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Progress in the Development of Cost-Effective Treatment for Drug Abusers

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Progress in the Development of Cost-Effective Treatment for Drug Abusers

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Progress in the Development of Cost-Effective Treatment for Drug Abusers

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EXECUTIVE SUMMARY

Jacqueline P. Ludford

A technical review meeting was convened by the National Institute on Drug Abuse on June 7-8, 1984, to:

- examine findings from studies of brief drug treatment interventions; and
- based on what has been learned, consider the future directions of such research.

In recent years, considerable progress has been made in assessing the effectiveness of treatment modalities. Studies have shown that drug abusers have a wide range of problems and needs, and that a variety of treatment approaches are required. Numerous factors have been found to be associated with treatment outcomes, including psychopathology (especially depression and antisocial personality disorders), physical health status, cultural factors, family relationships, social networks and community supports, employment status, vocational preparedness, and past criminality.

Existing treatment modalities (e.g., methadone maintenance, therapeutic communities, and outpatient drug free) have proven to be effective in treating drug abusers, but they are limited in many respects. For example, therapeutic communities have been particularly successful with clients sufficiently motivated to commit themselves to stay in a residential environment for 6 months or more, but a high percentage drop out before completing 3 months in residence. Researchers have found that methadone programs are less successful in treating clients who have psychiatric disorders and clients who use alcohol excessively. Many women, particularly those with dependent children, are not able to make the commitment to a long-term rehabilitation process. Thus, it is not surprising that existing (long-term) programs are failing to engage large numbers of drug abusers. Studies of people treated in hospital emergency rooms for drug-related episodes show that fewer than 12 percent are enrolled in treatment. Of those persons enrolled in

short-term detoxification, only about 12 percent are successfully recruited into longer term treatment from detoxification.

Despite a growing recognition of the need for alternative treatment methods that are cost effective, the basic drug treatment system has not changed fundamentally over the past 10 years. Some therapeutic communities have been experimenting with short-term residential treatment followed by aftercare. Methadone programs have also been testing methods of tapering or detoxifying clients who are highly motivated to pursue a drug-free lifestyle.

This technical review brought together researchers who have successfully conducted controlled studies of promising brief therapies for different types of drug abusers. It provided them an opportunity to present their findings and consider the implications for future research in this area.

In the first presentation, Ashery provided the rationale for the review of research on brief therapies, She pointed out that there is increasing pressure on agencies to use brief treatment methods as programs become more effective in diagnosing and individualizing client needs and make efforts to become more cost efficient. She highlighted the importance of diagnostics, client matching, strategies, treatment specificity, and cost-effectiveness in enhancing the treatment repertoire in the drug field.

Woody discussed findings from a study on the efficacy of short-term psychotherapy for opiate dependence. The brief treatments included drug counseling alone, drug counseling plus supportive expressive psychotherapy, and drug counseling plus cognitive behavioral psychotherapy. The results suggest that brief supplemental psychotherapy can make a significant difference in outcomes for high severity (seriously depressed) methadone maintenance clients.

Stitzer reviewed four operant-based behavior therapies for use in drug abuse treatment: extinction, satiation, punishment, and reinforcement. Among her findings, effectiveness of contingent reinforcement and punishment intervention has been impressive in the short-term studies conducted to date. Findings suggest that contingency management procedures involving methadone dose delivery may be a clinically useful adjunct in methadone treatment.

Outcomes from a study of short-term family therapy approaches were presented by Foote. Positive changes occurred in both One-Person Family Therapy (OPFT) and Conjoint Family Therapy (CFT) groups in reducing drug use and psychopathology, and in strengthening family structure. The successful use of CPFT is especially significant, since it is difficult to recruit whole families into treatment.

Andersen described a study which evaluated the effectiveness of a nursing intervention model known as Personalized Nursing. This model was designed to reach treatment-resistant drug-dependent

women through emergency room contacts--those women who refused referral to traditional drug treatment programs were provided personalized nursing home visits on a regular basis, with a view to reducing drug involvement. Findings indicated that nurses were able to make some impact on the lives of women addicts, although most differences between the experimental and control groups disappeared in the 6-month followup.

The feasibility of applying pharmacologic adjuncts to narcotic addicts who have psychiatric problems was examined by Kleber. He presented evidence for the existence of a high prevalence of psychiatric disorders in addicts, which could be treatable by psychotropic medication. He identified some drugs which may be of therapeutic use in treating such disorders.

Des Jarlais described the progress and preliminary findings from a study designed to evaluate a medical maintenance approach. The project being evaluated provides methadone maintenance treatment for compliant, employed clients in a physician's office. Methadone is administered in the physician's office, in a manner similar to chemotherapy for other chronic illnesses.

Platt examined the role of work as it relates to the rehabilitation of heroin addicts. One of the aims of this study is to examine and determine different classes of variables relating to employment. A second aim is to teach a process for overcoming vocational problems and to evaluate the effectiveness of the Vocational Problem-Solving Skills Training Project. In this project, participants are involved in a process of self-examination regarding their feelings, attitudes, and motivations toward work.

Findings from two separate studies were presented by Aiken. One study involved paraprofessionals; the other involved volunteers. In a national study of paraprofessionals, there was little evidence that clients were selectively assigned to particular counselor groups of professionals with degrees, ex-addict paraprofessionals without degrees, and paraprofessionals without degrees with no addiction background. The Volunteer Utilization Study distinguished among three groups of volunteers: 1) specialized professionals such as physicians, psychiatrists, and lawyers; 2) counselors; and 3) noncounseling personnel, including administrative support staff. Different types of counselors were contrasted in terms of their functions and activities, attitudes toward clients, attitudes of clients toward them, and progress of their clients in treatment.

McAuliffe described the results from a 4-year cross-cultural study (United States and Hong Kong) which evaluated an aftercare program

for successfully treated opiate addicts. The program combines both professionally led and self-help approaches. The study posited that participation in an aftercare program could prevent relapse and antisocial behavior while facilitating social reintegration, which was validated by their research. The experimental groups had higher percentages with positive outcomes (either entirely abstinent or having only rare "slips" for the entire 12-month period).

Catalano reported on a study of Project Skills, an aftercare program for reentry clients within 3 months of graduation from residential treatment. The project was designed to teach clients social skills to carry out daily living tasks at home and at work. In addition, each client was paired with a community volunteer for the purpose of joining and participating in a community organization. The investigators examined specific points where the experimental intervention appears to be affecting intervening variables and where it is not.

In the discussion that followed, the technical review participants agreed that research on brief, effective strategies should proceed on two tracks: 1) to test and evaluate methods and approaches that hold promise of improving traditional modalities in the drug field; and 2) to test and evaluate cost-effective methods of reaching and treating drug abusers who have not been successfully treated in traditional programs.

Based on the papers presented, the participants agreed that:

- Sophistication in treatment research requires continued development of diagnostic instruments to help clinicians and researchers develop individualized treatments. Diagnostic tools can also make it possible to develop client typologies and facilitate client/program matching.

- Whenever possible, treatment research studies should include cost-effectiveness study components.

- There are difficulties in conducting controlled studies and problems in working with a drug-abusing population. Participants suggested a NIDA-sponsored meeting to discuss these issues.

- More research must be focused on both adjunct and primary pharmacological therapies to treat drug abusers.

- Strategies to disseminate research findings should be given particular attention.

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ISSUES IN THE BRIEF TREATMENT OF DRUG ABUSERS

Rebecca Sager Ashery

There is no "quick fix" treatment for drug abusers. Administrators and clinicians alike will readily admit that drug abusers are one of the most difficult client populations to treat: their problems tend to be multidimensional. Such clients are likely to have several relapses and remissions before reaching a permanently drug-free state. Most drug abusers have a "drug lifestyle" and continue to be influenced by friends, neighbors, and others in the same lifestyle.

For these reasons, most traditional drug treatment programs were designed to hold clients in treatment for a considerable period of time. In the past, traditional therapeutic communities structured their programs in a series of treatment phases requiring up to 2 years of residential care and ongoing support or aftercare after graduation. Researchers have shown that those clients who stay in treatment longer do better (De Leon 1984).

Methadone maintenance, the most widely used modality in the treatment of heroin addicts, tends to hold clients in treatment even longer than traditional therapeutic communities. One can find clients in some clinics who have been receiving methadone for 5 to 10 years while they continue to receive counseling and basic medical services. Studies indicate that some clients who are detoxified after being stabilized on methadone for some time tend to relapse, although others do well (Dole and Joseph 1978). While some researchers conclude that treatment must be continued indefinitely, others have found that methadone clients who are rehabilitated can be successfully detoxified and achieve long-term abstinence (Stimnel 1978).

Outpatient drug-free modalities vary considerably in the amount of time they want a client to be in treatment. Some provide long-term psychotherapy, but the vast majority offer basic individual counseling as the primary treatment service. Counseling services can be scheduled for three months to several years, depending on

the types of problems clients typically present, the types of counselors (training and experience), and the resources available.

Drug-use patterns, as well as problems presented by clients, have also been changing. Today, clients referred to drug programs are more likely than in the past to be multiple drug users. In fact, studies show that a high percentage of methadone clients use other drugs while they are stabilized on methadone (Hunt et al. 1983).

BRIEF TREATMENT STRATEGIES

During the past several years, treatment resources have been squeezed, and there is increasing pressure on programs to find ways of using available resources more efficiently. Many therapeutic communities (TCs) are experimenting with short-term treatment protocols for some of their clients. Some TCs are being structured to provide short-term (6 months or fewer) residential care followed by a more basic aftercare program.

Inpatient psychiatric and hospital facilities tend to be too expensive to maintain drug clients in treatment over long periods of time. As a result, most of these inpatient programs have established referral networks. After a brief intensive inpatient phase, in which problems and needs are diagnosed, clients are generally referred to residential or outpatient facilities.

Because of the changes that have been taking place in the drug field and our present state of knowledge regarding treatment, there has been a growing interest in brief, effective therapies. "Brief" is defined as treatment for a time-limited short duration, generally a maximum of 6 months.

While evidence exists that a certain minimum length of stay in treatment may be necessary for some clients (Simpson 1979), researchers have not established an optimum length of treatment. Moreover, one may argue that both the client's interest and society's interest may be served by developing therapies that produce the desired changes in the client's functioning in the shortest possible period. While brief, effective therapy may be viewed either as an intervention in its own right or as part of a longer-lasting program of treatment, there is an immediate payoff in 1) improved client functioning and reduced social cost, 2) enhanced potential for engaging the client in a program of rehabilitation, and 3) an opportunity to clarify and understand the dynamics of specific treatment interventions with specific client types. Moreover, given the increasing pressures on treatment agencies to use resources more efficiently and effectively, development of brief, effective therapies has potential for more rational organization of treatment systems.

ISSUES IN BRIEF TREATMENT

Four interrelated issues that both clinicians and researchers need to address in the development of brief therapies are discussed briefly below: 1) the task of developing diagnostic instruments that can be used to pinpoint client problems/needs, yet are easy to administer by workers in the drug field, 2) the matching of clients to specific treatment protocols based on diagnostic assessment, 3) the development of brief treatment strategies either separate from or adjunct to current treatment modalities, and 4) the measurement of the cost-effectiveness of treatment.

Diagnostics

Jaffe (1984) has noted that improvements in diagnostic measures and sophistication of analytical techniques mark a major advance in the drug abuse field. Through the testing, standardization, and utilization of diagnostic tools, investigators and clinicians are able to identify subgroups of clients with different treatment needs. Woody and his colleagues (1984) have found that it is important to identify patients suffering from severe depression because they require special treatment. Instruments such as the Addiction Severity Index (ASI) enable programs to obtain better definitions and descriptions of patient subtypes (McLellan et al. 1980, Kosten et al. 1983). An instrument such as this can easily be administered and scored by a technician and has wide appeal for clinicians and researchers. Other investigators (Rounsaville et al. 1980, Kosten et al. 1982, Rounsaville et al, 1982) have reported findings on extensive testing and diagnostic work on samples of opiate addicts. A variety of psychopathology was found, including, most notably, depression, anxiety disorders, alcoholism, and personality disorders.

Client/Treatment Matching

The development of brief therapies must include not only adequate diagnostic screening and assessment but also client/treatment matching to ensure that treatment protocols are appropriate to client needs. Clinical researchers such as Woody et al. (1984) have noted that different outcomes may be obtained, depending on psychopathology. The "matching" of client to treatment is an important step forward in reducing "treatment failures" and budgetary waste.

Better matching between client type and treatment protocol can result in great improvement, whereas the wrong combination can result in no improvement at great cost to the client, the treatment facilities. and society. A controlled studv (McLellan et al. 1983) showed the benefits of matching alcohol-and drug-dependent clients to specific treatments. Results indicated superior performance during treatment and an average of 19 percent better (6-month) outcomes for matched clients than for unmatched clients. Woody (1984) is continuing to study psychiatric severity and

treatment matching in a controlled study, in which methadone maintenance clients who have severe psychiatric symptoms will be randomly assigned to psychotherapy or regular drug counseling.

Treatment Specificity

The components of treatment and the elements involved in the treatment process were not well defined in earlier studies. For example, in the Drug Abuse Reporting Program (DARP) studies (Simpson 1982), "counseling" was not precisely defined, and the various services received within modalities were not specified. The DARP studies provided "gross" data to show that prevailing drug treatment modalities are effective in treating drug abusers. However, given the current status of the drug field, it is not enough to know that treatment "works." There is a need to know what kind of treatment works and for whom.

In the mid- and late '70s, many "innovative" treatment strategies were tested and developed. The focus on specific treatment strategies was particularly in evidence at the National Drug Abuse Conference in 1978, where papers were presented on a variety of treatment strategies. Some of these approaches, which had long been part of the health and mental health treatment repertoire, were just finding their way into the drug abuse field. New treatment strategies included cognitive behavioral therapy, biofeedback, family therapy, hypnosis, and aftercare.

Efforts to demonstrate the effectiveness of particular interventions have included assessment of psychotherapy (Woody et al. 1983, Rounsaville et al. 1983, O'Brien et al. 1984), job-seeking skills (Hall 1977, 1981a, 1981b), and monitoring the urine of methadone clients (Havassy and Hall 1981), as well as use of pharmacological agents (other than methadone) in treatment programs (Kleber this volume). Woody et al. (1983) observed that methadone clients with "high psychiairic severity" impairment appeared to benefit from psychotherapy, while those with less severe psychopathology did not; Rounsaville et al. (1983) found no significant differences in treatment outcome when psychotherapy was added to methadone maintenance. Hall (1981a, 1981b, 1984) reported dramatically better rates of employment after clients' participation in a job seekers' workshop, in comparison to control subjects. Havassy and Hall (1981) found urine monitoring to be ineffective in preventing chipping among methadone patients. McAuliffe (this volume) found that the experimental group of subjects who participated in an aftercare program of recovery training and self-help had significantly better outcomes than a control group who did not participate in such a program.

Cost-Effectiveness

Cost-effectiveness measures must be implemented as part of the evaluation of brief treatment programs. Unfortunately, most researchers have not incorporated cost-effectiveness measures into

their studies. There is a need to test and evaluate cost-effective methods of reaching and treating drug abusers who have not been successfully treated in traditional programs. Andersen (this volume) evaluated a cost-efficient method of reaching women heroin addicts in the emergency room who had rejected traditional drug treatment modalities. Measuring cost-effectiveness means examining not just the program itself, but the overall staffing patterns, the allocation of resources, the appropriateness of treatment for particular clients, the length of time in treatment, and intensity of the treatment required. It may be less costly to use a clinical psychologist half-time than to use a fulltime untrained counselor. In addition, both researchers and program administrators must also consider the costs to the program and to the community of not implementing a particular treatment.

SUMMARY

In the chapters that follow, brief, effective treatment strategies are presented by the authors. Each of these strategies has been or is in the process of being tested and evaluated in practice. These studies have been conducted by researchers throughout the country. Almost all of them are controlled studies and represent the first group of drug studies to evaluate brief treatments, Some of these strategies are ready for dissemination to the field, and others continue to be tested and refined. All have the potential to enhance the treatment repertoire in the drug field. Studies that have been completed have demonstrated that brief treatment can be effective.

As a result of this research, a number of effective time-limited treatment approaches and models are now available to the field. For some of the treatments presented, the next level of research sophistication--diagnosing and matching clients with particular treatment protocols--has begun. Future research should focus not only on the further development of specific brief treatments but also on appropriate diagnosis of client problems and needs in order to facilitate appropriate client/treatment matching, In the future, special efforts should be made to demonstrate and evaluate cost-effectiveness for implementation by treatment programs.

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PSYCHOTHERAPY FOR OPIATE DEPENDENCE

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INTRODUCTION

There are only two major studies evaluating the efficacy of psychotherapy for opiate dependence. However, there are a number of smaller studies, and there is an extensive literature on psychiatric aspects of opiate dependence. A literature review is a good starting point for a more detailed presentation of the studies. The literature divides into four chronological periods.

First, there were case reports describing psychodynamic factors associated with addiction. The authors of these reports were psychoanalysts who emphasized the predominance of oral-dependent character traits and the extreme difficulties encountered in trying to treat addicts with psychotherapy. Fenichel (1945), Rado (1933), Glover (1932), and Savitt (1963) represent this era.

The second period was immediately prior to the development of methadone maintenance treatment programs. It was exemplified by the 1958 study of Nyswander et al. This study advertised professional psychotherapy as being available to any interested addicts in New York City. Only 70 persons responded by contacting the clinic; only 13 of them became regularly engaged in therapy. These engaged patients had an average of 35 appointments with psychotherapists over a period of approximately 1 year. They were compared with a control group of 22 minimally treated patients who kept an average of eight appointments. Although the engaged patients showed more benefits than the minimally treated patients, the investigators concluded that psychotherapy's role was minimal because so few applied for it, and only a small proportion of those who applied actually became engaged. The earlier case reports, in conjunction with Nyswander's more ambitious project, seem to have influenced the way many clinicians and researchers conceived of psychotherapy's role in addiction treatment. These experiences appear to have stimulated efforts to look elsewhere for effective treatments.

The third period began with the development of methadone maintenance programs, and coincided roughly with the application of ego psychology to psychoanalytic work. This era was marked by a rapid expansion of drug treatment programs. It saw the emergence of many ideas and debates about how best to treat addicts within this newly developed and greatly expanded treatment network. It was marked by the involvement of many "helpers" with opiate addicts. They ranged from highly trained medical professionals such as psychiatrists and psychiatric nurses, to social workers to paraprofessionals, including minimally trained mental health workers and ex-addict counselors. During this period, the possible contribution of psychopathology to addiction, and the positive influence that professional psychotherapy might contribute to outcome were reconsidered. The importance of psychiatric factors and the possible role of psychotherapy were best described by Wurmser (1979) and Khantzian et al. (1974). Both these writers are psychiatrists with psychoanalytic training, and each spent considerable time treating opiate addicts, with many of their patients being on methadone. Prominent among questions that Wurmser, Khantzian, and others raised were: Do treatment programs work? Does counseling add anything to methadone maintenance alone? Do trained professionals add anything to the counseling given by less trained, lower paid paraprofessionals?

During this period, a number of clinical studies and case reports reexamined the efficacy of psychotherapy. Seven of these studies employed random assignment; five of these seven showed that patients receiving professional psychotherapy did better than those receiving counseling alone (Willett 1973, LaRosa et al. 1974, Abrams 1979, Connett 1980, Resnick et al. 1981, Stanton et al. 1982, Rounsaville et al. 1983). Each study, except that conducted by Stanton et al., had serious methodological problems. Among these problems were small sample sizes, lack of definition of the psychopathology being treated, lack of definition of the treatments provided, and use of a very narrow range of outcome measures.

Stanton et al.'s study examined the efficacy of structural family therapy when added to routine counseling services. The specific treatment methods used were well described, several control groups were employed, and a moderately broad range of outcome measures was used. This study found good evidence for the efficacy of structural family therapy with this population. It was also the first well-designed study of a psychological treatment for methadone maintenance patients.

Though Stanton et al.'s study explored the efficacy of one specific type of therapy, it did not study the types of psychopathology found in opiate addicts, nor did it examine the efficacy of individual psychotherapy. These questions were addressed during the fourth and most recent period by three major studies which, taken together, are by far the best designed, most expensive, and most comprehensive ever to examine psychiatric aspects

of opiate dependence (Khantzian and Treece 1982, Rounsaville et al. 1982, Woody et al. 1983). Each study had a diagnostic section, and two of the three (Rounsaville et al. 1982, Woody et al. 1983) studied the outcome of one or more individual psychotherapies with methadone maintenance addicts. The diagnostic studies provided consistent results. Each found high levels of psychopathology. The most common problem seen was depression, especially major depressive disorder. Other common but less frequent problems were antisocial personality disorder, alcoholism, and anxiety disorders. A smaller proportion of patients had mood disorders such as hypomania or bipolar II, miscellaneous personality disorders, and schizophrenia (Rounsaville et al. 1982).

The two psychotherapy studies had differing results. The study completed by Rounsaville et al. (1982) at the New Haven/Yale program examined interpersonal psychotherapy (IPT) when added to routine counseling and group therapy services in a methadone treatment program. No differences in outcome were found between the two groups, though both showed improvement (Rounsaville et al, 1983). Woody et al.'s study at the University of Pennsylvania and Veterans Administration Medical Center, Philadelphia (1983), also found that all treatment groups improved, but the patients who received psychotherapy made more gains than the control group. A related project was a clinical report, published in 1983 by Herrington et al., which examined the progress and outcome of 40 physicians enrolled in an alcohol and drug dependence treatment program in Wisconsin. This report was not a prospective study. It did not employ random assignment or a control group, but it did obtain followup on a reasonably large number of subjects for an extended time (27 subjects were followed for 1 to 2 or more years), and it carefully documented and described the various aspects of the treatment program. The authors concluded several factors were important for recovery. First was consistent participation in the overall program, a P-year, three-phase program that started with inpatient detoxification and then moved into outpatient and reentry activities. Also included were regular urine testing, prompt return to meaningful employment, family involvement in the patient's treatment, and psychotherapy. This report was very positive in its evaluation of psychotherapy. It concluded:

> Insight oriented and expressive supportive psychotherapy effectively augments and enhances the other elements of treatment. Although initially resistant to psychotherapy, many of our patients later acknowledged it to be one of the most significant events in their recovery process (Herrington et al. 1982).

Woody et al. (1983) found similarly positive results. A detailed examination of these results provides interesting data about how psychotherapy might work, and for whom among this population it

might be most effective. These more detailed analyses were possible because the study employed a wide range of outcome measures and examined a large number of subjects.

The treatments studied were drug counseling alone (DC), drug counseling plus supportive expressive psychotherapy (SE), and drug counseling plus cognitive behavioral psychotherapy (CB). The major purpose was to see if there is any evidence that professional psychotherapy adds anything to routine counseling services.

Drug counseling was defined as a treatment delivered by paraprofessionals that focuses on identifying specific needs and delivering concrete services. Examples of such services are: monitoring progress, implementing program rules, intervening in acute crisis situations, maintaining proper records, referring patients to job training programs, screening patients for emergency psychiatric and medical problems, and discussing specific problematic issues in current life situations.

The psychotherapies, in contrast, focused on identifying and altering intrapsychic processes. Supportive expressive psychotherapy is an analytically oriented, focal psychotherapy that is modeled after that described by Malan (1963) and Sifneos (1972). and after a form of therapy used for many years at the Menninger foundation in Topeka, Kansas (Wallerstein et al. 1956). The two main techniques are supportive and expressive, as the name implies. The expressive ones aim to help patients identify and work through problematic relationship themes. Special attention is paid to the meanings that patients attach to drug dependence.

Cognitive behavioral psychotherapy is an active, directive, time-limited system of psychotherapy that focuses on uncovering and understanding the relationship and influence of automatic thoughts and underlying assumptions to problematic feelings and behaviors. The therapy models that were developed by Aaron T. Beck, M.D., have been shown to be effective for treatment of certain types of depression (Beck 1976). Beck and his colleagues have found that depressed patients have subscribed to a system of negatively biased thoughts, attitudes, and beliefs that lead to a consistently distorted perception of themselves, the future, and the world around them. Beck has found that significant improvement in mood can result when a person can learn systematically to correct these exaggerated thoughts so that they more accurately reflect reality.

Each of these treatments is described in a manual (Luhorsky 1976, Beck and Emery 1977, and Woody et al. 1977). These manuals were used for training and ongoing supervision of counselors and therapists. The entire study took approximately 4 1/2 years to complete. The psychotherapy was offered for 6 months. Patients were evaluated at intake, 7 months (1 month after therapy ended), and 1 year. Eighteen counselors and nine therapists participated. There were five SE and four CB therapists. All therapists except

two had either an M.D. or a Ph.D. and at least 2 years of clinical experience since completing training. One CB therapist had no formal degree but had 7 years experience as a CB therapist. One SE therapist was completing a Ph.D. program but had 3 years of clinical experience during one portion of training. All therapists had some experience with addicts or alcoholics, and five had worked in either alcohol or other drug abuse treatment programs for 1 or more years. Care was taken to select only therapists who were both experienced in their particular techniques and also interested in treating drug addicts. The therapists were chosen by the supervisor of each therapy--Dr. Luborsky for SE therapists and Dr. Beck for CR therapists. Because there were more applicants than jobs, we could interview and then choose the therapists judged best for this population. The drug counselors had worked in the drug treatment program for an average of 3 years and were familiar with counseling techniques and clinic procedures. About half had bachelor's degrees, and most had learned counseling procedures through on-the-job training. Some had also been trained as corpsmen while on military duty.

Study Design

The design of the study was as follows: The project was fully described to prospective patients, and those who were interested were randomly assigned to one of the three treatment conditions upon signing a consent form and completing an extensive intake procedure. Patients were given a brief explanation of the kind of treatment they would receive after random assignment, in the manner described by Orne and Wender (1968). This explanation was given on the assumption that most patients had little knowledge of what was expected in psychotherapy and that a brief explanation would facilitate the treatment process. Following this, the principal investigator or a research staff member introduced the patient to his therapist or counselor and encouraged him to keep all scheduled appointments.

Patients who completed the intake procedure were required to complete three appointments with their counselor and an additional three appointments with their therapist (if they were assigned to SE or CB. These initial appointments had to be completed within the first 6 weeks; if they failed to complete the appointments they were considered nonengaged and dropped from the study. Approximately 80 percent of patients who completed intake kept these initial appointments. The demographic status of the patients in each of the treatment groups is shown in table 1; table 2 summarizes their lifetime psychiatric diagnoses (based on Research Diagnostic Criteria [RDC]); the measures used are shown in table 3; and the design is outlined in figure 1.

TABLE 1. *Background status of 110 male, opiate-dependent psychotherapy subjects*

Characteristic	Treatment Group* (N=32)	(N=39)	(N=39)
Age (years)	31 ± 6	29 ± 6	29 ± 5
Race (percent)			
Black	59	67	59
White	41	33	41
Education (years)	12	13	12
Marital status (percent)			
Married	37	28	36
Divorced, separated**	25	49	28
Never married	38	23	36
Living with parents	28	31	28
Living alone**	12	13	23
Criminal convictions (average)	4	3	3
Months incarcerated (average)	13	14	11
Years problem drinking (average)	1	2	2
Years regular drug use (average)			
Heroin**	7	10	11
Methadone hydrochloride	2	2	2
Depressants	2	2	2
Stimulants	2	1	1
Prior drug treatments	4	3	4

*SE indicates supportive-expressive therapy; CB, cognitive-behavioral therapy; and DC, drug counseling.

**P < .01 by analysis of variance and paired t test.

TABLE 2. *Lifetime research diagnostic criteria diagnoses*

Diagnosis	Treatment Group* Number (Percent) SE	CB	DC	Total
Drug use disorder	32 (100)	39 (100)	39 (100)	110 (100)
Affective disorders				
Major depressive disorder	13 (41)	14 (36)	20 (51)	47 (43)
Minor depressive disorder**	0 (0)	1 (3)	7 (18)	8 (7)
Intermittent depressive disorder	7 (22)	3 17)	3 (7)	13 (12)
Labile personality	2 (6)	6 (15)	2 (5)	10 (9)
Cyclothymic personality	5 (16)	3 (8)	3 (8)	11 (10)
Hypomanic disorder***	7 (23)	2 (5)	12 (30)	21 (19)
Manic disorder	0 (0)	0 (0)	1 (3)	1 (1)
Bipolar II	4 (13)	1 (3)	6 (15)	11 (10)
Anxiety disorders				
Generalized anxiety	1 (3)	1 0)	1 (3)	3 (3)
Panic disorder	0 (0)	0 (0)	0 (0)	0 (0)
Phobic disorder	3 (9)	0 (0)	1 (3)	4 (4)
Obsessive-compulsive disorder	1 (3)	0 (0)	1 (0)	2 (2)
Alcoholism	7 (22)	9 (24)	10 (26)	26 (24)
Antisocial personality	6 (19)	6 (15)	4 (10)	16 (15)
Schizotypal features	2 (6)	1 (3)	3 (8)	6 (6)
Other psychiatric disorders	1 (3)	0 (0)	0 (0)	1 (1)

*SE indicates supportive-expressive therapy; CB, cognitlve-behavioral therapy; and DC, drug counseling.

**P < .05.

***P < .01 by analysis of variance.

TABLE 3. *Outcome measures administered, by month*

	Intake	1 Month	7 Month	12 Month
Consent form	x			
Maudsley Personality Inventory	x	x	x	x
Beck Depression Inventory (BDI)	x	x	x	x
Social Adjustment Scale (Weissman)	x	x	x	x
Symptom Checklist-90 (SCL-90)	x	x	x	x
Shipley	x			
Relationship inventory - counselor		x		
RelationshIp inventory - therapist		x		
Helping relationshlp - counselor		x		
Helping relationship - theraplst		x		
Patient termination form			x	
Schedule of Affective Disorders & Schizophrenia - Life Time Version (SADS-L)	x			
Research Diagnostic Criteria	x			
DSM III	x			
Previous treatment form	x			
Schedule for Affective Disorders - Change Version (SADS-C)	x	x	x	x
Addiction Severity Index	x	x	x	x
Background data Interview	x			
Social Information form	x			
Followup form				x
Therapist facilitative behavior		x		
Goals of therapy - therapist		x		
Terminatlon form - therapist			x	
Counselor facilitative behavior		x		
Termination form - counselor			x	

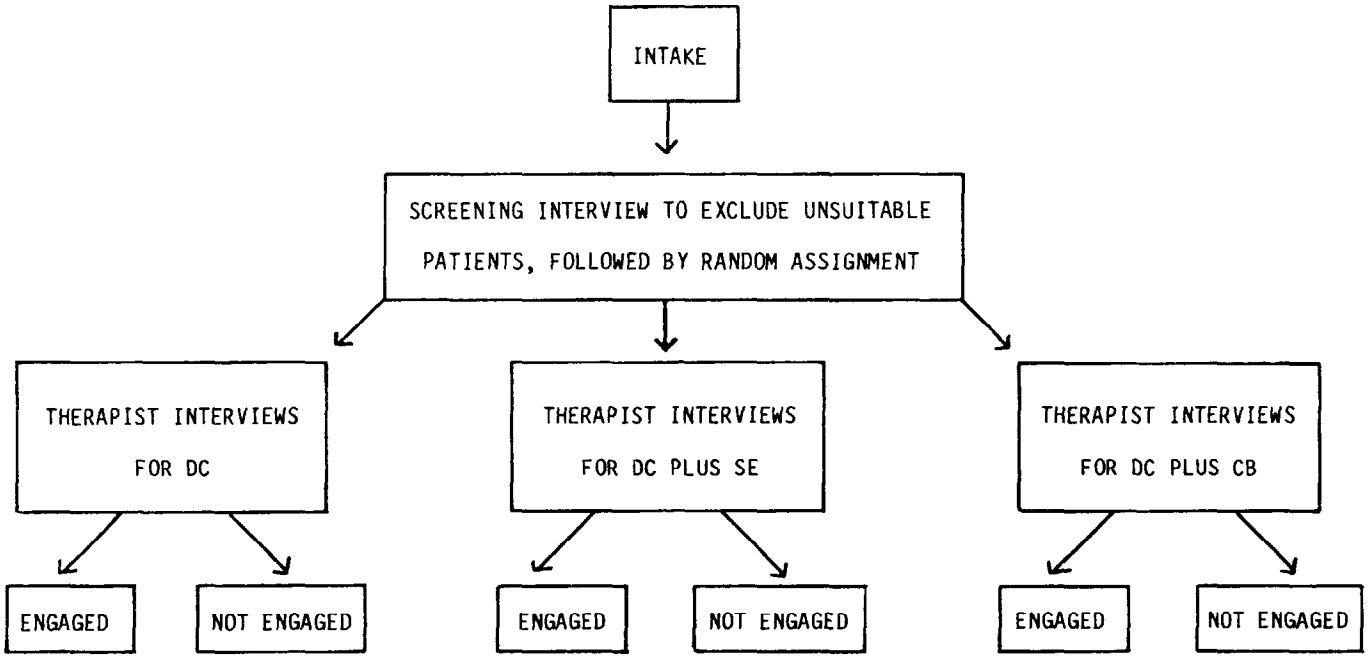

FIGURE 1. *Study design*

Results

The results have been published elsewhere (Woody et al. 1983) and are summarized as follows: Sixty percent of patients meeting the study criteria expressed an interest in participating; 40 percent of these actually became engaged. One hundred and ten subjects completed the study intake procedure, kept three or more appointments within the first 6 weeks of the project, and also completed the 7-month evaluation.

We examined subgroups of the overall sample in an attempt to find those subjects who benefited the most and the least from the additional treatments. Our rationale for the first series of these examinations was as follows: Clinical observations suggest that some proportion of drug-taking in almost all addicts is an attempt to self-medicate discomfort associated with life stress or psychiatric symptoms. However, there is reason to believe that this attempt at self-medication may account for a much greater proportion of drug-taking in those addicts with clinically significant levels of psychiatric symptoms. This, in turn, suggests that although the addition of professional psychotherapy may be generally useful in drug abuse treatments, it may be particularly important for that group of patients with additional serious psychiatric illness. Further, because psychotherapy services are usually expensive and of limited availability, it is important from a practical perspective to identify subgroups of the patient population who could be most responsive to additional psychotherapy.

We therefore used the pretreatment ASI psychiatric severity rating at the start of the study as well as the pretreatment scores on the BDI, the Maudsley Neuroticism Scale, the total scores on the SADS-C and the SCL-90, and the General Assessment Scale of the SADS-L to evaluate the patient's baseline psychiatric status. We combined these scores into a single composite that was highly correlated with the individual measures and generally indicative of the patients' global psychiatric status. Patients were divided into thirds according to their global psychiatric status rating. The third with the lowest scores were termed low-severity (LOW); the middle third, mid-severity (MID); the most disturbed, high-severity (HIGH) patients. Initial severity scores in all three groups were comparable for each treatment condition.

An examination of the three low-severity groups indicated substantial improvement in several measures in all treatment conditions. There was some indication that the SE-LOW and DC-LOW patients had more improvement and better outcome than the CB-LOW patients in employment, but the paired analyses on the 7-month outcome measures indicated no significant differences ($p > .10$) across the three treatments.

Mid-severity patients showed substantial positive change in all three treatment conditions, although the psychotherapy groups showed more changes in the psychological test measures. However,

unlike the LOW patients, the 7-month comparisons (ANCOVA) indicated significant between-groups differences in 10 of the 16 comparisons, with the DC group showing the worst outcome on 7. Thus, while all groups showed a number of significant improvements, the psychotherapy groups showed generally better outcomes for these MID patients.

The three HIGH groups showed very different results. The HIGH patients from both SE and CB therapy groups showed a number of significant improvements in most of the outcome measures, especially in employment, legal, and psychiatric status. In contrast, the HIGH patients in the counseling group (DC) showed very little improvement generally and significant change ($P < .05$) only in the drug-use measures. Comparisons of the adjusted (ANCOVA) 7-month scores indicated that the DC-HIGH oatients had significantly poorer outcomes (p=<.05 or less) on 9 of the 16 comparisons.

In addition to the 'I-month data, we also examined the standard clinical records of methadone dose, prescriptions for ancillary psychotropic medications, and urinalysis reports for patients in each of the treatment subgroups. These three measures are routinely and regularly collected on all patients during treatment. We have found them sensitive indicators of treatment response.

Results of analyses of variance on these measures indicated significant differences among the severity groups on methadone dose ($F=10.4$, df 2,71, $p < .001$) and prescriptions for psychotropic medications ($F=16.7$, df 2,71, $p < .001$). HIGH patients, regardless of treatment condition, had higher mean doses of methadone, a higher proportion of drug-positive urines, and a higher frequency of psychotropic drug prescriptions (p=.05 or less) than LOW or MID patients, who did not differ from each other ($p > .10$). Comparisons across therapy conditions yielded significant main effects on the variables of methadone dose ($F=21.7$. df 2.71. $< .001$) and psychotropic medication prescriptions ($F=13.3$; df 2,71, $p < .001$). Treatment-bv-severity interaction effects were significant for all three variables ($p < .01$). There were no significant differences in these variables among the three treatment conditions for the LOW patients ($p > .10$). However, as in the analyses of the ASI data. comparisons for the MID and especiallv the HIGH oatients yielded much different results. The MID and HIGH DC patients had a sianificantlv hiaher mean methadone dose ($p < .01$), a significantly higher proportion of drug-positive urines ($p < 05$); and a significantly higher frequency of prescriptions for psychotropic medications ($p < .01$) than patients in either of the psychotherapy groups in the HIGH range. The two psychotherapy groups did not differ from each other on any measure ($p > .10$).

Three main findings were evident from these results. First, and not surprisingly, patients with high levels of psychiatric symptoms had less satisfactory pretreatment adjustment in all areas of functioning than other patients. This finding is consistent with

earlier work done here and elsewhere (McLellan et al. 1983, Luborsky et al. in press-a), and it applies regardless of treatment group assignment. Second, the HIGH patients did not respond nearly as well to any of the treatments as did the MID or LOW patients. Their response to counseling alone (DC) was especially problematic.

Our third and the most novel finding was the relationship between the patients' psychiatric severity and the specific treatments that were used. The additional psychotherapy altered the typical relationship between psychiatric severity and outcome. The HIGH patients who received the additional therapy showed improvement in many areas, while the HIGH DC group improved only in drug use. Further, these HIGH therapy patients were able to make their gains with lower doses of methadone, less prescribed psychotropic medication, and less illicit drug use than HIGH DC patients. A more complete description of these results is available elsewhere (Woody et al. in press).

We next examined outcome by therapist. We had formed the impression that some therapists consistently effected better outcomes than others. This study offered a particularly good opportunity to examine differences in therapist performance for three reasons. First, the therapists were trained and regularly supervised using manuals that explicitly defined and described the techniques employed in the performance of each therapy. These manuals provided specific criteria that could be used by independent raters to derive reliable, valid, and discriminable evaluations of the nature and content of the three therapies (Luborsky et al. 1982). Second, each therapist's sessions were tape recorded throughout the course of the study. These taped sessions provided a representative sample of each therapist's performance during therapy and could be used by independent raters to evaluate the extent to which the therapists conformed to the particular techniques of their therapy as defined by the manuals. Finally, objective data on several measures of patient status were collected at the start of the study and again at 7-month followup. This provided a comprehensive range of measures upon which to evaluate patient improvement and outcome.

Our initial step in comparing the effectiveness of the therapists was to calculate the mean percent change from the start of the study to the 7-month evaluation point for all patients in each therapist's caseload. This improvement rate was calculated on seven outcome measures from the Addiction Severity Index (ASI). Table 4 shows the percent change from pretreatment status (positive or negative) for each therapist's caseload.

TABLE 4. *Percent change from start of treatment to 7-month followup, by therapist*

		Percent Change by Outcome Measure*							
	Number	Drug Use	Employ. Status	Legal Status	Psychiatric Status	Beck Dep.	SCL-90	Maudsley N Scale	Average Effect-Size**
SE Therapists									
A	10	34	32	20	102	58	44	64	.74
B	8	33	34	17	49	37	46	59	.59
C	8	-14	12	7	-4	8	-2	13	.19
CB Therapists									
D	11	61	19	17	34	36	39	44	.53
E	10	70	22	13	19	24	30	30	.44
F	9	48	10	11	14	14	21	33	.46
DC Therapists									
G	9	51	8	13	4	4	9	-1	.20
H	6	46	-4	6	2	-3	11	3	.13
I	7	66	17	7	15	14	15	17	.27

*All criteria were measured during the 30 days before treatment start and before 7-month followup. Factor scores represent composites of several items indicative of patient status in that area. Percent change was calculated against the treatment start baseline.

**Within-therapist effect-size was averaged across all seven criteria. Effect-size calculation for each criterion was pretreatment mean minus posttreatment mean, divided by pretreatment standard deviation. Small change = .2, moderate change = .5, large change = .8.

The differences in patient improvement rates among the therapists' caseloads are obvious from table 4. This was true in all treatment groups and on most of the seven outcome measures. One-way analyses of variance on the percent change scores indicated a significant between-therapists effect ($p < .05$ or less) on all measures. Further, the range in these performance measures was quite dramatic. For example, the patients of therapist A showed an average improvement in psychological status from the start to the 7-month point of more than 100 percent, while therapist E's patients showed only a 19 percent change, and therapist C's patients showed 4 percent worsening.

As an additional measure of the magnitude of change shown by each therapist's caseload, effect-size measures were calculated for each of the seven change measures and then averaged to produce a single score (table 4, last column). These effect-size measures have limitations with regard to their generalizability but they do offer an additional means of comparing therapist efficacy. As can be seen, the average effect sizes for the nine therapists parallel the data on percent change, with therapist A showing by far the largest effect; therapists B,D,E,F showing moderate changes; and therapist C, along with counselors G,H,I, showing the smallest changes.

Thus, we found that the choice of therapist was an important determinant of outcome. Further analyses of the therapist data indicated that those who obtained the best results formed the most positive relationships with their patients, and also conformed the most closely to their specified techniques. Our impression is that a positive, helping relationship provides a necessary foundation from which the psychological techniques can be usefully applied. The absence of a Dositive relationship makes it verv difficult for the techniques of the psychotherapy to be meaningfully applied. These results are described in greater detail in another paper (Luborsky et al. in press-b).

We then analyzed outcome by diagnostic groupings. We compared treatment outcome for psychotherapy patients who fell into three RDC categories: opiate dependence only, opiate dependence and depression, and opiate dependence and antisocial personality disorder (ASP). Both therapy groups were combined in this analysis to achieve a sufficient number of subjects in each category.

Patients in each of the first two categories improved considerably, with the largest therapy effect being in those with depression. However, there was no significant effect of psychotherapy in patients with only ASP, except that drug use was reduced. These findings are supportive of the idea expressed by many others that psychotherapy is not helpful for people with only sociopathy (Shamsie 1981). These findings are summarized in table 5.

TABLE 5. *Effectiveness of therapy on three diagnostic groups (RDC diagnoses)*

	Opiate Abuse Only		Opiate Abuse and Depression		Opiate Abuse and Anti-Social	
	Start (N=28)	7-Month	Start (N=14)	7-Month	Start (N=10)	7-Month
Drug use factor*	199**	106	189**	26	154***	118
Days opiates	8***	4	6	3	6	5
Days nonopiates	4	2	2	1	4	3
Employment	129**	48	148	86	133	129
Days working	9	13	4***	8	6	7
Money earned	417***	535	334	391	151	211
Legal status	217***	121	209***	109	255	186
Crime days	7***	3	5***	2	5	3
Illegal income	248***	106	227***	75	291	226
Psychiatric status	167***	122	232**	109	189	159
Beck	10***	6	15**	10	12	12
SADS depression	17	17	28	11	23	21
SADS anxiety	17	15	22	22	21	20
Maudsley N	20	17	32**	20	25	23
SCL-90	138***	123	165***	151	160	155
GAS	66	75	47**	70	63	71
Psychological severity	2.1	1.8	5.8***	2.9	4.6	3.8

*All criteria measured drug 30 days prior to study start and at 7-month followup. Higher scores indicate greater severity.

**$p < .01$.

***$p < .05$.

In a subsequent analysis we examined outcomes of patients with DSM III diagnoses of opiate dependence and antisocial personality disorder only, and compared them with patients who had opiate dependence and antisocial personality plus an additional psychiatric disorder. Here, the group of patients with another psychiatric disorder showed significant gains, mainly in the psychiatric area. Thus, some patients with sociopathy appear to be therapy-amenable, and these are those with symptoms of other psychiatric disorders such as depression or anxiety. However, the disabilities associated with the core characteristics of antisocial personality disorder are much less amenable to change, even in this more responsive subgroup. These findings appear similar to those found by Adams in a study of people with a DSM III diagnosis of ASP (1961). These findings are also described in more detail in another paper (Woody et al., in preparation).

We have done few detailed analyses on the 12-month data at this time. The overall results, though, are similar to the 7-month findings in showing better outcome for the psychotherapy groups.

This brief review could make the study sound easier than it actually was. We encountered many difficulties. Some of these were anticipated during the planning stage. Before beginning the study, we gave considerable thought to the administrative procedures that might be used in a psychotherapy study with this population. We had participated in the family therapy study done by Stanton et al. in 1976 (Stanton et al. 1982), and that experience taught us that there are special conditions under which therapy has the best chance to work. Based on that study, we expected three problems to occur: 1) missed appointments by patients, 2) competition between counselors and therapists, and 3) morale loss by therapists in response to the nature of the addicts' problems.

We implemented the following procedures from the start of the study, in a largely successful attempt to combat these problems:

1) The program director administered the psychotherapy study as an integral part of the ongoing treatment services.

2) The therapists had part-time offices in the treatment facility, and efforts were made to ensure that they felt they were a part of the treatment program. This close linkage between tne therapists and the program reduced the chances that therapists would feel disengaged, or that they would be perceived as irrelevant by the patients.

3) Attention was paid to facilitating coordination and cooperation between therapists and counselors, especially at the beginning of the project.

4) Attention was paid to patient compliance. Patients were reminded promptly if they missed appointments. Missed appointments were considered reflections of difficult social conditions or transference phenomena that should be addressed in therapy.

5) Patients were started in therapy shortly after they entered the program because that probably increases the chances for successful engagement.

6) Attention was paid to hiring only therapists who were interested in drug addicts and who felt comfortable with them.

7) Ongoing supervision of therapists was provided by a senior clinician who was skilled in the particular form of treatment that the therapist was to perform.

In addition to these administrative procedures, therapists were hired by time blocks so that they were paid whether patients kept or missed appointments, and counselors were paid $2 per patient for filling out weekly treatment report forms that were part of the data collection process.

These methods were necessary to carry out this study, and their absence in the New Haven/Yale project (Rounsaville et al. 1982) might have accounted for the much lower participation and compliance of their patients in the psychotherapy program.

CONCLUSIONS

The practical applications of this work are very clear. Our data indicate that the traditional poor outcome of high-severity methadone patients can be improved by the addition of competent and interested professional psychotherapists to the ongoing treatment services. These psychotherapists must be fully integrated into the overall program, and must be able to get along with other staff members. When therapists are integrated in this manner, we find that the counselors look to them for help with their most difficult patients. If therapy works, the successful management of these troublesome high-severity patients can bring relief to all staff, in addition to providing direct benefits to the individual patients. Cost-effectiveness arguments can be made on the basis of the more positive results that can be achieved with a group of patients who make very little progress with the standard treatment, usually at considerable expenditure of staff time. We saw some evidence for a reduction of time spent in hospital by the high-severity patients who received additional therapy (Woody et al. 1984).

Little mention has been made of group therapy in this paper. No major studies have been done on group therapy with this

population. One of the small studies cited earlier used groups and found evidence for positive results (LaRosa et al. 1974), while another found no differences in outcome between group therapy and counseling alone (Willett 1973). Group therapy is widely used in residential programs. It appears to be used less extensively in most outpatient programs. It has the potential to be a more cost-effective way of delivering professional treatment than individual therapy. Thus, our impression is that it can be helpful.

However, we have encountered serious practical problems in trying to establish it as a viable modality. Effective group therapy requires regular attendance by all members. Frequent absences seriously interfere with the group process and make meaningful therapy very difficult. Unacceptable levels of attendance have been our greatest problem in trying to start meaningful groups, and we have found that individual therapy is much more easily adapted to methadone patients. They are not good at keeping regular appointments to begin with, and they also are subject to a large number of schedule changes, e.g. patients working shifts with periodic schedule changes, and people who must appear in court or at social agencies at frequent and unpredictable intervals. This combination of impaired self-discipline plus social circumstances has contributed to our problems in carrying out group therapy.

There also may be an inordinately high level of resistance to group therapy in this population. Almost all of our patients have committed serious crimes. Effective therapy requires a high level of disclosure, and the issues of confidentiality in a group setting are much more complicated than in individual therapy. Patients cannot be certain who they are telling about their behavior in group therapy and what the group members may do with their disclosures. This kind of problem may contribute to difficulties in carrying out meaningful group therapy, especially in an outpatient program. Another problematic issue has been the tendency of some groups to turn into either gripe sessions or efforts to use group pressure to accomplish dubious goals such as, give out travel money, prescribe tranquilizers, or provide more take-home doses. This has been a problem with some of the large groups. It is not nearly so serious a problem as poor attendance, but it can create diversions and, when combined with irregular attendance, it can be difficult to redirect into a therapeutic process. Thus, while we are not opposed to group therapy and think it can work, we think individual therapy has been much easier to implement.

Our major efforts have, therefore, been directed toward individual therapy. We are pleased with the results. The observed outcomes fit both with common sense and with our clinical experience. They are of potential importance to the field and they could alter the typical practices and staffing patterns of methadone programs. It is important to see if they can be replicated in other programs, using techniques similar to those described here.

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BEHAVIOR THERAPY IN DRUG ABUSE TREATMENT: REVIEW AND EVALUATION

Maxine L. Stitzer,
George E. Bigelow, Mary E. McCaul

INTRODUCTION

This paper reviews operant-based behavior therapies that can be used to promote improvement in drug abuse patients. Respondent therapies such as relaxation training and biofeedback, which attempt to change internal responses to stimuli, will not be covered; their application in treatment of drug abuse has recently been reviewed by Hall (1983), Klajner et al. (1984), and Stitzer et al. (1983a). The paper describes a behavioral model of drug abuse and then discusses four behavior therapy strategies that can be used in treatment of drug abuse: extinction, satiation, punishment, and reinforcement. Examples are given of behavior therapy techniques that have been implemented in treatment of drug abuse, particularly in the treatment of opiate abuse; studies evaluating the efficacy of these techniques are reviewed and recommendations are offered on applying behavior therapy interventions in drug abuse treatment settings.

BEHAVIORAL MODEL OF DRUG ABUSE

One of the things that we have come to understand about drug abuse during the last 30 years is that drugs can act as powerful biological reinforcers in a manner analogous to such reinforcers as food and sex. Evidence for this view comes from the animal laboratory, where it has been clearly demonstrated that animals such as rats and monkeys will work (i.e., press levers) to obtain infusions of commonly abused drugs, including narcotics, sedatives, and stimulants (Deneau et al. 1969, Johanson and Schuster 1982). For these laboratory animals, drugs act as reinforcers in the absence of social deprivation, peer pressure, family histories of drug abuse,

or psychiatric illness, all of which have been cited as possible necessary precursors of drug abuse in humans. Further, it is clear from animal studies that drugs can act as reinforcers in the absence of physical dependence (Kelleher and Goldberg 1975), which suggests that the pleasurable or reinforcing properties of drugs exist independently of the need to avoid unpleasant symptoms of withdrawal. The fact that drugs can act as potent reinforcers to maintain behavior implies that every human has the potential to become a drug abuser. However, not everyone who tries drugs becomes an abuser, and there are vast individual differences in the amount, type, and pattern of drug use in which people engage. The factors that determine whether a particular individual will become a drug abuser are as yet poorly understood, although they certainly include such things as availability of drugs and the behavior and attitudes of friends and family with regard to drug use. What does seem clear from observation of individuals entering treatment for drug abuse is that the drug reinforcer has become the preeminent influence in their lives, as evidenced by an overriding concern with acquisition and effects of drugs as well as repeated episodes of drug self-administration. From a behavioral perspective, the critical difference between abusers and nonabusers may be the balance of reinforcers that control behavior. That is, the drug reinforcer is preeminent in the life of an abuser and exerts control over a large part of the behavioral repertoire, while in nonabusers other, more socially acceptable reinforcers exert preeminent control over behavior.

BEHAVIORAL APPROACHES TO TREATMENT

From a behavioral perspective, the main goal of drug abuse treatment is to change the relative dominance of behavior maintained by different reinforcers and, in particular, to reduce the dominance of behavior maintained by drug reinforcement while increasing behavior maintained by other reinforcers. Specific behavioral methods available for decreasing undesirable drug-maintained behaviors include extinction, satiation, and punishment, whereas reinforcement techniques are most appropriate for increasing desirable behaviors. Each of these approaches will be discussed in this paper, with examples drawn primarily from the treatment of opiate abuse since this is where most of the evaluation work has been done.

Extinction

During extinction, the reinforcer is withheld following responses. Thus, an extinction model requires that the drug self-administration response must occur in the absence of any reinforcing drug effect. During the course of extinction, the frequency of such unreinforced responding would gradually decrease and eventually

responding would stop. Narcotic antagonists such as naltrexone are available that can provide a complete pharmacological blockade of opiate drug effects. However, laboratory studies have shown that human subjects do not continue taking opiate drugs during pharmacological blockade, as would be needed for extinction of the drug self-administration response (Mello et al. 1981, Meyer et al. 1976). Further, in clinical trials opiate antagonists have proven to be a very unpopular treatment modality among opiate abusers; retention drops off sharply during the first month of treatment (National Research Council 1978). Thus, extinction does not appear to be a viable approach for treatment of opiate abuse because people are disinclined both to take opiate antagonists in the first place and to self-administer opiate drugs during antagonist blockade.

Satiation: Methadone Maintenance Treatment

Although methadone maintenance is generally conceptualized as a purely medical or pharmacological treatment modality, methadone's pharmacological effects during maintenance treatment can also be viewed within a behavioral framework. Two related behavioral pharmacological effects of methadone will be reviewed in this section: first, the satiation of opiate drug effects provided by methadone, and second, the reinforcing effects of methadone itself.

Methadone satiation. During satiation, the organism is provided, independently of responding, with liberal amounts of the reinforcer for which it has been working. In the case of a heroin abuser, liberal amounts of heroin would be supplied, thus eliminating the need or desire to obtain additional amounts of the drug, or both. Because most opiate drugs share pharmacological cross-tolerance, however, it is possible to satiate opiate abusers with any one of several opiate drugs. Methadone has been chosen from among the available opiate drugs for use in the treatment of opiate dependence because of its oral efficacy and relatively long duration of action. Thus, during methadone maintenance treatment, patients are provided with liberal daily amounts of an opiate drug pharmacologically similar to the drug they have been abusing. Providing the abuser with an opiate drug is analogous to feeding an experimental subject before offering food as a reinforcer for performance; the reinforcing potency of the food would be diminished, although possibly not eliminated. Similarly, the reinforcing potency of other opiate drugs is diminished during methadone treatment, leading to a reduction in illicit opiate drug use.

Reduction in the reinforcing potency of opiate drugs during methadone treatment has been demonstrated in laboratory experiments. A recent study by McCaul et al. (1983) compared the physiological

and subjective effects of intravenous hydromorphone (Dilaudid) in nontolerant postaddicts and in methadone patients maintained on 50-60 mg/day. The postaddicts received doses of 2-6 mg hydromorphone, while the methadone patients received doses three times higher (10-18 mg). Figure 1 shows that hydromorphone produced pupillary constriction and subjective reports of opiate intoxication (high) in the methadone maintenance subjects, but the magnitude of these drug effects was similar to that produced by the smallest (2 mg) dose of hydromorphone in the nontolerant subjects.

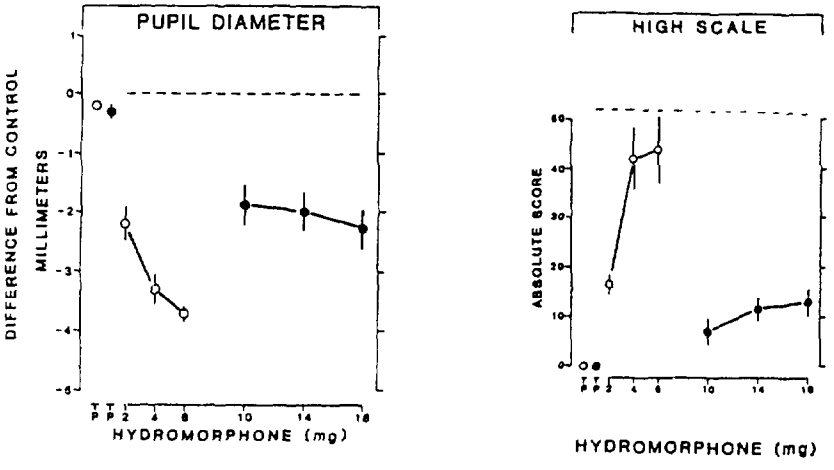

FIGURE 1. *Effects of intravenous hydromorphone (Dilaudid) on pupil diameter and on subjective report of drug intoxication. Data, shown separately, for opiate-free postaddict (open circles, N=5) and methadone maintenance (closed circles, N=5) subjects were collected 2 hours after drug or placebo (P) administration. Subjects rated their degree of drug high on a scale of 0 to 100. Error bars are ± 1 SEM.*

Another study by Jones and Praada (1975) assessed the reinforcing potency of opiate drugs during methadone maintenance by observing self-administration when subjects were and were not maintained on methadone. Subjects could ride an Exercycle to obtain daily 4-mg hydromorphone doses during a lengthy study in which they were initially drug free, then given gradually increasing methadone doses over a 6-week period, and finally maintained on 100 mg/day methadone. Hydromorphone self-administration declined as the methadone dose was increased; most of the subjects stopped working for hydromorphone about the time that the methadone dose reached 50 mg, although two subjects continued to take the hydromorphone occasionally even while receiving the full methadone maintenance dose. Similarly, opiate drug use may not be entirely eliminated

during methadone treatment in spite of the satiation and cross-tolerance provided by the treatment drug.

Methadone reinforcement. While methadone diminishes the reinforcing effects of other opiates via cross-tolerance and satiation, it also acts as a reinforcer by virtue of its own opiate effects. A recent study by McCaul et al. (1982) demonstrated that acute physiological and subjective effects were apparent following administration of the daily dose of oral methadone in maintenance patients. Four patients receiving daily doses of 40-80 mg methadone participated in sessions conducted 24 hours after ingestion of the most recent methadone dose. During these sessions, subjects ingested either a placebo drink or a drink containing their regular methadone dose. Physiological responses were monitored continuously and subjective responses periodically for 3 1/2 hours following ingestion of the drink. Figure 2a shows that the daily methadone dose reliably decreased pupil diameter and increased skin temperature, both of which are typical opiate drug effects. Increased scores on the MBG (euphoria) scale of the Addiction Research Center Inventory (Hill et al. 1963, Jasinski 1973) were also observed in three of four subjects, as shown in figure 2b, indicating that the daily dose produced measurable subjective effects in these maintenance patients.

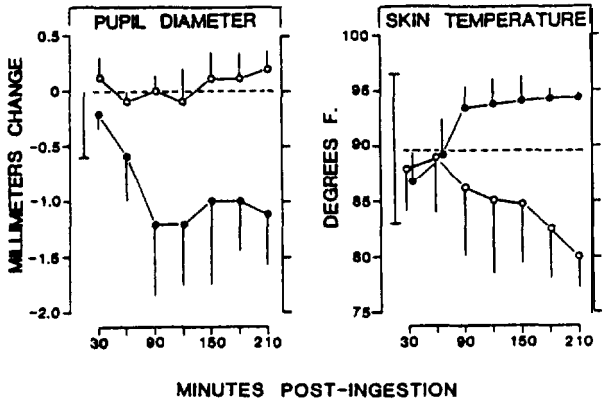

FIGURE 2a. *Average effects of the daily oral methadone dose (filled circles) or of methadone placebo (open circles) on pupil diameter and skin temperature in four subjects. Unconnected brackets represent mean ± SD of baseline scores. Connected points and vertical lines represent mean ± SD of effects at 30-minute postdrug intervals. (Mccaul et al. 1982.) Copyright 1982, The C.V. Mosby Company.*

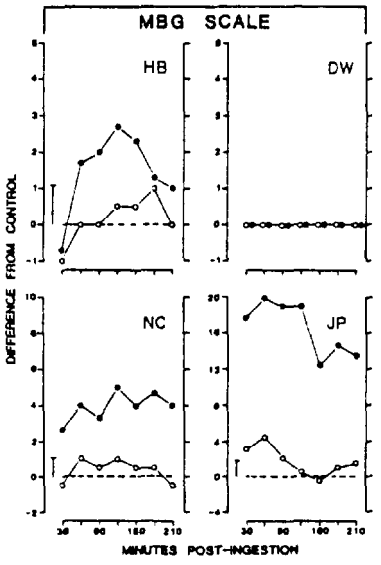

FIGURE 2b. *Effects of the daily oral methadone dose (filled circles) or of methadone placebo (open circles) on Morphine-Benzedrine Croup (MBG) scores of the Addiction Research Center Inventory in four individual subjects. Unconnected brackets represent mean ± SD of baseline scores. Connected points represent average change from control (predrug) observations. (McCaul et al. 1982.) Copyright 1982, The C.V. Mosby Company.*

Another recent study by Stitzer et al. (1983b) demonstrated that methadone dose increases are reinforcing by showing that maintenance patients would choose to self-administer supplemental amounts of methadone in addition to their regular 50-70 mg maintenance dose, In this study, seven subjects chose between receiving a sum of money ($1 or $5) or receiving an extra dose of methadone (0,1,5,10,25, or 50 mg) in addition to their regular daily dose. Before making each choice, subjects were informed of the amount of methadone or money available on that occasion. Figure 3 shows that extra methadone clearly acted as a reinforcer, since subjects reliably took advantage of the self-administration opportunities. Methadone was chosen over money on more occasions as the dose of drug increased, and similar dose functions were obtained when the monetary choice was $1 or $5. However, subjects chose the drug more often at all doses when the alternative was $1 than when it was $5, demonstrating that the reinforcing potency of a drug can he modulated by the available environmental alternatives to drug ingestion. The use of a treatment drug with reinforcing effects

suggests that patients would be attracted to and maintained in treatment by the opportunity to receive methadone. The reinforcing properties of the daily methadone dose and of dose supplements further suggests that methadone dose delivery or increases could be scheduled in a contingent fashion to promote therapeutic change in patient behaviors. In the following discussions of punishment and reinforcement, interventions will be described that take advantage of the reinforcing properties of methadone by making delivery contingent on desirable behavior or by withdrawing delivery as a consequence of undesirable behavior.

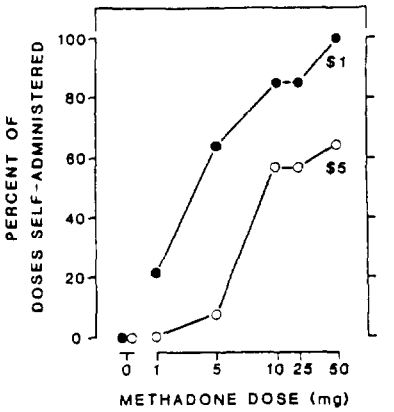

FIGURE 3. *Percent of methadone doses self-administered by seven methadone maintenance patients during informed choices between money and extra methadone. Data are shown separately for choices made when the monetary alternative was $1 (closed circles) or $5 (open circles). (Stitzer et al. 1983.) Copyright 1983, The C.V. Mosby Company.*

Punishment

The opportunity to continue receiving the full daily methadone dose can be used in contingent punishment arrangements to suppress illicit drug use or other undesirable behaviors. This section will describe two punishment strategies involving methadone dose delivery, contingent treatment termination, and contingent dose reduction, and also will review studies that have evaluated the therapeutic utility of these interventions.

Contingent treatment delivery. Contingent treatment delivery is commonly employed as a patient management strategy in methadone clinics; patients who are habitually uncooperative with clinic regulations or who continue supplemental drug use, or both, are typically threatened with termination of treatment. The threat is then carried out with greater or lesser dispatch depending on the rules and philosophy of the particular clinic and the willingness of treatment staff to deal with problem patients. The overall efficacy of this patient management strategy for producing change in drug use and other outcome measures has not been evaluated, although we might predict that efficacy would be related to the consistency with which detox contingencies are enforced (Havassy and Tschann 1984). Contingent methadone treatment termination has been specifically evaluated, however, as a strategy in the treatment of alcoholic methadone maintenance patients.

A study by Liebson et al. (1978) elegantly demonstrated that continued methadone treatment delivery could motivate participation in supervised disulfiram therapy among methadone maintenance patients dually addicted to opiates and alcohol. The 25 patients who participated had been or were about to be discharged from other methadone treatment clinics because of behavioral problems related to their alcoholism. All subjects were started on disulfiram during a 14-day loading period and were then randomly assigned either to a control condition, in which they were provided with disulfiram and urged to take it at home, or to a contingent condition, in which they were required to ingest disulfiram each day at the clinic along with their methadone dose. The consequence of disulfiram refusal for this group was detoxification and termination of methadone treatment. The experimental condition was scheduled to remain in effect for 6 months, followed by transfer to the control condition. Subjects could remain in the control condition indefinitely if they were doing well, but evidence of heavy drinking resulted in transfer to the contingent condition. As shown in figure 4, patients randomly assigned to the contingent disulfiram condition did much better on measures of abstinence (percent of days drinking) and social functioning (data shown are for arrests per 100 patient days in treatment) than did patients assigned to the control condition. In fact, patients ended up spending more time in the contingent (3,497 days) than in the control (1,634 days) condition because of the provision that control subjects could switch conditions if they showed evidence of heavy drinking. This study demonstrated that contingent methadone treatment termination effectively promoted participation in supervised disulfiram therapy among alcoholic methadone maintenance patients. The generality of this finding to other drug use remains to be explored.

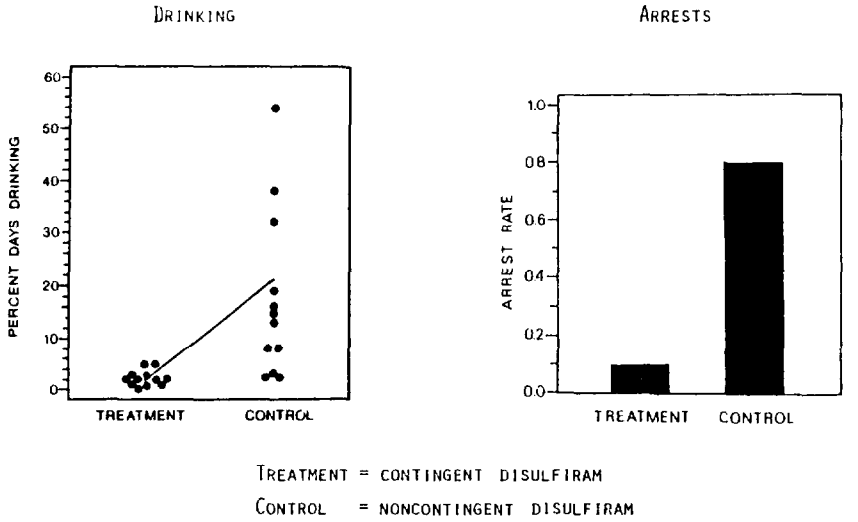

FIGURE 4. *Effects of contingent and noncontingent disulfiram ingestion on percent of days drinking and on number of arrests per 100 patient days. Drinking data are for 12 subjects who remained in treatment long enough to be assigned at least once to the treatment and control conditions; arrest data are for all (N=25) study participants. (Liebson et al. 1978.) Copyright 1978, Annals of Internal Medicine.*

Contingent methadone dose decreases. In this contingency management system, discrete dose decreases are arranged as a consequence of undesirable behavior, while the regular dose is restored upon evidence of appropriate behavior. In our research clinic, for example, this system has been used to promote regular payment of the required clinic service fee. As soon as a patient accumulates a specified amount of debt, a 21-day methadone dose reduction schedule is started, but the original dose can be reinstated as soon as the clinic debt is paid in full. Similarly, dose decreases could be arranged as a consequence of drug-positive urine samples; restoration of the original dose would depend upon provision of drug-free urines. This strategy has an advantage over contingent treatment termination in that it provides a discrete aversive event (dose reduction) that can be programmed to occur after each instance of undesirable behavior rather than a single catastrophic event (treatment termination) that occurs after many instances of undesirable behavior. It should be noted, however, that from a pharmacological viewpoint, contingent dose decreases may not offer the best approach since they reduce the efficacy of methadone as a treatment drug and decrease the likelihood of retaining the patient in treatment.

One study by Glosser (1983) attempted to evaluate the effects of a contingent *dose* delivery system on illicit drug use of methadone

maintenance patients. The program used was a token economy system in which points could be earned for attending the clinic on time each day, providing frequent urine samples, providing drug-free urine samples, attending a weekly counseling session, completing assessments, and fulfilling contracted activities. About one-third of the points depended on providing drug-free urine samples. Points were needed to purchase the full daily methadone dose, and any deficits in points resulted in a small (1 mg per deficit point) decrease in dose. However, the dose could be restored fairly rapidly if the patient earned a full complement of points on several consecutive days. Subjects exposed to the token economy system from the start of their treatment enrollment (N=86) showed less urinalysis evidence of illicit drug use than did a historical control group (N=20). For example, during their third treatment month, the control group submitted 35 percent drug-positive samples, while the experimental group submitted 14 percent positive samples. Because of the use of a historical control group rather than random assignment, differences in baseline levels of drug use or confounding by other concurrent environmental changes cannot be excluded as possible explanations for this group difference. The most convincing data presented were for 4 of 11 clients who changed during their enrollment from the traditional clinic rules to the token economy system. These patients showed a marked reduction in illicit drug use. Thus, the study suggests that a token economy system based on avoiding methadone dose reductions can have a beneficial impact on illicit drug use in at least a subgroup of maintenance patients.

Reinforcement

Reinforcement is a behavioral technique that is particularly useful for increasing the frequency of desirable behaviors. Since drug use is the primary focus of concern in drug abuse treatment, one behavior that can be reinforced is abstinence from drugs. An additional or concurrent approach would be to reinforce behaviors that compete with drug use or that lead toward improved social integration and functioning. This section will describe two ways in which methadone delivery can be used to reinforce behavior change--contingent dose increases and contingent take-home doses--and also will review studies that have evaluated the therapeutic utility of these interventions.

Contingent methadone dose increases. As previously mentioned, methadone maintenance patients may continue to supplement their regimen occasionally with illicit opiate drugs while in treatment. The typical clinic response to evidence of ongoing opiate supplementation is to raise the dose in order to increase the level of satiation and cross-tolerance achieved, although the efficacy of this procedure is at present uncertain (Gossop et al. 1982, Havassy and Tschann 1984). A preliminary study conducted at our research clinic suggests that efficacy may be enhanced by making discrete dose increases contingent upon opiate-free urine specimens. Three maintenance patients were selected because they

persistently submitted opiate-positive urine samples. Following a baseline evaluation period, these subjects were studied under both a contingent and a noncontingent dose increase procedure, with order of exposure to the two conditions counterbalanced across subjects. During the noncontingent procedure, subjects received a blind 25-mg increase in addition to their regular 50-mg/day methadone dose. The increase remained in effect for 6 weeks and then was gradually withdrawn. During the contingent procedure, these same subjects could request up to 25 mg of extra methadone daily providing that their most recent Monday, Wednesday, or Friday urine test result had been opiate-negative. As shown in figure 5, reduction in drug use was observed more consistently and more immediately under the contingent than under the noncontingent dose increase procedure. These preliminary data suggest that scheduling dose increases contingent on opiate-free urines may be a more effective way of suppressing supplemental opiate use than providing noncontingent dose increases. To the extent that a methadone dose increase functions as a reinforcer, this procedure may also be useful for promoting improvement in behaviors other than illicit opiate drug use.

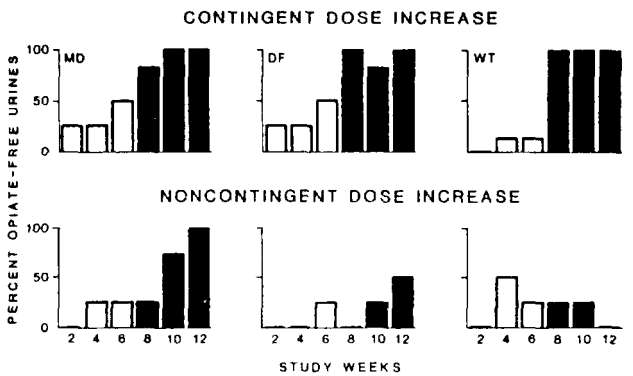

FIGURE 5. *Effects of contingent and noncontingent methadone dose increases on percent of opiate-positive urine samples in three individual subjects. Data are summarized for 2-week blocks prior to (open bars) and during (closed bars) the experimental interventions. During the noncontingent procedure, subjects received a blind 25-mg increase in their daily methadone dose; during the contingent procedure subjects could request daily 25-mg increases only if their most recent urine sample had been opiate free.*

Contingent methadone take-how doses. Methadone take-home doses allow patients to carry doses away from the clinic and thus

eliminate the necessity for daily clinic attendance. Several studies have demonstrated the potency of methadone take-homes as a reinforcer for methadone maintenance patients. One study by Stitzer et al. (1977) showed that counseling attendance improved among a group of chronic nonattenders when they could receive weekend take-home privileges each time they attended a counseling session of a specified duration during the week. A second recent study (Stitzer and Bigelow 1984) used contingent take-home methadone doses to promote regular payment of clinic fees. The take-home reinforcement procedure operated concurrently with the standard clinic policy dictating that subjects would begin detoxification if they failed to pay their fees for long periods of time. Subjects were selected for this study if they paid their fees sporadically during an 8-week baseline evaluation period. Following the baseline evaluation, subjects were exposed successively in counterbalanced order to a take-home and to a rebate intervention, each of which was in effect for 8 weeks. During the take-home program, subjects could earn a single take-home dose for use the following day whenever they paid their fee on Wednesday. During the rebate program, a $2 discount was offered if fees were paid on Wednesday. Figure 6 shows that the contingent take-home effectively increased Wednesday payments, while the rebate program was much less effective. This study demonstrated the potency of the take-home privilege as a reinforcer; in this case, the contingent take-home opportunity promoted a more desirable pattern of clinic fee payments.

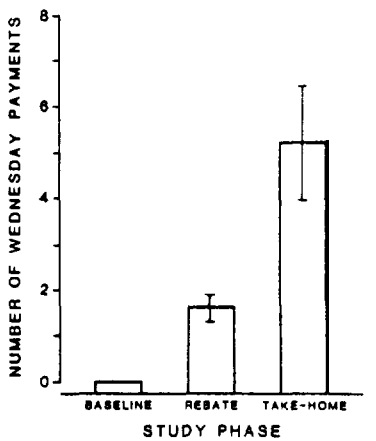

FIGURE 6. *Average number of clinic fee payments detivered on Wednesday is shown during three 8-week study phases: baseline evaluation, contingent rebate program, and contingent take-home program. Data are based on 5 subjects who participated in all three study phases. Error bars are ± 1 SEM. (Stitzer and Pigelow 1984) Copyright 1984 Elsevier Scientific Publishers. Ireland Ltd.*

Contingent take-home privileges have also been used effectively to reduce supplemental drug use in methadone maintenance patients. In one study (Stitzer et al. 1979), a portion of the benzodiazepine use of chronic benzodiazepine abusers was observed at the clinic by prescribing a 20-mg dose, which could be requested daily at the dispensary window. During baseline periods, virtually all the available drug was requested. However, when patients were offered the opportunity to receive a take-home methadone dose following benzodiazepine refusal, only 11 percent of available doses were requested. In a second study conducted with chronic benzodiazepine abusers (Stitzer et al. 1982), subjects were offered a choice of reinforcers twice weekly as a consequence of providing benzodiazepine-free urine samples. The choices included a take-home dose, a $15 payment, and a 20-mg single-day dose increase. Reduced benzodiazepine use was noted in 8 of 10 subjects during the contingent intervention, while half of the subjects remained benzodiazepine free throughout the 3-month intervention. Take-homes were chosen on about half the occasions that reinforcers were earned; money was selected on the remaining occasions.

Thus, several studies have shown that the methadone take-home privilege can be used in contingent arrangements to promote improvement in a single target behavior. It may also be possible to implement clinic-wide contingency management systems that promote simultaneous improvement in several target behaviors. Milby et al. (1978) evaluated one clinic-wide program in which methadone maintenance patients could earn take-home privileges by delivering drug-free urine samples for 7 consecutive weeks, maintaining a productive status (work or school), and being generally cooperative with clinic rules. Once take-home privileges had been gained, they could be lost again if the client changed his or her productive status or began delivering drug-positive urines. The effect of the take-home program was specifically related to the requirements of the contingency; a large number of consecutive clean urines was required and an increase in long strings of consecutive clean urines was observed. For example, twice as many patients showed seven or more consecutive clean urines in the 2 months after the contingency was put in effect than in the 2 months before. However, overall rates of positive urine samples were not altered by the program, suggesting that some patients might have increased their drug use above original levels following unsuccessful attempts at meeting the take-home eligibility criterion. An increase in productive activity was also reported following implementation of the take-home policy, although the methods used to verify the information supplied by patients are not clearly described. Although the program designed by Milby might not be optimal for engendering behavior change, this study generally supported the efficacy of contingent take-homes for promoting improvement in drug use and productive activity of at least some methadone maintenance patients.

RECOMMENDATIONS FOR CLINIC-HIDE APPLICATION OF CONTINGENT REINFORCEMENT SYSTEMS

Studies reviewed in previous sections have shown that methadone can be delivered or withheld in contingent arrangements to promote improved outcomes in drug abuse patients. The potency and specificity of these contingent reinforcement and punishment interventions has generally been impressive in the short-term studies conducted to date. Thus, these studies suggest that contingency management procedures involving methadone dose delivery may be a clinically useful adjunct in methadone treatment. The studies certainly suggest that additional research is warranted, including longer term clinical trials of these interventions. There are several issues that must be considered if contingency management programs are to be implemented on a clinic-wide basis and about which more information is needed before definitive recommendations can be made as to optimal implementation approaches. The most important issues concern 1) the choice of reinforcement versus punishment approaches, 2) the choice of target behaviors, and 3) the extent to which contingencies should be implemented uniformly for all clinic patients versus individually for different patients. Each of these issues will be considered in subsequent sections.

Choice of Reinforcement Versus Punishment

Four factors deserve consideration in making choices between positive reinforcement and aversive or punishment interventions. These factors are 1) efficacy of the intervention, 2) ease of implementation, 3) staff acceptance, and 4) patient acceptance. Among the reinforcers and punishers available at the methadone clinic, only the take-home privilege has received widespread evaluation for efficacy. Contingent take-homes have been effective in managing several problem behaviors encountered in drug abuse patients, including supplemental drug use. The efficacy of aversive techniques has received little systematic evaluation to date. More research is needed about the relative efficacy of reinforcement versus punishment techniques: these may be differentially effective in altering different target behaviors or differentially effective in patients with different characteristics. The efficacy of techniques that combine reinforcement and punishment also heeds to be explored.

None of the available contingency management techniques stands out as particularly easy or difficult to implement. Both methadone dose alteration and take-home interventions require some advance preparation and additional recordkeeping on the part of the nursing staff. In any contingency management system, it is important to develop cross-checks to ensure that reinforcers or punishers are delivered accurately according to the specifications of the system.

Acceptance on the part of both staff and patients wou'd probably be better for reinforcement than for punishment systems, although the attitude of the staff is likely to be influenced by existing treatment philosophies of the clinic. Acceptance can be measured directly with questionnaires, but it is also likely to be reflected in objective outcome measures. Treatment retention should in part reflect patient acceptance, while staff acceptance is likely to influence efficacy measures since the staff can sabotage systems they do not like. Future evaluation research should take these acceptance factors into account.

Choice of Target Behaviors

There is little doubt that ongoing drug use during treatment should be the first clinical concern and intervention priority in drug abuse treatment. Further, a contingency management approach may be particularly applicable in the case of supplemental drug use since it is questionable whether any new skills are required to give up drug use; rather, it may be that environmental reinforcement for doing so is lacking. The choice of additional therapeutic goals could depend on the level of patient functioning. For patients who are uncooperative and manipulative at the clinic, contingencies based on behavior at the clinic would be most appropriate, including attending on time, limiting time spent at the clinic, attending counseling, and paying required fees. For patients who are cooperative at the clinic, a focus on improved vocational status or interpersonal relations might be appropriate. Most clinics focus uniformly on employment as the most important secondary goal (after elimination of drug use) for their patients and routinely deliver take-home privileges to employed patients. However, employment status may not be the most appropriate target for delivery of contingent reinforcers if the intent is to improve the vocational status of clinic patients. Many patients may obtain or continue legitimate employment after enrolling in treatment irrespective of the availability of take-homes for employed patients, while chronically unemployed patients may lack the relevant skills and work history needed to obtain and keep a job. The vocational status of this unemployed group might best be influenced by providing reinforcement for participation in needed skills training programs outside the clinic rather than providing incentives for employment per se.

Another potentially important goal in rehabilitation of drug abuse patients is establishment of satisfying interpersonal relations that do not promote drug abuse. Some drug abusers may have marital and family problems that require interventions beyond the capabilities and skills of drug abuse counselors. Others may have psychiatric problems or social skills deficits that interfere with forming satisfying interpersonal relations. Since drug abuse treatment clinics cannot possibly provide the full spectrum of ancillary treatment services that might be useful for these patients, the best strategy for improving their interpersonal functioning may be to provide reinforcement for participation in

programs outside the clinic where needed skills and specialized therapies can be obtained. Patients who are functioning well interpersonally but are satisfied with family and friendship associations that promote and sustain their drug use, or who lack ready access to sources of friends who do not use drugs, can receive reinforcement for participation in community activities where they may meet new friends who are nonusers.

Uniform Versus Individualized Programs

The simplest way to implement a contingency management program would be to set up uniform contingencies for all clinic patients. For example, take-home privileges could be offered for providing drug-free urine samples and for exhibiting specific responsible behaviors at the clinic such as attending scheduled counseling sessions and paying the required fee. A system in which weekend take-home privileges were available to all patients for providing drug-free urine samples on Monday would have several advantages. First, it would provide a clinic-wide focus on the most pertinent treatment goal, elimination of illicit drug use. Secondly, although a drug-free sample delivered on Monday does not preclude the possibility that drug use occurred over the weekend, this system would tend to promote relatively circumspect and controlled amounts of use. Thirdly, with a Monday urine collection schedule, there would be a reasonable chance of receiving results from an outside testing laboratory in sufficient time to authorize take-home privileges for the following weekend. If an onsite urine testing system were available, additional urine samples could be collected and tested during the week in order to more fully monitor drug use, and the results of these tests could also be included in the contingent take-home plan. A contingency management system that specified uniform requirements for obtaining privileges and that was based on concrete behaviors observable at the clinic would help ensure smooth clinic operation and could be most easily implemented and evaluated.

In a somewhat more flexible contingency management system a specified number of take-homes might be available for dispensing by counseling staff depending on the therapeutic goals of individual patients. The specific requirements for earning take-homes would be chosen from a clearly defined list of alternatives, which might include drug-free urine, counseling attendance, cooperation with other clinic rules, or verified participation in ancillary treatment services or community activities designed to promote improvement in vocational or social adjustment.

Experience has shown, however, that individualized contingency management programs are difficult to design and implement for several reasons (Bigelow et al. 1980). First, it is difficult for a treatment staff untrained in behavior therapy techniques to specify concrete behavioral steps that are manageable for patients but that will effectively lead toward larger ultimate goals. Second, it is difficult for treatment staff to avoid being

diverted from ongoing treatment goals by crisis situations, which may arise frequently for patients with unstable lifestyles. Third, whenever reinforcers are offered for activities that occur outside the clinic, it is frequently difficult to verify that patients actually engaged in the specified activities. Finally, there are difficulties in ensuring that privileges are dispensed consistently and accurately according to the specifications of individualized contingency management contracts. In spite of these difficulties, it seems worthwhile to consider systems that allow for flexibility in dispensing at least some program privileges, since there are potential advantages to be gained from clarifying treatment priorities for individual patients, formulating concrete therapeutic goals, and breaking large goals down into manageable steps.

In summary, a contingency management system is recommended in which some privileges are uniformly available to all patients based upon abstinence from illicit drug use, since this is the primary concern of drug abuse treatment, while additional privileges are available for delivery on an individualized basis as a consequence of cooperation with clinic regulations or as a consequence of participation in needed skills training, psychotherapy programs, or community activities. At present, the use of positive reinforcement rather than punishment techniques is suggested since positive reinforcement may be associated with good therapeutic outcomes as well as more positive staff attitudes and better treatment retention.

SUMMARY

The goal of drug abuse treatment is to decrease the dominance of drug-related behaviors while enhancing the dominance of alternative socially acceptable behaviors. The behavioral techniques of extinction, satiation, and punishment can be used to suppress undesirable behaviors, and reinforcement can be used to enhance desirable behaviors. Methadone maintenance offers unique advantages for treatment of opiate abuse since methadone satiates the drug abuser, thereby reducing the reinforcing efficacy of illicit opiate drugs, while also serving as a reinforcer whose delivery in the treatment setting can be used in contingent arrangements. Short-term efficacy has been demonstrated in studies that used contingent treatment termination or contingent dose decreases as punishing events and contingent dose increases or contingent take-home privileges as reinforcing events to promote reductions in drug use and cooperation with clinic rules. Systematic use of dose adjustments and take-home privileges may be a useful adjunct to methadone maintenance treatment, having a positive impact both on client outcomes and clinic operation. Rehabilitation efforts might also benefit if delivery of reinforcers available at the clinic is contingent upon participation in skills training and therapy programs or community activities outside the drug abuse clinic.

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ONE-PERSON FAMILY THERAPY: A MODALITY OF BRIEF STRATEGIC FAMILY THERAPY

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INTRODUCTION

The literature substantiates the effectiveness of family therapy approaches with a number of presenting problems. In a major national survey of 2,012 agencies offering services to drug abusers, 93 percent of the respondents indicated family therapy as the treatment of choice with drug abusers (Coleman and Davis 1978). Despite this wide acceptance, considerable evidence suggests that inducing families of drug abusers to participate in extended treatment is extremely difficult. Coleman and Davis (1978), as well as other researchers (Stanton 1979, Stanton and Todd 1981), document the difficulty of engaging and retaining drug abusers' families in treatment.

The NIDA-sponsored Brief Strategic Family Therapy (BSFT) project developed and refined the BSFT conceptual model to address some of the difficulties encountered with family therapy. In doing so, this project developed a cost-effective and therapeutically effective approach to family therapy for use with drug-abusing adolescents. BSFT's therapeutic effectiveness is summarized in the Research Findings section of this paper. BSFT's cost-effectiveness results from its brevity (15 weekly sessions or fewer) and rate of retention. Thus BSFT capitalizes on the therapeutic effectiveness of family therapy while increasing its cost-effectiveness.

Two modalities were developed, applying the BSFT conceptual framework. The first application, Conjoint Family Therapy (CFT), is a refinement of previously existing structural systems family therapy (Minuchin 1974), with the entire family present for most therapy sessions. However, the therapy is conducted in a time-limited and strategic manner. Several publications describe CFT (Szapocznik et al. 1983a, 1983b) and its precursors (Frankel 1984, Haley 1976, Madannes 1981, Minuchin 1974, Minuchin and Fishman 1981). The second and more innovative modality, One-Person Family Therapy (OPFT), is emphasized here. Both modalities were

experimentally evaluated in a sample of Hispanic families with drug-abusing adolescents.

This paper provides an overview of the BSFT conceptual framework and an applied discussion of OPFT. The results of the experimental evaluation of the two therapy modalities are summarized and directions for future research are presented.

BASIC CONCEPTS

The BSFT conceptual framework makes two basic assumptions about the nature of families: the family and its members are a system, and family interactions occur in typical patterns called structures. In addition, BSFT uses two general guidelines to govern therapy: it should be strategic, that is, problem-focused and pragmatic, and it should be time-limited. Finally, BSFT follows three therapeutic strategies: the use of joining for entering the family system, experiential diagnosis to plan restructuring, and performance-based restructuring techniques. These seven elements define BSFT and are discussed below.

Assumptions About Families

The systems perspective in RSFT implies that individuals and individual behavior can be understood only in terms of their context--the system (e.g., the family, the community) and subsystems (e.g., the parental unit, the sibling unit) to which the individual belongs. Additionally, individual behavior is viewed as both interactive and interdependent. Thus, each family member's behavior is fundamentally different from what it would be if that individual could act in isolation.

Families in which adolescent drug abuse occurs tend to identify the adolescent as the sick patient. Within a family systems framework, this person is referred to as the family's Identified Patient (IP). At the time of presentation, the family's typical expectation of therapy is that the IP needs to be changed. The BSFT therapist, however, recognizes that, although one of the members manifests drug abuse symptoms, those symptoms are maintained because the entire family participates in maladaptive patterns of interaction. Treatment, therefore, targets the family as a whole.

Because of the systems assumption, BSFT examines interactions between people rather than individual behavior in isolation. Another basic assumption of BSFT is that a family tends to repeat these interactions, forming typical behavior patterns for conducting business among its members and within its environment. These typical or habitual patterns of interaction define a family's structural organization. Dysfunction results from the family system's attempts to resolve a problem by applying a maladaptive pattern of interaction. A problem arises and the family responds with a particular set of interactions, not because that response

is adaptive and will be effective in resolving the problem, but because that particular set of frequently repeated interactions has become habitual. Thus, the purpose of structural therapy is to facilitate the emergence of new patterns of interaction (i.e., family structures) that resolve problems effectively.

General Therapeutic Guidelines

In BSFT, therapy is strategically oriented. As part of this strategic orientation, therapy is problem-focused. The problem-focus requires that the family structures (patterns of interaction) targeted for change are those that directly affect the drug use or other symptomatic behavior. In addition, the presenting complaints such as drug abuse are used as the content through which the family is engaged in therapy. A strategic orientation also implies a high degree of pragmatism. Thus, BSFT modalities use whatever techniques lead to the most efficient, permanent, and adaptive structural change in the family system.

Another BSFT characteristic is that it is time-limited. Research and clinical evidence indicate that explicit temporal limitations that are strictly adhered to may facilitate and accelerate the therapeutic process (McGee and Williams 1971, Muench 1965). BSFT's preferred treatment length is 8 to 12 weekly therapy sessions, although a maximum of 15 sessions may be necessary.

Therapeutic Strategies

BSFT uses a joining strategy for entering the family system in a manner designed to avoid systemic resistance to change. The therapist joins by initially supporting the family and mimicking its style, affect, and activity. Once the therapist has found a way to fit into the family system and formed a positive relationship with each of its members, he/she quickly establishes a leadership position in the system. Thus, as a result of joining, a new system consisting of the family plus the therapist is formed.

Another element of BSFT is the strategy of developing an experiential diagnosis in order to plan how to restructure the family. The therapist diagnoses the family structure based on interactions occurring in the therapist's presence. In practice, the diagnosis occurs throughout the joining process. The diagnosis is experiential in two senses: not only is it based on behavioral interactions, but also it is through the joining process that the therapist is able to experience these interactions in the same way that family members experience them. After the family's structure is assessed, a series of interventions is strategically designed to restructure dysfunctional patterns of interaction. This planning focuses the therapeutic process, thereby shortening it.

Finally, the BSFT conceptual framework uses the strategy of performance-based restructuring. The BSFT therapist facilitates a

change in the family's organization so that the family members can achieve more adaptive patterns of family interaction. The therapist directs or manipulates improved ways of relating that must be performed by family members during therapy. Once more adaptive interaction patterns have been achieved within therapy sessions, the therapist assigns homework so these patterns can be successfully performed without the therapist's direct assistance.

Brief Strategic Family Therapy is present- and future-oriented. Its goal is not the exploration of the past, but rather the manipulation of the present (Minuchin 1974) as a tool for change. In order to work toward this goal, the therapist examines sets of interactions, diagnoses those that are pathological, and plans strategies to restructure these interaction patterns in order to implement change. BSFT's cost-effectiveness derives from its use of strategic interventions, explicit a priori time limitations, and the joining strategy, which gives the therapist access to the family and the ability to maneuver effectively.

ONE-PERSON FAMILY THERAPY

The purpose of One-Person Family Therapy (OPFT) is to accomplish BSFT's goals (i.e., reduction of drug abuse and improved functioning of the whole family) while working primarily with one person in therapy. By working with only one family member in most therapy sessions, OPFT enhances BSFT's strategic qualities. A corollary of the assumption that families are interactive systems that is critical to the development of OPFT is the Principle of Complementarity. It states that if a system is to maintain itself and its typical patterns of behavior, the behavior of each member must coordinate with, be maintained by, and be contingent upon the behavior of each and every one of the family members. Thus, if the behavior of one person in a family changes, then the other family members also have to change their behavior.

What follows is a brief discussion of the four major steps in OPFT: 1) the diagnostic interview, 2) choosing the IP, 3) joining, and 4) restructuring. These steps in OPFT will be explained by presenting the case of David S., a 16-year-old Hispanic who took methaqualone hydrochloride (Quaaludes) at least weekly and smoked marijuana daily. He had run away from home, and the Juvenile Court referred him for therapy. A fuller discussion of OPFT can be found in Szapocznik et al. (1984, in preparation-a).

Diagnostic Interview

In the case of David, the first step was an interview and diagnostic session with his entire family. Such an interview, although not absolutely essential, makes it easier to understand the family structure (patterns of interaction). The initial interview revealed that the family identified David as the principal repository of blame for the family's unhappiness, i.e., as the IP. The assessment of family interactions indicated that the mother

overprotected David. The father, on the other hand, labeled his son as hopeless, denigrating him for his failures. In our work with Hispanic adolescent drug abusers, this pattern of an overly protective mother and a punitive father is common. In addition, David's mother and father continually bickered throughout the assessment session, but consistently diffused the conflicts existing between them by focusing on David's "problems." Thus, several dysfunctional structures were revealed in this initial interview.

How to Choose the OP

The second step in the OPFT procedure is choosing the One Person (OP) for therapy. A number of factors should be considered, including: 1) rigidity of the IPhood (i.e., the degree to which all the family's problems are blamed only on the IP), 2) centrality in family interactions, 3) power in the family, and 4) availability in both a psychological and practical way.

In this case, the identified patient--David--was selected as the OP, for several reasons. The first was the rigidity of the IPhood. David's family was very unwilling to accept the possibility that anything could be wrong with the family other than David. A second reason for choosing David was his centrality. By virtue of his being the IP, most arguments within the family centered around him. Finally, David was eminently available because of a court mandate.

Joining

Establishing a therapeutic alliance. As already described, in BSFT the initial task of the therapist is to join the family system. In OPFT, because the entire family generally is not available during most therapy sessions, the therapist enters the family, as well as directs change, through the OP. To accomplish this, a strong therapeutic alliance is established with the OP. The OPFT therapist continues to track the family's characteristic patterns of interaction through the OP's perceptions.

For example, when David presented himself for the first session, he was dressed in a black jacket and gave the impression of a tough, "streetwise" adolescent who took pride in flaunting his drug experiences. Although initially cautious and cool, later he began to enthusiastically recount experiences he had when he ran away from home. This situation provided the opportunity for the therapist to begin the joining process. The therapist listened intently and allowed David to savor his bold adventure. David was allowed to experience the opposite of his initial self-blame and negativism about what he had done. By listening attentively, the therapist shared a critical experience with the patient and established a therapeutic alliance that provided a foundation on which to begin to assess the family structure.

Enactment analogue. In structural family therapy with the entire family present, a necessary component of joining is to encourage enactment of the typical family interaction patterns in the presence of the therapist. This aids in both entering the family system and making the experiential diagnosis. In OPFT, however, because just one person is present, only an enactment analogue is possible--a representation of the family's characteristic interactional patterns in lieu of direct observation.

In OPFT, when the OP is asked to represent her/his family, what the OP usually represents is the behavior of others rather than the self. The therapist assumes from the Principle of Complementarity that for the system to maintain itself, the OP must behave in a fashion that complements the reported behavior of others, i.e., the OP has introjected the kinds of behaviors that complement the behavior of others in the family. Because the OP tends to perceive the other family members' behaviors but not her/his own, in the enactment analogue the OP is requested to represent the other family members' behaviors. A full picture of the family's structure (patterns of interaction) emerges when the family's behaviors as represented by the OP and the behaviors the therapist has assumed the OP has introjected are brought together.

When the therapist inquired about David's perception of the problem in the family, David responded by complaining that he felt humiliated by his family. His relationship with an older girlfriend provided the therapist with some content to use in further assessing the family interactional patterns, revealing that David's place in the family structure had him in two conflicting roles: his mother's innocent baby ("My poor little one, that terrible woman is misleading you") and his father's no-good bum ("You are no son of mine to go with a woman like that!"). The enactment analogue, then, provided the therapist with an experiential diagnosis used to plan the restructuring described below.

Restructuring

Restructuring refers to the actual interventions that are designed to change family interaction patterns. In OPFT, the therapist directs changes in dysfunctional interaction patterns by bringing about changes in the OP's behaviors that have complemented and, therefore, maintained the dysfunctional interactions.

OPFT explicitly creates change at both the intrapersonal (affective and cognitive) and interpersonal levels. In OPFT, the therapist facilitates intraoersonal changes in the OP that can effect changes in those OP behaviors that maintain dysfunctional family interactions. (Because of the strategic orientation of HSFT, no other intrapersonal changes are sought by the OPFT therapist.) The therapist then facilitates or directs the OP to change these behaviors. When the OP complies, the interaction patterns are eventually forced to change as one "cog in the systemic wheel" behaves differently, as the Principle of Complementarity states.

Intrapersonal restructuring. In David's case, the therapist began to restructure David's introjection of the family's interaction patterns by tracking (i.e., following and making use of) David's reports of his parents' behavior toward him, that of alternately babying and denigrating him. The therapist moved from the reported interaction pattern to David's internalized complementary behavior.

David's habitual response to his parents was to allow himself to be dragged to the behavioral extremes that his parents expected of him in his role of IP. During intrapersonal restructuring, David achieved an understanding of his conflicting role behavior and desired to reach a middle ground more suitable to his stage in life, i.e., neither child nor adult, but adolescent. He desired to feel and behave, as well as to be treated, according to his age. Thus, the only intrapersonal changes sought were those required to restructure the corresponding interpersonal interactions.

Interfacing intrapersonal and interpersonal restructuring. Before beginning interpersonal restructuring, the OP must understand how she/he contributes to the family's interactional patterns. In David's case, the therapist asked David to imagine himself in the family context while the interaction is going on. Thus, David was asked to observe, along with the therapist, an imagined family interaction. As David observed the imagined family interaction, he was taught by the therapist how he contributed to the interaction and how his being labeled an IP was the result of quietly and passively accepting that role and label.

Interpersonal restructuring. Once the OP clearly understands the complementary roles in the family, and has given up her/his desire to play these roles, the OP has an investment in changing the family's dysfunctional patterns; thus, the OP and the therapist now have common goals, and they become therapeutic allies facing the remainder of the family. The final step in the therapy is to carry out the actual interpersonal restructuring with the aid of the OP, and frequently through the OP.

The therapist, for example, might coach David to stand up to his father when his father begins to denigrate him. The way in which system change takes place is that when David changes his behavior, in effect, he has interrupted the sequential flow of family interactions that cast him into the IP role. This is a clear example of how OPFT differs from many other psychotherapies. It does not stop at creating awareness. Instead it uses awareness as a tool for redirecting the interpersonal behavior of the OP and thereby bringing about system change.

The therapist must take care that the manner in which a son is taught to stand up to his father tracks (follows and makes use of) the family's structure as much as possible in order to minimize the direct challenge to his father. In addition, in OPFT, the therapist must rely heavily on the OP's ability to change her/his

own behavior and to maintain the change in the face of strong family pressure. Hence, the OPFT therapist must carefully plan and rehearse the OP's new behavior. It is particularly important to role-play various outcomes that could ensue from the OP's change. Once the new role is mastered in therapy, following the performance-based strategy described above, homework based on the new role can be assigned. The tasks involve the OP's changing her/his complementary role behavior in the family.

Ideally, when the OP changes, the family accommodates itself to the change, thereby supporting the new behavior. Generally, however, the first response to the OP's changed behavior is more likely to be family pressure to return to its habitual interaction patterns. The resulting confrontation will generally produce a family crisis. This point is an ideal moment for the therapist to request and obtain a conjoint family therapy session. During these conjoint sessions, the therapist can verify the enactment analogue and support the changes the OP is instigating.

In addition, a conjoint session or two provides an opportunity--albeit a limited one--for the therapist to intervene directly in family interaction patterns in which the OP is not complementary (e.g., in the case of David, the therapist could intervene in the marital relationship directly during a conjoint session). However, in one or two family sessions, it is not likely that major structural changes in these other family dysfunctional patterns can be achieved. Therefore, only those aspects of these "other" dysfunctional interactions that affect the OP are strategically targeted for change.

RESEARCH ON OPFT

The therapeutic techniques discussed above were developed as part of a research program with adolescent drug abusers. This section will briefly discuss some of this research. More detailed results can be found in Szapocznik et al. (1983a, 1983b, and in preparation-b).

Research Design

When the families presented themselves for treatment, they were randomly assigned to either OPFT or to conjoint family therapy (CFT), in which the entire family was seen by the therapist. In OPFT, therapists were limited to a maximum of two conjoint family therapy sessions and in CFT to a maximum of two one-person therapy sessions. Both therapy modalities aimed to have a maximum of 12 therapy sessions, with 15 sessions the absolute maximum and 4 the absolute minimum. Of the 72 Hispanic families included in the study, 35 received OPFT and 37 received CFT. The subject families were given a battery of instruments that examined functioning from several perspectives. The instruments included measures of family structure (Structural Family System Ratings) and climate (Family Environment Scale), IP psychiatric functioning (Psychiatric Status

Schedule), parental reports of IP behavioral problems (Behavior Problem Checklist), and IP drug abuse (Psychiatric Status Schedule and Client-Oriented Data Acquisition Process). These instruments were administered at intake, at therapy termination, and at a followup administered between 6 and 12 months after therapy termination (N=52 at followup). Data were analyzed using repeated measures, Analysis of Variance (ANOVA) primarily.

Study Population

All the families who participated in this study were Hispanic; 82 percent were Cuban-American. They were typically middle- to lower-class, as assessed by Hollinshead's Index of Social Position (8 percent Class I and II combined, 30 percent Class III, 34 percent Class IV, 28 percent Class V). The mean family size was 4.6, and in almost 70 percent both parents lived at home. They averaged 15 years in the United States.

Most of the drug-abusing adolescents were male (73.6 percent male, 25.4 female), and they averaged 17 years of age. Half of the IPs were still in school. Thirty-two percent of the IPs had been arrested at least once; two IPs (3 percent) had been arrested three or more times.

Most of the adolescents in this project abused multiple substances. Marijuana, however, was clearly the most pervasive substance they used, with 95.8 percent indicating at least some marijuana use. Moreover, half (50.0 percent) of the adolescents used it at least daily. The next most often used drugs in this sample were barbiturates and other sedatives, and cocaine. The proportion of adolescents who abused alcohol (6.9 percent) and amphetamines (1.4 percent) was surprisingly low. The average length of drug use in this sample was 2.7 years.

The number of daily marijuana users makes this sample unusual. Since basic knowledge of such users is relatively scarce, comparisons were made between those who were daily marijuana users and other drug users in the sample. Beyond behavioral variables directly related to their heavy marijuana use, such as amount of drug use and socialized delinquent behavior, however, the daily marijuana users had surprisingly few differences from the other drug users in our sample.

Research Findings

While space does not permit a full exposition of all findings, table 1 details some of the results typical of this study. As indicated by the F-ratios in the column labeled "Time," there was significant improvement on almost all the clinical measures, and this improvement was maintained at the 6- to 12-month followup.

TABLE 1. *Means, standard deviations, and F-ratios for Phase I and II: pre-, post-, and followup scores on Behavioral Problems Checklist (BPC), Psychiatric Status Schedule (PSS), and Structural Family Systems Rating (SFSR)*

	Mean (Standard Deviation)						F-Ratio		
	CFT			OPFT					
Variable	Pre	Post	Followup	Pre	Post	Followup	Treat.	Time	Treat. x Time
BPC									
Conduct problems	9.5 (3.90)	7.1 (4.51)	6.6 (4.12)	8.9 (3.98)	5.5 (4.14)	4.8 (4.22)	1.92	14.57[c]	.44
Personality	6.8 (3.12)	(3.35)	4.3 (2.95)	6.0 (3.26)	3.8 (3.68)	3.0 (3.61)	.67	20.44[c]	.85
Inadequate development	3.9 (1.88)	1.8 (1.64)	2.4 (2.151	4.2 (1.83)	2.5 (2.08)	2.1 (1.69)	.25	23.35[c]	1.42
Socialized delinquency	1.9 (1.49)	.9 (0.74)	.9 (1.11)	2.7 (1.51)	1.5 (1.42)	1.1 (1.60)	2.58	17.20[c]	.67
PSS									
Total	43.8 (9.27)	36.9 (6.02)	42.2 (8.80)	44.4 (9.81)	35.0 (5.36)	35.3 (5.36)	3.60	14.35[c]	3.09[a]
Subject distress	39.9 (12.94)	36.2 (5.79)	36.9 (6.82)	40.0 (9.84)	34.1 (3.96)	33.9 (3.97)	1.20	6.79[b]	.57
Behavioral disturbance	43.3 (6.16)	43.4 (4.47)	50.9 (12.72)	44.4 (6.36)	42.4 (3.43)	43.5 (4.16)	3.64	6.09[b]	5.82[b]
Impulse control	64.8 (10.15)	53.1 (9.05)	56.2 (12.99)	65.6 (10.90)	52.1 (9.23)	51.2 (8.26)	.63	28.86[d]	1.29
Reality testing	45.9 (3.66)	45.3 (3.06)	47.6 (4.59)	46.6 (5.41)	45.2 (2.45)	46.3 (4.47)	.07	2.22	.88
Drug abuse	68.2 (10.55)	55.1 (11.25)	57.1 (12.00)	70.1 (12.13)	54.0 (8.69)	53.6 (10.59)	.12	45.01[c]	1.23

TABLE 1 (Continued)

Variable	Mean (Standard Deviation)						F-Ratio		
	CFT			OPFT					
	Pre	Post	Followup	Pre	Post	Followup	Treat.	Time	Treat. x Time
SFSR structure	1.5 (0.71)	2.3 (1.10)	2.9 (0.82)	1.4 (0.72)	2.8 (1.27)	3.4 (1.12)	2.15	36.64[c]	1.10
Flexibility	1.5 (0.51)	1.9 (0.92)	2.7 (0.98)	1.7 (0.57)	2.1 (1.08)	3.2 0.98	2.21	31.56[c]	.40
Resonance	1.6 (0.78)	2.4 (0.50)	2.9 (0.78)	1.7 (0.87)	2.7 (1.15)	3.3 (0.93)	1.49	37.50[c]	.77
Developmental stage	2.1 (0.96)	2.7 (1.04)	3.3 (1.10)	1.7 (0.81)	3.1 (1.08)	3.6 (0.94)	.30	34.35[c]	2.08
Iphood	2.1 (1.19)	2.7 (1.31)	(3.0) (1.06)	1.8 (0.85)	2.8 (1.16)	3.0 (0.90)	.11	10.82[c]	.29
Conflict resolution	2.4 (0.70)	2.6 (1.16)	2.9 (1.21)	2.4 (1.99)	3.1 (1.29)	3.4 (1.27)	2.17	5.87[b]	.63
Total	11.1 (2.96)	14.6 (3.98)	17.7 (4.63)	10.7 (2.73)	16.5 (5.51)	20.0 (4.92)	1.61	49.25[c]	1.52

[a] $p \leq .05$
[b] $p \leq .01$
[c] $p \leq .001$

In particular, as shown in the row labeled "Drug Abuse," there was important reduction in overall drug use ($p < .001$). As a more specific example, 50 percent of the sample used marijuana at least once a day at intake, but only 5.6 percent used it that often at termination and at followup (sign test $Z=5.32$, $p < .001$ for each). Thus, both BSFT modalities effectively created positive changes in both individual and family functioning.

Comparison of OPFT with CFT in table 1 indicates that both treatments generally were equally effective in reducing overall psychopathology and substance abuse in particular. For example, in CFT 80.0 percent showed reduced marijuana use, 17.5 percent stayed the same, and 2.5 percent got worse. In OPFT, on the other hand, 87.8 percent showed reduced marijuana use, 9.8 percent stayed the same, and 2.4 percent got worse [$X^2(2)=0.64$, $p=.42$, for the comparison intake to termination change between CFT and OPFT, and $X^2(2)=0.17$, $p=.68$ for the termination-to-followup change]. Therefore, OPFT is at least as effective as CFT in reducing drug abuse among Hispanic adolescents.

That OPFT was as effective as CFT in improving family structure should be mentioned. Examination of the six scales and total score of the Structural Family Systems Rating (the measures of healthy family structure) in table 1 shows that there were no differences between conditions that approached significance [for examole. as shown in table 1 for the total score $F(2.78)=1.52$. $p=.23$]. In the past, structural family therapists have operated under the assumption that the entire family must be present during therapy for changes in the family structure to occur. OPFT's success indicates that this assumption is incorrect. Thus, while we believe that changes in family structure are necessary in order to efficiently and permanently correct IP drug abuse, these results affirm our belief that therapists can strategically work with only one family member to achieve structural changes in the family system.

While CFT and OPFT tended to be equally effective therapeutically, they tended to have slightly different numbers of therapy sessions. OPFT clients averaged more therapy sessions [11 for OPFT, 9 for CFT, $F(1,64)=3.7$, $p=.059$]. A significant chi-square [$X^2(2)=9.1$, $p < .01$] reveals that this resulted from the tendency for OPFT cases to complete treatment within the preferred 8- to 12-session range, rather than requiring extra therapy. In fact, fewer OPFT clients required more than 12 sessions of therapy (8 percent had 13 or more sessions in OPFT vs. 23 percent in CFT). Thus, there was a significant tendency for CFT to have greater variability in the number of therapy sessions.

A major problem in treating drug abuse is that of initially engaging clients for treatment. This problem became very evident to us during the BSFT project. Of more than 650 callers who passed our initial telephone screening, only about 15 percent entered therapy. On the other hand, it should be noted that 60

percent of those who began intake completed therapy, and 72 percent of those completing therapy were available for followup. Thus, although we experienced difficulty in engaging families who called and appeared to be appropriate for the study, those who were engaged had a good rate of retention in both BSFT modalities.

FUTURE RESEARCH

About 85 percent of the adolescent drug-abusing population who contacted our center could not be helped because they never entered therapy. Typically, one concerned family member would contact the center but would be unable to convince the rest of the family to enter therapy. We believe that the BSFT framework and OPFT technology developed by this project as tools for therapy could also be used in the engagement process. In this case the goal would not be amelioration of drug abuse; it would be to effectively aid the concerned family member in getting the entire family to enter the therapy process. Work has already begun on a study examining this possibility (Brief Strategic Family Therapy: A Structural Systems Approach to Engagement, NIDA Grant No. DA 03224-05; 1983 to 1985).

In the research study reported here, therapists were generally required to use the identified patient as the OP. Even in those cases in which a choice was allowed, the identified patient was generally chosen as the OP. Thus, very little is known about working with an OP who is not also the identified patient.

Another research possibility concerns the need to maintain allegiance solely with the OP in OPFT. Although we have no data on this point, it is now our belief that maintaining alliances with only one OP throughout OPFT may not be as critical as was first thought. If switching alliances is permitted in OPFT, then the therapist would be able to successfully deal with more issues during sessions with the whole family (e.g., issues not involving the IP), and the therapist would be able to switch from one' OP to another at strategic times during the course of therapy. These ideas are speculative but warrant further investigation.

Another question that remains for future research is the degree to which the findings reported here can be generalized to other cultural populations, age ranges, and types of drug abuse (e.g., opiate addicts were excluded from this sample). An additional question of generalizability comes from the research requirement that all families, regardless of which condition they were assigned to, had to agree to be available for conjoint family therapy. This requirement was necessary to permit random assignment to condition. Nevertheless, whether or not this requirement influenced the efficacy of OPFT in either direction has yet to be established.

Another matter for future research concerns those clients who had a relapse between termination and followup. It is possible that a

very few, spaced followup therapy sessions after regular therapy termination would prevent such relapses. However, the exact nature and timing of these followup therapy sessions, as well as their efficacy and the identification of clients needing them, remain to he determined.

Finally, the use of CFT and OPFT in clinical practice should be mentioned. From the data and experience of this study, OPFT would be preferred over CFT if there is particular difficulty in scheduling the entire family for therapy, if one family member requires a great deal of strengthening, or if the family is highly disengaged. Our strongest suggestion, however, is to combine both modalities. In this research study, strict controls were followed to keep the two modalities as pure and separate as possible in order to discover their differences and respective strengths. Nevertheless, in a more typical clinical situation, combining the two modalities would be the most powerful treatment strategy. Thus, in most situations, a combination of OPFT and CFT modalities is suggested as the treatment of choice.

SUMMARY AND CONCLUSION

The One-Person Family Therapy approach to the treatment of drug abuse described here is based on the Brief Strategic Family Therapy conceptual framework. It represents an innovative integration of family therapy techniques that have proven effective in working with entire families and techniques specifically designed for use with one family member. OPFT appears to be as effective as conjoint family therapy with adolescent drug abusers and their families. It thus provides skilled family therapists (generally master's-level social workers and psychologists with training and experience in structural family therapy) with a novel and useful tool for carrying out family therapy, while minimizing the problem of retaining entire families in therapy. Further work should concentrate on improving our ability to engage families of drug-abusing adolescents in the therapy process, generalizing results to other types of samples, learning more about using an OP who is not also the identified patient, exploring the possibility of switching OPs, exploring the use of spaced followup therapy, and integrating OPFT and CFT sessions more fully. However, it is clear that OPFT is a practical, cost-effective, field-oriented intervention for use with drug-abusing adolescents.

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PERSONALIZED NURSING: AN EFFECTIVE INTERVENTION MODEL FOR USE WITH DRUG-DEPENDENT WOMEN IN AN EMERGENCY ROOM

Marcia D. Andersen

INTRODUCTION

This paper will describe a study evaluating a nursing intervention model known as Personalized Nursing with a group of treatment-resistant drug-dependent women. Subjects were drug-abusing women who entered the emergency room (ER) in Detroit, Michigan, with health problems; some of these were related to their drug abuse and some were not. Women who refused referral to traditional drug treatment programs available in the community were asked to participate in the study. Women participating in the study were randomly assigned to Personalized Nursing intervention or to no treatment. The Personalized Nursing intervention consisted of home visits to these women by project nurses. The focus of these visits was on developing a sense of well-being and life control. Well-being was defined as a person's sense of contentment, health, happiness, and satisfaction with current life. Life control existed when a patient identified the problems she wanted to work on and perceived herself as involved in directing changes in her life. The program was limited to 8 weeks.

It was hypothesized that daily drug use would decrease as the sense of well-being increased for women in the experimental group. Further, it was expected that the women's perceived stress would also decrease.

One hundred fifty-five women were interviewed in the hospital emergency room over a 2-year period by project nurses. Approximately half of the women (72) were randomly assigned to the Personalized Nursing intervention (the experimental treatment). The experimental group received home visits by project nurses once a week for a maximum of 8 weeks. For ethical and practical reasons, the 83 subjects in the comparison group were given Personalized Nursing intervention only in the ER. They did not have home visits by project nurses. During the pilot study, it became evident that a subset of the experimental treatment group wanted to have members of their social network treated also.

Because the specific focus of this study was to examine needs of drug-dependent women, male social network members were not included. However, female social network members were treated by the project nurses in conjunction with that subset of experimental women who voluntarily requested that their friends be offered treatment. Fifty-four women who were friends or relatives of women in the experimental group were also treated as part of this study.

This paper describes the background for the study, the theoretical framework of the intervention model, the research methods used, and the results. Suggestions for further research based on the results of this study are then presented.

BACKGROUND

Women's Treatment Needs

As research substantiates early anecdotal reports, it has become clear that drug-dependent women's treatment needs differ from those of drug-dependent men (Andersen 1980a, Beschner et al. 1978, Burt et al. 1979. Tucker 1981. Colten 1981. Reed and Moise 1979. Ryan 1981, Schultz 1975). It is well documented that drug-addicted women have many serious medical problems, and they are more likely than men to cite physical problems as the reason for entering treatment (Andersen 1980a, 1980b, 1980c, 1982; Beschner and Thompson 1981, Cuskey 1982). Hall et al. (1981) and Dammann and Ousley (1978) report that drug-dependent women have lower self-esteem and fewer social supports, and are more likely to be responsible for the care of dependent children than men. They also found, as did Moise et al. (1982), that women were less likely than men to be employed, more likely to be receiving welfare, and more dependent on others.

Use of Emergency Rooms

The use of hospital emergency rooms by drug-dependent women continues to be an issue of considerable social, medical, and economic concern (Shrader et al. 1982). Data from both the Drug Abuse Warning Network (DAWN 1975 and 1976, 1982) and the Client Oriented Data Acquisition Process (CODAP) suggest that drug-dependent women are more likely to require hospital emergency room treatment than drug-dependent men are (Burt et al. 1979).

Women who come to emergency rooms are less likely than men to want or accept a referral to a traditional drug treatment program for help with their substance abuse problem (Andersen 1980a, 1982; Reed et al. 1981). Drug-dependent women are likely to have dependent children at home and thus are less able to take advantage of traditional treatment programs if child care is not provided. Boyd and Mast (1983) also suggest that the drug use of many women is related to the drug use of the men in their lives.

These women may feel unable to change their lifestyle because the men in their lives are using or trafficking in drugs.

The ER visit for a drug or drug-related problem generally indicates serious problems in a woman's life, in addition to the immediate health problem for which she has requested help from the ER staff. However, hospital emergency rooms are not designed to provide ongoing treatment or continuity of care for chronic health problems. The heavy client flow in most emergency rooms makes it impossible for the staff to provide comprehensive health care for the drug-dependent woman or for them to follow up to make sure that she gets the services needed. When drug abuse is diagnosed, some attempt is usually made to refer the woman to a drug treatment program outside the hospital. Unfortunately, there is rarely any attempt to follow up, and most addicted women do not enter a formal treatment program after being treated for a crisis in an emergency room.

In spite of the documented need for treatment services oriented to these women, few programs have been established (Beschner and Thompson 1981, Andersen 1980a, Cuskey 1982, Reed et al. 1981). Multiple factors contribute to problems in women's health care and problems related to substance abuse, and a more flexible mode of intervention is needed than what is currently available. There is evidence that thousands of drug-dependent women are treated in a hospital emergency room each year. Yet there is little evidence that their needs are being met within the traditional health care system.

Nurses are a potential resource of health care personnel for such an intervention. Nursing is concerned with the total health needs of individuals and has long recognized the interaction between the person and the environment. Nursing has a history of providing health care in homes and a variety of settings.

Theoretical Foundation of the Personalized Nursing Intervention Model

Personalized Nursing is an intervention model theoretically based on the concept of well-being and the capacity to direct one's own life; it uses the traditional nursing process in a unique fashion in order to assist people to get the help they need and increase their sense of well-being. Nurses develop an understanding of the client's point of view with respect to each step in the nursing process (i.e., assessment, development of a list of focal concerns, goal development, intervention, and evaluation). Nurses assist clients to identify areas of stress related to health, drug use, and other spheres of life. The nurses focus on helping clients identify the different options for addressing concerns directly. Nurses encourage clients to plan for both anticipated and unanticipated changes rather than just reacting when changes occur. As health care providers, nurses are in a unique position because, unlike social workers, psychologists, or drug counselors,

they can assist drug-dependent individuals to resolve both health and social problems.

Sample Selection

The 155 subjects in this study were drug-dependent women who presented for health care at a large urban hospital emergency room (Detroit Receiving Hospital, Detroit, Michigan). These women were 18 years or older and were admitted to the emergency room with physical or emotional complaints or both. ER staff members referred women to project nurses present in the ER. Their presenting health care problems were sometimes related to their drug dependence and sometimes not. Women referred to this study were drug-dependent and had refused referral to traditional treatment programs; in this sense they represented a reluctant treatment group. During the study it became evident that most of these women had had other drug treatment experiences and chose not to repeat those experiences.

Design

The study was experimental in nature, with a pretest-posttest control group design (Campbell and Stanley 1963). The variables examined in the study were daily drug cost and perceived stress. Consent was obtained for study participation, and clients were randomly assigned to the control or experimental group. Both groups were interviewed three times: at a pretest session, at an 8-week posttest session, and at a 6-month followup session. The Personalized Nursing Interaction Model was used with the experimental group for a maximum of 8 weekly 1-hour sessions, usually conducted in the client's home. The control group had no weekly sessions with the nurse. However, for ethical reasons, the control group did receive personalized nursing counseling by project nurses when they were in the ER and referral to community agencies for identified concerns.

Fifty-four female drug-using friends and relatives of a subset (N=12) of experimental clients were also treated; they were called social network clients. Since subjects often used drugs in groups, clients expressed a desire to have these "network" friends or relatives included during the nurse's visit. Network members were not study subjects per se. In the study results, experimental clients who voluntarily referred networks were analyzed both separately and together with other clients in the experimental group who had not voluntarily referred network members. Results will be reported separately when appropriate. There were no pretest differences between network and nonnetwork groups.

MEASUREMENT OF STUDY VARIABLES

Daily drug cost and perceived stress were the two dependent variables in this study. Drug use was measured by calculating the sum of the street cost or usual cost of each reported substance. If

the client received drugs free, the expected cost was calculated. Stress, defined as people's sense of upset with any or all spheres of their lives, was conceptualized from the client's perspective. The specific measures used to measure stress are discussed in detail in a later section of this paper,

Several methods of assessing the client's concerns and perceived stress were used, including the Ireton Personal Inventory and a well-being journal. The Inventory (Ireton 1979, 1980). developed as an assessment tool for use in a family practice setting, assesses an individual's perceptions of concerns in a variety of life spheres (i.e., work, marriage, school, health, sexuality, general stress, ability to cope, emotional support, and so forth). On a Likert-type scale from 1-9, subjects indicate their concern or worry in each sphere of life. The Inventory is divided into three parts: 1) concerns about stress and mood in general and specific work/family concerns, 2) self-perceptions of one's personality, i.e., self-confidence, and 3) open-ended questions to identify specific concerns and worries.

In this study, the items within the emotional distress factor were used to measure stress, including feeling irritated or angry, confused or overwhelmed, unhappy or depressed, pressured or stressed, and worried or anxious. The items were examined separately and the scores summed to create a factor score for emotional distress.

Validity analysis was also done as part of this study. Several tests of concurrent validity of the scale were conducted. Scores on the Ireton Personal Inventory were compared with scores on the Heimler Scale of Social Functioning (Heimler 1967, 1975) and the Social Readjustment Rating Scale (SRRS) (Holmes and Rahe 1967). A significant correlation of 0.53 (P=.0001) was found between the negative mean on the Heimler Scale of Social Functioning and the Ireton emotional distress factor score, and a significant correlation of 0.27 (p=.0001) was found between the number of life changes as measured on the SRRS and the Ireton Personal Inventory.

Drug Use Measures

Drug cost was used as a measure of drug use in an attempt to account for the wide variety of drugs used by subjects. Polydrug abuse was the norm in the Detroit study subjects. It would have been difficult to measure change if only drug use were measured because 1) qualitative urine screens (i.e., urine tests measuring the amount of each drug taken in addition to naming the drugs in the urine) were prohibitively costly, and 2) if one drug decreased, another similar drug might increase. Drug cost was thought to be a measure of severity of drug use in general because heroin, pentazocine (Talwin) and pyrabenzamine (Ts and Blues), cocaine, and hydromorphone hydrochloride (Dilaudid) cost more than codeine, acetaminophen (Tylenol), and diazepam (Valium). While all drug use is of concern, a decrease in overall use was the goal of this study.

Drug cost was measured by summing all the reported costs for drugs and alcohol in the week before the interview and dividing the total weekly cost by seven to obtain a daily drug cost. The validity of the subject's report of daily drug cost was spot-checked by comparing it with the amount of drugs shown on urinalysis. The correlation between the client's report and the number of drugs found in her urine was very strong ($r=.93$; $p=.0001$). The reported drug cost was checked with a street drug price list developed by project staff from interviews with clients and clients' family members. The list was regularly updated by all project nurses as new information became available. Since clients were accurately reporting the number of drugs, and the costs they reported were verified with street drug prices, the daily cost figure is assumed to be valid.

Number of days clean (free) of any drug use was also assessed. Subjects were asked to estimate the number of drug- and alcohol-free days in the 8 weeks before the posttest interview session and in the 6 months prior to the followup interview session. Nurses' observations were consistent with the subjects' self-reports--as the number of reported drug-free days increased, the household environment appeared improved to the nurse at the time of the weekly home visits (the house was generally cleaner, the children were dressed and in school, and so forth).

Identification of focal concerns. After the assessment process, the client and the nurse identified the focal concerns for which the client desired the nurse's assistance, and a list of these was developed. The focal concerns included 1) the items the client listed as things she was worried about and wanted to change on the Ireton scale, and 2) activities or situations noted in a "well-being journal" in which the client desired assistance to effect change. For the latter, clients were given a notebook and a pen and asked to maintain a three-column journal related to their activities and how they felt. In the first column they recorded the date and time of the journal entry. In the middle and widest column on the page, they recorded their activities, moods, medications interactions with others, food, and whatever else they were experiencing and wanted to note. In the final column, they recorded a number based on their sense of well-being on a scale from 1 to 10, where 1 was very poor and 10 was the maximum possible perceived well-being. The journals began to show the nurses and the clients how factors in their internal or external environment were related to their sense of well-being. Even clients whom one might not have expected to keep a diary generally would record at least 1 or 2 days of activities and associated well-being scores if they were given a notebook and a pen.

Goal development. Long- and short-term goals related to each concern were established by the client and the nurse. Goals were considered to be short term if they could be expected to be accomplished in the next week and long term if they could be expected to be attained by the end of 8 weeks. This period was chosen

because it seemed to allow resolution of some of the immediate crises that women reported during ER visits.

Interventions. After the development of a list of focal concerns and goals related to each issue on the list, the client and the nurse met weekly in the client's home. Reassessment, replanning, and intervention phases continued until the client perceived that an acceptable state of well-being had been achieved. The interventions were specific and personalized in order to ensure that the goals are obtained. The nurse and client had to be creative in developing intervention strategies and in personalizing them according to the client's life situation.

Examples of interventions included:

1) home nursing care, such as soaking and dressing of skin abscesses

2) family communication counseling

3) providing appropriate reading material to the client to facilitate goal attainment, for use between visits with the nurse

4) referral to high school completion courses

5) referral to Health Department for birth certificate to facilitate getting identification needed for application for General Assistance

Evaluation. At the end of 8 weeks, the nurse and client evaluated their progress and the Ireton Personal Inventory was retaken. Progress toward decreasing concern about the initial issues was then measured. The client could then be guided into a self-help group or an aftercare group that met on a less frequent basis, which would continue to support the woman's efforts at restructuring her life and maintaining or increasing perceived well-being.

Analysis Methods

Initial differences between the control and experimental groups were examined using Chi-square for categorical variables (i.e., race) and Student's t-test for interval variables (i.e., age). In the cases where the T-test assumption of homogeneity of variance was violated, a Mann-Whitney U test was performed because it does not assume homogeneity of variance.

Analysis of covariance (ANCOVA) was computed for all posttest and 6-month measures instead of the Student's t test or the Mann-Whitney U in cases where pretest measures were available and where they correlated with the posttest measures. Analysis of covariance was used to partial out the variance in the dependent variables that resulted from pretest scores in cases where the two

scores were significantly correlated and the assumptions underlying analysis of covariance were not violated. The adjusted means, F statistic, and level of significance are reported along with the means.

A significance level of .10 was considered to be an acceptable level of significance for this exploratory study. The results are expected to identify trends in treatment approaches for a hard-to-treat group of addicted women; therefore, a liberal alpha level is justified. Any indications and trends that are discovered in this exploratory work warrant further study; trends are an appropriate outcome goal because so little is currently available for inner city residents who are addicted and seek no assistance for their addiction.

RESULTS

It was hypothesized that interaction with the Personalized Nursing Intervention Model would be associated with a decrease in daily drug use and perceived stress. Women receiving the experimental treatment were expected to show an improved sense of well-being. As their sense of well-being increased, daily drug use and stress were expected to decrease, based on the assumption that drug use and stress are associated with a poor sense of well-being.

It was also expected that clients who brought their female friends and relatives into the treatment program and were treated simultaneously with these social network members would change their drug use patterns more significantly than clients who were treated alone and those who were not treated at all.

Sample Description and Pretest Differences

As can be seen in table 1, there were no initial differences on any demographic variables between the control and experimental groups. Tables 2 and 3 examine drug history variables (costs and types) between experimental and control groups. There were no statistically significant differences between the control and experimental study groups with respect to drug history or in types of drugs used.

It is important to remember that the sample of women in this study had had at least one previous drug treatment experience (66 percent) and all refused referral to known community treatment programs. However, the main problem that both the experimental and control group desired help on was their drug habit. Thus while they wanted help with their drug dependency, the traditional treatment modalities were not desired. Other areas where change was desired were living situation, relationships, and personality characteristics. There were no differences between experimental and control groups in the areas they desired to change. There were also no differences between groups on variables related to health and stress.

TABLE 1. *Initial demographics*

Characteristics	Experimental Group (n=72)	Control Group (n=83)	statistic	p	Network Participants (n = 54)
Race					
Black	86%	83%	$x^2(2)=1.78$	NS	96%
White	14%	15%			4%
Hispanic	0S	2%			0%
Age (x)	29	28			
Monthly income (x)	$1,067.00	$1,567.00	±(148)=-1.24	NS	$770.00
Partnership status					
Married or livlng together	16%	11%	$X^2(1).0.63$	NS	17%
Single or living separately with no partner	84%	89%			83%
Number of children (x)	1.8	1.7	±(148)=0.39	NS	2.4
Number of children living with client (x)	1	1	±(142)=-0.24	NS	1.5
Years of education completed (x)	11	11	±(152)=-0.89	NS	11
10 years or fewer	47%	33%			34%
II years	14%	32%			17%
12 years	29%	25%			20%
More than 12	10%	10%			21%
Number of times arrested (x)		6.7	±(125)=0.57	NS	8.9

TABLE 2. *Initial drug history*

Characteristics	Experimental Group (n=72)	Control Group (n =83,	Statistic	p	Network Participants (n =54)
Daily cost of drugs (x)	$47.00	$63.00	U=2411.0	NS	$39.00
Daily cost of heroin (x)	$40.26	$53.14	±(105)=-1.56	NS	$42.00
Age at first use (x)	16.5	15.5	±(127)=1.23	NS	17
Number of prior drug treatment program admissions	1.2	1.4	±(126)=-0.35	NS	1.1
Number of time periods free of drugs since first use (x)	2.2	2.2	±(108)=0.10	NS	2.3
Number of drugs found In urine (x)	2	5	(72)=-1.05	NS	2
Type of drug first used					
Heroin	23%	17%	$X^2(3)=1.68$	NS	351
Marijuana	48%	46%			41%
Alcohol	25%	28%			20%
Other	4%	9%			4%

TABLE 3. *Initial drugs used*

Characteristics	Experimental Group (n =72)	Control Group (n =83)	statistic	p	Network Participants (n =54)
Reported drug use					
Heroin					
Use	70%	77%	$X^2(1)=0.91$	NS	74%
No use	30%	23%			26%
Cocaine					
Use	15%	25%	$X^2(1))=2.26$	NS	8%
No use	85%	75%			92%
Pentazoclne (Talwin)					
Use	26%	23%	$x^2(1)=0.21$	NS	10%
No use	74%	77%			90%
Marijuana					
Use	47%	49%	$x^2(1)=0.03$	NS	46%
No use	53%	51%			54%
Diazepam (Valium)					
Use	32%	41%	$x^2(1)=1.12$	NS	23%
No use	68%	59%			77%
Barbiturates					
use	4%	7%	$x^2(1)=0.31$	NS	2%
No use	96%	93%			98%
Codeine					
use	37%	47%	$x^2(1)=1.27$	NS	28%
No use	63%	53%			72%
Amphetamine					
use	12%	7%	$x^2(1)=0.98$	NS	6%
No use	88%	93%			94%
Number of drugs used (x)	3.0	3.1	$\pm(142)=-(0.42)$	NS	2.6
Usual route of heroin use					
Intravenous	95%	93%	$x^2=0.31$	NS	83%
Other	5%	7%			17%

Posttest Differences

Drug use. The posttest results compared all experimental subjects with all control subjects. Control subjects were also compared to experimental subjects who did not refer networks and to those who did. The experimental subgroups (i.e., those with networks and those without networks) were compared, but, since there were no significant differences between those groups, the results are not discussed in this paper.

Table 4 examines differences with respect to drug use between the control and experimental group clients at the posttest and follow-up sessions. Experimental subjects reported a lower daily drug cost than control subjects at 8 weeks ($14.24, SD=19 vs. $28.97, SD=40) ($F(1,95)=2.90$; $p=.09$). Experimental subjects also reported a lower daily cost of eroin ($13.94, SD=23) than control subjects ($42.27, SD=47) at the 8-week posttest interview. The differences were statistically significant ($U=165$; $p=.01$). It is interesting to note that the daily cost of heroin went down for the controls

from $42.27 at 8 weeks to $18.22 at 6 months. The experimental group's daily cost of heroin went up from $13.94 at 8 weeks to $30.92 at 6 months. This phenomenon will be examined in the discussion section.

TABLE 4. *Changes in drug use*

8 Weeks 6 Months	Experimental Group (n=34) (n=28)	Control Group (n=66) (n=44)	Statistic	p
Daily drug cost (ii)				
8 Weeks	$14.24	$28.97		
Adjusted mean	$16.50	$28.60	F(1,95)=2.90	.09
6 Months	$15.21	$14.05		
Adjusted mean	$16.46	$13.56	F(1,68)=0.44	NS
Daily heroin cost ($\bar{x}$)				
8 Weeks	$13.94	$42.27	U=165	.01
6 Months	$30.92	$18.22	t(29)=1.46	NS
Number of days free of drugs ($\bar{x}$)				
8 Weeks	26	20	t(83)=1.10	NS
6 Months	39	34	t(60)=0.38	NS
Number of drugs in urine ($\bar{x}$)				
8 Weeks	5.8	9.5	t(48)=-1.32	NS
6 Months	Not enough data to compute statistic*			
Change in daily drug cost from ER to 8 weeks	-$24.88	-826.66	t(96)=0.16	NS

*Urine data were initially collected to validate the drug cost measurement. When the validity testing was completed and showed drug cost to be correlated with drugs in urine samples, urine samples were no longer collected.

Stress. Table 5 shows the changes in stress-related scores at the 8-week posttest and 6-month followup. The experimental group had less perceived stress at 8 weeks (p=.09) and 6 months (p=.02). They also had less anxiety (p=.04), less confusion (p=.06), and a lower composite distress score (p =.06) at 8 weeks. There is an implication that the trend would have continued had intervention been prolonged. When the control group and the experimental

groups with networks were compared, the network group had significantly lower perceived depression (p=.03) at 8 weeks.

TABLE 5. *Stress changes--experimental subjects vs. control subjects*

8 Weeks 6 Months	Experimental Group (n=34) (n= 2 8)	Control Group (n=53) (n=39)	Statistic	p
Perceived anxiety (1=Low; 9=High)				
8 Weeks	4.2	5.5	t(85)=-2.12	.04
6 Months	5.0	5.7	t (65)=-1.02	NS
Perceived anger (1=Low; 9=High)				
8 Weeks	3.5	4.1		
Adjusted mean	3.5	4.1	F(1,85)=0.83	NS
6 Months	3.8	4.2		
Adjusted mean	3.8	4.2	F(1,64)=0.38	NS
Perceived confusion (1=Low; 9=High)				
8 Weeks	3.5	4.7		
Adjusted mean	5.4	6.5	F(1,85)=2.80	.10
6 Months	4.4	4.5	t(65)=-0.13	NS
Perceived stress (1=Low; 9=High)				
8 Weeks	5.4	6.5		
Adjusted mean	5.4	6.5	F(1,84)=3.00	.09
6 Months	5.3	6.8	t(65)=-2.35	.02
Perceived depression (1=Low; 9=High)				
8 Weeks	4.1	5.0		
Adjusted mean	4.1	5.0	F(1,85)=2.60	NS
6 Months	4.8	5.3	t(65)=-0.81	NS
Ireton composite emotional distress score (5=Low; 45=High)				
8 Weeks	20.5	25.8		
Adjusted mean	20.1	25.6	F(1,83)=3.70	.06
6 Months	23.3	26.5		
Adjusted mean	23.5	26.4	F(1,64)=1.10	NS

Summary of Results

The study indicates that nurses can affect stress and drug use in addicted women. At the 8-week posttest, daily drug cost and daily heroin costs had gone down for the experimental group. However, at the 6-month posttest, daily drug cost and daily heroin cost for the experimental group increased, although it did not reach its initial pre-intervention levels. The increase in drug costs at 6-month followup is probably a result of the lack of nursing intervention after the 8-week period. Interestingly, both the drug costs and heroin costs of the control group went down at 6 months. In other words, the control group decreased use also, only at a slower pace. What accounted for this decrease in use by the control group at 6 months? Several speculations are offered. The single Personalized Nursing Intervention counseling in the ER may have had an impact on the client. Controls who had had the singie intervention in the ER were receptive to followup and were easily found. (Originally the single intervention in the ER was not part of the design. However, about 20 clients who had not had Personalized Nursing Intervention in the ER but who just answered the initial questionnaire were never found for followup. Because of the followup and ethical considerations, project staff members instituted the single ER intervention.) Another speculation is that of "burnout," a phenomenon that can be seen in both experimental and control groups. The mean age of the total population was 28.5, number of times arrested was 7.25, and age at first drug use was 16. It appeared that the following factors evoked a desire for change in these women: 1) leading a drug lifestyle for so many years, 2) the approach of age 30, 3) entrance into adolescence of their own children, and 4) the ER episode. Personalized Nursing Intervention could be considered a catalyst toward lifestyle change.

Examination of daily drug cost and the Ireton emotional distress score showed trends indicating that the experimentals with network participation made larger gains than the control group or experimentals without networks. Further study on the use of client networks in treatment is indicated.

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BRIEF EFFECTIVE TREATMENT STRATEGIES: PHARMACOLOGICAL THERAPY FOR OPIATE ADDICTS

Herbert D. Kleber

INTRODUCTION

Psychopathology and drug abuse may interact in at least three ways. Psychopathology may lead to drug abuse (e.g., attempts at self-medication of dysphoric affect); drug abuse may lead to psychopathology (e.g., depression related to rejection by significant others or possible neuroendocrine changes secondary to chronic drug use); or psychopathology and drug abuse may exist independently of each other but with interactive effects (e.g., schizophrenic patients may cause significant problems in treatment programs, leading to their being rejected by the staff; depressed patients are more likely to drop out of drug treatment programs, while anxious patients are more likely to be retained). In a study of heroin addicts in the community who had never sought treatment, Kleber et al. (1981) found that the key difference between them and a treatment group was that the community group had less psychopathology. Thus, at least for some drug abusers, the degree of psychopathology, rather than just the substance abuse per se, may be what led them to seek treatment in a drug program. Even where psychopathology may have led initially to the drug abuse, once the latter is established it is unlikely that treating the initial pathology will eliminate the drug abuse since this has taken on a life of its own. However, it may help the patient take better advantage of treatment opportunities for the drug problem. When psychological methods are inadequate to treat these problems, it may be helpful to consider psychopharmacologic agents. In the New Haven drug treatment program, we have set up a special program to treat patients with serious psychopathology. The patient remains in treatment at his or her regular program but, in addition, is seen by a therapist, usually more experienced, who can provide more attention over a sustained period and recommend pharmacotherapy if indicated.

Physicians connected with drug treatment programs usually wish to diminish a patient's reliance on drugs to solve life's problems. Trying to stick to this belief, they find themselves on the one hand under pressure by patients seeking drugs, especially minor tranquilizers, and on the other hand wanting themselves to prescribe something because they believe that patients could benefit from use of a particular agent such as an antidepressant or antipsychotic. Their problem is made more difficult by the scarcity of controlled studies about such drugs in the treatment of narcotic addicts; the lack, until recently, of adequate tools for accurate diagnostic assessment; the pressure of time and too many patients; and, finally, the pressure of other staff members either not to prescribe any other drugs or to prescribe drugs that will solve the patient's problems in an almost magical way. Physicians in treatment programs such as naltrexone maintenance, outpatient drug free, or residential therapeutic communities may be even more reluctant than those in methadone programs to use ancillary medications. In some therapeutic communities, there is no real distinction between illicit drugs and psychiatrically indicated medications. Finally, the presentation of psychopathology with patients maintained on methadone or in withdrawal may be quite different from that when the same patient is on a very low dose or when not on methadone. At times, immediately following withdrawal, there seems to be emergence of symptomatology even where the detoxification has been slow and stress has been minimal. Symptoms of psychosis or mania have been observed under such circumstances.

Psychotropic agents are most helpful to opiate addicts when used to treat coexisting psychopathology. While there is no clear evidence that such agents will reduce or affect the addiction itself, they may help keep patients available for rehabilitation efforts. Concomitant severe psychopathology has been associated with poorer outcome in treating drug abusers. Chemical approaches that could reduce their severity could significantly improve the quality of patients' lives.

In this presentation, I shall first describe the evidence for the existence of a high prevalence of psychiatric disorders in addicts that might be treatable by psychotropic medication and then review the categories of drugs that might be of therapeutic use for such disorders. More detail on this has been given by the author in a recent review article (Kleber 1983).

PSYCHIATRIC DISORDERS IN OPIATE ADDICTS

The high prevalence of diagnosable psychiatric disorders in opiate addicts has begun to be documented by careful studies. Most early studies usually employed only dimensional symptom or personality scales; a major exception is the large-scale study recently completed at Yale by Kleber et al. (1981) and Rounsaville et al. (1982a). Psychiatric diagnosis was obtained on 533 subjects applying for treatment at the multimodality Drug Dependence Unit of the Connecticut Mental Health Center in New Haven, Connecticut. Subjects in this study met Research Diagnostic Criteria for narcotic dependence. Information for making diagnostic judgments was collected on the Schedule for Affective Disorders and Schizophrenia (SADS). On the basis of this information, the subjects were classified according to the Research Diagnostic Criteria (RDC), a set of operational diagnostic definitions with specific inclusion and exclusion criteria for a variety of nosologic groups.

Using the SADS-L, diagnoses are made for both the current time period and for a lifetime. Depression was the most commonly diagnosed symptomatic condition; 23.8 percent of the sample were in a current episode of major depression at this evaluation. Other affective disorders, including minor depression (2.3 percent), manic disorders (0 percent), and hypomanic disorders (.9 percent) were comparatively infrequently diagnosed, as were schizophrenia (.2 percent) and schizoaffective disorders (1.5 percent). Only small fractions of the sample were in current episodes of panic (.9 percent), obsessive-compulsive (1.3 percent), or generalized anxiety (.9 percent) disorders. However, a substantial minority had a current phobia (9.2 percent) or abused alcohol to a degree that met the criteria for a current episode of alcoholism (13.7 percent) (table 1).

In regard to lifetime RDC diagnoses, 86.9 percent of the addicts surveyed met the criteria for some psychiatric disorder exclusive of drug addiction in their lifetime. The most commonly diagnosed disorders were major depression 53.9 percent, alcoholism 34.5 percent, antisocial personality 26.5 percent, intermittent depression 18.8 percent, labile personality 16.5 percent, phobic disorder 9.6 percent, schizotypal features 8.4 percent, minor depression 8.4 percent, other psychiatric disorders 6.8 percent, hypomanic disorder 6.6 percent, and generalized anxiety disorder 5.4 percent.

TABLE 1. *Current rates/100 of psychiatric disorders in opiate addicts according to Research Diagnostic Criteria*

Current RDC Diagnosis	Number (N=533)	Rate/100
Affective disorders		
Major depression	127	23.8
Minor depression	12	2.3
Manic disorder	0	0.0
Hypomanic disorder	5	0.9
Schizophrenia	1	0.2
Schizoaffective disorders (depressed and manic)	8	1.5
Anxiety disorders		
Panic	5	0.9
Obsessive-compulsive	7	1.3
Generalized anxiety	5	0.9
Phobic	49	9.2
Alcoholism	73	13.7
Other psychiatric disorder	25	4.7
Any current disorder (including personality diagnoses)	375	70.3

All other disorders, including schizophrenia, schizoaffective disorders, mania, cyclothymic personality, obsessive-compulsive disorder, panic disorder, and Briquet's disorder were found in fewer than 5 percent of the sample. When affective disorders are combined, it is apparent that opiate addicts in this sample are at high risk in that 74.3 percent met the criteria for some affective disorder (table 2).

TABLE 2. *Lifetime rates/100 RDC psychiatric diagnoses in addicts by sociodemographic characteristics*

Type of disorder	Percentage (N=533)
Affective disorders	
Major depression	53.9
Minor depression	8.4
Intermittent depression	18.8
Cyclothymic personality	3.6
Labile personality	16.5
Manic disorder	.6
Hypomanic disorder	6.6
Bipolar 1 or 2	5.4
Any affective disorder	74.3
Schizophrenic disorders	
Schizophrenia	.8
Schizoaffective depression	1.7
Schizoaffective manic	.4
Anxiety disorders	
Panic	1.3
Obsessive-compulsive	1.9
Generalized anxiety	5.4
Phobic	9.6
Any anxiety disorder	16.1
Alcoholism	34.5
Personality disorder	
Antisocial personality	26.5
Briquet's	.2
Schizotypal features	8.4
Other psychiatric disorders	6.8
Any lifetime disorder	86.9

NEUROLEPTIC DRUGS TO TREAT SCHIZOPHRENIC DISORDERS

The incidence of psychosis, usually schizophrenic reactions, in opiate addicts has been estimated from as low as 1 percent (Vaillant 1966) to as high as 19 percent (Gerard and Kornetsky 1955). Our recent study puts the combined figure for schizophrenic and schizoaffective disorders at fewer than 2 percent. The relation of opiate drug use to psychosis has been a mixed and confusing picture throughout the past 200 years. Whereas some authors saw morphine as a useful treatment for psychotic disorders

and other psychiatric problems (Carlson and Simpson 1963, Comfort 1977), others saw its chronic use as a cause of such psychosis (Bell 1911), a view disputed by still others who could not find such an effect (Pfeffer and Ruble 1946, Kolb 1925). The discovery of opiate receptors and endogenous opiate-like substances has increased our knowledge but not solved this particular problem. Some researchers find opiate agonists to exert an antipsychotic effect (Berger et al. 1980), while others find that, on the contrary, antagonists have such an action (Gunne et al. 1977). Still others find that neither agonists nor antagonists have a consistent effect (Wickler 1952, Janowsky et al. 1977). The similarities and differences between opioid agonists and anti-psychotic agents has recently been reviewed (Clouet 1982), as has the relationship between endorphins and psychopathology (Berger and Barchas 1982).

While there may be disagreement on the relationship of exogenous opiates, endogenous opiate-like substances, opiate antagonists, and opiate receptors to the signs and symptoms of schizophrenia, it seems that methadone alone may be insufficient to treat the disorder as it appears in maintained patients, and for addicts in general the use of neuroleptics to treat such symptoms appears noncontroversial (Kaufman 1974, Chappel 1974, Ferris 1976, Kleber and Gold 1978, Ciccone et al. 1980). No particular drug stands out in this context; chlorpromazine, thiothexene, fluphenazine, and haloperidol are all mentioned. For methadone maintenance patients, lower doses of such drugs may be needed to control psychotic symptoms (Kleber and Gold 1978, Ciccone et al. 1980), perhaps because methadone either potentiates their effects or has its own antipsychotic action. in general, these drugs should be used cautiously because of the possibility of tardive dyskinesia. Unlike some of the other categories of psychotropic drugs, these drugs are usually not abused by addicts, and the problem more often is getting the patients to continue them when they are indicated. Once indicated, they may need to be continued for long periods of time, although periodic drug-free trials should be attempted. Schizophrenics can be so disruptive to a program and have so much difficulty conforming their behavior to the structure and rules that adequate medication may make the difference between their remaining in the program and being expelled.

MINOR TRANQUILIZERS IN THE TREATMENT OF ANXIETY DISORDERS

The data from the Yale study (Rounsaville et al. 1982a) indicate that approximately 10 percent of the opiate addicts were diagnosed as having an anxiety disorder. It has been noted by a number of authors that diazepam has become a popular drug of abuse among opiate addicts and in methadone programs (Kleber and Gold 1978, Woody et al. 1975a, Spensley 1976, Gould et al. 1977, Budd et al. 1979). The question, therefore, arises whether this use is an attempt to treat anxiety and should be viewed as self-medication or whether it represents rather another way of getting high. Diazepam is said to "boost the high" experienced after methadone,

using 25-50 mg of the tranquilizer (Kleber and Gold 1978), or to produce "a pleasant relaxed sensation which may be described as a high" (Woody et al. 1975a).

Such patients are frequently noted to appear sleepy, ataxic, and dysarthric at the methadone clinic and occasionally to have pathological rage attacks (Kleber and Gold 1978). There have been no controlled studies reported in the literature using diazepam or other benzodiazepines to treat anxiety in opiate addicts or methadone patients, with the exception of Sugarman et al. (1971), who used prazepam to treat anxiety in detoxified narcotic addicts. Although it was better than a placebo in reducing anxiety during the first 2 weeks of treatment, by the third week there was no longer an advantage.

Although benzodiazepines have been shown in numerous controlled studies to be useful in treating anxiety in nonaddict patients, the problem in this population is whether the abuse potential outweighs the clinical usefulness. The abuse potential in methadone patients may be greater than in alcoholics (Kryspin-Exner and Demel 1975). Under such circumstances it appears prudent to treat anxiety by counseling, training in relaxation techniques, or environmental manipulation rather than tranquilizers. One should also be cautious about treating anxiety by raising methadone dosage, often requested by patients if diazepam is refused, since any relief so gained is often short-lived and followed soon by a new request for a higher dose. Occasionally, when other methods have been unsuccessful and the clinician is convinced of the presence of a serious anxiety disorder, benzodiazepines may be used if care is exercised. Panic anxiety is often better treated with imipramine than a benzodiazepine. Its high incidence in this population could be due to a compromised endogenous opiate system unable to inhibit noradrenergic rebound hyperactivity.

Although one may make a theoretical case for less abuse potential by benzodiazepines with slower onset of action--e.g., the Philadelphia Veterans Administration drug program (G.E. Woody, personal communication) has been using oxazepam for anxiety for a number of years and feels there has been no significant abuse problem--this point has not been adequately demonstrated in controlled studies. Further, since most labs report only the presence or absence of the benzodiazepine class of drugs in routine urine screens rather than the exact drug, prescribing one member of the class makes it difficult to monitor the use of other members. Potential misuse is suggested by requested refill of prescriptions earlier than due, supposedly lost prescriptions, requests for increasing doses, and the desire for indefinite use (Spensley 1976). It is even more clear when the patient appears excessively sedated or ataxic. When misuse occurs, it should be considered that the dangers of the drug have come to outweigh its usefulness, and prescriptions should be terminated. The patient, however, should be evaluated at that point as to the need for possible diazepam withdrawal and the decision made about the

location for providing such treatment. Klein (1983) has argued that patients likely to abuse benzodiazepine are also likely to abuse alcohol, and therefore no new dependence is likely to be incurred by a more liberal initial use of these agents in opiate addicts as long as it is done prudently and halted if abuse occurs.

TRICYCLIC ANTIDEPRESSANTS IN THE TREATMENT OF AFFECTIVE DISORDERS

A number of studies have emphasized the incidence of depression in opiate addicts (Wieland and Sola 1970, Lehman and DeAngelis 1972, Robins 1974, Weissman et al. 1976, Rounsaville et al. 1979, Dorus and Senay 1980, Steer and Kotzker 1980). In the recent Yale study, approximately 24 percent of the sample were diagnosed as having a current major depression, and over two-thirds were noted to have either chronic or episodic depressive disorders.

Spensley (1974) reported an uncontrolled trial of doxepin in 27 patients maintained on methadone whose target symptoms were anxiety, depression, pseudowithdrawal, sleeplessness, and apprehension. Of the 27, 25 (93 percent) reported beneficial results of slight-to-marked degree.

Woody et al. (1975b) conducted a double-blind study of doxepin in 35 "mildly depressed patients" on methadone maintenance. Diagnosis of depression was made by a psychiatric interview, and a number of depression-rating scales were also obtained. Although the dropout rate from the study was high (only 16 were on the drug or a placebo for longer than 4 weeks), there was statistically significant improvement noted for the doxepin-treated subjects as compared with the controls. Also, the doxepin patients tended to be less likely to drop out. Improvement was found in symptoms of depression and anxiety as well as in craving for heroin.

In order to overcome the design limitations in the Woody study, a study was begun in New Haven in 1977 (Kleber et al. 1983). To avoid the high Philadelphia dropout rate and also to avoid confounding results by the increasing doses of methadone and early program adjustment, the patient was stabilized on methadone before beginning imipramine. This latter drug was chosen instead of amitriptyline or doxepin partly because the sedating tricyclics have been abused by drug addicts in some cities (Stimmel et al. 1978, Cohen et al. 1978), but not all (Senay et al. 1977). Analysis of the data from the study initially seemed not to confirm the Woody findings in that there was no significant difference between the drug and placebo groups. Closer examination of the data revealed that this was due not to failure of the drug group to improve but rather to the major improvement shown by the placebo group, which did about as well as the doxepin patients in the Woody study (table 3). This can illustrate the variability of the depressive symptoms over time, the role of nonpharmacologic factors on outcome of depression, and, finally, the importance of not rushing in to use drugs to treat depression in these patients. Two more

recent studies appear to lend weight to the Philadelphia group's initial finding of benefit using doxepin: one was a replication by them of their initial study but with design improvement (Woody et al. 1982), and the other from Florida by Goldstein, also showing improvement with doxepin (Woody et al. 1982). The tendency of depression present in the early stages of methadone treatment to significantly improve over time without other pharmacologic intervention has been stressed by two recent studies, one by Dorus and Senay (1980), and the other by Rounsaville et al. (1982b).

TABLE 3. *Effects of treatment on depressive symptoms: Comparing opiate addicts with primary depressives*

	Current study of depressed addicts stabilized on methadone		Primary depressives		Woody et al. 1975b study of depressed early methadone patients	
Week	Placebo (N=23)	Imipramlne hydrochloride (N=23)	Placebo (N=21)	Amitriptyline hydrochloride (N=20)	Placebo (N=11)	Doxepin hydrochloride (N=13)
Raskin total score						
0	8.2	8.7	8.7	8.5	NA	NA
1	7.4	7.1	8.5	7.8	NA	NA
4	6.3	6.7	8.0	7.6	NA	NA
8	5.9	5.8	8.0	7.1	NA	NA
Hamilton total score						
0	19.5	20.0	15.3	16.8	18.3	18.3
1	13.9	12.3	15.1	13.6	NA	NA
4	12.1	11.2	15.2	12.5	15.1	7.1
8	11.2	10.1	14.3	11.4	NA	NA
Beck total score						
0	13.3	15.1	NA	NA	9.1	9.1
4	12.0	10.5	NA	NA	10.3	3.6
8	10.4	10.2	NA	NA	NA	NA

NA Indicates not available.

The New Haven study found that although the depressive symptoms often abated over time, those patients who were diagnosed as having a current major or minor depressive disorder at admission were more likely to use illicit drugs during the next 6-month period. It may be, therefore, that a subgroup of depressed patients could benefit from pharmacotherapy. The possibility that different subgroups may require different treatments is strengthened by Schildkraut et al. (1976) and Meyer et al. (1978), who found that during heroin administration only four of nine patients showed elevated MHPG excretion.

There is agreement on the high incidence of current and past affective disorders in opiate addicts and methadone-maintained patients, and that depressed patients do not do as well in treatment and drop out in higher numbers. There is less agreement over what to do about this finding and even less agreement as to whether the cause is psychological, psychosocial, or biological. Since there appears to be substantial change in depressive symptoms during the first 3-6 months on methadone without specific pharmacotherapy, it may be best not to intervene with drug therapy until it is seen whether spontaneous remission will occur. Tricyclic antidepressant medication should be considered for those patients who do not improve after 3-6 months or those abusing stimulants who may be trying to self-medicate. Once begun, antidepressant medications usually need to be continued at least 3 months and then tapered gradually over 3-6 weeks. Klein (1983) has argued for a more liberal use of antidepressants in order to gain more insight as to which subgroups are likely to benefit from such drugs.

MAO INHIBITORS

The stimulant properties of monoamine oxidase (MAO) inhibitors may have some abuse potential. Shopsin and Kline (1976) note that "amphetamine-like effects including euphoria, hypomania..., flight of ideas, and outward hostility can be associated with the use of all MAO inhibitors even in the usually prescribed dosage range for treating depression." The mechanism of action for this is not completely clear even though it is known that these agents, like the amphetamines, increase the available amount of norepinephrine, dopamine, and serotonin at synapses. Because of the abuse potential and risk of serious reactions from certain medications or tyramine-containing foods while individuals are taking MAO inhibitors, the dangers of use, in my opinion, outweigh the therapeutic potential in a drug-abusing population, which can be notoriously careless with drug, alcohol, and food intake. A way out of this dilemma has been posed by Klein (1983), who suggests the possibility of using MAO-B inhibitors, such as deprenyl, which do not have the potential for the tyramine reaction, or, more experimentally, combining MAO inhibitors with tricvclics. which could block the uptake of tyramine and be less likely to lead to a hypertensive crisis. More animal research on this appears needed before human trials should be carried out.

LITHIUM

The Yale study did not diagnose any current patients as manic but found 0.9 percent to be hypomanic. Their lifetime rates showed 0.6 percent manic, 6.6 percent hypomanic disorder, 5.4 percent bipolar 1 or 2, and 0.4 percent schizoaffective manic. Thus, there may be a significant number of patients for whom lithium might be a useful treatment or prophylactic agent.

Apparently Scher (1975) was the first to suggest treating narcotic addicts with lithium. He noted that lithium given to heroin addicts was associated with alleviation of withdrawal symptoms and blocking of heroin's euphorogenic effect. Altamura (1975), on the theory that drug addiction may be due to masked depression, gave lithium to 20 detoxified opiate (mainly heroin) addicts. While a few of the patients reported an enhanced feeling of well-being on the drug and lessened psychological dependence, only nine patients took the lithium for more than a few weeks. Followup in general was poor, and the author concluded he could neither confirm or refute his hypothesis. After 1 year, all patients were off lithium and most were back on heroin.

Cronson and Cadden (1976) gave lithium to 11 addicts and felt that 9 had an excellent response, with 5 remaining drug-free after 2 years. Cronson et al. (1979) claimed that of 20 patients given lithium for at least 1 month, 16 substantially benefited. Flemenbaum (1974) hypothesized that a significant number of depressed patients and chemically dependent ones "share a common depressive oral personality but some express it as a clear affective disorder and some express it as parapsychiatric symptoms that are usually conducive to sociopathy and/or chemical dependence." He felt that lithium might, therefore, be of help in treating such patients. Kleber and Gold (1978) noted that methadone patients given lithium tended to ask for lower methadone doses because of increased drowsiness and that this occurred regardless of whether they felt they were helped by the lithium or not. These authors gave lithium to seven patients with a history of recurrent depression on the theory that narcotics might be blocking or attenuating the manic phase, so that the true bipolar nature of their illness might not be apparent. Four of the seven patients noted clinical improvement of their depressive episodes while on lithium. Nahunek et al. (1978) reported giving lithium to 23 "analgesic abusers' with equivocal results: 11 were defined as satisfactory outcome, 12 as unsatisfactory. Better results were experienced with stimulant abusers.

There are a number of theoretical possibilities relating to the existence of undiagnosed or masked bipolar affective disorders in opiate addicts or the existence of atypical depression which could he helped by the use of lithium. Unfortunately, human studies to date have been small, uncontrolled, and at best inconclusive. Wider use of lithium in selected methadone programs might be encouraged so as to gain more clinical experience with combining the two modalities and to focus more clearly on the types of patients that may be helped. Additionally, it should be tried in naltrexone and drug-free programs. If clinical experience indicates sufficient usefulness, blind clinical trials can then be undertaken. Since lithium appears to be an effective agent in the treatment of the manic phase of manic-depressive illness and in the prophylaxis of both mania and depression in nonopiate patients, its use in opiate treatment may lead to improved outcomes for a number of patients.

ALCOHOLISM AND THE USE OF DISULFIRAM

Abuse of alcohol by patients maintained on methadone has been recognized as a serious problem since the early 1970s. Until recently, however, there was disagreement about whether the alcohol problems began while patients were on methadone or preceded their entrance into the program. There has also been confusion about the extent of the problem, since many studies failed to provide operational definitions of such categories as "excessive use of alcohol," "problem drinking," "alcohol abuser," or "alcoholism." An excellent review of these studies has been done by Carroll et al. (1977), and they conclude that most individuals who had trouble while on a program appear to have had previous problems with alcohol.

Alcohol abuse is associated with major physical problems such as cirrhosis of the liver and premature death. In combination with methadone, overdose death can occur. In one study, 60 percent of the deaths in patients enrolled in or recently discharged from a methadone maintenance program were alcohol-related (Gerston et al. 1977). Also, it is a major cause of administrative discharge from such programs (25 percent in one study), and such patients often deteriorate rapidly after leaving. To cope with these problems, some programs send their patients to separate alcoholism treatment units, while others try to treat them in the methadone program itself. Both approaches appear approximately comparable in outcome (Baker et al. 1977). Also, in both approaches, disulfiram (Antabuse) appears to be, at times, a useful treatment adjunct. Studies by Charuvastra et al. (1976) and Tong et al. (1980) on the combined use of methadone and disulfiram indicate that the combination appears to be a safe one.

It can be difficult, however, to get patients to use the drug on a regular basis. Pascarelli and Eaton (1973) suggested on the basis of the alcoholism literature that the methadone patients least likely to succeed on disulfiram would be those under 40, with a history of blackouts, currently depressed, and of low social stability. They emphasize that the drug must be used as part of a total treatment program. Gerston et al. (1977) list a comprehensive program as "a combination of supportive environments and psychotherapy, crisis intervention, and an emphasis on control of drinking."

Liebson et al. (1978) compared 25 alcoholic methadone-maintained patients divided into two groups on a random basis. One group was required to take disulfiram as a condition of getting their methadone, while the other was urged to take it but could get their methadone regardless. The first group did substantially better than the second in regard to drinking (2 percent of days with drinking vs. 21 percent), and this requirement did not drive the patients away from the methadone program. Because the ethics of denying methadone to patients who refuse disulfiram may be questioned, the authors suggest "this approach be considered only for

those patients for whom all else has failed and whose alcoholism has already resulted in a decision to terminate methadone maintenance." Kamback (1979) has tried a similar contingency method of disulfiram administration on 10 methadone patients and also reports good results regarding alcohol abuse and changes in lifestyle. He cautions, however, that methadone may ameliorate some of the adverse consequences of the disulfiram-alcohol reaction; therefore, a daily breathalyzer test should be used to monitor alcohol intake. It appears overall that disulfiram can be a useful treatment adjunct for the problem-drinking drug abuser, but a contingency method will probably be required to ensure compliance with such a regime.

SUMMARY

This paper has examined the possibilities of applying significant pharmacologic help to a variety of psychiatric problems that may accompany narcotic addiction. It has been shown that many of the patients do have such difficulties, with affective disorders being most common. As far as the various psychotropic drugs are concerned, neuroleptics for schizophrenia and lithium for manic disorders are generally agreed upon. A more extensive trial of lithium in a variety of situations seems indicated. Minor tranquilizers for anxiety and MAO-inhibitors for depression are both seen as problematic in this population--the former because of the possibility of abuse, the latter because of the danger of drug interaction associated with the addict's careless lifestyle. Tricyclic antidepressants may clearly have a role in treating major depression in opiate addicts on or off methadone, but the lability of the syndrome over time with frequent spontaneous remission argues against their routine use until it is clear that depression has persisted 3-6 months into methadone. Disulfiram appears to be a useful adjunct for drug abusers with serious alcohol problems.

Psychotropic agents are most helpful to opiate addicts when used to treat coexisting psychopathology. While there is no clear evidence that such agents will reduce or affect the addiction itself, they may help keep patients available for rehabilitation efforts. Failure to intervene may make treatment dropout and recidivism more likely. Given the relative frequency of potentially treatable psychiatric disorders in these patients and the consequences of undiagnosed and untreated conditions, it is important for clinicians to maintain a high index of suspicion for concomitant psychiatric illness and for programs to have a mechanism for routinely diagnosing either all patients or, at a minimum, all patients not doing well. If programs used a standard instrument such as the SADS, it would be possible to compare various programs on this factor; in addition, it would provide a rich source of data for outcome studies.

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MEDICAL MAINTENANCE FEASIBILITY STUDY

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INTRODUCTION

Background

Since 1964, methadone maintenance has evolved from a small research project into the largest single modality for the treatment of heroin addiction (Des Jarlais and Uppal 1980, Dole and Nyswander 1976, Lowinson 1981). This evolution has been shaped by a number of factors, including the large numbers of persons seeking methadone treatment, the need for a wide variety of rehabilitation services in addition to treatment for heroin addiction, and a concern about diversion of the medication to persons not officially enrolled in treatment. The current method for the delivery of methadone maintenance treatment is within a formal clinic setting. Such clinics are officially licensed by Federal, State, and city governments, with explicit regulations concerning dosages to be prescribed, frequency of patient visits to the clinic, and use of supportive services.

The formally organized clinic may be the best method of providing methadone maintenance to large numbers of patients at a relatively low cost per patient, but it is possible to identify patients who might be better served in a setting more similar to treatment of other chronic diseases. This medical maintenance research is a feasibility study of delivering methadone maintenance treatment in a setting outside of clinics as they are currently organized and regulated.

The patients who are least well served within the present organizational setting of methadone clinics tend to be the "well-rehabilitated" patients, who no longer need supportive services. Such patients have established stable lifestyles; are generally employed, students, or homemakers; do not abuse nonnarcotic drugs or alcohol; and do not have the social ties with illicit narcotic users that promote diversion.

Requiring such well-rehabilitated patients to use supportive services is an unnecessary expense, and it is often seen as demeaning and stigmatizing. Frequent required visits to the clinic to pick up medication add to treatment costs, can severely limit personal and business travel, and can threaten the confidential nature of treatment. Compromising patient confidentiality can lead to loss of employment and social ostracism (NY State 1983).

A final area in which treatment for well-rehabilitated patients is undermined concerns the clinician-patient relationship. A therapeutic clinician-patient relationship requires that the patient believe the clinician is using his or her expertise in the best interests of the individual patient. Within the current organizational framework, well-rehabilitated patients (and others) often perceive clinical decisions as being made to conform to impersonal regulations rather than to the individual patient's best interest. Clinicians, of course, also frequently see clinical decisions as determined by impersonal regulations, thus further undermining the clinician-patient relationship.

The present form of service delivery for well-rehabilitated patients thus not only involves extra expense and inconveniences, but also can be counterproductive.

Medical Maintenance

The basic concept in medical maintenance is to provide drug maintenance treatment for heroin addiction in a manner similar to chemotherapy for other chronic illnesses, e.g., epilepsy. Patients participating in the feasibility study are those for whom narcotic addiction is primarily a biophysical problem rather than a psychological or sociological problem. One of the purposes of the feasibility study is to refine appropriate criteria and selection procedures for medical maintenance patients. The following minimum criteria were used for the initial selection of patients to participate in the feasibility study:

1) Five years in conventional methadone maintenance treatment.

2) Stable employment or other productive use of time over the past 3 years. (There should be an adequate source of income so that possible diversion of medication for monetary reasons is unlikely.)

3) No criminal involvement for the previous 3 years.

4) No nonnarcotic drug or alcohol abuse for the previous 3 years.

5) A record of reliability in the previous clinic with respect to attendance and not missing medications.

6) Indications that further long-term maintenance will be needed. Such indications might include previous unsuccessful attempts at detoxification or a shared belief between the patient and physician that continued maintenance will be necessary.

7) No need for additional psychotropic medications or intensive support services.

8) Lack of social ties to illicit narcotic users who might encourage diversion of medication.

9) Recommendation from a clinician with thorough knowledge of the patient's treatment history.

10) All patients must be volunteers, and willing to participate in research evaluations of medical maintenance.

Intensive intake interviews and supporting documentation from previous treatment were the primary methods of collecting the information needed for an admissions decision. Appropriate specialists or persons having detailed knowledge of the patient, or both, were consulted to resolve any doubts about whether patients met specific criteria.

In addition to the formal criteria, admission also required concurrence by the medical maintenance physician that the patient was appropriate. No formal list of criteria could be expected to cover all factors that might be important for admission. Expert clinical judgment is used in the admission decision as in other medical maintenance treatment decisions.

Under medical maintenance, patients receive treatment in the office of a hospital-based phvsician. Visits are scheduled according to need as determined by the physician. Medication dosage is also determined by the physician, in accordance with currently accepted good medical practice. The number of days of medication that are prescribed is also determined by the physician, with an upper limit of a 30-day prescription. Medication is dispensed from a selected pharmacy, meeting all current requirements for dispensing methadone. Nonmedical supportive services, e.g., counseling, are provided on an as-needed basis, rather than by mandated schedule. In order to provide methadone maintenance within this format, an Investigational New Drug (IND) status for the project was obtained from the Food and Drug Administration.

FIRST-YEAR PROGRESS

Admissions

The medical maintenance project began operating in June 1983 at the Rockefeller University Hospital medical clinic under the direction of Dr. Vincent P. Dole and Dr. Marie Nyswander. Twenty-three ex-street addicts and five "medical-pain" patients were admitted to the medical maintenance program. The medical-pain patients were accepted as referrals from pain clinics and physicians, and from inquiries to Dr. Nyswander. These were patients who required frequent short-acting narcotics for chronic pain conditions; methadone was a means of managing the iatrogenic narcotic dependence.

Eleven patients (48 percent) in the ex-street addict group were admitted from Dr. Nyswander's ongoing caseload at Rockefeller University Hospital. The remaining 12 (52 percent) were recruited from other New York City methadone maintenance programs through an informal network of physicians and program staff members.

Initially, the ex-addict methadone patients were continued for 1 month on their former weekly clinic visit schedules. During this period, Dr. Nyswander interviewed, evaluated, and observed the new patients. At the end of the month these patients, with one exception, were placed on a monthly visit schedule. The exception, an anxious person with impressive achievements in college, professional school, and employment while maintained on methadone, appeared to need close monitoring. He was placed on a biweekly reporting schedule. One medical-pain patient, a successful businessman who travels frequently, was placed on a monthly schedule. The other medical-pain patients had complicating problems and were seen much more frequently.

Data Collection

Three forms were created to gather information about the patients. An intake interview was administered to obtain basic demographics, and addiction and treatment histories. A physician's log was created to enter all contacts with the patient; collateral contacts with other parties; medical, social, and psychiatric information; methadone dose; drug and alcohol abuse data; and reasons for possible termination. After 6 months in the project, the patients completed a questionnaire about their reactions to medical maintenance.

Patient Characteristics

Table 1 summarizes the ethnicity, sex, marital status, and educational levels of the 22 ex-street addicts and 3 medical patients who remained in medical maintenance. There is a preponderance of white males. About 60 percent of the ex-addict group are married and living with their spouses. The educational level of the

ex-addicts is high, 14 percent having finished college and 18 percent having attended graduate or professional schools. Except in two cases, college education, job skills, and graduate studies were pursued while patients were in methadone treatment. The mean age of the ex-addict group in 1983 was 43, which is older than the mean age of 35 for all New York methadone programs.

TABLE 1. *Patient demographic data*

Characteristic	Ex-Addicts (N=22)	Medical-Pain (N=3)
Sex		
Male	19	2
Female	3	1
Ethnicity		
Black		
White	1:	3
Hispanic	3	
Marital status		
Married	14	3
Separated/divorced	3	
Widowed	2	
Single	3	
Education		
Less than high school	1	
Equivalent to high school	8	
Some college	6	
College graduate	3	
Graduate school	4	3

Table 2 summarizes the ex-addict patients' addiction and criminal histories. As a group, the patients had an average of 12 years of addiction and an average of 9 arrests while using opiates. Sixteen patients spent an average of 2.4 years being incarcerated. No arrest occurred after entry into methadone treatment.

TABLE 2. *Addiction, treatment, and arrest histories for 22 es-addict patients*

Addiction and treatment histories	
Average ages	
First used opiates	19
First entered MMTP	31
Entered medical maintenance	43
Average number of years in MMTP	12
Percentage of cases continuously in treatment	83
Arrest histories prior to methadone treatment	
Average ages	
First arrested	19
Last arrested	29
Number of persons arrested	20
Average number of arrests	9
Number of patients incarcerated	16
Average years in prison for those incarcerated	4

Table 3 summarizes the ex-addict patients' income at the time of intake interviews conducted in the summer and fall of 1983. With one exception, the patients have not changed jobs and are earning approximately the same incomes. Because of the increased travel flexibility within medical maintenance, one patient was able to substantially increase his income. Thirteen patients (55 percent) are employed by hospitals that operate methadone programs, They work as methadone counselors, clinic supervisors, or in an administrative capacity. The remaining 45 percent are employed in sales, office work, middle management, law, art, and music. Eighteen percent earn between $30,000 and $40,000 per year, while 59 percent earn between $21,000 and $25,000 per year.

TABLE 3. *Income of 22 ex-addict patients*

Income Level	Percent of Patients
$15,000 - $20,000	5
$21,000 - $25,000	59
$26,000 - $30,000	18
$31,000 - $35,000	13
$36,000 - $40,000	5

Medication Levels

The amount of methadone prescribed for the 22 ex-street addict patients ranges from 20 mg to 80 mg. Table 4 shows the amounts are equitably distributed into three levels--low (20 mg/day), medium (30 to 50 mg/day), and high (60 to 80 mg/day). Irrespective of dosage level, these patients are able to function without motor or intellectual impairment.

TABLE 4. *Stabilization levels of 22 es-addict patients*

Stabilization Level	Percent of Patients
I 20 mg	32
II 30 mg - 50 mg	36
III 60 mg - 80 mg	32

During the first 8 months of medical maintenance, the daily amounts prescribed for three patients were changed. One patient attempted detoxification, which was not successful because of increased discomfort, and was then stabilized at 20 mg/day. Two patients were raised 10 mg/day: one was under emotional stress because of his wife's serious illness, and the other, who gave birth, felt more comfortable with the increased dosage.

Patient Reactions to Medical Maintenance

Four trends were discerned in the responses of patients to a questionnaire about the medical maintenance pilot project:

1) Patients now have more mobility and privacy. They are able to plan extended trips without having to make arrangements to obtain medication in other cities or countries. As a consequence of monthly reporting, one patient relocated to a distant suburban community. As noted above, another reported a substantial increase in earnings because more flexible business traveling was permitted by medical maintenance.

2) Anxiety about travel to treatment has been reduced. Given the uncertainties of urban transportation, some working patients were concerned about being able to obtain a weekly supply of methadone during the clinic hours. Anxiety about obtaining medication during storms, periods of illness, or when job responsibilities prevented them from leaving their offices has decreased.

3) The patients report their employment situations have improved. Under weekly reporting schedules and traditional clinic hours, some patients were late for work after they had picked up methadone. Others had to obtain permission to leave work early to obtain medication. With monthly reporting schedules, these problems have subsided.

4) The patients also report improved self-esteem and a perceived reduction of the stigma associated with methadone maintenance. As one patient succinctly expressed: "I feel trusted and therefore feel better about myself." Another summed up her treatment experience as follows: "After 17 years in treatment with my heroin addiction far behind me, it is gratifying that I am no longer treated as a 'patient in need of counseling,' being treated the same as a patient who just began treatment." The effect of being subjected for years to controlling regulations and the subsequent loosening of these regulations elicited the following response from one patient: "My frame of mind is 100 percent improved. I feel that I was released from a restrictive and punitive atmosphere. For the first time in many years, I feel that I'm being treated as a patient with a medical problem, rather than a drug addict, who's lucky to be receiving medication."

Discharges

Of the 28 patients officially admitted to the medical maintenance program, 3 (11 percent) have been terminated. Two were medical-pain patients. One was detoxified and is now seen on a monthly basis without medication. A second medical-pain patient has an extensive surgical history and continuous back pain, for which short-acting narcotics have often been required. Ouring the month of April this patient did not discuss his medical condition with Dr. Nyswander, and proper doses of medication could not be prescribed. Subsequently, he was terminated from medical maintenance and returned to his referring physician for additional treatment.

One patient from the ex-addict group reported no advantages to medical maintenance and stated that he missed staff members from his former clinic. After 6 months he requested and received a transfer back to his previous methadone clinic.

CONCLUSION

In summary, the first year of the medical maintenance study indicates the feasibility of methadone maintenance without mandatory counseling and with a considerably more flexible medication schedule for a small, highly selected group of patients. Counseling services were provided on an as-needed basis and appeared sufficient to patients' needs. Noncompliance with the treatment regimen was noted in only one patient (not an ex-addict), which is quite low compared to noncompliance rates for other chronic diseases. Patient acceptance of this form of methadone treatment appears quite high, with patients reporting significant subjective benefits compared to standard methadone clinic treatment. In the second year of the feasibility study, medical maintenance will be expanded to include additional patients and additional physicians. We expect to add up to 10 additional physicians and up to 120 additional patients.

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THE ROLE OF EMPLOYMENT IN THE REHABILITATION OF HEROIN ADDICTS

Jerome J. Platt, David Metzger

INTRODUCTION

In their 1979 chapter on vocational rehabilitation in the Handbook on Drug Abuse, Wolkstein and Hastings-Slack noted that few controlled studies existed in the area of vocational rehabilitation for drug abusers. The few that did exist led them to conclude that vocational rehabilitation and its goal, employment, seemed to be related to treatment outcome, but that little was known about the nature of the relationship. The situation has not changed significantly since then. In this paper we will examine the role of work as it relates to the rehabilitation process in heroin addicts, report on recent findings that help to define and delineate specific elements in the rehabilitation process, and briefly outline current work in this area.

EMPLOYMENT AND TREATMENT OUTCOME

Employment has been viewed as an essential element in the successful rehabilitation of the heroin addict in methadone treatment. On this point, Smart, based on a number of investigations he conducted, stated: "The major factor may be getting a job and not whether a drug is given or not" (1977, p. 181). Other researchers agree that for the ex-heroin addict to reach a successful outcome, employment is crucial in making the expected life adjustments (Waldorf 1970, Preble and Casey 1976).

Generally, the employed methadone client is more likely to be successful than the unemployed one, not only in securing employment, but also in meeting other outcome criteria. Vaillant (1966) and others (Waldorf 1970, Dole and Joseph 1978) have reported that employment appears to be related to abstinence from opioid and nonopioid drugs. Other investigators have found a strong association between employment status and criminality among methadone clients. The employed methadone client is more likely to have shorter periods of incarceration or fewer instances of it, or both (Sass and Woodward 1978, Nash 1973). Retention in treatment has

also been related to employment. In an effort to stabilize their lives, clients are maintained on methadone for what are often long periods of time. Although retention rates in methadone maintenance programs were reported to be around 50 percent overall (NIDA 1976), cumulative evidence consistently indicated that employment status was directly related to retention in treatment (Babst et al. 1971, Berle and Lowinson 1970, Chambers et al. 1970, Sells et al. 1972). Those clients who are employed have a higher retention rate. The conclusion drawn from these studies is that the employed client is likely, from all indications, to meet many criteria used to define a successful treatment experience. The pattern of these results appears to indicate that to understand the issues involved in employment, and to understand the factors involved in overall successful rehabilitation, one must examine the individual client and his or her personal qualities and resources.

CHARACTERISTICS OF THE EMPLOYED CLIENT

The abilities and resources of the employed methadone client that enable him or her to secure and maintain employment are of a multidimensional nature. A host of internal forces (e.g., values, confidence, motivation, personal decisions) and external forces (e.g.) employment opportunities, social matrix) come together to render the client employable as well as employed. In addressing these abilities within the context of employment and training of ex-drug users, Presnall (1975) stated:

> One ...can improvise a fairly effective rehabilitation process, provided an ex-drug user has well developed survival skills and is not too distant from the language and cultural value system of the middle class business world. (p. 1212)

Richman (1966) agreed and further delineated the factors involved in the success of rehabilitation as the "degree of identification with and conformity to conventional modes of behavior and the degree of criminality" (p. 260). There is, in fact, increasing evidence that it is the "type" of client involved that best clarifies the relationship found between employment status and overall success at rehabilitation:

> Most of the outcome status variance for which we could account was related to characteristics of the patients before they entered the sample treatment program...the type of patient served may outweigh program impact. (Mandell et al. 1973, p. 122)

Other researchers have arrived at the same conclusion. Katzker et al. (1974) and Joe (1973) found that the success experienced on the various outcome measures they used, such as retention and employment, appear to depend not on treatment but on the personal

qualities and social resources that the individual client has prior to entering treatment.

The ability to secure employment is, of course, more than simply going out and getting a job. First, clients who successfully go out and get jobs placed some value on being employed. Second, they believed that job opportunities do exist. Third, they had realistic goals in view of their skills and abilities, and they had confidence in applying these resources in seeking and securing employment. Fourth, employed methadone clients were motivated and made the decision to seek work. Finally, they were successful in overcoming or dealing with the fears and anxieties associated with locating, applying for, and being accepted (or rejected) for employment.

It is also clear that the ability to maintain employment is more than merely applying the skills required in performing the given work task. In this regard, Richman (1966) noted:

> Work requires at least two attributes, namely the skill and ability to perform the task required and the social ability to be part of the social matrix which is the job environment. (p. 254)

The implication of the above is that the ex-heroin addict, in becoming "successfully" rehabilitated, must engage in what could be called a "cultural transition." The extent to which addicts internalize and identify with the drug subculture, where they feel accepted, has been explored and documented through the literature (Chein et al. 1964, Waldorf 1970, Senay 1975, Coombs et al. 1976). The addict, through involvement in the drug subculture and a drug-seeking career, becomes enmeshed in a way of life that is far removed from that of the dominant culture.

The emoloved methadone client. aiven this success at rehabilitation, appears to have the abilities and resources required to make this cultural transition. There is. in fact. some evidence that the employed methadone client is not as far removed from the dominant culture as are addicts in general. Caplovitz (1976), in a study of working addicts, concluded that the social characteristics of the working addict are more similar to those of the nonaddict population than to those of addicts in general. This finding was substantiated by Hughes et al. (1971), who found that working clients are good prospects for treatment, given their abilities with respect to psychosocial functioning. Further, the employed methadone client, according to Dole and Joseph (1978), has a relatively shorter history of addiction; that is, he has had less involvement in the drug subculture than the unemployed methadone client has. Finally, there is considerable evidence that a stable work history prior to admission is indicative of subsequent

success at employment (Koenigsburg and Royster 1975, Vaillant 1966); employed methadone clients had experience in applying their personal and social abilities within a job environment prior to treatment.

Overall, there appears to be a pattern that emerges from the literature with respect to employed methadone clients. First, they are successful not only in securing employment, but also on other outcome measures; i.e., the employed client is considered successful in terms of overall rehabilitation. The success experienced in each of these areas appears, in turn, to be dependent on personal qualities and resources that typify the employed methadone client. Finally, employed clients have the abilities required to seek and gain employment and the social skills that enable them to interact with the nonaddict population found in the job environment.

RECENT RESEARCH FINDINGS: A SKILLS APPROACH TO OBTAINING AND RETAINING EMPLOYMENT

There are very few studies that focus directly upon the issue of vocational rehabilitation for heroin addicts. In discussing vocational rehabilitation, however, some redefinition may be needed. Wolkstein and Hastings-Black (1979) defined it as:

> . ..a process in which the client is helped to understand his/her problems and strengths, and is provided with services which will help him/her become employable and obtain and hold a job. (p. 159)

Our view, however, is that rather than developing "understanding" on the part of clients, it would seem as appropriate to provide them with job-related skills. Such skills are not defined as relating to the manifest requirements of the job, but to the interpersonal skills needed in obtaining and retaining employment.

Azrin and his associates (1975) and Hollandsworth et al. (1977) have demonstrated the value of behaviorally oriented training in increasing job interview-related skills in unselected unemployed populations. Azrin and Phillips (1979) later extended their work to the handicapped, while Kelly et al. (1979) developed a program for providing job interview-related skills to formerly hospitalized psychiatric patients. These studies clearly suggested the value of acquiring specific job-seeking behaviors such as asking relevant questions, responding appropriately to questions about oneself, and otherwise demonstrating effective interpersonal behavior. Azrin's program went beyond the interview situation, employing a job-seeking strategy called the "Job Club," which focused on obtaining information about job availability, as well as upon specific interview behaviors. Importantly, participants in Azrin's Job Club learned to use peers as a source of support and information during the job-seeking process.

With respect to heroin addicts, Hall, Loeb, and their associates have been most active in developing job-seeking skills. Using a program they developed with LeVois (Loeb et al. 1982). modeled after Azrin et al.'s (1975) Job Club, they successfully demonstrated an increase in employment among ex-heroin addicts and clients in methadone maintenance. In their first study, with ex-heroin addicts, Hall et al. (1981a) found that their "Job Seeker's Workshop" significantly increased interview skill and rate of employment levels. In their second study, with clients in methadone maintenance, Hall et al. (1981b) found similar increases, but at only marginal levels of significance.

These studies by Hall and her associates are clear examples of what is needed most with respect to the vocational rehabilitation of substance abusers--carefully designed, rigorous experimental evaluations of brief structured interventions that have face validity for the client. The only notable limitation of the Hall et al. studies is acknowledged by the authors (1981a) themselves. They noted that the workshop had a limited objective, increased employment, and did not address "...the other, very real job-related problems which plague ex-drug abusers, including inability to keep a job..." (p. 451).

Some suggestions regarding the skills (and other variables involved in obtaining and retaining employment) may be found in the results of a recent NIDA-sponsored study (Platt et al. 1982) that evaluated the rehabilitative potential of providing interpersonal cognitive problem-solving training to methadone clients. One aspect of the research investigated the demographic, psychosocial, treatment involvement, and interpersonal problem-solving characteristics of clients as these variables related to employment status. Of the 191 methadone clients included in the final analysis, 25 percent were employed.

Perhaps the most striking finding was that the employed group and the unemployed group were very similar in demography and what Platt et al. termed "personal characteristics." While there was no clear evidence that the employed group was more similar to the nonaddict population than to the unemployed group, the trends noted did lend support to past research findings. From the overall study sample, it was noted that white male clients from nonurban, higher socioeconomic areas were more likely to be included in the employed group. Also, these clients tended to have been involved in drug abuse for a shorter time, and thus a shorter period in which the drug culture, with its attendant beliefs, attitudes, language, and behavior, could be internalized.

Regardless of the extent to which the values, beliefs, and attitudes of the drug culture are internalized, it appears that there remain essential differences in the two cultures that the methadone client must deal with when involved in a working environment. As compared to the unemployed clients, employed methadone clients, interacting within a different social matrix,

that of the employed nonaddict population, reported a significantly lower sense of self-confidence in their ability to deal with social situations. At the same time, the employed client was more likely than the unemployed client to maintain a relatively extensive support system. It was also found that employed clients were not only more likely to be married, but were also more likely to indicate that, when needed, they had someone to turn to for help. Most frequently, when faced with a problem, employed clients--unlike their unemployed counterparts--believed that they could turn to clinic staff for support.

In addition to having a support system available to them, employed methadone clients were able to bring to bear problem-solving skills upon problematic situations. They were able, for instance, to view problems from various perspectives. They displayed a stronger ability to make causal connections between actions and consequences and were also able to cite more solutions to a particular problem. This finding is particularly noteworthy. Although the two groups were similar in their ability to cite the various types of problems that people routinely encounter, the employed methadone client was able to conceive of significantly more alternative solutions. Although cognitive abilities are usually viewed as stable constructs, there is ample evidence that these abilities can change with time, training, or experience, or all of these. Although demographically very similar to the unemployed clients and essentially equivalent in terms of past and current treatment involvements, employed clients were receiving significantly higher doses of methadone ($\bar{X}$ = 50 mg versus $\bar{X}$ = 38 mg). Our data cannot define a cause-and-effect relationship between methadone dose and employment. However, it is our belief that clinics may be more willing to maintain clients at higher dose levels when they are engaged in activities generally regarded as productive and successful.

Together, the above similarities and differences suggest that employment is related to interpersonal cognitive skills (and, of course, job availability). There were few demographic and treatment-related differences other than clinic location and dose between those who had jobs and those who did not. While employment may he an almost universal goal of treatment programs and clients alike, the data also suggest that gaining employment brings with it an increased need for supportive counseling services.

VOCATIONAL PROBLEM-SOLVING SKILLS TRAINING: THE HAHNEMANN PROJECT

Based upon the above findings, which we believe highlight the essential role of interpersonal skills in seeking and maintaining work, we have developed a pilot intervention program that will be empirically evaluated over the next 3 years.

One focus of this project will be to examine different classes of variables in explaining employment. A second focus will be on

teaching and directing participants to clarify and act upon their own work-related problems. Some programs, either directly or by implication, make promises that cannot be kept with certainty: that is, they set overly optimistic expectations, such as job placement, vocational expertise, and so on. It is crucial that realistic expectations be established at the start. This program is not a job-placement program, nor is it a vocational training program. The group series is a program designed to lead participants through a process of self-examination regarding their feelings, attitudes, and motivations toward work, and to teach a process for overcoming vocational problems.

It is our belief that getting a job or keeping a job is a job in itself. These groups will provide an approach to looking at oneself in relation to finding work and keeping it.

The underlying construct of these sessions is the Training in Interpersonal Problem-Solving model (TIPS), as developed by Platt et al. (1979). This problem-solving, cognitive training model may be briefly summarized as consisting of three phases: 1) problem clarification, 2) resource awareness, and 3) action and readiness. Ten one-and-a-half-hour group sessions focus upon teaching this process to drug treatment clients. The program is intended to aid in a current assessment of an individual's status regarding work. We will not attempt to deal with historical factors in an individual's life that have evolved to produce their current situation. While this is obviously an important issue, the program begins with the existence of the problem and attemots to Drovide strategies for addressing the problem. We want clients to move away from thinking about "What could have been?" or "What should I have done?" to "What am I going to do now?"

The employment problems will be different for each participant; consequently, solutions will also be different for each individual. However, the process of moving from the problem to the solution can be the same for all. It is this process upon which this group sequence is based and designed to teach. Success of the group will be assessed on the basis of how well the participants have learned the process and incorporated it into the achievement of their own vocational goals through action.

Past demonstrations of the efficacy of the problem-solving therapy approach have been focused upon teaching a set of interpersonal skills, which have been empirically tested and related to adjustment. This project represents an attempt to sharply focus that process upon vocational issues. Our success with past training programs in problem-solving encourages us to believe that, with this more highly focused approach, application of the acquired skills will be more directly facilitated. In fact, with this focus, individuals within the group will be required to apply the process as it is being taught and to assist each other in the process of vocational problem-solving.

One additional point must be stressed: the group program is designed to place the responsibility for action upon the individual. We will train the clients to become, in essence, the procurers of services they define as necessary to overcome their own barriers to employment. An important focus of the intervention is thus upon motivating clients to act upon their own employment problems, to use the resources available to them. As stated previously, each client has a unique set of historical and current issues that may impede goal-directed behavior. The fact that employment problems are individualized in nature means that the specific solution to these problems must also be individualized. While one client may face an educational barrier, others may be stalled in their search for employment because of a recent work failure or poor work history. The common factor among these clients is that they are unemployed and must act to overcome their own barriers to employment. The focus of the intervention is upon involving clients in a process of self-examination and training in solving employment-related problems.

CONCLUSIONS

At this point, the relative lack of empirical data on the efficacy of vocational rehabilitation programs for heroin addicts is painfully obvious. At the same time, research appears to be beginning on what works in increasing both job-acquisition and job-retention skills. It is hoped that current research on the role of work in rehabilitation will yield an increased understanding of the contribution of different classes of variables (personal and demographic characteristics, treatment involvement, psychosocial, and interpersonal cognitive problem-solving skills).

Based on our experience to date, however, we can summarize our ideas concerning the "ideal" intervention program. First, it should meet an important need of a large proportion of the heroin addict population. Since our own data as well as those provided bv others (Wolkstein and Hastinas-Black 1979) indicate approximately a 75 percent unemployment rate, the need is obvious if what we believe about the value of employment is substantiated. Secondly, the ideal treatment program, in our opinion, is one of brief duration--eight to ten sessions because of the difficulties in holding addict populations in treatment, Third, the ideal location for placement of a vocational rehabilitation program should be the clinic itself since this placement maximizes attendance. Fourth, there is no reason for vocational rehabilitation to be isolated from other treatment elements. If anything, its importance should be stressed as part of an integrated treatment program. Fifth, the staff members who implement the program need not be at the doctoral, or even master's, level. In fact, our experience suggests that such leaders may be too closely allied with a clinical philosophy and therapeutic style inconsistent with the problem-solving training approach used here and thus have a tendency to "stray" from the programmed content of the

intervention. Also, individuals highly familiar with the practical aspects of employment difficulties for addicts should be used.

The program we are currently studying brings with it many questions. These include 1) the form of the most efficacious vocational skill acquisition program, 2) the nature of the client characteristics that facilitate skill acquisition and their use, 3) the possible negative consequences, if any, of providing skills, and 4) the long-term psychosocial impact of seeking and gaining employment.

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WHO IS SERVING DRUG ABUSE CLIENTS: TREATMENT DELIVERY BY PROFESSIONALS VERSUS PARAPROFESSIONALS, BY PAID STAFF VERSUS VOLUNTEERS

Leona S. Aiken,
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INTROOUCTION

In two national studies we have detailed who is treating drug addicts. and, from staff evaluation and client progress, how well they are providing these services. In our first study, we contrasted three groups of paid counselors in drug-free outpatient (DF) and methadone maintenance (MM) modalities: 1) professional counselors with no addiction background who held at least a bachelor of arts degree (PROs); 2) ex-addict paraprofessional counselors who did not hold a bachelor's degree (EXAs); and 3) non-ex-addict paraprofessional counselors who had neither a bachelor's degree nor a history of drug addiction (NEAs). These counselor groups were contrasted in terms of their functions and activities in the program, their attitudes to clients, the attitudes of clients to them, and the progress of their clients in treatment (Aiken et al. 1984a,b; LoSciuto et al. 1984; Aiken and LoSciuto 1984). In the second study we examined the services provided by volunteers in more than 100 drug-free outpatient and therapeutic community (TC) programs nationwide. Here we detailed the services provided by both specialized volunteers such as physicians, lawyers, and psychologists, and, more importantly for our purposes here, by volunteer counselors. We explored the views of program administrators and paid counselors on the worth of program volunteers, and on the staff support, training, and supervision required to use volunteers. We examined in some detail sources of volunteers and their motivations for and satisfactions with volunteering (Aiken et al. 1981).

Background of the Paraprofessional Study

The comprehensive nature of our study of counselor groups contrasts with the literature on paraprofessional versus professional program staff. There has been some consensus concerning the advantage of counseling by indigenous paraprofessionals such as the ex-addicts of our first study. However, few studies of the effectiveness of these counselors versus more traditional professionals

exist (Ottomanelli 1978). In the methadone maintenance modality, Brown and Thompson (1976) provided 1-year evaluations of clients assigned to ex-addict and nonaddict counselors; they reported no differences in client retention in treatment, arrest rate, and employment. More recently, Longwell et al. (1978) and Connett (1980) compared the drug use of clients of professional and para-(professional counselors, again reporting no differences in the percentage of clean urines of the two client groups. Finally, Ottomanelli (1973) found no differential personality changes in clients assigned to professional counselors (with master's degrees) versus methadone-maintained ex-heroin addicts. While these studies apparently support a lack of difference between paraprofessionals and professionals in counseling quality, only the study by Brown and Thompson had samples of sufficient size and therefore statistical power to warrant such a conclusion. This literature suffers from the same limitations on validity of statistical conclusions as the more extensive literature on paraprofessional effectiveness within the mental health field (Durlak 1979, Hattie et al. 1984, Nietzel and Fisher 1981). The present study was designed to overcome problems of statistical power, so that whatever differences might exist among the counselor groups could emerge.

Background of the Volunteer Study

According to the 1980 National Drug Abuse Treatment Utilization Survey (NDATUS) (National Institute on Drug Abuse 1980), only 4 percent of the fulltime equivalent counselors in all drug treatment programs in this country were volunteers. For prior years, headcounts, not fulltime equivalents, were reported by NDATUS. These counts give a different picture of volunteer use. The percent of all counselors who were volunteers was 30 percent in 1976, 24 percent in 1977, and 23 percent in 1978. (The most recent NDATUS report of 1982 did not gather data comparable to these earlier reports.) In 1978, the percentage of volunteer counselors who were paraprofessionals without degrees was 76 percent versus 46 percent for paid counselors. Examined from the perspective of volunteers, more than half the volunteers in drug treatment programs serve as counselors. Overall, a sizable part of our drug treatment nationally is being provided by volunteers who do not hold a bachelor's degree.

Ausetts et al. (1980) provided further analysis of volunteerism in drug treatment based on a program-by-program analysis of the federally funded programs listed in the 1976 NDATUS survey. Volunteers were not uniformly distributed across the country. In large East Coast Standard Metropolitan Statistical Areas (SMSAs) with substantial federally funded treatment programming, volunteering was surprisingly low: fewer than 1 percent of treatment staff in the New York City SMSA were volunteers; for Washington, D.C., 9 percent were volunteers. In contrast, volunteers constituted 20 percent of staff in San Francisco and 25 percent in Los Angeles. Volunteers were not uniformly distributed across

modalities--almost no methadone maintenance programs had volunteers, but close to half of therapeutic community and drug-free outpatient programs did.

Ausetts et al. (1980) also provided an extensive literature review on the volunteer movement in drug abuse, alcoholism, mental health, and corrections. They analyzed the functions and specific activities of volunteers in these service delivery areas. Volunteers have been reported to participate in a full range of program activities: community education, interagency relationships, program administration, counseling in the community, client administration, personal aid to clients, psychological and psychiatric services, medical and dental services, legal services, and research. The shift in motivations for volunteering that occurred in the 19705, i.e., from response to broad social goals and societal needs to more personal self-awareness and self-actualization is described (see also Smith 1974, Suarez and Ricketson 1974). Evaluations of volunteer effectiveness are reviewed; these mainly are confined to the criminal justice field, where volunteer programs have met with mixed success (see also Cook and Scioli 1975), and to the mental health area, where reports have been more positive.

Finally, of particular importance are issues of volunteer recruitment, selection, and training, and the implementation of volunteer programs, also addressed by Ausetts et al. (1980). Volunteer pools have included university students, professionals, retired persons, and clients and ex-clients. Recruitment has been accomplished through appearances by program staff, advertisements, and distribution of literature. Not unexpectedly, selection and training have varied widely in intensity and care.

In all, the extensive literature on volunteerism addresses the many issues confronting program planners who wish to use volunteers. However, the major sources of information on volunteers have been the mental health and criminal justice fields, not that of substance abuse. Our investigation complements this literature by addressing volunteer use in drug treatment.

THE PARAPROFESSIONAL STUDY

In the paraprofessional study we aimed to examine differences among three distinct groups of counselors in the drug treatment field: 1) professionals with degrees (PROs); 2) ex-addict paraprofessionals without degrees (EXAs); and 3) paraprofessionals without degrees with no addiction background (NEAs). Across 16 programs in 5 major cities we surveyed 82 counselors and 302 of their clients. The programs chosen were primarily ones in which the three groups of counselors were simultaneously employed, permitting maximum divergence of roles to occur.

The study is divided into three components. The first is a consideration of counselors' backgrounds and roles (Aiken et al. 1984a). The second is an attitudinal study (LoSciuto et al. 1984). The third is a consideration of clients' progress in treatment (Aiken et al. 1984b). The thrust of all aspects of the study was to identify differences among the counselor groups.

The study began with an in-depth documentation of the three groups' drug use and academic and experiential backgrounds. An analysis was also done of the drug use, drug treatment, and criminal, educational, and employment histories of their clients, to determine whether clients were differentially assigned to the counselor groups. A job analysis of the counselor's role was done, covering 41 activities in 11 areas ranging from community education to staff administration.

In the attitudinal component of the study, counselors reported on the major causes of drug use, the critical factors of treatment success, their definition of treatment success, their expectations for clients, and their perceptions of drug abuse clients. Clients, in turn, reported on their counselors' knowledge of drugs and the streets, their competence, and the quality of their relationships with clients. Clients described problems they would bring to their counselors, their perceptions of counselors' willingness to help, and their expectations for themselves.

In the client progress component of the study, clients reported about two points in time--the point of entry into treatment and the time of the interview. Counselors reported about client status at the time of the interview to corroborate client accounts. The counselors then provided followup data on the clients 4 months later. At all points, clients' drug use, schooling, employment, and criminal involvement were considered.

Method

Programs. Nine methadone-maintenance (MM) and six drug-free (DF) programs plus a sixteenth program with separate MM and DF units were visited. These programs were in New York, Washington, D.C., Los Angeles, San Francisco, and Chicago.

Across programs, 31 PRO, 20 NEA, and 31 EXA counselors were interviewed. Then clients of 116 PRO, 71 NEA, and 115 EXA counselors were randomly chosen by the study staff for interviews. We fell 8 percent short of our goal of four clients interviewed per counselor. Finally, we interviewed 29 program administrators.

Four months after the site interviews we performed a mail followup study of the progress of the clients we had interviewed. Counselors described individual clients' status, whether or not the clients had remained in treatment. Followup data were collected on 257 of the original 302 clients (86 percent).

Findings: Counselor and Client Background and Counselor Role

Counselor background. The demographics of the three counselor groups varied considerably. They differed in ethnic composition: PROs were 67 percent white/Anglo, while NEAs and EXAs were 70 Percent black. Mean ages were 30 years, PROs; 36, NEAs; and 39, EXAs. The percentage of males was 48 percent, PROs; 60 percent, NEAs; and 81 percent, EXAs.

PROs had worked in their programs about 1.5 years; NEAs, 3 years; and EXAs, 2 years. Prior to their current position, PROs had had an average of only 7 months' drug counseling experience, as opposed to 13 months for NEAs and 16 for EXAs.

In addition to bachelor's degrees, 42 percent of PROs held master's degrees, and another 29 percent had taken some graduate courses. The rates of in-service training differed across groups: 80 percent of NEAs had received such training, but only 58 percent of PROs and 42 percent of EXAs had. Counselors were asked whether, over all sources of training, they had studied nine areas relevant to the counselor role, including counseling techniques, drug effects, and drug laws. Though they had had quite different sources of training, the three groups did not differ in incidence of having received training on any topic.

Almost half the PROs, only 15 percent of NEAs, and, of course, all EXAs reported having used various drugs. All EXAs had been frequent heroin users; all but two had been in drug treatment.

Client background. Client backgrounds were examined to uncover any evidence for differential assignment of clients to counselors of the three groups.

Clients of the three groups were very similar demographically. Two-thirds of the clients in each group were male; half in each group were black; another third in each were white; the remainder, Spanish-American. The three groups differed slightly, but significantly, in age, with client ages averaging 29 years old for PROs, 32 for NEAs, and 30 for EXAs.

Clients reported their years of any drug use, years of continuing use, frequency of use in the year prior to entry, and frequency of use in the 30 days prior to entry for 12 drug categories. There were no differences in the MM modality; in the DF modality clients of PROs had used alcohol more often than other clients in the 30 days prior to treatment. Again in the DF modality, clients of PROs had on average one more treatment episode than those of NEAs.

More clients of EXAs had been in jail in the year but not the 30 days prior to treatment. Equal rates of clients in all groups were in treatment as a result of an arrest.

Groups did not differ in educational and employment history.

In summary, four differences among groups were detected over 97 measures of difference among groups. There was no cohesive picture of differential assignment of clients to counselor groups.

Counselor roles. EXAs worked longer hours than PROs did but earned an average of $900 a year less than PROs. Caseloads were equal in size across groups. PROs spent slightly more time per week than EXAs in individual counseling; the reverse was true for group counseling. Across these measures, NEAs fell between PROs and EXAs.

Counselors reported their frequency of involvement in 41 activities covering 11 areas: community education, clerical and service duties, control and enforcement, socializing with clients, counseling in the community, personal aid to clients, administration of clients, administration of the program, counseling in the treatment center, psychological assessment, and staff training. With separate Multivariate Analyses of Variance applied to the activities in each of the 11 areas, differences emerged in three areas: community education ($p<.10$), socializing with clients ($p<.10$), and counseling in the community ($p=.05$). All three areas involved work with clients outside the program. In these three areas, EXAs were consistently more involved.

These overall results suggested that EXAs as a group might be characterized as being more active outside the program. Actually, this was not so, as indicated by discriminant analyses performed to determine the extent to which individual counselors would be classified as similar to their own versus other counselor groups. In separate discriminant analyses applied to the community education and to the socializing with clients activity clusters, 36 percent and 48 percent, respectively, of EXAs were classified as being statistically more similar to PROs than they were to other EXAs. In sum, then, it was a subset of EXAs who differed from the other counselors at all, and then only on those activities that took them outside the program.

Administrators apparently supported the idea of equivalent counselor roles across almost all of the 41 activities. Administrators thought that PROs more than the other groups should be involved in psychological testing, and they supported the extensive participation of EXAs in community education. Other than these, few differences emerged in administrators' views of the appropriateness of counselors' involvement by group.

Summary. The demographics and the educational and experiential backgrounds of the three counselor groups were markedly different. Of course, PROs had the most extensive academic backgrounds. In contrast, NEAs had received substantially more in-service training than had the other groups. Despite the differences in background, the groups reported equal prevalence of having received training in a variety of drug-treatment-related areas.

One might have expected selective assignment of clients to counselors, based on the perceived strengths of each counselor group. Little evidence of selective assignment was noted, based on 97 measures of drug use, treatment, and educational, employment, and criminal history.

Counselor roles in the program were also quite similar, with counselors of the three groups having equal involvement in most dimensions of counseling-related activities. The one exception was that for several activities that took counselors into the community, a subset of the EXAs were more active than all other counselors.

Considered across client characteristics and job-related activities, there was almost no evidence of differences among counselor groups. The programs chosen for analysis were ones that provided the greatest opportunity for role differentiation, since all counselor groups existed in all but one program surveyed.

Findings: Counselor and Client Attitudes and Expectations

While counselors' roles were notably consistent across groups, it was possible that their backgrounds had conditioned differences in their views of drug addiction, drug addicts, and drug treatment. Clients also might respond differently to counselors of the three types.

Counselor attitudes and expectations. Counselors, asked to rank six potential reasons for drug abuse, agreed across groups that peer pressure was the most important, and poverty and discrimination the least important factor (intergroup reliability coefficient = .97). The groups also agreed that among four factors, the client was the most important factor in treatment (intergroup reliability coefficient = .99). The groups, in giving open-ended definitions of treatment success, most commonly included becoming and remaining drug-free (29 percent of PROs' comments, 31 percent of NEAs', and 23 percent of EXAs') and leading a "normal, mainstream" existence (25 percent of PROs, 26 percent of NEAs, 20 percent of EXAs). The only group difference of note was that EXAs mentioned such psychological adjustment factors as coping, sense of self-sufficiency, and self-awareness more frequently than the other groups did; 32 percent of EXAs, 16 percent of PROs, and 15 percent of NEAs mentioned these factors.

Ratings by counselors of the likelihood of clients' sustaining 10 treatment outcomes again yielded substantial convergence among the groups. NEAs were less optimistic that clients would have good mental health; EXAs, more optimistic that clients would remain drug free. All groups agreed in their ratings of the likelihood that clients would get and hold legal jobs, be crime free, enjoy physical health, and have good productive lives and family relationships. They all agreed that it was unlikely that clients

would have no further need for treatment a year after leaving the program.

Counselors characterized drug abuse clients on 19 statements concerning "the average drug abuse client in their program," e.g., mentally ill, victims of society, morally weak, reachable, likely to steal. The counselor groups converged on all items (intergroup reliability coefficient = .93). Most notably they all agreed that clients were not criminal by nature, that they were reachable, and that they were capable of real and permanent change.

Perhaps surprisingly, all three counselor groups disayreed to the same extent with two items concerning the background required to handle clients--"There is no substitute for coursework in counseling or social work for learning how to deal with clients," and "Unless you have a lot of education, most clients think you cannot help them." Though all three groups disagreed with a third item, "You cannot really understand a client's problems unless you have had the same problems yourself," EXAs disagreed less strongly than did the other groups. The groups agreed on items concerning the control of clients in the therapeutic relationship, and more broadly, on items concerning how clients and their counselors should interact.

Clients' attitudes and expectations. Clients first rated their counselors along 30 items subsumed under three dimensions: 1) counselor knowledge of drugs and the street (5 items), 2) counselor competence to understand and help the client (12 items}, and 3) quality of counselor-client relationship (13 items). Clients of EXAs viewed their counselors as more knowledgeable than other clients viewed their counselors on all items pertaining to drugs and the street. In addition, clients of EXAs endorsed more strongly the notion that they got something from counseling sessions. Clients of EXAs agreed with clients of the other counselors on all other items.

Clients characterized what they believed to be their counselors' views on the 19 statements concerning the "average drug abuse client in their program"; their counselors had also rated these same items. Correlations between mean responses of clients and counselors in a group across the 19 items were strony: $r(17) = .81$ for PROs' clients, .66 for NEAs', and .78 for EXAs'. The only variation among the client groups was that clients of EXAs believed their counselors would see drug abuse clients in a more negative light compared to clients of the other counselor groups, i.e., as more likely to steal, more antisocial, and more likely to be dangerous.

Clients described their expectations for the future. Clients of the three groups agreed highly over 10 items (interyroup reliability coefficient = .99). They had much higher expectations than their counselors, however.

Asked what problems they were willing to bring to their counselors, clients all were more willing to bring drug-related problems than other, more personal, problems. When aggregated over a list of 10 problems, the average percentage of clients who said it was likely that they would bring a problem to the counselor was slightly higher for clients of EXAs (65 percent) than for clients of PROs (61 percent) or NEAs (60 percent).

Clients of EXAs also were more likely than clients of the other two counselor groups to believe that their counselors would participate with them in six counseling-related activities, e.g., visiting the client at work or in the hospital, going to court to testify (on average 86 percent of PROs' clients, 88 percent of NEAs', and 92 percent of EXAs' across six activities). For participation in more personal activities, e.g., socializing with clients, differences were more dramatic in favor of EXAs (on average 59 percent of PROs' clients, 70 percent of NEAs', and 76 percent of EXAs'). The pattern was similar in response to the question of whether clients would want their counselors to participate in the counseling-related activities (71 percent of PROs', 79 percent NEAs', and 78 percent of EXAs'), and the more personal activities (40 percent of PROs', 48 percent of NEAs', and 53 percent of EXAs'), though NEAs as well as EXAs were favored here.

Summary. Counselors showed remarkable agreement over many areas: reasons for the onset of drug abuse, factors important for treatment success, the definition of treatment success, the likelihood of sustained treatment outcomes, counselor background required to treat clients, the nature of client-counselor relationships, and the characteristics of drug abuse clients. It was clients, in contrast, who exhibited differential beliefs about their counselors. Clients of EXAs believed their counselors to be more knowledgable about drugs and the street, and to offer more in counseling sessions. Clients of EXAs were slightly more willing than clients of the other counselors to bring problems to their counselors; they believed more strongly that the counselors would be willing to help them, and actually wanted their counselors to participate in solving both counseling-related and personal problems.

Findings: Progress of Clients in Treatment

Counselors in the three groups held notably similar views, and their roles in the program were markedly alike. However, the quality of their participation in the counseling function may have occasioned differences in client progress in treatment.

Initial differences among client groups. The extensive assessment of client status in the year, and more specifically the month, prior to treatment entry had yielded essentially no evidence of differences in assignment of clients to counselors. Moreover, clients of the three groups did not differ in the length of time they had been in treatment prior to the first interview.

Methadone clients averaged 21 months in treatment before the interview; drug-free outpatient clients averaged 7 months. Lastly, clients in the three groups did not differ in the amount of treatment time with their current counselors (80 percent and 86 percent of all time with current counselors for the MM and DF modalities, respectively). In all, there were no systematic differences among clients of the three counselor groups that would distort the assessment of client progress as a function of counselor group.

Drug use. Clients and their counselors estimated client use frequency of 12 categories of drugs in the 30 days prior to the first interview: marijuana/hashish, drugstore items containing drugs, inhalants, hallucinogens, amphetamines, barbiturates, sedatives and tranquilizers, cocaine, heroin, illegal methadone, other opiates, and alcohol to excess. (See Aiken and LoSciuto 1984 for an extended treatment of counselor-client agreement in estimation of client drug use.) Use in all but three categories--marijuana/hashish, sedatives and tranquilizers, and heroin--was low; rates of any use did not differ across groups. In the MM modality, the frequency of use of marijuana, sedatives, and heroin did not differ across counselor groups, with pretreatment use level controlled. One difference was noted in the DF modality: decline in use of marijuana from the 30 days prior to treatment entry to the 30 days prior to the interview. Clients of EXAs showed the greatest decline.

Counselors at the 4-month followup again reported the frequency of use of each of the 12 categories of drugs. For clients who remained in treatment, the report covered the 30 days prior to the followup. For those who had left the program, the report covered the 30 days prior to leaving. In the DF modality there were no differences in rates of use. In the MM modality differences were found in three nonopiate categories. Clients of EXAs had the highest use of barbiturates; clients of NEAs, amphetamines; clients of PROs, drugstore items.

Finally, asked what their counselors had done to help them become and remain drug-free, 20 percent of PROs' clients, 13 percent of NEAs', and 9 percent of EXAs' said their counselors had done nothing.

Education and employment. PROs' clients, more often than those of the other two groups, received any schooling in the 30 days prior to the interview (22 percent for PROs', 18 percent for NEAs', and 11 percent for EXAs'). There had been no differences among the groups in the 30 days prior to treatment entry (10 percent PROs', 11 percent NEAs', and 9 percent EXAs'). At followup, approximately equal percentages of each client group were in vocational school; however, clients of PROs again had the educational advantage for academic programs (26 percent PROs' clients enrolled, 11 percent NEAs', and 9 percent EXAs'). Part, hut not all, of the differences among groups could be accounted for, by a small

interaction between client age and education level. In all, 18 percent of PROs' clients, 6 percent of NEAs', and 12 percent of EXAs' held high school diplomas or GEDs and were also between the ages of 16 and 25, an age range in which clients might consider pursuing a college education.

No differences existed at any point in the rates of employment of clients across groups, or, for female clients, in their rates of being housewives.

Criminality. Clients did not differ in arrest rates or rates of being jailed in the 30 days prior to treatment entry, 30 days prior to first interview, or 30 days prior to followup.

Quality of life. During the initial interview only, clients were interviewed about the quality of their lives. Topics included: 1) participation in routine chores and activities (22 items), 2) participation in antisocial activities (11 items), 3) physical health (3 items), 4) social isolation versus nonisolation (6 items), and 5) physical environment (3 items). No differences emerged on any items.

Summary. Evaluation of client progress was based on client status at three points in time: the 30 days prior to treatment entry, cross-sectionally the 30 days prior to the first interview, and 30 days prior to a 4-month followup (or leaving the program). In only one area, education, did any difference emerge among the clients of the three groups, with the advantage accruing to PROs' clients. Some part of this advantage may have been attributable to a demographic interaction--a somewhat higher proportion of college-age clients who held high school diplomas or GED degrees in the PRO group.

Discussion

We have amassed evidence on the following four points:

1) PRO, NEA, and EXA counselor groups have highly similar roles in their programs.

2) Despite their vastly different experiential backgrounds, these groups have highly convergent views of drug abuse, drug addicts, and drug treatment.

3) Clients are not assigned selectively to one or another counselor group based on the clients' histories.

4) With the exception of educational pursuits, the clients of the three groups make equivalent progress in treatment.

In sum, we are making an argument for a "no difference" conclusion, a conclusion that can be supported only in the context of adequate statistical power to detect any differences that might exist in the data (Cohen 1977). Statistical power analyses were performed on the two data segments within which counselor groups comparisons were made: comparisons among the 82 counselors, and comparisons among their 302 clients. For comparisons among counselors at a conventional level of significance (.05), the power for detecting effects of moderate size was 80 percent, a level of power now conventionally acceptable in psychological research (Cohen 1977). For comparisons among clients on continuous measures, power approached 100 percent; for comparisons on discrete measures, almost 80 percent. The one exception to this high level of power was that for comparisons of drug-use levels among clients in the DF modality at followup; here power was 72 percent for a Type I error probability of .05, but it rose to 82 percent if the probability of Type I error rose to .10. Examined across the many comparisons made in the study, the power was adequate for our "no difference" conclusion.

With this broad conclusion of no difference among counselor groups, are there further questions we need to ask? Two suggest themselves: 1) Do the counselor groups differ in their ability to handle "special needs" clients, e.g., the severely disturbed? and 2) Would a finer stratification of the "professional" category into those who hold only a bachelor's degree versus those with advanced clinical training reveal undetected differences in effectiveness?

Our selection of clients was random--we chose a random sample of clients of each counselor's caseload. We did not systematically sample classes of clients of interest, e.g., those who were emotionally disturbed, or those with extensive criminal histories. Perhaps in such cases unique counselor backgrounds would lead to differences in effectiveness. We might find interactions between client outcomes by subgroup and counselor group in these more extreme cases.

In this publication a number of treatment strategies are being discussed--group therapy, behavioral therapy, family therapy. We did not examine in our study how the various counselor groups fared in providing these various treatment strategies. Rather, we aggregated across treatment strategies. A more careful study of the interaction of counselor background with treatment strategy would be useful.

In considering what counselors are suited to delivering what sorts of therapy to what type of clients, a precise definition of "professional counselors" is needed. In our study all counselors with degrees were considered professionals, though this group could have been stratified at least into those who hold an advanced clinical/counseling degree versus those who hold only a bachelor's degree. It is interesting that what the drug treatment field

labels professional counselors are often labeled paraprofessional counselors in the mental health field (Durlak 1979, Nietzel and Fisher 1981, Hattie et al. 1984). In all we are suggesting that further studies in this area should analyze the interaction of counselor groups with special types of clients and particular therapy systems, based on a precise definition of the professional counselor.

THE VOLUNTEER UTILIZATION STUDY

In the volunteer utilization study, we distinguished three groups of volunteers: 1) specialized professionals such as physicians, psychiatrists, and lawyers, 2) counselors, and 3) noncounseling personnel, including administrative support staff. In this report we address the specialized professionals and counselors as distinct resources in drug treatment programming. (See Aiken et al. 1981 for a more general report on all three volunteer groups.) We begin with an overview of the prevalence of volunteers, based on a national survey of programs. We then address the specialized volunteers, their functions in the program, their services to paid counselors, and their backgrounds. In a third section we consider the volunteer counselors, with special emphasis on their direct counseling services in the program and on their academic and experiential preparation for their volunteer role. An evaluation of volunteers by paid counselors is given. In a fourth section we contrast the specialized professionals and counselors on a number of issues--demographics and educational background, access to the program, motivations for volunteering, length and amount of service to the program, sources of satisfaction with volunteering, relationships with paid staff and clients, and participation in a number of activities across a broad spectrum.

Method

Telephone survey: Phase I. All federally funded MM, TC, and DF programs on the 1978 NDATUS file that listed five or more volunteers were screened for eligibility. They had to be single modality programs, with at least five volunteers at the time of the study. For the study, volunteers were defined as people who work for no pay and for at least 1 hour per week in the program. Students were included as long as they were not paid. Of the 138 eligible programs, telephone interviews were completed with the administrators of 123, or 89 percent. In all there were 95 DF, 26 TC, and 2 MM programs.

On-site survey: Phase II. The telephone survey constituted Phase I of the two-part study. Phase II involved on-site visits to treatment programs. Of the 123 programs in Phase I, 9 DF and 6 TC programs with substantial numbers of specialized volunteers and nonspecialized volunteers, particularly counselors, were site-visited. In all, 108 volunteers and 51 paid counselors were interviewed across the programs.

Findings

Prevalence. Across the 123 programs lawyers were the most frequent specialized professional volunteers, and also the most infrequent paid staff (see table 1). Volunteer psycholoqists, nurses, and social workers were each found in more than 30 percent of programs. Fully 80 percent of the 123 programs had volunteer counselors, and 9 percent had no paid counselors. Hotline counseling was essentially a volunteer function, with 95 percent of programs with hotlines using only volunteers for that function. Finally, more than half the programs depended on volunteers for some administrative support services.

Programs often had large numbers of volunteers. Among the 123 programs, the median number was just under 25 (29 for DF, 14 for TC), and a fourth of the programs had more than 50 volunteers.

Specialized professional volunteers. Approximately 80 percent of the 123 programs had at least one specialized volunteer, with a median of more than four per program. These specialized volunteers brought a high level of professional training and services to programs that otherwise might not have these services.

The specialized volunteers did provide some direct services to clients. However, the volunteers more often served the program through consultant services to staff. They participated in in-service training of counselors, consulted with counselors about the counselors' clients, and saw clients on a temporary basis at the request of counselors. The specialized professionals also provided administrative services--they served on Boards of Trustees and helped develop policy and administer functions in their own areas of expertise. Volunteer lawyers illustrate the specialized professional function well. Of the 76 program administrators with at least one volunteer lawyer, approximately 90 percent reported that the lawyers advised staff members about legal issues concerning the program and/or the clients, and half reported that the lawyers provided administrative and policy support to the program as well.

The specialized professionals brought to the program more than just their own services. Volunteers in every specialty procured resources from the community for the program through referrals of clients to resources outside the program, bringiny other specialists into the program, and obtaining funding.

TABLE 1. *Percentage of programs' having paid staff and/or volunteers, by staff category*

Staff Category	Programs With at Least One Volunteer (Percent)			Programs With at Least One Paid Staff Member (Percent)	Programs With Paid and/or Volunteer Staff (Percent)			
	All Program	OF (N=95)	TC (N=26)		Both	Paid Only	Volunteer Only	Neither
Physician	27.3	29.5	23.1	18.2	5.8	12.4	21.5	60.3
Psychiatrist	26.7	26.6	26.9	24.6	3.3	21.3	23.0	52.5
Lawyer	61.8	62.1	61.5	13.8	11.4	2.4	50.4	35.8
Psychologist	39.0	42.1	30.8	46.0	21.1	27.6	17.9	33.3
Social worker (M.S.W)	33.3	36.8	19.2	30.1	13.8	16.3	19.5	50.4
Vocational counselor	24.3	24.2	23.1	18.3	3.5	14.8	20.9	60.9
Nurse	34.1	39.9	15.4	21.1	12.2	8.9	22.0	56.9
Counselors	80.5	76.8	92.3	89.4	71.5	17.9	8.9	1.6
Counselor with at least bachelor's degree	68.3	67.4	69.2	04.6	56.9	27.6	11.4	4.1
Counselor without bachelor's degree	44.7	38.9	69.2	49.6	25.2	24.4	19.5	30.9
Hotline worker	46.3	54.7	19.2	2.4	2.4	0.0	43.9	53.7
Administrative support staff	57.9	50.5	80.8	92.6	52.1	40.5	5.8	1.7

*N = 123; Includes two methadone maintenance programs.

SOURCE: Aiken, L.S.; LoSciuto, L.A.; and Ausetts, M. A Study of Volunteers in Drug Abuse Programs National Institute on Drug Abuse Treatment Research Report. DHHS Pub. No. (ADM) 81-1147. Washington, D.C.: Supt. of Docs., Govt. Print. Off., 1981. p. 12.

Interviews with the 51 paid counselors in Phase II of the study provided another perspective on the specialized volunteers, i.e., how they served paid staff. For all specialized categories except vocational counselors, the paid counselors were more likely to have requested information for use in working with a client than to have requested aid in working with the client by having the specialist see the client. The paid counselors almost universally reported that their requests were met and that they were satisfied or very satisfied with the specialists' responses.

The specialized volunteers (n = 31) interviewed in Phase II provided information on their current employment and work histories. Overall, about 80 percent were currently employed in the discipline in which they were volunteers. All the psychiatrists, physicians, and lawyers had been employed in the professions in which they were volunteering for a minimum of 3 years; and in half the instances, more than 10 years. In contrast, half the psychologists, social workers, and vocational counselors had not been practitioners in the professions in which they were volunteering, though several were professors or teachers in their disciplines, and several were students. Two-thirds of all specialized professionals volunteered for 5 or fewer hours per week. In contrast with other volunteers, none of the specialized volunteers had ever been in treatment for drug abuse.

Volunteer counselors . In all, 106 of the 123 programs of Phase I had volunteer counselors; 11 had exclusively volunteer counselors. All 106 programs provided in-service training and supervised the volunteer counselors continuously. Most of the programs assigned a staff member direct responsibility for the treatment provided by volunteer counselors to their clients.

Phase II interviews with the 47 volunteer counselors provided further information on their training and educational backgrounds, caseloads, and drug use.

Of the 47 volunteer counselors, 45 percent held bachelor's degrees. Almost half of these were psychology majors. Five held master's degrees, three of them in clinical or counseling psychology. Across all 47 volunteer counselors, fewer than half had taken a counseling course. In all, 89 percent reported that they had received training in counseling from the program in which they were volunteering. Training of volunteer counselors was compared with that of all paid counselors of the paraprofessional study. Volunteers had lower rates of having studied a large number of treatment-related topics than had the paid counselors. For example, fewer volunteers than paid counselors had studied counseling techniques (74 percent versus 91 percent), specific therapy methods (66 percent versus 83 percent), and client control procedures (51 percent versus 70 percent).

In all, 11 percent of the volunteer counselors had held paid jobs in drug abuse programs; four had worked as paid drug counselors.

Almost half had held some paid job in a service delivery program. Considering all volunteer work experience, more than half had been volunteer drug abuse counselors for less than 6 months (median = 5.7 months) with a median of 13 months for the aggregated length of all volunteer counseling experience.

Volunteer counselors were asked to indicate for how many clients they were the primary counselor, i.e., the "counselor who is mainly responsible for the treatment regimen." More than 40 percent reported that they had no such clients, while 20 percent had more than four clients each. In all, 77 percent of the counselors counseled clients in individual counseling sessions. The counselors who provided any such counseling spent a median of 4 hours per week doing so. Fewer counselors (45 percent in all) provided group counseling; those who did spent almost 4 hours a week (median = 3.7 hours) doing so. Phase I reports were similar, in that 26 percent of the 123 programs let volunteers serve as primary counselors, 34 percent only as auxiliary counselors, and the remainder, as a mixture of both.

Volunteer counselors of Phase II also were involved in other counseling-related tasks such as filling out forms dealing with clients (75 percent of volunteer counselors involved), learning about community resource agencies that might serve their clients (81 percent), discussing clients in staff meetings (66 percent), and doing hotline counseling (57 percent). They had lower rates of involvement in client-related activities that took them out of the program, such as working with clients in the community (30 percent), providing personal aid to clients (29 percent), and providing social activities for clients (32 percent).

In the Phase I study, 14 of the 123 programs drew all their volunteers from among their own clients. In all, 15 percent of the volunteer counselors in the Phase II study had been drug addicts; in most individual drug use categories, volunteer counselors reported lower use than did paid counselors.

The views of administrators on the drug-use history of their counselors was explored. Of the 123 administrators of Phase 1, only 5 percent thought that volunteers should have no history of drug use or drug treatment. The remainder were approximately evenly divided as to whether a drug use history helped volunteers understand drug problems or whether it merely did not interfere with their work in the program.

Paid counselors' evaluations of volunteers suggested there might be tension between the two groups. Paid counselors in Phase II evaluated volunteer counselors' characteristics relative to their own, indicating that they were less knowledgeable about drugs than are paid counselors (72 percent), less able to take responsibility (47 percent), and less dedicated to the program mission (45 percent). Their judgments concerning volunteers' ability to take over certain activities entirely were negatively correlated with

the centrality of the activity to the paid counselors' role. In all, 71 percent of Phase II counselors thought volunteer counselors could take over providing social activities, and 68 percent thought that volunteers could take over reviewing community resource agencies for clients, in contrast with 29 percent who thought that volunteers could take over individual and 25 percent, group, counseling.

Administrators agreed with paid counselors that the volunteer counselors were less knowledgeable about drugs (70 percent). The administrators also indicated that volunteer counselors were less well educated (63 percent), and had less relevant educations (42 percent) and work experience (68 percent) than paid counselors.

Contrasts between specialized professionals and counselors. Phase II interviews with specialized professional volunteers versus volunteer counselors showed these groups to be distinct in a number of areas including demographics, access to the program, motivations for volunteering, length and amount of service to the program, their sources of satisfaction with the volunteer experience, and finally, their perceptions of relationships between paid staff, volunteers, and clients.

Specialized volunteers were established professionals most often holding terminal degrees in their disciplines, i.e., M.S.W. for the social workers, Ph.D. for the psychologists, B.S. for the nurse, and of course, M.D. and J.D. for the doctors and lawyers. Only 3 of the 31 were students. Their modal age category was between 41 and 50, and 55 percent were married. Their median annual income was 835,000. None considered themselves ex-addicts. It will be recalled that in contrast, two-thirds of the volunteer counselors of Phase II were students, and more than 40 percent did not hold bachelor's degrees; only 10 percent held master's degrees. The age distribution of the counselors was bimodal, with (modes in the age categories 22-25 and 36-40; only a third were married. Only half were currently employed, with a median annual income of 812,500. In all, 15 percent considered themselves ex-addicts. Finally, both groups were predominantly Caucasian (87 percent of the specialized volunteers and 94 percent of the counselors).

Specialized professionals first learned that the program needed volunteers through friends (42 percent) or people in the program (26 percent), while counselors more often learned from their own experience with the program (26 percent) or through school (30 percent). While 48 percent of specialized volunteers were contacted by the program to ask them to volunteer, this was true for only 11 percent of volunteer counselors.

Thirty-two percent of the counselors as opposed to 3 percent of the specialized professionals reported that they chose to volunteer in drug programs due to their own experience with drugs or that of their friends. Counselors (73 percent) more often than

professionals (50 percent) reported a desire to learn, the gaining of experience for future jobs (54 percent versus 17 percent), and school program requirements (19 percent versus 3 percent) as reasons for volunteering; specialists more often mentioned the development of professional contacts (13 percent versus none for counselors). Both groups emphasized the desire to help people with a social problem (82 percent of counselors and 87 percent of professionals).

The specialized professionals and counselors had very different patterns of volunteering. A third of the professionals had volunteered at their current program for 5 or more years (median = 34 months), while 45 percent of counselors had been at the current programs for 6 months or less (median = 70 months). There was a smaller group of counselors (15 percent) who had been volunteers for 5 or more years.

In contrast with length of service, counselors spent substantially more time in the program per week than did professionals. Two-thirds of professionals spent 5 or fewer hours per week in the program (median = 3 hours), while three-quarters of the volunteer counselors spent 10 or more hours per week in the program (median = 12 hours).

Of the specialized professionals, 73 percent, versus 47 percent of the counselors, intended *to* remain volunteers in the program. In contrast, a third of counselors, but only 10 percent of the specialized volunteers, intended to leave within 6 months.

All members of both volunteer groups reported that they were satisfied with their volunteer experiences. In response to an open-ended question concerning reasons for satisfaction, a third of each group gave fulfillment through volunteering and enjoyment of working with people as reasons; a quarter of each group mentioned putting their skills to work. However, 43 percent of counselors versus 13 percent of professionals mentioned the opportunity to learn as a reason for satisfaction; and 23 percent of the counselors versus 3 percent of the professionals mentioned being treated with respect.

Asked what would make them more satisfied as volunteers, more counselors endorsed areas of improvement of the volunteer situation than did administrators: more responsibility (28 percent of counselors versus 10 percent of professionals), more important tasks to perform (28 percent versus 3 percent), better working conditions (21 percent versus 10 percent), and more direct contact with clients (36 percent versus 13 percent). Counselors indicated that having more direct contact with clients was the single factor that would be most important to their increased satisfaction.

Volunteers were asked to compare themselves with paid staff along a numher of dimensions. In all, 28 percent of professionals versus 2 percent of counselors reported they had more authority

than paid staff; 25 percent of professionals versus 42 percent of counselors, less authority. Both professionals and counselors, however, saw themselves as less well-respected by clients (75 percent of professionals and 91 percent of counselors) and less well-respected by administrators (85 percent of professionals and 93 percent of counselors) than were paid staff. In contrast, both groups thought that they were accepted by administrators, clients, and paid counselors as being useful in the program.

DISCUSSION

It appears that the specialized volunteers and volunteer counselors ought to be treated quite distinctly from the perspectives of recruitment and administration. The specialized volunteers in this study were established professionals, often of long-standing in the field, whose motivations for volunteering and whose satisfactions with volunteering are captured by traditional notions of altruism and service to society. They had often served the programs for long years and intended to continue to serve. They provided highly technical support to the counseling staff and brought community resources to the program. They provided the program with specialized expertise which would not have been available to the programs in their absence. These specialized volunteers, due to their seniority, their encapsulated roles in the program, and the stability of their volunteer efforts over time, likely posed a minimal administrative burden to the program.

In our sample, half the specialized volunteers were first contacted by the programs. The volunteer professionals most frequently indicated that they had heard of the program's need for volunteers through friends or family members. This suggests that paid program staff would be important recruiting agents for the program, and that personal appeals on a one-to-one basis would be useful. The demographics of the professionals in our sample suggest that the targets of recruitment ought to be older, well-established individuals.

In the main, volunteer counselors in our study were a substantially different group, often students, volunteering for relatively limited periods of time with training goals in mind. A substantial number had used drugs, and a portion were ex-addicts. In actuality, there appeared to be a small subgroup of volunteer counselors also who resembled the specialized professionals--older, having volunteered for longer time periods, intending to stay in the program, and with motivations and satisfactions that mirrored those of the specialized professionals.

Considering the bulk of the volunteer counselors in the study, one might well prescribe recruitment through universities, through systematically established relationships with graduate counseling programs that require internship experiences. Because such programs will not likely be directed toward the treatment of drug addiction per se, there will be a heavy burden on programs to

provide inservice training on issues of drug abuse and drug treatment. Further, there will be an administrative commitment required for the smooth functioning of a relatively transient population of young adults who are delivering primary care on a voluntary basis.

Further Research

Through 1980, the NDATUS report gave staffing information by specialization for volunteers as well as paid staff. The staffing categories were continued from prior years with little modification. In 1982, reporting changed. Volunteers were stratified into only two categories, "direct care staff" and "administrative or support staff." The stratification that we have found useful here, i.e., into volunteer counselors and specialized volunteers, cannot be recovered from this dual-level categorization. The 1984 NDATUS, as it is now planned, is a program census--no staffing information whatever will be gathered (Blanken 1984). Hence any information on the order of magnitude of the volunteer effort in drug treatment will be lost. Any documentation of the growth versus decline of volunteer utilization will now fall to researchers in the field.

We have a suggestion. In 1982 the NDATUS report gave fulltime equivalent volunteers, not headcounts. Headcounts are needed for an understanding of the order of magnitude of the volunteer effort. To say that 62 percent of the 123 federally funded programs we surveyed had a volunteer lawyer provides a very different picture from saying that there were approximately 6.5 fulltime equivalent volunteer lawyers across the 123 programs (35 hours per week; 3 hours per week on average per specialized volunteer; 76 volunteer lawyers).

The budgetary issue of cost-effectiveness of volunteer use must be confronted. It is our hypothesis that the use of specialized volunteers is a cost-effective enterprise. The same might well hold for that subset of volunteer counselors who are like the specialized volunteers, i.e., established professionals in their own right, who serve as volunteers over long periods of time, and become integrated into the program staff. Students serving as volunteer counselors as part of internship programs may be quite another matter. The administrative cost of training and supervising these volunteers is likely substantial. All this, however, is conjecture at the present time. An understanding of the costs associated with volunteer use is essential before broad policy on volunteer use can be developed and budgetary planning that incorporates them can occur.

In the present study, it is reasonable to conceptualize paid counselors as the clients of the specialized professional volunteers. The paid counselors used the specialized volunteers as consultants, and reported on their satisfaction with the services they received. It is unlikely that the drug field per se

will wish to open the issue of whether these medical, psychiatric, and legal services are of high technical quality. Barring this excursion into evaluation of the quality of professional services, this study provides evidence as to the high level of satisfaction of the counselors with the consultant services provided by the specialized volunteers.

The evaluation of services provided by volunteer counselors based on clients outcomes remains to be undertaken. The work from our study of paraprofessional counselors provides a model of how such an evaluation might be performed. It is worrisome to note that all but a very few volunteer counselors reported that they were less well-respected by clients than are paid staff who did the same work. If clients devalue the services of volunteer counselors, then what can be the impact of volunteer counseling on client progress in treatment? We think this may be the most critical question to face in formulating policy on the use of volunteer counselors in drug treatment. It is all well and good to say that in times of restricted funding, the field can turn to volunteers. But we need to know how well those volunteers provide the services the field depends upon them to provide.

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THE HARVARD GROUP AFTERCARE PROGRAM: PRELIMINARY EVALUATION RESULTS AND IMPLEMENTATION ISSUES

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INTRODUCTION

This paper describes preliminary results from a 4-year cross-cultural demonstration and evaluation of a group aftercare program for successfully treated opiate addicts. The program combines both professional and self-help approaches. The professional component features a comprehensive 6-month training curriculum that systematically addresses the major causes of relapse and obstacles to full recovery. The self-help component uses fellowship meetings to provide support and role modeling to motivate and sustain behavior change. The evaluation was a randomized clinical trial, with sites in Boston and Worcester, Massachusetts; Providence, Rhode Island; and Hong Kong. At each site, the study team recruited, interviewed, and randomly assigned treated addicts to either our aftercare program or a "usual-care" control condition. After an average of 9 and 20 months, the researchers reinterviewed subjects to assess their outcomes. The study sought to determine whether participation in the aftercare program could prevent relapse and antisocial behavior while facilitating social reintegration. We will describe our program in more detail and review previous research, describe our research methodology and results, review implementation *issues,* and summarize our conclusions.

PROGRAM DESCRIPTION

Our Boston group illustrates how our aftercare program borrows from both self-help and professional traditions. The group met twice weekly. One meeting was a training session led by a professional group worker and open to members and guests; the other, a self-help session led by an ex-addict, was open to members only. Other groups met once a week, with the time split between a training and a self-help segment. The groups were professionally initiated, and usually included from 8 to 12 members. Guests sometimes increased training session attendance to 25.

The professionally led meetings were based on a health promotion/education model rather than a psychotherapeutic model. Led by master's-level social workers and psychologists, these training sessions were highly structured and adhered to a planned 6-month curriculum. The curriculum was designed to address systematically each of the major threats to ex-addicts' recovery. We identified these threats from studies of relapse and from our clinical experience. Topics included recovery phases, deaddiction and craving, avoidance of active addicts, employment, love and intimate relations, stress reduction, new friendships, pain and prescription medicine, nonopiate substance abuse, and fun without drugs. We researched each of these topics, and prepared materials and exercises that would help leaders make and reinforce the sessions' key points. We have collected these materials into a training handbook (Zackon et al. 1984) for others who wish to develop similar programs.

The self-help sessions featured individual sharing and support for recovery and reintegration, recovery stories by peer leaders and other long-term ex-addict associates, and planning of recreational and community service activities. Because makiny new friends and finding nondrug social activities are major problems for recovering addicts, we encouraged members to socialize with one another outside of formal meetings. Groups had parties, cookouts, soccer matches, softball games, and various outings. In addition, we encouraged members to identify themselves as ex-addicts in daily socializing and by performing public service.

PREVIOUS EVALUATION RESEARCH

Because Brown and Ashery (1979) and Nurco et al. (1983) nave ably reviewed the general topic of aftercare in drug abuse programming and because another paper in this volume (Catalano) addresses skills training in aftercare, we will confine ourselves to reviewing previous evaluative research directly relevant to our program. Credit for the concept of combining self-help and professional approaches to addict aftercare goes to James Ch'ien, who formed a group of ex-addicts in Hong Kong in 1968. Ch'ien (1979) evaluated his approach by comparing 100 persons who participated in the aftercare program with 100 ex-addicts who did not participate. After 2 years, 57 percent of the aftercare subjects were abstinent compared to only 9 percent of the control group. Because the internal validity of a nonrandomized study may be threatened by the possibility of selection bias--that is, aftercare clients may have been more motivated to recover than comparison group members--our randomized study was undertaken.

While we at the Harvard School of Public Health were proposiny the present study, Nurco et al. (1983) began a demonstration project designed to show that self-help aftercare groups for ex-addicts could he initiated with the help and sponsorship of drug treatment professionals. Nurco et al.'s groups differed from ours in two major ways: they had no preplanned training curriculum, and in

their groups the professionals withdrew as soon as the groups were strong enough to survive on their own. Despite these differences, the descriptive data collected by Nurco et al. and the conclusions they reached about self-help groups for ex-addicts were confirmed by our experiences.

To our knowledge, no previous researchers have conducted a randomized evaluation of aftercare for opiate addicts or specifically of self-help groups for ex-addicts. We undertook this task because we thought that our program and the self-help movement as a whole were being held back by the lack of sound evidence on efficacy. What follows is a description of our methods and results.

RESEARCH METHODOLOGY

The Sample

The results presented in this article are from the study's first 144 subjects (80 from Hong Kong and 64 from the United States recruited between 1979 and 1982). Because our subjects were drawn from two different countries, it is natural that two distinct populations are represented. Also, because our populations volunteered for aftercare. they are a unique subset of the population of addicts in treatment. The subjects averaged 31 years of age; were 85 percent male; the Hong Kong subjects were 100 percent ethnic Chinese, the American subjects were 95 percent Caucasian and 5 percent black; the Americans were two-thirds Catholic, while the Chinese were 87 percent without religious preference. In addition, the Americans were better educated; more often employed, with higher occupational prestige; and more likely to be married than the Chinese were. All of the subjects were opiate addicts (addicted for a mean of 6.4 years) and had relapsed an average of 4.3 times prior to entering the study.

The American subjects came mostly from methadone maintenance programs (62 percent), outpatient drug-free counseling (14 percent), and detoxification programs (11 percent); the Chinese came from halfway houses (50 percent) or Shek Kwu Chau (50 percent), Hong Kong's island residential treatment center. During the month before entering the program, 82 percent did not use illicit opiates, and 18 percent used an illicit opiate at least once.

Randomization and Followup

The 144 subjects were randomized to treatment (77) or control (67) conditions at the study's six yroup sites. Control subjects were urged to make use of aftercare services available to them as part of the primary treatment program from which they were referred or other availahle community resources. Followup interviews were scheduled for 6 and 12 months after the baseline interview. Ninety-eight percent of the first followups and 82 percent of the second followups were completed, although it took an average of 9.1 months and 19.7 months respectively to complete them. Subject

attrition at second followup was due to refusal and nonresponse (4 percent), death (3 percent), relocation (1 percent), and subjects who were not reinterviewed because of practical administrative problems (10 percent). All significance levels reported in this article are from two-tailed tests.

RESULTS

Process Evaluations

Although the meat of our evaluation was an assessment of outcomes, including illicit opiate use, employment, and crime, this section presents the results for several key process measures. They are 1) length of membership in the groups, 2) participation in group activities, and 3) the subjects' own assessments of the programs' value.

About half of the subjects were active group members for about 13 weeks (approximately 3 months), and a quarter were members for 6 months or more. In the United States during the project's fourth year (not reported here), the number of dropouts declined dramatically after we adopted a mandatory 3-week attendance period before subjects were randomized. Of the last 16 experimental subjects, 69 percent remained the entire 6 months. Two of the American groups are still active and self-sustaining 7 months after the research was discontinued.

Treatment and control groups were compared in four dimensions of activities that characterize our program's self-help component (learning about recovery, socializing with recovered addicts, trying to help others recover, and social service), and two that do not (working in a treatment program and religious activities). In each of the four dimensions characterizing our program, the differences favored the treatment group for both first and second followup, and by the second followup all of the differences were significant. By contrast, the other two activities were not different across experimental and control groups. A subsample of the experimental subjects were asked whether being in the study had helped them. At the first followup, 74 percent said that it had helped to some degree; at the second followup, 87 percent said so.

Thus, there was clear evidence that we were able to implement the treatment: subjects attended meetings and participated in self-help activities, and most participants thought that the program was helpful.

Relapses During a 1-Year Followup Period

The most important objective of our aftercare program was to prevent readdiction to illicit opiates. During the first 6-month followup period, 46 percent of the combined sample had relapsed (10 or more days of daily use); during the second 6-month period, more than 60 percent relapsed. However, for both 6-month periods,

the experimental group had significantly more subjects who had good outcomes, defined as abstinent or having only rare "slips" (use less than once per month). After statistical controls for baseline differences and country effects were introduced, the combined experimental groups had more subjects with good outcome than the control groups did (32 percent versus 18 percent) for the entire 12-month followup period ($p < .05$). Thus, as a result of aftercare, the experimental group's rate of positive outcomes was 77 percent better than the control group's.

When we examined the countries separately, we found that in Hong Kong 15 percent more of the experimental subjects had positive outcomes than the controls throughout both 6-month time periods, which is at the .10 confidence level. In the United States 17 percent more of the experimental group than the controls had positive outcomes, which is at the .18 confidence level. The effect in the United States appeared to weaken over time, since it was significant at the .05 level for the first 6 months but significant only at the .10 level for the second 6 months, and at the .18 level for the entire year. The small differences in the treatment effect across countries were not statistically significant for any time period.

A quantitative measure of this outcome is the number of days on which the subjects used an illicit opiate during the 12 months. A regression analysis of this measure found that the combined experimental group used illicit opiates on 49 fewer days than the control group did, an effect that was significant at the .01 level. The effect in Hong Kong was 59 days ($p < .05$), and in the United States the effect was 37 days ($p < .12$).

Space prevents presentation of the several other measures of relapse we obtained in this study, including measures of legal methadone use. The conclusions in each case were basically the Same: there is a significant positive treatment effect for both the first and second followup periods when the combined sample is employed. Although the treatment effects are in the right direction in both Hong Kong and the United States, the small sample size, especially in the United States, often makes it difficult for these effects to achieve significance. For most of these opiate-use measures, the treatment effects were greater in Hong Kong than in the United States, but the differences between countries (interactions) were not significant. Finally, in Hong Kong the effect remained virtually constant throughout the followup period, but in the United States it appeared to fade somewhat after the first 6 months. One possible explanation for this difference is that after a 1-year period the Chinese subjects could join the 1,500-member self-help organization of ex-addicts in Hong Kong, whereas no such parent organization existed in the United States.

Employment

Although employment is a key outcome measure for almost any opiate drug treatment program, it is somewhat less central for our aftercare program because a majority of our subjects in the United States had jobs or were effectively out of the labor force (mothers with several small children) when they joined the groups, and a majority of addicts in Hong Kong work even when they are actively addicted. Our program's employment objectives vary. Depending on the subject's employment status at entry, the objective is 1) to help the unemployed find jobs or 2) to prevent job loss and improve careers of the employed.

Our results show that the experimental group members had better employment outcomes than the controls at 6 and 12 months, but the effect is significant only at 12 months for the combined United States and Hong Kong sample. At 12 months 65 percent of the combined experimental group were employed, compared to 46 percent of the combined control group. When we examined the number of months employed during the year-long followup period, the differences between experimental and control yroups were favorable, but not significant.

Almost all of the employment treatment effect was in helping unemployed subjects find jobs. Relatively few of the initially employed subjects, either experimental or controls, lost their jobs, and the experimental condition made no apparent difference. By contrast, for initially unemployed outpatients (N=39) there were large, significant differences in employment rates between experimental and control groups at 6 months (61 percent vs. 30 percent) and 12 months (64 percent vs. 18 percent), and for initially unemployed inpatients (N=40) there was a significant difference (75 percent vs. 35 percent) between the experimental and control subjects at 12 months. The difference in treatment effect between the initially employed and unemployed outpatients was statistically significant. This pattern of results was repeated when we examined the number of months of fulltime employment during the year, with the treatment effect for initially employed subjects significant at the .05 level duriny the second 6-month period in the combined sample and the United States sample.

Thus, the aftercare program had significantly positive effects on helping unemployed subjects find and keep jobs, especially during the second 6 months followiny baseline.

Criminality

The usual indicators of criminality, such as arrest or incarceration, did not occur with great frequency in this population during the entire followup period (15 months in the United States and 22 months in Hong Kong) and revealed no significant differences between treatment and control. However, in examining self-reported

criminality, we found that the Hong Kong experimental group had significantly fewer members with indications of criminality than the control group did (49 percent vs. 79 percent) during the second followup period. The effect in the United States was in the right direction (58 percent vs. 77 percent) but not significant during the first followup period, and it virtually disappeared (67 percent vs. 72 percent) by the end of the second followup period.

DISCUSSION

In sum, the research showed that our mixed self-help and professional aftercare program was implemented satisfactorily in both Hong Kong and the United States. The program was received favorably by the subjects themselves, and it had statistically significant effects on preventing relapse and getting unemployed ex-addicts back to work. It also significantly reduced self-reported crime in Hong Kong and reduced crime in the United States, but not enough to be statistically significant.

Implementation Issues

Since many of the usual questions about initiating our program and handling a group once underway have been addressed elsewhere by Nurco et al. (1981) and by ourselves (Zackon et al. 1984), we will confine our discussion in this article to a few broad implementation issues.

Starting our groups was hard. The greatest amounts of effort were required in developing a suitable structure and curriculum materials, getting real support from referral sources, getting members to participate fully, maintaining regular attendance, and preventiny attrition. Because our handbook provides a proven structure and curriculum materials, the major problems for a new group will be finding enough interested and appropriate clients and hiring leaders who will faithfully implement the model and keep members participating in the program long enough and actively enough to reap its benefits.

Although we believe that the training and the self-help structure ultimately set this program apart from other aftercare groups, starting the group requires leaders with skill, energy, charisma, patience, and time. The professional may need to work almost fulltime for a month or two to get the ball rolling. Once the group is established, the professional and peer leader are needed for 8 to 10 hours per week. The budget for one of our free-standing groups is now approximately $20,000 per year for the yroup leaders and incidentals. An agency-based program is estimated to cost $12,000 per year. The estimated weekly time is 10 hours for a professional and 5 hours for a peer leader.

Our experience suggests that this program could flourish in a wide range of treatment settings. Our subjects were opiate addicts

drawn from the full gamut of treatment modalities (methadone, therapeutic community, inpatient detoxification, and outpatient drug-free). We worked as a freestanding agency in the United States and as part of a large drug-treatment agency in Hong Kong. We see no reason why the curriculum and self-help structure could not be adapted to other drugs, for the issues faced by recovering persons are often similar regardless of the drug abused. Our own future research is most likely to be on adapting the program for ex-cocaine addicts. We already have one program that has begun to use our materials with slight modification for a methadone detoxification group and a cocaine addict group, and in Hong Kong the model is being used in primary treatment as well as aftercare. Extension to primary care is another topic for future research.

At present we encourage individual clients to use other services when needed, especially individual counseling for obvious psychological problems and Narcotics Anonymous (NA) for additional support and inspiration, especially during crises. Clients often have such needs, but undue attention to them can prevent an aftercare group from addressing less urgent but equally important recovery issues that are not dealt with elsewhere. One group member said, "NA is my commitment, this group is my growth." Moreover, when compared to programs that focus on primary treatment or both primary treatment and aftercare, our program offers a unique opportunity for new members to be surrounded by success, not failure. Our admission policies and program structure ensure that members, peer leaders, and ex-addict associates form a community in which abstinence and community reintegration are the norms.

CONCLUSIONS

Finally, we want to briefly review the theoretical issues in drug treatment that this research addresses. We think we have shown that relapse rates can be reduced by an aftercare program that goes beyond the services currently available to ex-addicts. We believe that the benefits of the program will increase even further with its development and refinement.

The program's success demonstrates that professional and self-help approaches can be combined effectively to take advantage of the strengths of each. Although our outcome measures do not allow us to separate the effects of self-help from the training sessions, the addicts themselves made clear the importance they attached to the program's self-help elements. In addition, we have shown that self-help programs can be rigorously evaluated using random assignment to treatment. Our positive results, even if not as impressive as previous findings from Ch'ien's (1979) nonrandomized evaluation, are a springboard for continued development.

Our 6-month curriculum exemplifies our conscious divergence from the usual psychotherapeutic model of drug treatment and aftercare (Brown and Ashery 1979). We favor a structured, systematic regimen that draws from research and clinical knowledge. Our proyram

also emphasized a hands-on, activist approach that goes beyond the therapist's office and formal group meetings. Information, planning, models, motivation, and support are our therapeutic agents. We believe that our results show this approach is cost-effective and appealing to ex-addicts.

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PROJECT SKILLS: PRELIMINARY RESULTS FROM A THEORETICALLY BASED AFTERCARE EXPERIMENT

Richard F. Catalano, J. David Hawkins

Drug abuse treatment seeks to achieve three broad goals: 1) the cessation of illicit drug use and criminal activity, 2) the establishment of socially acceptable behavior patterns, including legitimate employment, maintenance of a basic standard of living without recourse to welfare or crime, the development and maintenance of a stable set of relationships with family and friends, and 3) the prevention of a return to drug use and crime.

Historically, drug treatment programs have focused predominantly upon the first and second goals. Different programs have emphasized various aspects of the goal of establishing socially acceptable behavior patterns. In contrast, the third goal, prevention of a return to drug use and criminal activity following treatment, has received relatively little attention in drug abuse treatment programs (Hawkins 1979, Smart 1976). Strategies for preventing and coping with relapse generally are not well developed components of drug treatment programs.

It is not surprising that stopping illicit drug use and crime are the focus of drug treatment. Currently, most State and local policies provide resources for drug treatment when people are most dysfunctional and threatening to themselves or others. Few resources are earmarked for treatment maintenance services. Nor is it surprising, in this situation, that treatment is often a revolving door through which drug abusers periodically recycle (Hawkins and Catalano in press).

A concern with maintaining the gains made in treatment has focused interest on aftercare. The fundamental goal of aftercare in drug abuse treatment is to prevent treated drug abusers from returning to drug abuse. As an intervention, aftercare is based on the assumption that continuing assistance following treatment can remove or reduce post-treatment factors associated with relapse and strengthen those factors associated with the maintenance of sobriety. The concept of aftercare has come to encompass those efforts to ensure that the former client can successfully maintain

a life free from drug dependence in the larger community following treatment (Brown and Ashery 1979).

FACTORS RELATED TO RELAPSE

The prevention of relapse to drug abuse through aftercare initiatives requires an understanding of the factors that inhibit relapse. A number of these factors have been identified. They include: pretreatment client characteristics, in-treatment adjustment, the modality of treatment and post-treatment experiences (Costello 1980, Finney et al. 1980, Goldstein and Kanfer 1979, Hawkins and Fraser, in press, Levy 1972, Simpson and Sells 1982. Stead and Viders 1979). Aftercare efforts address the post-treatment factors associated with a return to drug use.

Elsewhere we have reviewed the post-treatment factors that appear to be related to relapse following treatment for either drug or alcohol abuse (Hawkins and Catalano, in press). These factors include absence of a strong prosocial interpersonal network, including family and friends (Finney et al. 1980, Levy 1972, Moberg et al. 1982, Moos et al. 1979, Stanton 1978, Stanton and Todd 1979, Waldorf and Biernacki 1981), pressure to use drugs from drug-using peers and family (Harbin and Mazier 1975, Hawkins 1979, Hawkins and Fraser, in press, Hejinian and Pittel 1978, Krohn et al. 1980, Marlatt and Gordon 1980, Stanton et al. 1978, Wellisch and Kaufman 1975). isolation (Hawkins 1979, Stead and Viders 1979), lack of productive work or school roles (Savage and Simpson 1979, Simpson 1981, Simpson and Lloyd 1979, Waldorf and Biernacki 1982), lack of involvement in active leisure or recreational activities (Finney et al. 1980, Moberg et al. 1982, Moos et al. 1979, Simpson 1981, Stead and Viders 1979), negative emotional states (Cummings et al. 1980, Finney et al. 1980, Hatsukami and Pickens 1982, Marlatt and Gordon 1980), and physical discomfort (Finney et al. 1980, Khatami et al. 1979, Moos et al. 1979).

These reported sources of relapse suggest three reasonable goals for aftercare in drug treatment (Hawkins and Catalano, in press).

1) Aftercare should increase family and other social support for successful living in the community without dependence on drugs and should seek to eliminate patterns of interaction with family and peers that contribute to readdiction. In short, aftercare should seek to develop or enhance informal social supports in the community.

2) Aftercare should seek to increase involvement in productive roles in the community, whether in work, school, or the home.

3) Aftercare should facilitate former drug abusers' involvement in active recreational and leisure activities that do not involve the use of drugs.

We recently completed a study of reentry experiences of clients leaving four drug-free residential treatment programs in two Western cities to see the degree to which these goals are achieved in existing residential treatment programs and to identify other appropriate goals for aftercare from an empirical base. We examined the daily experiences of 54 subjects in the four residential programs who were in the "reentry phase" of treatment, and we studied the drug use of 43 clients of these programs during the first 3 months after they left treatment. Social networks were studied for a subsample of 38 of the 43 former clients for whom complete social network data were available. The details of these studies are provided elsewhere (Catalano and Hawkins 1984, Hawkins et al. 1981, Hawkins and Fraser, in press), and the results are summarized here.

REENTRY STUDY

We found that residential treatment clients in reentry participated in a number of conventional activities that *are* likely to be important to rehabilitation. These included work and education, active leisure, and social interactions with others who do not use drugs. Substantial minorities of clients also reestablished linkages with their families, though these involvements were less widespread. However, we also found that a substantial minority of clients, ranging from 26 to 32 percent, evidenced deficits in social skills at work, during active leisure, during social interactions with others who do not use drugs, and during family interactions. (Deficits in social skills were coded when clients did not interact appropriately in social situations given their goals.) In addition, 38 percent of the working clients evidenced deficits in task skills at work, and 30 percent evidenced deficits in carrying out daily living tasks. (Deficits in task skills were coded when clients did not adequately meet requirements in preparation for, or performance of, a specific activity.) Finally, 33 percent of the working clients evidenced deficits in coping skills at work, 22 percent evidenced deficits in coping skills in interactions with family members, and 31 percent evidenced deficits in coping skills in using human services. (Deficits in coping skills were coded when clients failed to handle a reported difficulty in a particular situation in a *way* that achieved a satisfactory resolution.) Thus, although clients participated in these areas, substantial minorities did not perform effectively in these situations. Since an unskillful performance *is* not likely to be rewarded, continued participation in these areas may be discouraged by poor performance.

Another finding from the reentry study was that a substantial minority (24 percent) of subjects were exposed to drug users and people engaged in other illegal activities during the reentry phase. Following treatment, former clients inevitably encounter drug users in their daily rounds of activities. The presence of such interactions during reentry can be viewed as an opportunity for clients to practice and develop skills for managing

potentially troublesome situations. However, nearly one-third of those who had such interactions did not handle the situations effectively.

Finally, with the exception of clients in one program who were involved in Narcotics Anonymous self-help groups, almost none of the reentry clients were involved in organizations or groups outside the treatment program that could provide alternative sources of social support and reinforcement for new living patterns following treatment.

POST-TREATMENT FOLLOWUP STUDIES

To examine the possible effects of social influences on rehabilitation following treatment, followup data were collected on the social networks of clients from these same residential programs at 1 month and 3 months after treatment. Complete data were available from 38 subjects. Personal networks of individuals with whom the respondent had contact in the 30 days prior to the interview were studied, using network mapping and q-sorting procedures.

Subjects in this study were divided into two groups: those who used opiates in the first 3 months following treatment and those who did not. A comparison of the social networks of these two groups before and after treatment suggested possible linkages between social network characteristics and prevention of a return to drug use following treatment. We found that both groups had significantly different social networks at 1 month after treatment when compared with their pretreatment networks. There were significantly fewer people in their networks known over 1 year, fewer people with positive attitudes towards drugs, and fewer illicit drug users.

In comparing post-treatment opiate users and nonusers, we found that the two groups had similar network characteristics before treatment. However, in the first month following treatment, the networks of the two groups had become significantly dissimilar in several respects. Those who did not use opiates in the first 3 months after treatment reported significantly fewer frequent users of illicit drugs (excluding marijuana) in their networks than did those who used opiates (3.4 percent compared with 20.2 percent). Similarly, nonusers had significantly more nonusers in their networks (70.1 percent) than did those who used opiates (44.5 percent). Additionally, the proportion of network members who influenced the subjects to use drugs differed significantly at 1-month followup (2.6 percent of the networks of nonusers versus 20.4 percent of the networks of users). At 3 months following treatment, the networks of the opiate users continued to include a greater proportion of members who influenced the respondents to use drugs (16.2 percent) than did the networks of nonusers (3.0 percent). In sum, those who used opiates following treatment had networks that provided significantly greater reinforcement for drug use than did those who did not.

While the small sample and short followup period call for caution in generalizing from these results, they suggest that a return to opiate use following treatment is likely to be accompanied by involvement in a social network that includes significant social reinforcement for drug use. While former clients appear to restructure their social networks after leaving treatment, those who use opiates following treatment tend to establish social networks that contain more drug users, fewer people involved in conventional activity, and more people supportive of drug use.

We also examined the alcohol- and drug-using experiences of 43 clients leaving treatment during the study period who had been in treatment at least 3 months. Half (51 percent) of this sample had graduated from treatment and the other half (49 percent) had left before completing treatment. A relapse to drugs or alcohol was a relatively common experience in the first 3 months after treatment exit for this sample (see table 1). Only 14 percent of the sample reported remaining drug- and alcohol-free throughout the period. About 12 percent reported having used only alcohol in this period. Thus, close to 75 percent of the sample had used an illicit substance at least once in 3 months following treatment. Slightly over half the sample reported using illicit drugs other than marijuana in this period.

TABLE 1. *Most serious substance used in 3-month followup and mean number of weeks of use*

Most Serious Substance Used	Percent Using at Least Once (N = 43)	Mean Number of Weeks of Use
None	14.0	0
Alcohol	11.6	4.8
Marijuana	23.3	5.5
Nonopiates	14.0	1.7
Opiates	37.2	4.9
TOTAL	100.0*	

*Numbers do not sum to 100 percent due to rounding.

A single drug use experience following treatment can be expected as part of the recovery process and may not indicate a serious relapse problem. To investigate the extent of relapse, the number of weeks during the 11-week followup period in which subjects used any of 12 substances was recorded. All subjects were classified into one of four categories according to the most "serious" substance used (i.e., opiates, nonopiates, marijuana, alcohol). The number of weeks of use of the most frequently used substance in

the most serious category was taken as an indicator of the extent of the relapse. This is a conservative indicator of relapse because it considers the frequency of only the most "serious" substance used. For instance, if a subject used marijuana several times a day but used heroin once, the subject would be classified as an opiate user for 1 week. The average number of weeks of use for each category of substance is listed in table 1. For all categories except nonopiates, the mean period of use in the 11 weeks was more than a month. For those whose most serious category of use was nonopiates, the average period of use was slightly less than 2 weeks.

These data have a limited capacity to indicate the extent of relapse because of the short followup period. However, they do indicate that relapse to substance use is a common experience. Over 85 percent used some substance, and almost three-quarters of the subjects used illicit substances. Moreover, the majority of those who relapsed did so more than once. Slightly over 60 percent of those who relapsed during the 11-week period did so in more than 1 week of the period.

These studies of reentry and post-treatment experiences of residential drug treatment clients suggest that a skills training mission should be added to those mentioned earlier as a fourth goal for aftercare.

4) Aftercare should assist former drug abusers to develop and practice the skills necessary to maintain sobriety after leaving treatment. These include: a) skills to become involved in social, productive, and leisure activities in the larger community, b) skills to cope with stress and "negative emotional states" without resorting to drug use as a form of self-medication, c) skills to recognize and avoid situations with a high risk for relapse, and d) skills to cope with a slip into drug use without allowing it to become a full-blown relapse.

AN EXPERIMENTAL INTERVENTION TO PREVENT RELAPSE

Based on the data reviewed above, we designed an experimental program that seeks to address the four goals of aftercare we have identified. We based the experimental program on a theory of rehahilitation (Hawkins and Catalano 1980) that integrates the existing data on relapse into a causal model that includes specific points of intervention for aftercare and expected consequences of each intervention component. The theory of rehabilitation specifies the competing pressures to return to drug use and to remain drug free. Following control theory (Hirschi 1969), the theoretical model hypothesizes that a social bond consisting of attachment to conventional others, commitment to conventional lines of action, and belief in the conventional moral order will

inhibit a return to regular use of illicit drugs. Further, it is hypothesized that this social bond results from a social process involving: 1) involvement in conventional activities and interactions with conventional others, 2) the skills to participate effectively in these involvements and interactions, and 3) the rewards forthcoming from skillful performance in conventional activities and interactions.

As shown in figure 1, four related paths are hypothesized to explain continued drug use following treatment. Conventional interaction and involvement paths are directly relevant to the establishment of a bond to the social order. Both paths start with willingness to participate in conventional life. In addition to this willingness, opportunities for conventional interactions and involvements are required. These opportunities and willingness lead to actual involvements. The skills applied in these involvements and the rewards available from the environment determine the rewards experienced bv particioants. Where conventional involvements or interactions are perceived as rewarding, they should lead to the development of a social bond that inhibits a return to drug abuse.

The two remaining paths in the model are directly relevant to a return to drug abuse. The first is an "interaction with drug users" path, and the second is a "criminal involvement" path. Identical processes are hypothesized to operate on these paths. Willingness to become involved in conventional life inhibits interaction with drug users or involvement in criminal activities. while opportunities to become involved or to interact in these forms of deviant behavior enhance the orobability of actual deviant involvement. If socialization'has been effective and a bond to the conventional order has developed, elements of the bond of attachment, commitment, and belief will inhibit illicit involvement. In the absence of a strong conventional social bond, when illicit involvements or interactions are perceived as rewarding, they will lead to continued criminal involvement, to continued interactions with users, and, ultimately, to drug abuse.

The intervention points of the model are underlined in figure 1. Interventions that increase opportunities for conventional involvement and interaction are expected to strengthen the social bond and thus to prevent a return to drug use. In addition, specific skills are identified in the model. These skills are expected to affect the likelihood that rewards will be experienced for specific involvements. Effective consequential thinking about one's use of drugs or alcohol is expected to increase one's willingness to become involved in conventional life as well as the rewards from participating in conventional life. Consequential thinking skills enhance one's ability to perceive the connection-, between drug and alcohol use and problems, thus tying perceived costs to drug use. Conventional social, problem-solving, and stress-coping skills increase the likelihood that rewards will be obtained from involvement with conventional others. It is

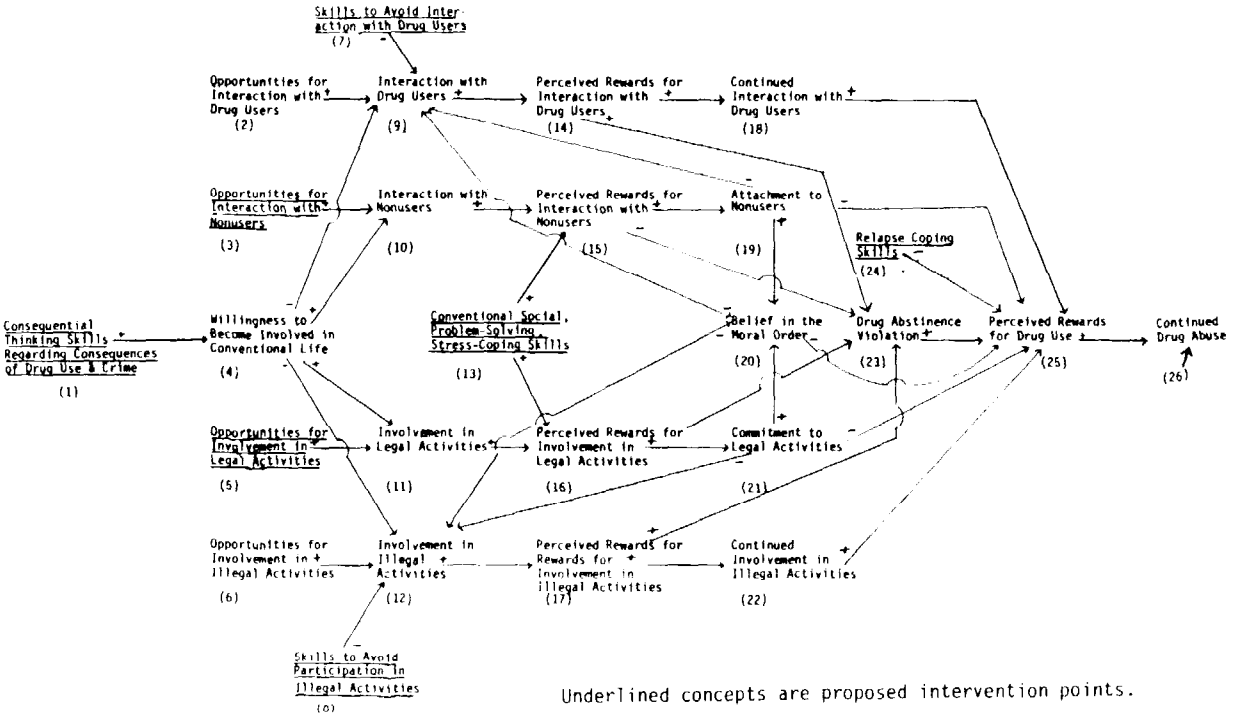

FIGURE 1. *Theoretical model of rehabilitation*

hypothesized that the more skillful one's performance, the greater the probability that this performance will be rewarded. Skills to avoid participation in illegal activities (e.g., "saying no" to drugs, avoiding drug users, avoiding places of drug use, and resisting intrapersonal temptation to use drugs) are hypothesized to decrease initial reinvolvement in drug use. Finally, the greater one's ability to cope effectively with a possible relapse to drug use, the less the probability that one's initial use of drugs will be experienced as uncontrollable and will lead to continued drug use.

Our experimental aftercare intervention seeks to address both the client skills and the environmental conditions related to drug relapse. It seeks to increase opportunities, skills, and rewards for successful participation in the conventional world. In addition, it seeks to increase skills to avoid interaction with drug users, to avoid involvement in illegal activity, and to prevent and cope with relapse. The opportunity and reward components involve environmental change. We seek to assist clients to attain the rewards associated with socially accepted activities and interactions by providing opportunities for involvement in these activities and interactions, hy systematically helping them to develop better problem-solving, social, and coping skills, and by helping to ensure that their posttreatment networks contain strong social supports for prosocial rather than drug-using behaviors.

The experimental aftercare program, called Project Skills, works with clients who are beginning the reentry stage (live in/work out) of treatment in residential programs. These subjects have been exposed to the residential treatment regimen for at least 3 months, and still have the support offered by the drug-free environment for at least the first 10 weeks of the supplemental experimental intervention.

Project Skills combines behavior-skills training with involvement in activities and social network development (see table 2). Behavioral-skills training recognizes social and interpersonal factors that influence people to return to drug use (Perry and Murray 1982). Our use of this approach is based on evidence that individuals can be taught behaviors that lead *to* environmental self-control and socially acceptable and adaptive forms of reinforcement and reward (Bandura 1973, 1977; Chaney et al. 1978; Pentz and Kazdin 1982). We seek to inoculate individuals against a return to drug use by showing them how to avoid drug users and drug situations, how to solve problems, how to interact with nonusers in ways that are reinforcing, and how *to* cope with high-stress and high-risk situations, which might lead to a relapse into drug use (Kellam et al. 1982, Meichenbaum and Novaco 1978).

TABLE 2. *Project Skills structure*

Opportunities	Skills	Rewards
Pairing with a "straight" community volunteer	Social	Volunteer as supportive practice person
	Problem-solving	
Involvement in an informal community group or organization	Stress-coping	Phase III support and maintenance group
	Social network assessment	Interest identification
	Avoidance and refusal	
	Relapse prevention	
	Relapse-coping	

Skills training is only one part of the intervention. A common problem with skills training approaches has been generalization (Goldstein and Kanfer 1979, McFall 1982). In his reconceptualization of skills training, McFall (1982) emphasizes that training people to perform better is only one aspect that should be addressed. Additionally, environmental stimuli should be altered to reduce problem behaviors.

The activities involvement and network development components of Project Skills pair a client with a partner from the community who does not use drugs. The pair selects and participates in a community organization that interests the client. The organization, focused on social, leisure, service, or religious activities, serves as a resource for meeting new people supportive of rehabilitation. The community partner provides support for getting involved in the organization, practices new skills with the client, and supports the client through any problems encountered in becoming involved in an organization. We hypothesize that organizational linkages will help to structure former abusers' involvements in the "straight" world, provide a source of continuing social support, and provide a source of reinforcement in an interest area other than work,

THE INTERVENTION

Project Skills is divided into three phases having distinctive goals and activities. All three phases are planned to assist clients to improve their skills, to increase their involvement in community activities, and to develop supportive social networks.

Phase I

Phase I lasts 3 weeks. During Phase I, clients meet twice a week for 2 hours per session to learn basic interpersonal, problem-solving, stress-coping, and refusal skills. These skills are: social introductions and assertive behavior, giving and receiving praise and criticism, structured problem-solving, stress management, social network assessment, and saying "no" to drugs and alcohol.

Each lesson in skills improvement is derived from a problem situation in a behavioral role-play test developed by the authors. This role-play test was developed by abstracting situations from weekly interviews with clients that led to relapse, in either the client's judgment or in a clinician's judgment. Eighty of these situations were pretested in a role-play format; forty-three were retained in the final instrument. Experimental clients are taught the components of an effective response to the problem situations from the role-play test. Half of the situations are not rehearsed, so that the degree of the clients' generalization to unrehearsed situations can be examined. The techniques used to teach effective responses are instruction, modeling, role-playing, structured feedback, videotaped feedback, and group discussion.

Volunteer training. Prior to the start of Phase I, volunteers recruited from the community attend an orientation session at which they receive information about Project Skills and learn about the role of the community partner. They are interviewed individually, and those selected to be community partners are asked to make a commitment to be a partner for 9 months.

In our program, this recruitment produced 108 applicants, of whom 57 were selected. The greatest number of volunteers selected to participate after orientation and screening were the result of personal contacts of staff members and from "want ads." In terms of staff time necessary to recruit volunteers, "want ads" were clearly the most efficient producers of volunteers. The screening process was similar to a job application, In the personal interview, the volunteers' motives for applying, their personal drug and alcohol history, the level of commitment required by the job, and their responses to troublesome situations that could occur as a result of their participation were discussed.

The volunteer partners meet once a week for 2 hours during Phase I. They learn about residential drug treatment, how to work with clients in the partnership role, community organizations that may be of interest to their client partners, how to help clients find and join organizations in order to meet positive people, and social skills that will help them get to know their client partners.

During these first 3 weeks of intervention, the main goal is to teach clients and community partners the basic skills necessary

for involvement with Project Skills. The two groups are gradually integrated through informal refreshment breaks during the sessions. At the third session, clients and community partners are paired, based on staff observations of skills, interests, and interactions during the sessions and refreshment breaks.

Phase II

During the 7 weeks of Phase II, clients and their community partners find and join a community organization of interest to the client. Once a week, clients and their volunteer partners meet in a training session to plan and evaluate their community networking activities. These activities include calling potential organizations, visiting these organizations together, joining or volunteering at one organization of interest to the client, meeting nonusers in that organization, and developing a plan to join another organization if interest in the original organization fades. Project Skills' criteria for acceptable organizations are designed to maximize the organization's reinforcement potential for the client and to maximize opportunities to meet prosocial individuals who do not use drugs. These criteria are:

1) The group should meet regularly (not less than once per month).

2) The group must provide the opportunity to interact with the same people over time.

3) Participation should be as a member of a larger group, rather than alone (e.g., playing a team sport rather than solo weight lifting for personal improvement).

4) The organization's activity should be one the client is willing to pursue even if the volunteer is unable to participate with the client.

5) The organization and client should have a shared purpose, interest, or function.

During Phase II, experimental clients also continue to meet separately once each week to work on drug avoidance, problem-solving, social, and coping skills. The skills taught are: dealing with being treated unfairly, dealing with depression, coping with a slip into drug use, dealing with success, and dealing with personal high-risk relapse situations.

To minimize possible conflicts with collaborating residential programs, community volunteers visit their partner's treatment program and meet the client's counselor and other staff during this phase. These visits help community volunteers to understand their clients better and help residential program staff to understand the supplemental experimental intervention.

At the end of Phase II, a combined promotion and graduation ceremony is conducted for those who have met project criteria. Clients and volunteers who have completed all assignments of Phases I and II are promoted to Phase III.

Phase III

Phase III, which lasts 6 months, seeks to: 1) increase generalization of skills, 2) provide support for clients, who typically leave their residential programs during this time, 3) allow clients to become more fully involved in a community organization while still having the support of a volunteer and Project Skills staff, 4) provide an opportunity to switch community organizations if the first one chosen does not meet the client's expectations, and 5) provide time for actual community reentry problems to occur and be solved with the support of the volunteer, Phase III support group, and staff.

During Phase III, volunteer and client pairs are expected to continue participation in at least one community organization, to meet together for at least 8 hours per month, to continue to use the problem-solving methods learned in Phases I and II to deal with emerging problems, and to maintain contact with others in their training group through a biweekly problem-solving and support group meeting.

Each Phase III meeting begins with an informal potluck dinner and social time, followed by an hour and a half of structured activ*ity,* which includes positive reports of personal events and an activity designed to enhance a skill learned in Project Skills. Either in the middle or at the end of the structured time, stress reduction exercises are practiced.

All client-volunteer pairs are supervised, using a case management system. Each case manager is responsible for contacting one of the pair each week, alternating between the client and the volunteer. Each month, the case manager writes a report on client-volunteer activities for each pair. Those who complete Phase III requirements yraduate from Project Skills and are no longer active clients. The clinical staff awards certificates of completion to this graduating group.

RESEARCH METHODS

Five residential drug treatment centers (therapeutic communities, or TC's) originally agreed to collaborate in an experimental research project with Project Skills and to provide access to clients approaching the reentry stage (live in/work out) of treatment. Early in the project, one of the programs lost its funding and closed. The other four programs remained open during the entire project period, although two of the programs merged during the project. The programs ranged in style from traditional TC confrontation milieu therapy utilizing paraprofessional staff

exclusively to a program staffed by both paraprofessionals and professionals that makes extensive use of community programs and personnel for therapeutic referrals. Length of treatment required for TC graduation ranges from 6 to 24 months. However, the retention rates in these TC's are similar at 1, 6, and 12 months (see table 3). Approximately 40 percent of clients completing intake remain in treatment after the first month, 14 percent remain at 6 months, and 10 percent or fewer remain in treatment for 1 year.

TABLE 3. *Percentage of clients remaining in treatment, by month by program, November 1979 - November 1981*

Program	Percent in Treatment at End of Month		
	1	6	12
1 (N=123)	39	15	10
2 (N=223)	35	8	1
3 (N=82)	44	18	8
4 (N=353)	42	14	5

Clients who were within 6 weeks of beginning the reentry phase of their TC programs or who had been in the reentry phase 6 weeks or fewer at the starting date of each round of Project Skills training were eligible for inclusion in the supplementary aftercare intervention. Eligible subjects were randomly assigned to the control and experimental conditions by a randomized block design stratified by program and by sex after the subjects had consented to participate in the project and completed assessment interviews. Seven sample pools were constructed in this way.

In spite of written sample pool guidelines, which were explained verbally prior to construction of each TC's sample pool, several subjects who were not eligible were referred by their TC's to Project Skills. Table 4 presents the sampling and assignment results of the first five groups of Project Skills, including the number of subjects initially referred by their TC's who refused to participate or were ineligible for inclusion in the sample pool. During groups two and five, a disproportionate random sample at one program was used to increase the number of treated experimentals. This procedure produced 10 more experimental than control subjects.

TABLE 4. *Results of subject recruitment groups 1-5*

Number of Subjects Referred	Refused N (Percent)	Ineligibie N (Percent)	Experimentals N	Controls N	Total Participants N (Percent)
134	24 (17.9)	16 (11.9)	52	42	94 (70)

ASSESSMENT PROCEDURES

Historical and baseline data were collected on all clients willing and eligible to participate in Project Skills prior to their random assignment to experimental or control conditions. The Client History is a structured interview that collects information on the client's life before TC entry, including drug use, crime, social network, demographics, and employment history, as well as current social network information, and current attitudes toward a variety of issues. The Problem Situation Inventory (PSI) is a tape-recorded role-play test in which subjects respond to potentia'l problem situations. This instrument was developed to assess skill levels of clients in six areas: problem-solving and decision-making skills, social skills, stress-coping skills, refusal skills, relapse prevention skills, and relapse-coping skills. The PSI was completed again for experimental and control subjects immediately after the first 10 weeks of training (Phase I and II), and a shortened version was administered at 6 and 12 months after completion of Phase II to examine treatment maintenance issues.

The PSI rating system is highly reliable. Intrarater reliability rates were 91.6 percent for the component skills and 91.7 percent for the overall score on the PSI. Interrater reliability was 88.5 for the component skills and 91.1 for the overall score. Rating has just been completed for pre- and post-tests, and these data are not yet analyzed.

Followup interviews were attempted with all subjects at 6 and 12 months after completion of Phase II. These interviews collect data on the subject's activities, including drug use, employment, leisure activities, organizational involvement, criminal activities, additional treatment, incarceration, social networks, problem areas, and helpful influences.

DATA ANALYSIS

Historical and 6-month followup data are presented for the first five of seven groups of subjects. Table 5 presents demographic and background data for the 94 subjects assigned to the experimental and control groups. As can be seen, the sample was predominantly male (80.4 percent) and white (75.9 percent), and the mean age was 26.5. The sample averaged 11.5 years of education, and 37.9 percent had a job before entering residential treatment. On the average, subjects had used three types of drugs regularly.

Seventy-two percent of the subjects had used opiates at some time, and 50 percent had used opiates regularly. Slightly more than 86 percent of the sample had been involved in criminal activity prior to entering treatment. These characteristics are similar to those of other residential treatment program populations (DeLeon 1984, Bale et al. 1980), although the Seattle sample has more whites and fewer Hispanics.

TABLE 5. *Experimental/control comparability at baseline*

	Experimental (N=49)	Control (N=38)
Age	26.6	26.4
Years of education	11.3	11.8
Percent male	77.5	84.2
Percent white	69.4	84.2
Percent with a job before entering treatment	36.7	39.5
Number of different types of drugs ever used regularly	3.3	3.3
Number of different types of drugs used regularly in last month in community before treatment	2.0	1.9
Number of different types of drugs ever used	4.5	4.5
Percent ever used opiates	71.4	73.7
Percent ever involved in crime	89.8	81.6

The experimental and control groups exhibit no significant differences on these variables. The experimental group contains fewer whites, and its members have a history of slightly more criminal involvement. Overall, it appears that random assignment procedures produced comparable experimental and control groups.

Presented next are 6-month followup data for the first five groups. The reader is cautioned that these data are preliminary outcomes, since the entire sample consists of seven groups. The effects of the experimental intervention may have improved over time as clinical staff became more experienced; however, cohort

effects have not yet been examined. In addition, more definitive followup information on the maintenance of the treatment gains is being collected in the 12-month followup interview. It is expected that outcomes during this extended followup period will more accurately reflect the power of the experimental intervention.

Table 6 displays project participation and followup interview completion data for the first five groups. Slightly more experimentals than controls have been located and interviewed. However, the interview completion rates for both groups exceed 90 percent. Those not located or refusing to be interviewed are likely to have worse outcomes as demonstrated by Polich et al. (1980), but the nearly equal percentages of interviews completed in the experimental and control groups lends confidence to the comparability of the followup data for subjects in these two conditions.

TARLE 6. *Project participation and followup interview completion, groups 1-5*

	Experimental		Control		Total	
Total Participants	N=52	(Percent)	N=42	(Percent)	N=94	(Percent)
Percent interviewed at 6 months	49	(94.2)	38	(90.5)	87	(92.5)
Percent completing 10-week training and equivalent controls	34	(65.4)	32	(76.2)	66	(70.2)

Two issues need to be considered before the discussion of results. The first is time at risk during the 6 months following the 10 weeks of Phase I and Phase II intervention. Project Skills accepted subjects at the beginning of the reentry phase of residential treatment. Thus, a proportion of the sample stayed in residential treatment during part or all of the 6-month followup period. Approximately a third of the sample were residents in a TC for the entire 6-month followup period, though all these subjects worked, went to school, or looked for work outside their TC during this period. Thus, even these subjects had opportunities to use drugs during this period. As noted earlier, our previous reentry study found that a quarter of the reentry sample were exposed to drugs and drug abusers during the reentry phase of treatment.

To see whether the reentry phase of TC treatment should be considered an at-risk period for drug use, we also investigated subjects' reported drug use while in the reentry phase. Examining the month of most frequent drug use for each client during the 6-month followup period, we found that 24 percent of the months of heaviest use of illicit drugs other than marijuana were months when clients were in the reentry phase of treatment. Thirty-one percent of the months of heaviest use of marijuana were months when clients were in treatment. These data indicate that the TC reentry phase clearly is a period of risk for drug use. Thus we have considered the entire 6-month period following Phase II as the at-risk period regardless of whether subjects were living in a TC or not.

The second issue concerns the designation of experimental and control group subjects for analyses. We examined outcomes in two ways. We compared all subjects assigned to the experimental condition with all subjects assigned to the control group, regardless of actual exposure to the Project Skills intervention. Second, we compared "treated experimentals" with an equivalent control subsample who remained in residential treatment for the same period of time. Of the 52 experimentals in the first five groups, slightly over 65 percent completed the 10-week experimental Phase II training program. Slightly over 76 percent of the control group remained in residential treatment for this same 10-week period. We designate these subjects as "treated experimentals" and equivalent controls. This latter analysis allows assessment of the possible effects contributed by Project Skills over and above TC residence. When evaluating the incremental gains of a brief intervention in addition to a long-term intervention, it is essential that subjects have an adequate opportunity to be exposed to the brief intervention. The comparison of the treated experimental group to those members of the control group who remained in residential treatment during the same time period helps to ensure comparability across groups on motivation factors that may be related to outcomes.

The outcomes suggested for assessment by our theoretical model are opportunities for conventional involvements and interactions, skills, perceived rewards for conventional participation, bonding to conventional people and activities, and crime and drug use. The data on skill levels have not yet been analyzed, hut preliminary results on other outcomes for groups 1-5 are available.

When the entire experimental and control groups are compared, no significant outcome differences appear in the first five waves of 6-month followup data. The one comparison approaching significance is the percentage participating in organizations. When outcomes of treated experimentals and their equivalent controls are examined for the first five groups, the differences are also not significant. However, some of the differences suggest favorable trends that may prove to be significant when the full sample of seven groups is examined.

Though not statistically significant, the preliminary findings are displayed in table 7. A greater proportion of the treated experimental group (45.5 percent) participated in prosocial organizations during the last month of the followup period than of the equivalent control group (30 percent). It appears that the intervention produced greater opportunities for conventional involvement outside of work and school settings. In the area of social networks, 60 percent of treated experimentals' networks were reported as influencing subjects not to use drugs as compared with 50 percent of the equivalent control sample's networks.

Virtually the same proportions of the two groups' networks were reported to he nonusers of drugs (46 percent). On the average, 35 percent of experimentals' networks did not use drugs and influenced experimental subjects not to use drugs, compared with 30.9 percent of the equivalent control group's networks. Finally, a slightly greater proportion of the treated experimentals have reported incorporating persons in their networks that they met at organizations or at Project Skills. Thus, the treated experimentals appear to be incorporating slightly more prosocial influences and more people influencing them not to use drugs into their networks than the control group is.

In the area of commitment to productive activities, it appears that the treated experimental group is slightly more committed to work and school than their equivalent controls are. If these prosocial influences are maintained and developed, it is hypothesized that they will lead to increased opportunities for bonding to prosocial others and to less drug use at 12-month followup.

Turning to drug use, two types of measures are shown in table 7. The percentage of the sample abstaining from drug use during the entire 6-month followup period favors the control group. Of the experimental group, 45.5 percent reported not using any drugs or alcohol, and 56.7 percent of the control group reported abstaining during this period. However, when the number of drug-free and drug- and alcohol-free weeks in the 6-month followup period are examined, the outcome is more favorable for the treated experimental group. The average number of drug-free weeks during the 24-week period is 20.5 for the treated experimental group and 18.7 for the equivalent control group. When the average number of weeks free from both drugs and alcohol is examined, the treated experimentals enjoyed 19.2 weeks free of use of all substances, while the equivalent control group had an average of only 14.9 weeks drug- and alcohol-free. These data suggest the possibility that the experimental skills training may be producing a greater ability to curtail a slip and prevent it from becoming a full-blown relapse, since there are fewer abstainers but more abstinent weeks in the treated experimental group. The final outcome presented is the amount of criminal involvement. The self-reported rates of official contact are low in both groups.

TABLE 7. *Selected comparisons of treated experimentals and equivalent controls at b-month followup, groups 1-5*

	Experimental (N=33)	Control (N=30)
1. Organizational participation		
Percent participating in organizations during most recent month	45.5	30.0
2. Networks		
a. Percent who influence not to use	60.0	50.8
b. Percent not drug users	46.7	46.1
c. Percent hard-drug users	10.2	6.6
d. Percent met in organization or Project Skills	12.1	8.2
e. Percent who use no drugs and influence subject not to use	35.0	30.9
3. Commitment (range 1-5)		
a. Commitment to work	3.1	2.7
b. Commitment to school	4.1	3.8
4. Drug use		
a. Percent abstinent (drugs only)	57.6	66.7
b. Percent abstinent (drugs and alcohol)	45.5	56.7
c. Drug-free weeks, excluding alcohol	20.5	18.7
d. Drug-free weeks, including alcohol	19.2	14.9
5. Crime		
a. Mean number of times arrested	.12	.20
b. Mean number of convictions	.06	.17
c. Mean number of times incarcerated	.09	.23

DISCUSSION

While these data are preliminary, it appears that some variables are trending in the hypothesized direction, while others are not. The pattern of variables trending in the hypothesized direction is not consistent. For instance, differences in the hypothesized direction have been produced in opportunity for involvement, drug-free weeks, and commitment, yet not on the intervening reward variables. Nor do the opportunities provided through Project Skills appear to be having as large an impact on social networks as we expected. Because of this, we are reexamining our approach to social network intervention. Our current thinking is not to rely exclusively on volunteers to help with network development. Although it appears that volunteers became a part of experimental subjects' social networks and provided emotional sustenance, it

does not appear that they were able to serve as effective facilitators for subjects' network development. It may be beneficial to have more highly skilled people systematically assist subjects to reconstruct their networks. This task includes giving emotional sustenance, but also requires giving critical feedback on performance, encouraging selection and participation in organizations, and encouraging subjects to meet people at organizations rather than huddling together as a two-person protection unit.

Another surprising finding is that experimental subjects are not reporting greater rewards from conventional activities. While Project Skills subjects are participating in organizations, this participation does not seem to be as rewarding or to be maintained as well as we had hoped. One reason for this may be a weakness in our procedures for helping subjects define interests for selecting an organization. It could be that subjects chose organizational activities more out of need to comply with Project Skills' requirements than to discover real interest areas. A more intensive case management system to explore interests in depth and ensure a greater exposure to different organizational settings may increase the rewards subjects perceive for this involvement. Alternatively, it may be that experimental subjects have been pushed out of their comfort zone and into a new and anxiety-filled area of involvement by their organizational involvement. In this case, skills training should eventually contribute to increases in perceived rewards once subjects reduce their anxiety over the newness of the organizational participation. If this were the case, we would expect a trend toward more perceived rewards for conventional activities among experimental subjects in the 12-month followup data.

The 6-month data presented above suggest some trends, but have produced no significant differences with the portion of the sample analyzed so far. In conclusion, we would like to leave the reader with two thoughts. The theoretically based approach to aftercare experimentation that we are using outlines hypothesized processes of rehabilitation. As a blueprint for experimentation, it allows us to examine specific points where experimental interventions appear to be affecting intervening variables and where they are not. In this way, we are able to examine and adjust implementation prior to theory testing. This type of model-based intervention will allow us to ascertain success of particular components of the intervention and to see which components are not working and should be improved. We feel that this is an appropriate approach for research and development in intervention programming. Using this approach avoids throwing out the baby with the bathwater by allowing researchers to fine-tune or overhaul specific components of the intervention before abandoning an empirically based theory. Without a theoretical base with specified intervention points, it is more difficult to decide whether to change components of one's intervention or to abandon the intervention approach and theory completely.

In closing, the second point is that the 6-month followup period is usually a shakeout period during which clients of residential treatment centers experiment with life beyond treatment. Experimenting with a new style of life, testing resolve not to use drugs, and attempting to return to community living make this a relatively unstable transition period. Thus, we are interested in looking at the 12-month followup data, which should reflect more stable patterns of involvement, bonding, and drug use. Presently, we have 12-month followup data on only the first two Project Skills groups. We present the data on drug-free weeks for these groups in table 8. These data show increased drug use during this second 6-month period for both groups. However, when the mean number of drug-free weeks for the treated experimentals and equivalent controls are compared, the treated experimentals show an average of nearly 8 more drug-free weeks than the equivalent controls.

TABLE 8. *Twelve-month followup results, groups 1 and 2*

	Treated Experimentals* (N=14)	Equivalent Controls** (N=12)	Total Experimentals* (N=22)	Total Controls** (=16)
Average number of drug-free weeks***	14.9	1.3	12.2	7.0

*One subject has not been interviewed in this condition.
**Two subjects have not been interviewed in this condition.
***24 weeks possible in period.

When all experimental and control subjects assigned to groups 1 and 2 are compared, this difference remains in the experimental group's favor, with a mean difference of approximately 5 drug-free weeks. If this trend continues, it would suggest a maintenance effect of Project Skills. We are eager to continue followup and analysis of the 12-month data in the coming months.

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