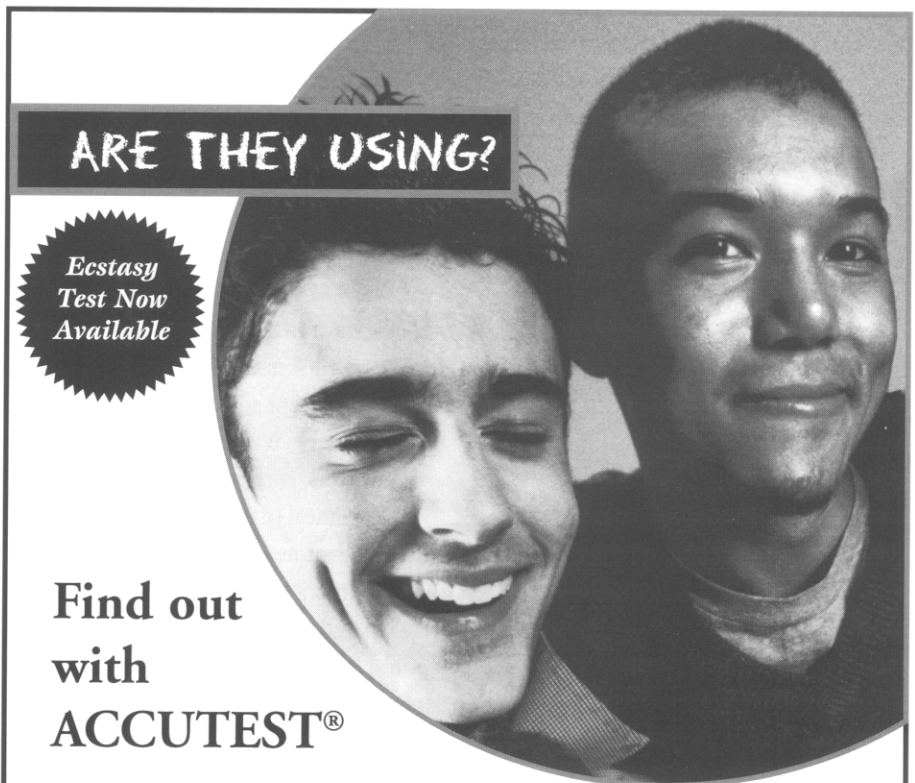
The ability to get new research findings into the field is hampered by the half-decade process between study initiation, study completion and the publication of findings and the need for more sophisticated ways to transfer new learning into the multiple systems in which adolescents are involved. Finding ways to speed the processes of knowledge development and dissemination constitutes a major challenge of the next decade.

Methodological limitations

Many of the studies included in this review have constraints on the ability to generalize findings due to small sample sizes, high rates of refusal to participate, use of unstandardized measures, a lack of

measures of comorbidity, ill-defined treatment interventions, minimal information on services received, minimally supervised or unsupervised therapies, high rates of treatment dropout (20-50 percent), high rates of research study attrition (25-54 percent), and the lack of control groups — all leading to potentially large and unknown bias. In addition, current research is often limited to studies of a group of adolescents at treatment entry and exit, or studies comparing two kinds of treatment against each

other. This kind of study does not inform the field about whether these interventions are better than any existing practices or how multiple interventions compare with one another. The methodological rigor of adolescent studies has increased and will increase with the growing federal and state investment in adolescent treatment, and this enhanced rigor will increase the confidence with which researchers can report study implications to frontline clinicians.



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Promising areas

Based on our review of adolescent treatment outcome studies, we would suggest that the future adolescent substance abuse treatment research agenda include the following items:

- Replication studies on effectiveness of evidence-based, manual-guided therapies in different service-delivery settings such as criminal justice settings, student assistance programs, child welfare agencies, and health clinic settings.
- Studies that identify the potential of enhanced effects from particular combinations and sequences of service interventions, e.g., combining pharmacological treatment with behavioral treatment.
- Studies that test the ability of enhanced treatment-engagement protocols, assertive aftercare protocols, sustained recovery support services, and early re-intervention protocols to help resistant clients engage in treatment, help sustain longer periods of recovery, and help clients who have relapsed re-engage in treatment services.
- The development of knowledge about the cost and cost-effectiveness of adolescent substance abuse treatment models to help guide the expansion of adolescent services in an efficient way.
- Studies of the pathways, processes, stages, and styles of long-term recovery throughout the life course beginning in adolescence.
- Continued research and dissemination of developmentally appropriate, standardized biopsychosocial instrumentation that can be used for adolescent research as well as diagnosis, placement, and treatment planning.
- The development of a common database containing information on the needs and effectiveness of different types of adolescent treatment that can be used for benchmarking and

evaluating the effectiveness of both new experimental programs and existing programs.

- The development of standardized and sophisticated training and quality assurance models to transfer clinical research protocols into service delivery settings.

As ambitious as this sounds, much of this work is currently underway. A randomized trial comparing five different outpatient treatments as part of CSAT's Cannabis Youth Treatment (CYT) study and an evaluation of ten different exemplary treatment programs currently in practice (the Adolescent Treatment Models (ATM) study) have recently been completed. These studies used the same follow-up time points and measures [the Global Appraisal of Individual Needs (GAIN); Dennis et al., 2002 — see www.chestnut.org/li/gain for more information]. The GAIN is also being used as part of dozens of studies ranging across levels of care, systems, and population. There have also been recent advances in pharmacological treatments with adolescents, particularly with work currently underway as part of NIDA's clinical trials network.

The treatment of adolescent substance use disorders is rapidly evolving into a science-based professional specialty. Addiction counselors have much new information to draw upon to enhance their clinical effectiveness in working with adolescents, and the quantity of such information will explode in the next decade. The greatest beneficiaries of this new information are and will continue to be the young people and their families served by addiction counselors across the country. ©

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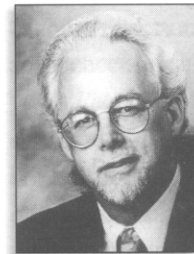
Footnotes

¹For more information on these agencies and recently funded adolescent treatment studies, see http://www.samhsa.gov/centers/csat2002/csat_frame.html; <http://www.nida.nih.gov>; and <http://www.niaaa.nih.gov>. See also Muck and Butler, page 12 of this issue, for a description of studies currently underway.

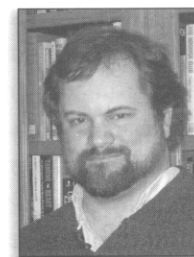
²The numbers add up to more than 34 due to multiple treatment types being evaluated within a single study.



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