

Appendix 4.

Clinical Management of a Multisite Field Trial of Five Outpatient Treatments for Adolescent Substance Abusers

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Abstract

Bridging the gap between clinical research and clinical practice in the treatment of adolescent substance abuse requires empirically validated therapies and technology transfer strategies that reflect an awareness of the realities and resource constraints of local treatment service providers. This article describes the management of cross-site and cross-intervention clinical issues in the Cannabis Youth Treatment (CYT) study, a multisite, randomized, clinical trial of five outpatient therapies. The methods used in the management of such clinical trials could play an important role in elevating the quality of adolescent substance abuse treatment as practiced in the field. This technology involves 1) defining and delineating clinically relevant subpopulations of clients, 2) developing research-supported manuals that define the theory, active ingredients, and procedures of treatment, 3) monitoring therapist adherence to manual-based therapy, 4) monitoring client responses to the procedures as they are implemented, 5) individualizing and refining the delivery of these manual-based therapies within the context of clinical supervision, and 6) conducting rigorous and sustained followup to determine the enduring effects of the interventions.

Carroll and her colleagues (1994) detailed the strategies used to implement and to protect the integrity of three manual-based therapies evaluated within Project MATCH, a multisite study of adult alcoholism treatment (Project MATCH Research Group, 1993). This paper takes a similar approach in describing cross-site clinical coordination procedures within the Cannabis Youth Treatment study, the largest multisite, randomized field experiment ever conducted of adolescent substance abuse treatment. More specifically, the paper details the common clinical infrastructure within which these therapies were implemented across the treatment sites.

It is our collective experience that therapies can fail in the transition from efficacy (outcomes under ideal circumstances) to effectiveness (outcomes in the real world of adolescent treatment), not because of flaws in the interventions themselves, but because of the absence of a sound foundation of clinical management upon which empirically validated interventions are replicated. The construction of stable clinical infrastructures within local treatment programs is as important to the future of adolescent treatment as the availability of research-validated therapies.

The Cannabis Youth Treatment Study

After declining in the 1980s, both licit and illicit drug use among adolescents rose in the 1990s. In 1996, cannabis use by adolescents (8th, 10th, and 12th graders) reached its highest peak in 12 years for reported lifetime use, past year use, and past month use (ISR, 1997). As cannabis abuse/dependence emerged as the leading cause for admission to substance abuse treatment (OAS, 1997), demands increased for research-validated treatments for cannabis-involved adolescents. In response to this need, the Substance Abuse and Mental Health Services Administration's (SAMHSA's) Center for Substance Abuse Treatment (CSAT) of the U.S. Department of Health and Human Services (DHHS) funded the CYT study.

The CYT study is a multisite, randomized field experiment designed to test the efficacy of five promising outpatient treatment interventions for cannabis-abusing and cannabis-dependent adolescents. Its long-range goal is to provide validated and cost-effective models of intervention that can be widely replicated in local treatment agencies across the country. The study sites include Chestnut Health Systems in Madison County, Illinois (CHS-MC); the University of Connecticut Health Center (UCHC) in Farmington, Connecticut; Operation PAR (PAR) in St. Petersburg, Florida; and the Children's Hospital of Philadelphia (CHOP) in Pennsylvania. The sites represent both academic, research-oriented clinics (UCHC and CHOP) and community-based adolescent treatment programs (CHS-MC and PAR) (Dennis, Babor, Diamond, Donaldson, Goldley, Tims, et al., 1998; Herrell, Babor, Brantley, Dennis, et al., 1999). The CYT study provides a test in geographically diverse environments of treatments that differ in theoretical orientation, delivery format and focus, and dose.

Between June 1998 and February 1999, 600 adolescents (approximately 150 per site) meeting the criteria presented in the *Diagnostic and Statistical Manual of Mental Disorders 4th Edition-Revised* (DSM-IV) (American Psychiatric Association, 1994) for cannabis abuse or cannabis dependence were randomly assigned to one of three conditions, with a total of five conditions used across the four sites. The five conditions include:

- Motivational Enhancement Therapy/Cognitive Behavioral Therapy—5 individual/group sessions (MET/CBT5) (Sampl & Kadden, 2001)
- Motivational Enhancement Therapy/Cognitive Behavioral Therapy—7 individual/group sessions (MET/CBT5 + CBT7) (Webb, Scudder, Kaminer, & Kadden, 2002)
- Family Support Network (FSN) (Hamilton, Brantley, Tims, Angelovich, & McDougall, 2001) (FSN includes MET/CBT5 + CBT7 plus enhanced family supports: home visits, parent education classes, parent support groups)

- Adolescent Community Reinforcement Approach (ACRA) (Godley, Meyers, Smith, Karvinen, Titus, Godley, Dent, Passetti, & Kelberg, 2001)
- Multidimensional Family Therapy (MDFT) (Liddle, in press).

At UCHC and PAR, adolescents were assigned to a five-session brief intervention (MET/CBT5) or to one of two other interventions that combine more extensive individual and group sessions (MET/CBT5 + CBT7 or FSN). At CHS-MC and CHOP, adolescents were assigned to the five-session brief intervention (MET/CBT5) or to one of two individual/family approaches (ACRA or MDFT). All study participants were assessed at intake and at 3 months, 6 months, 9 months, and 12 months. Treatment completion rates were in the 70-percent range, and followup rates through 9 months after treatment exceeded 95 percent (Titus et al., 1999; Godley, Diamond, & Liddle, 1999).

Methodological Challenges

There were three important challenges in conducting this multisite field experiment. The first was to ensure the integrity of each of the interventions being tested (Moncher & Prinz, 1991). Following what has been referred to as the "technology model" (Carroll et al., 1994; Carroll & Nuro, 1996; Carroll, 1997), workgroups led by a technical expert in interventions and a therapist coordinator (TC) responsible for cross-site supervision of that intervention took the following six steps to enhance its integrity:

- Defined and manualized the active ingredients of each therapy, including the frequency, intensity, duration, and sequencing, and indicated responses to the most common problems that occur during delivery of the intervention
- Conducted 15 to 25 hours of centralized, competency-based training for the therapists delivering the interventions and followed this by local certification of staff in each intervention
- Developed a therapist's skillfulness scale to serve as a cross-site measure of general therapeutic competence
- Developed a service contact log to measure therapists' adherence to each of the five interventions and to document the dosage and types of services provided to each client
- Taped and rated sessions for model fidelity (all tapes were rated as part of the cross-site supervision by an expert in the intervention until each therapist was certified, after which two tapes per therapist, per month, were reviewed and rated)
- Conducted weekly (1-hour onsite or telephone) individual supervision and weekly or bimonthly (60 to 90 minute) cross-site group supervision for each intervention.

These procedures helped enhance treatment differentiability (the delineation of the ingredients and procedures that distinguished each treatment from the other treatments) and treatment adherence (the assurance that the interventions [as delivered] maintained fidelity to the original manual-defined procedures) (Hoffart, 1994).

A second challenge involved controlling extraneous factors that could compromise interpretation of the treatment outcomes. To accomplish this, every effort was made to ensure that all general clinical procedures, other than those involved in the specific therapies, would be handled similarly across sites and interventions. This was done to minimize the ability of these contextual issues to unduly influence the evaluation of the experimental interventions and was achieved in two ways. First, staff of the CYT coordinating center conducted two site visits at each of the four service delivery sites to ensure that each site met baseline standards related to arenas such as research protocol compliance, accessibility and appropriateness of clinical space, clinical supervision structure, recruitment strategies, intake and service procedures, confidentiality procedures, crisis and safety net procedures, clinical documentation, data security and storage, and followup procedures. Second, the TCs for each intervention coordinated similar responses to issues that were not part of the specific interventions in monthly conference calls facilitated by the CYT coordinating center. Details of this latter process will be described shortly.

The third challenge was to enhance the external validity of the interventions (the generalizability of study findings) by ensuring that the interventions could be implemented as designed within the resource constraints of settings that currently provide the bulk of services to drug-involved adolescents. It was the goal of the CYT TCs to do everything possible in the CYT study to bridge the traditional gap between efficacy research conducted under experimental (ideal) conditions and effectiveness research conducted in field (real) settings. We wanted to document the kind of clinical infrastructures and the management of day-to-day clinical issues that might need to accompany these unique interventions if they were to achieve comparable results in the field.

The monthly conference calls among the TCs for each of the five interventions and the staff from the CYT coordinating center were particularly helpful in facing the latter two of these challenges. The purpose of these meetings was to define how sites would manage common clinical issues that were not a unique part of the experimental interventions but which, if not identified and controlled, might corrupt the evaluation of these interventions. We were concerned, for example, that if therapists in one intervention expelled adolescents from treatment (and the study) for arriving at a session high, while another site either allowed such adolescents to participate or rescheduled their sessions, differences in completion rates between these sites would reflect not the power or weakness of the interventions but contextual policies unrelated to the active ingredients of each intervention.

What follows is a synopsis of how common clinical issues were managed across the four treatment sites and across the five interventions being

tested. It is hoped that this discussion will provide researchers and treatment practitioners alike with insights into the importance of managing such contextual influences. The discussion also represents a snapshot of baseline clinical practices in adolescent substance abuse treatment in 1998 and 1999.

Issues in Clinical Management and Clinical Care

A. Clinical Infrastructure. A rather complex clinical infrastructure was required to effectively manage clinical activities across the four treatment organizations and the five treatments in the CYT study. The care taken in constructing this infrastructure was based on the assumption that there is a close relationship between the quality of clinical supervision and treatment efficacy (Holloway & Neufeldt, 1995).

There were three levels of clinical coordination and supervision in the CYT study. First, local clinical supervisors at each service site coordinated cross-intervention clinical issues and day-to-day clinical problem solving. Second, a therapist coordinator for each of the five interventions used in the CYT study provided onsite and cross-site clinical supervision of staff working in their particular intervention. This supervision occurred weekly during the period in which therapists were being certified and bimonthly following staff certification. Third, a TC at the CYT coordinating center facilitated cross-site and cross-intervention coordination and problem solving. The centerpiece of this cross-site clinical coordination was a monthly meeting at which the respective TCs met with the cross-site TC and research coordinator via a conference call to discuss cross-site clinical and research issues. Particular problems or procedural questions emerging from these discussions were sometimes also referred to the CYT executive committee (all of the principal investigators, the CSAT project officer, and other CSAT staff) for consultation or decision making. The CYT coordinating center validated that the cross-site clinical procedures developed through these processes were in place by conducting two monitoring visits to each of the CYT research sites during the course of the study (*CYT cooperative agreement*, 1999).

Many problems and issues (administrative, fiscal, research, clinical, ethical, legal) were addressed in this multitiered supervisory structure, but the major goals were to meet the methodological challenges noted earlier: ensuring the integrity of the interventions, controlling factors that could confound outcomes, and enhancing the generalizability of findings. Several steps were taken to achieve these goals.

All sites used the same research and service intake and clinical assessment/screening procedures, the same inclusion and exclusion criteria, and the same approach to randomization and waiting list management. To maximize transferability of findings to the field, exclusion criteria were limited to adolescents 1) who needed a higher level of care than outpatient treatment, 2) who presented for treatment with confirmed histories of drug dealing or violence (particularly predatory behavior patterns reflecting a high frequency, high intensity, and long duration), 3) whose psychiatric comorbidity was so severe as to render them inappropriate for the CYT interventions, and

4) whose primary drug of choice was not cannabis. Although the study focused on adolescents with a primary drug choice of cannabis, most adolescents entering the CYT study reported using other drugs in addition to cannabis. Although abstinence from all alcohol and drug use was a goal of the treatments in the CYT study, at admission, adolescents were asked to agree to evaluate their drug use and its effects on themselves and their families. Therapists across sites and interventions agreed that many adolescents' commitment to abstinence was something that should emerge out of the treatment process, not something that should be a precondition for entry into treatment.

Mechanisms to enhance clinical fidelity to the interventions used in the study included centralized training and booster training of clinical staff delivering the interventions, the videotaping or audiotaping of all sessions followed by the use of self- and supervisory-scored adherence measures to monitor skillful execution of the intervention, formal procedures to certify each therapist in the intervention, continued postcertification tape reviews to minimize therapist "drift," and regular cross-site group supervision led by an expert in the intervention.

A considerable portion of the monthly meeting of the CYT TCs was aimed at ensuring baseline clinical processes and data collection procedures were being handled consistently across the four sites. There were discussions of just about everything—from drug testing procedures to appropriate responses to clinical deterioration of a study participant. The monthly agenda included a site-by-site review of particular issues, such as the status of therapists' certifications and the quality of communication between sister sites (those delivering the same interventions), and an opportunity to discuss the general problems and issues encountered. Below are some of the cross-site clinical issues that were of major concern throughout the course of the study.

B. Staff Recruitment, Training, and Retention. Most of the therapists working on the CYT project were trained at the master's degree level or higher, and most had prior training and experience in addiction treatment. The research sites, like the practice field, varied in their use of full-time and part-time staff. Most sites felt there were advantages to having full-time therapists working on the project because that increased their availability to clients, provided greater flexibility in scheduling, and created a greater degree of personal investment in the project. In general, sites looked for individuals with good clinical skills whose overall clinical orientations were congruent with the intervention they were going to deliver. A particular effort was made to find staff who had a good working knowledge of child and adolescent development—a qualification not often found in those working with adolescent substance abusers (Kaminer, 1994). Staff were paid salaries that were at or slightly above the geographical norm for addiction therapists. None of the sites experienced any significant problems recruiting qualified staff.

In the course of the project, there were a total of 26 full-time and part-time clinical positions at the 4 CYT sites. Nine staff left the CYT project during

this period—two due to changes in the communities selected as service sites and the majority of the others due to a return to school, family relocation, or promotion. The highest turnover rate was among the case managers. Several things worked to enhance staff morale and retention on the CYT project: a conscious effort to build team cohesion, a knowledge of the potential importance of the research being conducted, the training and supervision opportunities, the opportunity for cross-site contact with peers working on the same intervention, and the flexibility of the individual sites regarding scheduling of part-time employees on the project.

Although considerable effort is made to ensure that conditions in clinical trials are equivalent to natural conditions in the field, there are several characteristics of clinical trials staff that make them somewhat different from those in mainstream practice. Staff who seek clinical positions in clinical trials are not scared away by the limited timeframe of employment on such a project, are often attracted by the intense nature of training and supervision such projects afford, and are not put off by the rigorous record-keeping generally required in such projects.

Strategies used for managing clinical continuity in the face of staff attrition included replicating the training that was provided to all therapists at the beginning of the CYT project, having a built-in transition/training period for entering staff, and using videotaped sessions of the current therapists to train new therapists.

The safety of staff working in the field was enhanced by hiring staff from the local community, providing inservice training on safety management and access to beepers and cellular phones, and the option of working in teams to visit areas that posed higher safety threats. Office-based safety issues were addressed by ensuring that other staff were present while sessions were being conducted and by providing walkie-talkies or silent alarms to signal other staff if assistance was needed. There were no major safety-related incidents experienced by the CYT project.

C. Client/Family Recruitment, Engagement, and Retention. The major barriers in recruiting, engaging, and retaining adolescents and their families were fairly consistent across the CYT project sites:

- Low adolescent/parent motivation for treatment involvement
- The perception that other problems in the family were more important than the drug experimentation of one child
- Parental substance abuse
- The parental view that smoking marijuana is not that big a deal
- Failure to attend due to lack of transportation or child care
- A marital or relationship breakup during the period of treatment involvement

- Inconsistent messages from the parents to the adolescent about the importance of involvement in counseling
- Relocation of the child during the course of treatment
- Parents having given up on efforts to change their child
- A general and pervasive sense of hopelessness about life (felt by both the parents and the adolescent).

Study participants were recruited by direct appeals to youth and parents through newspaper and radio public service announcements and strategically placed bulletin board posters. Staff also oriented local youth service professionals regarding how referrals could be made to the program and the nature of the various treatments that youth would be receiving. These visits and mailings included CYT information packets, business cards, and Rolodex inserts. There was some resistance to referring clients to the project when referral sources discovered that they could not control which intervention their clients would receive. Some were concerned that the five-session intervention would not provide an adequate level of service. After some education about the benefits of brief therapy in general, however, and the need to test such therapies in the substance abuse arena, most were willing to make referrals.

Of 690 adolescents referred to the CYT sites between May 1, 1998, and May 31, 1999, 38.6 percent were referred by criminal justice-affiliated agencies, 24.8 percent by families (7.6 percent of which came from a media promotion of the CYT project), and 15.2 percent by educational community health and human service agencies (Webb & Babor, 1999). An analysis of adolescents admitted to treatment in the CYT study (Tims, Hamilton, Dennis, & Brantley, 1999) revealed that 84.7 percent were age 15 or older, 38.1 percent were nonwhite, and 11.9 percent were female. The low rate of female admissions is attributable to at least two factors. The first involves the use of referral sources such as juvenile probation departments that serve predominantly male clients. The second factor is that, of those females referred to the CYT study, more than one-third presented with comorbid psychiatric disorders severe enough to exclude their participation in the study.

Client engagement was enhanced through five broad strategies. The first was to make the transition between the research staff (the equivalent of the intake staff in most agencies) and the clinical staff as personal as possible. When a therapist was not available to be introduced to the client/family by the research staff, the assigned therapist called the parents or the adolescent before the first appointment to introduce himself or herself, begin alliance building, and clarify any questions about treatment participation. All of the CYT interventions begin with an emphasis on empathy and skillful rapport building to build a strong therapeutic alliance and work through resistance related to the coercive influences that may have brought the adolescent to treatment.

The second strategy was for the therapist to speak for 5 to 10 minutes with any adolescent who had to wait more than 2 weeks to begin service (a delay sometimes caused by randomization and the cycles of starting new groups) to sustain his or her motivation for service involvement.

The third strategy was to remove as many environmental obstacles to treatment participation as possible by using geographically accessible service sites, providing assistance with transportation (that is, cab vouchers, bus tokens, picking adolescents up in the agency van), and providing or arranging child care. Case management, whether provided by therapists, case managers (in the FSN intervention), or even during the screening activities of the research staff, was an essential medium of engagement for those families whose lives were most chaotic at the point of initial contact with the CYT project. Every effort was made to link what could be learned in treatment with what could help the immediate crisis presented by the family. The CYT interventions shared the message, "We have something that could help with some of these problems and improve the quality of life for you and your child."

The fourth and most important strategy was to actively engage the adolescents and families by creating strong therapeutic alliances, expressing interest in their participation (e.g., by weekly phone prompts for participation), finding a goal that the adolescent and family were interested in working on, expressing optimism in their capacity to change, and persisting in family contacts during the earliest signs of disengagement. FSN intervention staff felt that home visits were very important in initiating and sustaining the involvement of the most treatment-resistant families.

The fifth strategy was to provide a warm, collaborative, adolescent- and parent-friendly environment (with informal but respectful hosting, providing pizza and sodas as part of the dinner-hour adolescent and parent meetings) and to provide specific incentives for involvement in treatment (help with very specific problems, fully subsidized treatment, and token prizes for homework completion).

D. Safety Net Procedures. Safety net procedures involve strategies for recognizing and responding to adolescents who before or after entering outpatient care were thought to be in need of a higher level of care or allied services. We anticipated and experienced four scenarios that required such safety net procedures. The first involved emergency situations that might arise related to an adolescent's drug use during the course of the study. All parents were provided a laminated card listing signs of acute intoxication and oriented to procedures that could be used to respond to an emergency. The second scenario occurred when adolescents underreported the frequency and intensity of their drug use at intake but disclosed it after they were randomized and admitted to one of the therapies. The third scenario involved the frequency and intensity of use escalating after the adolescent had been admitted to outpatient treatment. The fourth scenario occurred when an adolescent's mental health status deteriorated following admission, particularly where such deterioration posed the threat of harm to himself or herself or others. Safety net procedures were established at

all four sites that 1) ensured the periodic reassessment of the status of use and the appropriateness of the level of care to which clients were assigned, 2) ensured the availability and use of supervisory supports to formally reevaluate changes in clients' status and care needs, and 3) facilitated, when needed, moving an adolescent to a more structured and intense level of care or the addition of collateral services. Where alternative or additional services were thought to compromise evaluation of the effect of the CYT intervention, the adolescent and family were provided the additional services but the adolescent was no longer included in the study.

E. Concurrent Services. The exclusion of adolescents with severe psychiatric illness from the CYT study does not mean that all adolescents with psychiatric comorbidity were excluded from the CYT study. The majority of adolescents and families admitted to the CYT study presented with multiple problems, and the rate of psychiatric comorbidity of the adolescents admitted to the study was quite high. Forty-two percent met the criteria for attention deficit/hyperactivity disorder, 55 percent met the criteria for conduct disorder, and 29 percent presented with multiple symptoms of traumatic stress (Tims, Hamilton, Dennis, & Brantley, 1999). Those adolescents who were referred for more intense services prior to randomization and who were not included in the CYT study were most likely to be excluded because they presented a high risk of harm to themselves or others. (These risks were identified through the participant screening form completed at intake and through the assessment instrument [GAIN] [Dennis, Webber, White, et al., 1996] and the interviews that were part of the intake process at all of the CYT service sites.)

The multiple problems presented by the CYT adolescents and their families raised an important clinical and research issue: How to respond to the clinical needs they presented without contaminating (through concurrent service involvement) the evaluation of the particular interventions in the CYT study. This problem was complicated further by the referral patterns of the agencies that linked adolescents with the CYT project. Acutely aware of the number and complexity of the problems many of these adolescents presented, many of these referral sources used a shotgun approach—simultaneously referring the adolescent and family to multiple treatments, hoping that the cumulative dose of services would have some positive effect on the child and family. These problems diminished through education of and negotiation with referral sources. It was a policy of the CYT study that adolescents would not be allowed to remain in the study if they were receiving concurrent treatment whose primary focus was the problem of substance abuse or if they were receiving services whose impact was judged by the local staff to inordinately confound the impact of the CYT intervention being provided. However, no adolescent had to be excluded from the study for such concurrent service involvement. Several adolescents who were treated simultaneously for collateral problems (e.g., being medicated for hyperactivity or depression) were allowed to enter and remain in the CYT study because the focus of the concurrent services was not on substance abuse or dependency.

F. Session Management. Efforts were made to ensure that issues related to the management of sessions that were not unique to the particular interventions would be handled in reasonably consistent ways across the sites. Where procedures were not the same, they were reviewed to ensure the differences would not confound outcomes. These discussions included how to respond to lateness, missed sessions, the criteria for dropping cases, intoxication, contraband, disruptive behavior, preexisting relationships between members, and a group session at which only one member is present.

Lateness was handled by degree, by ensuring either that the client got the minimal dose for that session or that the session was rescheduled. Missed sessions were rescheduled or, in the case of group interventions, provided as an abbreviated makeup session prior to the next scheduled session. (All services across the five modalities were expected to be completed within 14 weeks of the time of the first therapy session, with local TCs reviewing and approving any exceptions to this rule.)

All programs made intoxication and possession of contraband grounds for exclusion from that particular session and a flag for reassessment of the appropriateness of the current level of care. (While rare episodes of an intoxicated youth arriving for services did occur, these episodes were clinically managed without excluding the adolescent from continued service.) Only one adolescent per family was included in the CYT study, and preexisting relationships between participants in the group modalities were reviewed to determine whether the prior history would undermine or enhance treatment. A group with only one member present was conducted in a 30- to 45-minute individual format covering the material that was scheduled for presentation. If an adolescent failed to appear for a family session, the session was conducted without the adolescent.

The TCs collectively sought and implemented general strategies that could enhance the effectiveness of sessions for all of the CYT therapies. Strategies that served to minimize problems and enhance session effectiveness included formalizing, posting, and consistently enforcing group/family norms on such issues as dress (banning drug/gang symbols on clothing) and language (profanity, drug argot). In the group interventions, the closed group structure made it particularly important to guard against negative influences within the peer cultures that evolved. A final issue was the appropriate level of contact between therapists and adolescents outside the intervention. The TCs decided that such contact should be minimized so as not to contaminate model fidelity by altering dose. More specifically, it was agreed that all extra-session contact should be responded to within the therapeutic framework of the particular intervention, channeled into upcoming sessions, documented, and brought to supervisors for review.

G. Gender and Cultural Adaptations. While there is significant momentum toward the development of standardized, empirically supported, and manual-based treatments (Wilson, 1998; Carroll, 1997), there is a simultaneous call for the refinement of standardized treatment that includes gender and cultural relevance and effectiveness (Orlandi, 1995). All of the CYT therapists noted making changes in their delivery of the

manual-based treatments that were based on gender, cultural, and socioeconomic status (SES) appropriateness. Therapists in group interventions explicitly noted diversity issues in the group and incorporated respect for diversity into the ground rules established at the beginning of each group. The most frequently mentioned adaptations included:

- Changing the language of the session to reflect cultural or geographical norms
- Adding items to some worksheets to make them more applicable to urban youth
- Providing special writing and reading assistance to address illiteracy
- Slowing the pace and adding repetitions of key ideas to accommodate learning impairments
- Developing examples and illustrations of key points that had greater gender, cultural, and SES relevance.

Therapists emphasized it was not the content of interventions that had changed; there were subtle changes in the way that content was framed or delivered.

H. Case Mix Issues. Therapists involved in the group interventions (MET/CBT5, MET/CBT5 + CBT7, FSN) also decided to monitor closely client mix issues according to gender, ethnicity, and other important dimensions. There was an effort to identify any potential iatrogenic effects of randomization (e.g., harassment, scapegoating, or other predatory targeting of a vulnerable group member by other group members) and to actively manage potential negative effects of group support for antisocial behavior (Dision, McCord, & Poulin, 1999). This was managed primarily by establishing and enforcing norms for group sessions.

I. Mutual Aid and Peer Support Groups. In contrast to Project MATCH, a 12-step facilitation therapy was not included in the CYT study, and there was some variation in the philosophies of the 5 interventions related to the desirability of mutual aid involvement by cannabis-involved adolescents. The ACRA, MDFT, and MET/CBT interventions do not directly encourage affiliation with addiction recovery support groups, but they do frame such involvement positively if the adolescent is already involved in such a group or self-initiates involvement during the course of treatment. FSN, while strongly encouraging parents to participate in Al-Anon, does not directly encourage adolescent clients to affiliate with Narcotics Anonymous (NA) or Alcoholics Anonymous (AA). Information on local mutual support groups is provided simply as one of many community resources. There was more of an emphasis in all the CYT interventions on involvement in drug-free prosocial activities in general than on addiction recovery support group involvement.

J. Ethical Issues. The TC meetings also provided a venue to discuss and formulate responses to some of the complex ethical and legal issues that can arise in the treatment of adolescent substance abuse (White, 1993). Considerable time was spent discussing questions such as:

- What are the boundaries of confidentiality regarding disclosure of information about an adolescent to his or her parents?
- Do parents have a legal/ethical right to the results of their child's urine tests?
- What circumstances would constitute a duty to report or duty to intervene?
- What obligations, if any, do therapists have in responding to an adolescent's disclosures of past or planned criminal activity?
- How should therapists respond to reports of abuse of adolescents by a parent or to failures by child protection agencies to intervene to ensure the safety of the adolescent?

Discussion

Carroll and colleagues (1994, 1996, 1997) are to be commended for helping transfer the technology model of psychotherapy research to addiction treatment outcome studies. The CYT study greatly benefited from the earlier experience of Project MATCH in the use of this model. This paper has described a structure (the interface between a cross-site and cross-intervention TC group and the CYT executive committee) and a process (monthly meetings of all the TCs and monitoring visits at each CYT study site) that were used to control contextual elements surrounding the experimental interventions. Our goal was to hold these contextual elements constant across the interventions in order to enhance our ability to measure the differences the experimental interventions produced on outcome measures. We wanted differences in outcomes to reflect differences in the interventions themselves and not factors incidental to the interventions.

While there were major research design elements (consistency in clinical data collection instruments and procedures, inclusion and exclusion criteria, and followup procedures) that helped control such variance across sites and interventions, we also sought to identify more subtle areas of potential contamination of the study. By generating consistent cross-intervention procedures to respond to lateness, missed sessions, disruptiveness, intoxication, and concurrent participation in other services, we were able to ensure a consistent and a more precise definition of the dose and type of services provided in, and collateral to, each intervention. By developing and monitoring safety net procedures across the sites and interventions, we were able to ensure timely and appropriate responses to the placement of a client in an inappropriate outpatient modality who needed a higher level of care and to respond to acute episodes of clinical deterioration that warranted a similar change in the level of care. We found that the

collaborative work of the TCs helped enhance the methodological rigor of the CYT study and helped establish a sound clinical infrastructure upon which each of the interventions was tested.

There are many aspects of the clinical management of the CYT project other than the efficacy of the particular interventions used that may have wide applicability to the field of adolescent substance abuse treatment. It is our view that many of the procedures to provide overall clinical management of randomized field trials have great clinical utility and are likely to become future baseline clinical practices in the treatment of adult and adolescent substance abuse disorders.

The technology model that, to date, has been used primarily as a means of ensuring methodological rigor in multisite field trials seems to us to have enormous advantages for enhancing the quality of treatment and should be studied for potential adaptation to mainstream clinical practice. Those looking for ways to enhance the quality of adolescent substance abuse treatment would be well served to explore how the elements of this model could become part of the future definition of treatment as usual. Parents seeking help to address the substance abuse-related problems of their son or daughter ought to be able to expect that the theory behind the treatments they are offered can be articulated and that their active ingredients can be defined. They should further be able to expect that these treatments have some degree of scientific support for their effectiveness and that they will be delivered in a manner consistent with procedures whose effectiveness has been validated.

Increased demands for such accountability and fidelity by parents, policy makers, and funding agencies will likely make manual-based therapies the rule in the future, along with the training and adherence measures that accompany them. The technical aspects of cross-site clinical management of the CYT project have much to offer the field as a whole. The use of standardized assessment instruments that are capable of providing comprehensive assessment and treatment planning data should become a requirement of all adolescent treatment programs in the next decade. We further commend the use of central (and booster) training, videotaping and adherence ratings as standard practices in supervision, and cross-site supervision as marvelous tools for training and professional development. Finally, we believe that rigorous followup (monitoring, feedback, and, where indicated, early reintervention) should move from the realm of clinical research to being an expectation, if not a requirement, of mainstream clinical practice. The idea of providing services without measuring outcomes will be incomprehensible in the very near future, and the technology to perform this task is rapidly emerging. Morale among staff working in the CYT project remained high, in part because of the near universal belief in the historical importance of this study and the climate of excitement and discovery that permeated the project. We believe that small field-based experiments to answer critical clinical questions, opportunities for cross-site sharing, and the opportunity to work on papers and presentations can similarly contribute to staff morale within local service organizations. We believe this milieu of curiosity, discovery, and contribution is transferable

and sustainable in natural clinical settings. Routine outcome monitoring and field-based experiments, like the other items in this discussion, must simply be moved from the arena of clinical research to the arena of standard clinical practice. This transfer of technology from the research environment to the clinical practice environment, however, will not be simple.

If there is a single weak link in the current practice of addiction treatment that will slow this technology transfer, we believe it is in the arena of clinical supervision. Comprehensive assessments, science-guided treatment planning, empirically validated and manual-based therapies, regular adherence measurement and monitoring, using clients' response-to-treatment data to individualize and refine standard interventions, and rigorous posttreatment followup (and early reintervention, where called for) all flow from the clinical infrastructure at the core of which is a clinical supervisor. If we can elevate the quality of clinical supervision in the field—the selection, training, and support of clinical supervisors to do true clinical supervision—to that of clinical supervision in controlled clinical trials, we will be able to channel knowledge from clinical research to clinical practice.

Conclusions

Clearly defining the demographic and clinical characteristics of client populations, presenting the active ingredients in a manual format and procedures inherent in particular treatments for those populations, monitoring therapists' adherence to such procedures, controlling contextual influences that can influence treatment outcomes, and conducting rigorous and sustained followup to determine clients' responses to particular interventions collectively hold great promise in moving the treatment of adolescent substance abuse from the status of a folk art to that of a clinical science. The technologies used to build this science may themselves offer great potential in enhancing the quality of adolescent substance abuse treatment programs if they can be adapted for routine use in the clinical setting. The CYT study confirms the importance that these new tools can and will have in the future clinical management of adolescent substance abuse treatment.

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