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Abstract

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Comments

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Two residential programs for dually diagnosed (severely mentally ill and substance-abusing) homeless individuals in Philadelphia were compared in a quasi-experimental field study. Findings indicate that the experimental model, a hybrid psychosocial and drug rehabilitation program, did significantly better in maintaining clients in care and in successful rehabilitation than did the comparison model, a modified therapeutic community program. However, the overall rate of success in both programs was quite modest. We found Emile Durkheim's concepts of organic and mechanical solidarity to be useful in comparing the structure of the two programs. Because of the small number of clients treated by these programs and the unique characteristics (predominately young, black, and male) of this urban population, findings are not conclusive but clarify direction for further practice and study.

More than one-half of all psychiatric patients are substance abusers.[1] Domiciled dually diagnosed individuals are considered difficult to serve and have higher rates of rehospitalization, greater hostility, more suicidal and homicidal behaviors, and poorer self-care than either chronically mentally ill clients or substance abusers.[2] They are also at higher risk for homelessness.[3]

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Homeless dually diagnosed individuals pose an even more severe challenge for service providers.[4] They have multiple impairments that must be addressed in the rehabilitation process.[5] This population is heterogeneous in diagnosis, substance of choice, level of functioning, and motivation to receive service.[6] Many of these clients have been reported to have high rates of contact with the criminal justice system and to have neither an effective social support system nor an established relationship with the service system.[7] They have been characterized as lacking motivation to work on their dual problems, a factor that has proven crucial in the rehabilitative process.[8] These individuals can be difficult to engage and often enter the system only while in crisis.[9] Because of their noncompliance with medication and treatment plans they tend to move in and out of service.[10] Dually diagnosed individuals have low self-esteem and value autonomy, as do other homeless individuals.[11] There are indications that they have had very dysfunctional family backgrounds.[12] Many exhibit high levels of physical health problems.[13] Many of them display the behaviors of addicted individuals who are preoccupied with acquiring their substance of choice.[14] Often, they tend to manipulate, steal, act impulsively, and demonstrate little regard for the consequences of their actions.[15]

In the past few years, there have been significant advances in programs for domiciled dually diagnosed individuals.[16] However, formulation of services for homeless dually diagnosed individuals is at a far less developed stage,[17] and there has been little controlled research to guide program development.[18]

In this article, we compare the effectiveness of two residential programs. One is a hybridized psychosocial rehabilitation model and the other a modified therapeutic community model. This quasi-experimental study was supported by a 3-year National Institute of Alcoholism and Alcohol Abuse community demonstration grant for dually diagnosed homeless individuals. We hope that these research results will offer ideas for practices that other providers might want to replicate or adapt.

Program Descriptions

Theoretical Framework

The literature on programmatic intervention with the homeless in general and with the dually diagnosed homeless in particular tends to be descriptive and lacks a theoretical framework.[19] In this study, we compared two programs that followed two distinct philosophies of rehabilitation. Although there were some common characteristics of these programs, such as positive rewards, individual therapy, and use of off-site day programs, they differed significantly in their mode of

care. We found Emile Durkheim's typology of organic and mechanical solidarity useful to clarify the key differences between the two programs. Durkheim was concerned with the mechanisms that bond individuals to the societal collective. Organic and mechanical solidarity are two forms of social integration. In our view, the key differences between the programs we studied lie in the nature of the bonding of clients to the programs.

Durkheim recognized that complex modern societies developed certain integration mechanisms based on the division of labor. However, some individuals become detached from the culture and values of society. His solution was the development of "occupational groups" that would perform many of the educational, recreational, and social functions formerly provided by family, neighborhoods, and churches. The purpose of these groups is to make the generalized values and beliefs of the entire society relevant to the life experiences of each individual. It is our contention that the residential programs perform the function of occupational groups, reintegrating the homeless individual with dual comorbidities into a functional role in society. On the basis of our observations, clients in residential rehabilitation programs are expected to develop therapeutic relationships with the community of service, that is, with primary caregivers, staff members in all shifts, and other clients. The two programs used different means to achieve these therapeutic ties, which can be characterized as organic and mechanical.

The use of a residential community as milieu therapy is rooted in both the mental health and the substance abuse fields.[20] However, the nature of the intervention provided by each field differs. In mental health residential treatment, the focus is on developing individual interpersonal skills and competencies to prepare for integration into society. In substance abuse residential treatment, the focus is on personality change creating adherence to the creed or philosophy of abstinence necessary for a lifetime commitment to abstinence, which is necessary for productive integration into society.

The experimental program followed closely what Durkheim labeled as "organic solidarity," revealing high degrees of interdependence among individuals, with exchanges, legal contracts, and norms regulating these interrelations.[21] The legal codes in organic solidarity are less punitive and more "restitutive," specifying nonpunitive ways to redress violations of normative arrangements and to reintegrate violators into the network of interdependencies that typify organic relationships. In such a community, individual freedom is great, and, in fact, the highly abstract collective conscience becomes dominated by values stressing respect for the personal dignity and responsibility of the individual. In such a community, contracts (such as the contingency contracts between clients and staff described below) not only are a means of

communication and bargaining but also serve to foster a cohesive force that reinforces the mutual responsibility and commitment of members of the same community. This type of community is very similar to a psychosocial rehabilitation model, which was the basis for the experimental program.[22]

The comparison program followed more closely what Durkheim labeled as "mechanical solidarity." Mechanical solidarity is based on a strong collective conscience regulating the thoughts and actions of individuals located within structural units that are all alike. The notion is that in order to foster solidarity, clear and unambiguous expectations should be set along with appropriate punishment for deviants. It is assumed that individuals may choose to pursue their own interests and need to be brought into the collective. Thus, with mechanical solidarity, individual freedom, choice, and autonomy are low. People are dominated by the collective conscience, and their actions and needs are constrained by its dictates and by the limits set by cohesive units. This type of community is very similar to the therapeutic community, which was the basis for the comparison program. Although this may sound less democratic and appealing than organic solidarity, one has to keep in mind that group members (as is the case with substance abusers) often join groups involuntarily, and the collective cannot rely on internal willingness for cooperation to guarantee solidarity.

This formulation is also similar to Ferdinand Tonnies' distinction between gemeinschaft and gesellschaft.[23] The gesellschaft (based on organic solidarity) allows the individual to experiment and decide internally to conform. The gemeinschaft (based on mechanical solidarity) keeps the individual in line by providing a clear set of group norms that are to be internalized and/or obeyed.

The Experimental Program

For the experimental program, we chose a residential model based on a psychosocial rehabilitation approach that has proven effective both with homeless mentally ill individuals and in substance abuse treatment.[24] The experimental program was operated by a psychosocial rehabilitation agency with mental health, mental retardation, and drug and alcohol services. Psychosocial rehabiliation is an essential part of the treatment of individuals with severe mental illness, and it focuses on providing the skills and supports necessary to maintain an individual in the community.[25] Individualization and client choice are important principles of treatment.[26] The program included 24-hour staffing, individual counseling by staff, skills teaching, psychoeducational and peer support groups, and intensive case management (with a caseload ratio of 1:7). Clients attended off-site mental health or drug and alcohol day programs. Psychiatric services were provided on-site

by a part-time psychiatrist. There was no time limit on the service stay; clients stayed anywhere from 1 day to 2 years.

The purpose of this program was to provide a structured supportive environment that emphasized individualization and tolerance of relapses but prevented destructive behaviors. Relapses were viewed and treated as part of the expected process of recovery. Instead of blaming or punishing clients for failing, relapses were used as educational tools to highlight risks, unsupportive environments, and the difficulty in achieving success. Special training and supervision were provided to staff members to reduce frustration and guilt when their clients experienced relapses. Further, the aim of the program was to meet the needs of the whole person and to recognize the interrelationships of substance abuse to many of the clients' personal problems.[27] Thus, the interventions were multifaceted and intensive.

In order to concurrently work on the clients' multiple disorders, the experimental program incorporated elements of traditional substance abuse treatment such as the level system and contingency contracts into the mental health–oriented intervention of psychosocial rehabilitation. The combined outcome was an innovative approach that integrated a low-demand environment with clear expectations for progress. This approach can be best exemplified by the program's level system in which clients were encouraged to achieve certain objectives at their own pace; each successful completion of a level was celebrated in public and followed by an award, ranging from a brush to a special meal. No pressure or punishment was put on clients to progress through the level system; this was an individual decision encouraged by staff members. The following is an outline of the level system.

1. *Engagement.*—The first level focused on helping clients start to address basic needs such as hygiene skills and mental health medication. Clients were asked to discuss their substance abuse in a support group. Rewards for successful completion included posters for their rooms, new underwear, or earrings.

2. *Transition.*—This level placed increased demands on the clients in performing daily living activities. Clients chose and attended a day program, performed household chores around the residence, planned a personal budget, and co-led a group on substance abuse with staff. Rewards for successful completion included a coffee mug, movie ticket, hair permanent, or haircut.

3. *Interpersonal and emotional growth.*—At this level clients were expected to establish social relationships, to demonstrate listening skills, to identify with a staff member those factors contributing to substance abuse, and to demonstrate conflict resolution and negotiation skills with a peer. Completion of this level was rewarded with T-shirts and blouses.

4. *Community resources.*—This level focused on identification of a preliminary alternative living site by the client, as well as participation

in self-help groups and identification of community support services. Clients were also required to co-lead a group on substance abuse and to maintain daily attendance at off-site programs. Rewards at that level included journals, pens, or appointment books.

5. *Self-management.*—At this level clients were expected to abstain. They planned for both relapse prevention and a move to an independent-living unit. Completion of this level was followed by a graduation party and presentation of a certificate.

The diversity of client needs required individual rehabilitation plans. The initial rehabilitation goal, negotiated with the clients, was to stabilize general well-being. As soon as the clients mastered basic functional skills and felt capable of change, the staff helped them focus on their mental health and substance abuse disabilities. The program stressed positive reinforcement of incremental gains, through praise, recognition within the peer group, and receipt of awards such as specific goods, opportunities, or privileges.

Relationship building was an important part of the rehabilitation process, as most of the clients had never had trusting interpersonal relationships. The initial step was to engage clients in their own rehabilitation process. However, the process of engagement was different from that used in the mental health field for homeless individuals.[28] Many of these clients were very difficult to engage, as they were extremely suspicious and hostile. Often, clients lied to staff and others to cover their behaviors. Considering the serious drug-related and manipulative behaviors, a trusting relationship was an end product rather than an unconditional given at the beginning of the relationships.[29]

Staff consistently demonstrated that they cared about the clients but did not approve of some of their behaviors, including drug abuse. Clients were encouraged to trust one staff member of their choice and share confidentially whatever they wanted as long as the information had no threatening implications to others. For these clients the rehabilitation partnership developed very slowly. Often, there was a precipitating event, such as a mental health crisis, a limit-setting experience, or a special visit to a prison or hospital, that triggered the connection of a client with a particular staff member.

It was essential for staff not only to gain the trust of the clients but also to model responsible behaviors for them. The program provided structure that gave this impulsive and destructive population external controls until they could develop their own internal controls. It was found that many of the dually diagnosed homeless are unable to function in socially defined roles, for example, to seek education or vocations, refrain from substance use, and avoid verbal and physical conflicts on their own volition. The staff also noted a lack of impulse control and inability to assess consequences of antisocial behaviors. It

was assumed that years of homelessness, dysfunctional childhoods, and their comorbidities weakened their ability to judge what is good and what is bad. Thus, learning or relearning these skills had to be done by following the examples and demands imposed on them from the immediate environment. These external controls included daily monitoring of client behaviors (i.e., constant verbal feedback on positive and negative behaviors, with redirection when needed), clear expectations of responsibilities within the group home, and a mandatory daily schedule of activities. If a client did not comply with the routine, did not respond to verbal redirection, or persisted in such negative behaviors as substance abuse or emotional outbursts, the staff would develop contingency contracts. These contracts, negotiated by the residential counselor and case manager with the client, listed a set of desired outcomes and the supports that the client would need from staff as well as the steps required of the client to meet the goal. Both positive and negative consequences were written into the contract. Staff members met daily to discuss clients so that the message from various staff members would be consistent.

The experimental program used the philosophy commonly used in psychosocial rehabilitation of mentally disabled persons.[30] The focus of rehabilitation was on the client's individual needs, and services were organized accordingly. The experimental program attempted to bring about behavioral changes by increasing clients' internal control and voluntary commitment; as such, it aimed to foster an organic solidarity within the residential setting reflecting society at large. A more complete description of the experimental program implementation is available elsewhere.[31]

The Comparison Program

For the nonequivalent comparison group, we chose a residential program operated by a drug and alcohol agency. The program employed a modified therapeutic community, a model used elsewhere for dually diagnosed homeless.[32] Although the program had been modified to help homeless clients with their mental health problems and daily living skills, in practice it was more like a traditional substance-abuse therapeutic community.

The counselors clearly stated to clients at entry that the program required commitment to abstinence and was for those who were interested in working on their dual problems and that clients would not be "babied" in this environment. Clients had to remain in the residence during the orientation phase of the program, which lasted several weeks. They were expected to initially learn a "creed" that was used as a basic philosophy of the program. All clients were expected to memorize the program creed, which hung prominently in the main

living space. The role of the community, or residential group as a whole, was stressed. The group was expected to monitor and facilitate individual recovery and to pressure clients not to regress.

House meetings and peer meetings were held at least once a day, during which time behaviors of specific clients were addressed, sometimes in a confrontive manner. If a client became intoxicated, this behavior was addressed during the meetings, with other clients and staff giving feedback. Peer groups such as men's and women's groups and Narcotics Anonymous, Alcoholics Anonymous, and Double Trouble met three afternoons a week. "Learning experiences," such as performing undesirable chores, were ordered for those who abused substances or broke site rules. Clients who were actively working on abstinence had a notice of their achievements (i.e., days of sobriety) posted in the main living room.

There were many opportunities for one-on-one interactions. Clients were scheduled to meet their primary counselors in weekly sessions or more often if needed. The program also included traditional case management (caseloads averaged 25 clients), off-site psychiatric services, and day programming (vocational training, social skills teaching, and recreational activities). There was less use of traditional phases or levels even though they existed informally. One form of external control was urinalysis: clients who left the facility had to submit to urine testing on their return. Another form of external control was the use of "expediters," that is, clients who had earned the trust of staff and whose responsibility it was to keep watch and make sure that each client behaved appropriately. Clients who continued to use drugs or alcohol were asked to leave the facility.

The comparison program used a modified therapeutic community approach and stressed the role of group pressure in its attempts to help clients attain sobriety and stabilize their mental health. There was less stress on individual choice and the individualization of rewards and punishments. As such, the comparison program aimed to foster a mechanical solidarity.

Differences in the Programs

As the descriptions indicate, the two programs differed in practice and philosophy. The experimental program stressed psychosocial rehabilitation and fostered values of organic solidarity. The comparison group stressed a therapeutic community model modified for these clients and fostered mechanical solidarity. The relevant programmatic differences are listed in table 1.

There were some additional differences. The experimental program used a single facility with 28 beds, whereas the comparison program used two facilities, one with 14 beds and the other with 18 beds. It

Table 1

DIFFERENCES IN PROGRAM ELEMENTS BETWEEN THE EXPERIMENTAL AND COMPARISON MODELS

Program Element	Experimental	Comparison
Source of funding/background of the agency	Primarily mental health	Primarily drug and alcohol
Philosophical orientation	Psychosocial rehabilitation modified for residential care of dually diagnosed	Therapeutic community modified to care for mentally ill homeless people
Philosophy of change	Development of the individual	Change in the individual brought about by the group
Negative discharge policy	No client was expelled. Some were transferred to other programs if a consistent threat to self or others.	Clients who consistently violated rules were expelled. Program was not responsible for client location after discharge.
Methods of modifying behavior	1. Positive rewards to stimulate change 2. Contingency contract to modify negative behaviors	1. Confrontations to stimulate change 2. Punishment for negative behavior
Case management	Intensive: ratio of 1:7	Traditional: ratio of 1:25
Staff background	Mental health professionals or paraprofessionals with drug and alcohol cross training	Paraprofessionals who were former addicts. Only program supervisor had primary mental health background.
Restrictions on leaving the residence	Clients could come and go during day. Curfew was at midnight.	Clients could not leave premise during "orientation period." Clients had to be accompanied by a "buddy" until they reached the highest levels.
Location of psychiatric care	On-site—both individual and group counseling	Off-site—individual counseling and medication
Locus of control	Internal to the client, with client-chosen goals and individually tailored limits and rewards.	External to the client. Group responsible for establishing limits for client and creating impetus for change through confrontation and interactions. Clients "grow" by going through predetermined stages. Rehabilitation goal chosen for the client.
Provision of individual counseling	Multiple sources: individual counselor, psychiatrist, specialized therapist, and case manager	Primarily performed by individual counselor, who is a former substance abuser and paraprofessional
Means for developing motivation for change	Developing personal trusting relationships that enable clients to examine negative consequences of substance abuse	Confrontations often in front of others in which negative consequences are pointed out

should be noted that no significant differences in client characteristics or services provided were found between the two sites of the comparison group; thus, they are combined for the purpose of this study.

At the end of the study period, we administered the community-oriented programs environment scale (COPES) to staff and clients of both programs.[33] COPES elicits information regarding program structure and staff-client interaction in a service site. A comparison of the scores confirmed differences between the two programs. We found significant differences as reported by clients in five areas: greater involvement of clients in day-to-day functioning of the comparison program, greater emphasis on order and organization in the comparison program, greater emphasis on spontaneity and open expression in the comparison group, greater staff control over decisions and activities in the comparison group, and greater staff encouragement for clients to be supportive of each other in the comparison group.

We also found staff in the experimental group to be viewed by clients as significantly more involved with clients and more tolerant of clients' anger and displays of aggression. When we compared staff responses, the experimental group was viewed as higher on program clarity, emphasis on spontaneity (this is contrary to what clients perceived), and practical orientation for release from the program.

These findings conform to the philosophies of the programs. The experimental group stressed a low-demand approach that did not necessitate frequent staff-client or client-client interaction. The comparison group stressed more staff control and client adherence to the community expectations and norms.

Hypotheses

It was our expectation, on the basis of the needs of homeless dually diagnosed individuals as outlined above, that a program based on psychosocial rehabilitation and stressing organic solidarity would be more suitable for these multi-impaired clients. We believed that people who had failed so many times by the conventional standards of society would find it difficult to comply with strict group norms. It seemed that personal concern along with tolerance for relapses would be more appropriate for these clients.

We thus proposed the following hypothesis: more clients will graduate successfully from the experimental (psychosocial rehabilitation and organic solidarity based) program than from the comparison program (therapeutic community and mechanical solidarity based). We defined success as the client's abstinence from drugs and/or alcohol, no mental health hospitalization, and the ability to successfully function in an environment that demanded management of adequate skills of daily living (i.e., permanent residency).

In addition, we hypothesized that even if clients could not meet our general measure of "success," more clients in the experimental program would attain abstinence from drugs or alcohol than those in the comparison group. Also, we hypothesized that there would be a higher retention rate (i.e., lower rate of attrition) in the experimental program.

The two programs shared some common programmatic features such as individual counseling that could have been used to varying degrees by clients regardless of program. Further, clients in the two programs shared many characteristics. Thus, it was possible that these two components (client characteristics and program use) might explain success as opposed to essential differences in the programs themselves. As David Cordray pointed out, quasi-experimental designs do not automatically rule out rival explanations to the tested hypothesis.[34] In our case, the fact that the experimental program may have a higher rate of successful outcomes does not necessarily imply that it is a better mode of treatment, as many intervening variables may account for the success and need to be ruled out. Thus, we finally hypothesized that clients' participation in a certain program (experimental vs. comparison) would explain the variability of success better than client characteristics and program use. That is, when other variables are controlled, none will have a stronger explanatory power than actual clients' participation in a certain program.

Methods

Research Design

Both host organizations were subcontractors of the Philadelphia Human Service System, which refused to participate in a random sampling design. Clients were assigned to programs by outreach teams solely on the basis of bed availability. In the duration of the study, 85 clients were referred to the experimental program and 121 to the comparison program. There were six cases in which a client was sent to one program, dropped out, was reengaged by the city's outreach team, and, as a result of bed availability, was sent to the other program. These six clients were not included in our analysis; thus, 200 clients were referred to any of the studied programs. The design was strengthened by following some of the techniques described by Cordray and Mark Lipsey.[35] Cordray noted that "the use of quasi-experimental analysis to assess causal relations has received mixed reviews." Further, "To counter the other imperfections in quasi-experimental analysis of causal relations, the use of multiple strategies (for example, methods, measures, analysts) has been widely advocated."[36]

The problem with quasi-experimental designs is that many intervening variables may account for the findings. Thus, alternative hypothe-

ses (different explanations for the findings) should be examined. In our study, alternative hypotheses, such as number of days in attendance at day programming (average of 92 days for the experimental program and 28 for the comparison group) or clients' previous number of drug treatments (an average of .3 treatments for the experimental program and 2.3 for the comparison group) were tested. In addition, several different types of outcome measures were used, and each of these outcome measures was validated by several sources.

As we were aware of the weakness of the nonrandomized assignment, we collected extensive data on the clients to control for assignment bias. Out of a list of 300 such variables, including demographic characteristics, history of care, personal traits, homeless history, and functioning skills, only 17 yielded significant differences between the groups. As indicated in table 2, there were a few significant differences between the two groups on drug- and alcohol-related issues and on activities of daily living at entry. Those in the comparison group scored higher in activities of daily living, with the exception of developing strategies to handle stress and following directions. The groups showed no significant differences in sociodemographic characteristics, personal history characteristics, previous mental health treatment, childhood characteristics, work history, and homelessness history.

Table 2

SIGNIFICANT DIFFERENCES IN CLIENT CHARACTERISTICS AT ENTRY TO PROGRAM (N = 89)

Client Characteristic	Experimental Program	Comparison Program	t-Value	Significance
Previous drug treatments	.84	2.33	−.261	<.05
Previous drug detoxifications	.35	1.04	−2.23	<.05
Being bothered by drug use*	.93	2.25	−2.48	<.05
Importance of alcohol treatment*	1.67	3.04	−3.03	<.01
Importance of drug treatment*	1.22	3.23	−4.53	<.001
Alcohol use†	10.74	.47	5.80	<.001
Alcohol to intoxification†	6.18	.23	3.44	<.01
Cocaine use†	3.54	.52	2.58	<.05
Polydrug use†	5.22	.38	3.66	<.001
Shower/bath*	1.30	1.04	2.83	<.01
Change clothes*	1.62	1.12	3.68	<.001
Clean personal area*	2.14	1.62	2.73	<.01
Take mental health medication*	2.20	1.50	2.73	<.01
Initiate contact with peers	1.41	1.08	3.05	<.01
Initiate contact with staff	1.26	1.04	2.35	<.05
Develop strategies to handle stress	2.75	3.54	−3.42	<.001‡
Follow directions	1.65	2.33	−2.60	<.05‡

* Self-report at time of entry into program.

† 30 days prior to admission, based on the addiction severity index.

‡ Indicates only areas in which clients in the experimental program performed better than did those in the comparison program.

One full-time and one half-time research assistant in each residential site collected data. Each worked with us for at least 2 years and often covered night and weekend shifts. Data were gathered from a variety of sources: research instruments; staff log books, which included laboratory results; interviews of staff members; and observations by the data collectors.

Instruments

We administered a series of instruments to each program participant at entry and at 6-month intervals until the end of the project. Instruments used to obtain baseline data included a personal history, a homeless history, a homeless functional assessment that measured activities of daily living and skills competency, the addiction severity index (ASI), and the structured clinical interview for *DSM-III-R*—patient version (SCID).[37] To validate the personal history data we used records held by the City of Philadelphia Office of Mental Health. A psychiatrist who met the clients as part of their treatment validated the SCID results.

In the homeless functional assessment, we asked 59 questions that pertained to behavior such as personal care, interpersonal skills, coping skills, emotional skills, independent living skills, and money management. The homeless functional assessment was developed specifically for this project. We used some questions from other validated assessment tools and developed others by talking with staff who had extensive experience with the homeless mentally ill.[38] We conducted weekly group meetings with the research assistants to ensure uniformity in using this and other scales. Staff records were used to validate the scores obtained by the research assistants. Because six clients in our study crossed over from one program to the other, we were able to compare interrater reliability of the instrument. We found very strong reliability, with agreement in more than 90 percent of the 59 items ratings in all pairs.

We repeated the ASI and the homeless functional assessment every 6 months. When the client left services, an outcome status form was completed, and the ASI and homeless functional assessment were administered if possible. We also collected data relevant to number of days of residential service, number of days in attendance at day programming, number of positive and negative rewards, number of rehabilitation plan changes, and attrition from the two programs.

Respondents

The original sample included 200 homeless individuals believed to be dually diagnosed who received service from either the experimental or the nonequivalent comparison program over a 3-year period. Of those, 24 proved to be homeless substance abusers only (i.e., not men-

tally ill) and were dropped from the study, leaving us with 176 dually diagnosed homeless individuals. Six others were dropped from the study, as they were treated by both programs.

Unfortunately, we could not gather complete data on many clients, as some remained in the program only briefly and others were not sufficiently coherent to answer the questions. Thus, our study data include baseline ASI on 97 clients, baseline functional assessments on 112, personal histories on 89, and at least one monthly assessment on the entire sample ($N = 176$).

Individuals who entered the programs ($N = 176$) were predominantly young (mean = 33 years), black (77%), unmarried (85%) males (63%), with a mean 11.7 years of education. All of the clients had Axis I disorders, with schizophrenia the most frequent diagnosis (70%), followed by bipolar (11%) and schizoaffective (9%) disorders. Diagnoses were confirmed both by certified psychiatrists who work with the two programs and by the SCID. In addition, 53 percent had an Axis II disorder. The averge age for the onset of mental health problems was 19. Over one-third were polysubstance abusers. Thirty percent listed crack as their substance of choice, and 26 percent listed alcohol. The average age for the onset of drug or alcohol use was 15. The diagnosis of drug and alcohol abuse was based on the results of urine analyses and the ASI.

The overwhelming majority (89%) had experienced one or more abusive childhood experiences that put them at high risk for substance abuse or mental illness.[39] These included parents who were substance abusers (56%), physical abuse (53%), out-of-home placement (47%), sexual abuse (41%), and parents with mental health problems (32%). In fact, 23 percent of the parents were themselves dually diagnosed. About half of the clients (49%) reported that they had run away from home, and 48 percent said they had been expelled from school. A large percentage had had contact with the criminal justice system. About half (49%) had convictions, with a mean time in jail of 12.3 months.

It has been claimed that homeless individuals have a high level of disaffiliation or low social margin, that is, an ineffective and unsupportive social network.[40] Three-fourths of the clients had a parent living in the area, and more than half of the clients (54%) had children, although in all cases they had lost custody of their children. Clients had high levels of contact with their families; 74 percent were in contact with their mothers, 66 percent with fathers, and 85 percent with siblings at least once in the month prior to interview. However, they also reported high levels of previous conflicts with family members. None of the clients in the study reported receiving any money from family. That is, despite the relatively high frequency of contact with family members, families were not reported to be a source of

financial support. Friends also did not provide a network strong enough to buffer the clients from homelessness. Only 49 percent reported having close friends, and 37 percent of these had only one friend, a finding similar to that of others.[41] The clients reported that they received no financial help from friends. Main sources of the clients' financial support were social security disability benefits (59%) and public welfare (38%).

This picture of the dually diagnosed homeless as young black males who are unmarried and have less than a high school education is supported by the emerging literature on this population.[42] Compared with other reports of inner-city, dually diagnosed homeless, there were a relatively high number of female clients and a low number of Hispanic clients.

Clients in both programs reported adequate levels of daily functioning, that is, an ability to perform activities of daily living without assistance. The areas of significant problems were setting up medical/service appointments, coping with stressful situations, accepting criticism, managing bank accounts, adhering to a budget, and identifying personal strengths.

For the outcome analysis, we included only clients who stayed more than 60 days in one of the programs. We believed that, given the multiple disabilities of these clients, there needed to be a sufficient time for rehabilitation interventions to have any effect. Of the original 176 clients, only 135 had exited (35 were still at the service sites at the time the project ended, and six had crossed over). Of these, only 89 stayed in either of the residential programs 60 days or longer. Thus, of the 135 clients who were treated and then exited, only 66 percent can be used in this study. This indicates a high rate of attrition, which is common in dually diagnosed clients in general and in the homeless dually diagnosed in particular.[43] This multiafflicted population is hard to care for, which was the impetus behind developing this demonstration project. To control for the high rate of attrition, we assigned a special research assistant to keep in touch with the dropouts, and we determined the rates of attrition in each program. Finally, it should be noted that sociodemographic characteristics of the outcome sample ($N = 89$) were very similar to those of all dually diagnosed clients who entered either program ($N = 176$).

Results

For purposes of this study, we defined success as the client's abstinence from drug and/or alcohol, mental health stability (i.e., no hospitalization), and ability to function successfully in an environment that demanded adequate skills of daily living (i.e., permanent residency). Moreover, to attain a successful exit status, clients had to maintain

sobriety, no hospitalization, and permanent residency status for a period of at least 3 months after exiting the program. (It should be noted that the 3-month period was dictated by the end of the project period. In fact, at project termination many clients had maintained successful outcomes for much longer periods of time. However, our analysis here is restricted to 3 months after service for each client in order to achieve uniformity in analysis.) To determine the status of clients, we used five measures that when combined indicated success versus failure. The measures were (1) terminal ASI (based on client self-report), (2) a urine analysis prior to exit, (3) client self-report on abstinence (based on the research assistants' interviews of clients on leaving the program and 3 months later), (4) ongoing client reports by case managers, and (5) an assessment of status by the program's clinical staff. All these sources of data were cross-referenced to confirm each other. If a client moved to a residential care unit, the staff of that unit was also consulted. Records on mental health hospitalization were checked with the City of Philadelphia Office of Mental Health.

In the experimental program, 15 out of 51 clients (29%) in residence for more than 60 days exited successfully. In the comparison program, three out of 38 clients (7.9%) in residence for more than 60 days exited successfully. This difference was statistically significant ($\chi^2 = 6.24$, df = 1, $p < .05$) and supported our research hypothesis that the experimental program would have more positive exits.

There was a clear difference in the postprogram living arrangements of the successful clients from the two programs. Two-thirds of those from the experimental program went to apartments or supported living. All those from the comparison program stayed in the service system (in a group residence or halfway house). Because of the small group sizes (15 and three for the experimental and comparison programs, respectively) we did not apply a statistical test to this finding. Clients in the experimental program were also significantly more likely to abstain from substance use despite "negative" exits (e.g., jail, hospital, back on the streets, or left before staff considered them ready). In the experimental program, 22 clients abstained from drugs and/or alcohol, and 29 did not. In the comparison program, six clients abstained, and 31 did not ($\chi^2 = 7.16$, df = 1, $p < .01$).

We analyzed the data in two ways to determine whether there were different patterns of attrition between the two programs. First, we found a higher percentage of attrition in the comparison group (34 out of 72 entering clients, or 47%) than in the experimental group (12 out of 63 entering clients, or 19%). Second, we calculated attrition rates for each program by dividing the number of dropouts by the total number of beds. We used this method, as the number of beds in each program varied (28 and 32 for the experimental and comparison programs, respectively). Findings indicated that during the first 60

days, a critical period for engaging the individual into the rehabilitation process, the experimental program had a much lower attrition rate as compared with the comparison program (a rate of 43 vs. 106.25). When using both methods, the relative risk ratio for attrition in the comparison group is about 2.5. It should be noted that neither program expelled clients for substance abuse within this critical period of 60 days. Clients who dropped out did so as a consequence of personal issues, response to the program structure, or participation demands.

We found no significant differences in the sociodemographic characteristics of dropouts from either program. We could not perform analyses on other characteristics of these clients because they were not in residence long enough to collect the necessary data. We also examined the data to determine whether clients who left service in less than 60 days differed from those who stayed longer. We found no significant differences between those two groups on any of the study variables.

Examination of Alternative Hypotheses

Our findings indicated that although success was modest, the experimental program had significantly better outcomes than did the comparison program. Nevertheless, because we used a quasi-experimental design, there were several alternative hypotheses that had to be rejected as threats to internal validity: differences in clients' characteristics, differences in program use, and their joint effects on outcome.

In order to test for the possible impact of certain variables, we used the following three-stage examination of alternative hypotheses method.[44] First, we studied each client characteristic separately to see if it explained significant variation in successful outcome. For those that yielded significant results, we next tested whether the two programs significantly differed from one another on the client characteristics that significantly explained variation in successful outcome. If a client characteristic significantly explained outcome and distinguished between the two programs, we used it in our final analysis. Our logic can be best understood by the following hypothetical example. If we find that age explains variation in outcome, we then need to determine if the two programs varied in mean age. If the mean age in both programs was similar and yet one program reported better outcomes, then one might assume that program participation more than age accounts for the variation in outcome. If, however, there is an age difference between the programs, then it may be that an alternative hypothesis (age as explaining success in contrast to program participation) should be considered.

Second, we repeated the same procedure for program use rates. Our goal was to assess if the quantity (as opposed to the quality and

basic philosophy) of the program explained variation in outcomes. Third, client characteristics and program use rates that significantly accounted for success and also distinguished between the programs were incorporated into discriminant analysis models along with the type of program as a two-category variable (experimental vs. comparison program). The variables that best discriminated between success and failure were considered to significantly account for the outcome. We used this somewhat complex method to identify critical independent variables and then to control for them because our two-category success variable did not lend itself to analysis of covariance. Logistic regression was not used because our sample size was too small and there were some missing data.

Client Characteristics and Outcomes

Of the client characteristics, there were two—the number of previous drug treatments and certain functioning skills—that significantly explained positive outcomes. The data indicated that the fewer the drug treatments (before entering the program), the more likely clients were to have positive outcomes ($t = -2.86, p < .01$). When comparing the level of functioning of clients with positive outcomes with those without positive outcomes, we used a t-test for independent samples. The functioning items were rated on a Likert-type scale ranging from 1 (no functioning problem) to 5 (major functioning problem). The functioning skills associated with positive rehabilitation were performing household tasks ($t = -2.11, p < .05$), following directions ($t = -2.82$, $p < .01$), identifying personal strengths ($t = -2.08, p < .05$), identifying strategies to handle stressful situations ($t = -2.06, p < .05$), cooperating in tasks ($t = -2.33, p < .05$), and initiating contact with peers (less contact was associated with success) ($t = 2.16, p < .05$).

The next question is whether these differences in client characteristics explained the outcomes better than program participation alone. Clients in the experimental program had fewer drug treatments, greater ability to develop strategies to handle stress, less ability to initiate contact with peers, and greater ability to follow directions. As there were no significant differences between the programs for the remaining characteristics associated with positive oucome, we omitted them from further analysis.

Program Use and Outcomes

The variables for program use that significantly explain positive outcomes are the number of days in residential service, the number of days in attendance at day programming, and the number of positive rewards granted. Clients with positive outcomes were in residence an average of 356 days, and those with negative outcomes, an average of

201 days ($t = 2.76, p < .01$). Day program attendance was also significantly associated with outcome, with a mean of 190 days and 55 days for positive and negative outcomes, respectively ($t = 3.13, p < .01$). Those with positive outcomes granted more positive rewards (.7 vs. .02) ($t = 2.85, p < .01$). Additionally, although not significant, those with negative exits received more negative criticism.

To assess the statistical impact of program characteristics on the outcome, we compared the two programs on these variables. We found no significant differences for the number of days in residential service and the number of days in attendance at day programming. The only programmatic variable on which the two programs significantly differed was the number of positive rewards. The experimental group had significantly more positive rewards than did the comparison group ($t = 2.94, p < .01$).

Variables Associated with Positive Outcome

To support our finding that the experimental program was more successful, we had to assess the relative contribution of client characteristics and program use described above and of program participation. We ran a number of discriminant analyses based on the variables from the previous steps. We found that the equation that had the most successful predictive power for the largest number in the sample consisted of two factors: positive rewards and participation in the experimental program. The unstandardized canonical discriminant function coefficients were 1.7 for positive rewards and .62 for participation in the experimental program. The constant was .58. Together, these two factors correctly classified 85 percent of 89 cases in the sample. Thus, only one program use variable and no client characteristics significantly contributed to the variation in outcome in addition to the original finding of participation in the experimental or comparison programs. When considering the number of variables tested to explore alternative hypotheses, the fact that one (positive rewards) was significant does not decrease the importance of the programs' differences. Furthermore, the experimental program's philosophy of psychosocial rehabilitation stressed positive rewards, and, thus, it can be viewed as an integral part of the experimental program.

Discussion and Conclusions

Both programs invested many hours of labor, large sums of money covering housing and supplies, and, most important, goodwill in their work with these multiply disabled clients. Yet, overall, very few of the clients successfully graduated. Such findings might be viewed as a setback in light of the heavy investment of both programs. Yet, we

should remember that this is a very difficult population to serve, and the exp ected rate of success was very low at the outset. Furthermore, one ought to keep in mind that the alternative to service is the streets, drug abuse, and decompensation. In addition, even with the overall low rate of success, we can learn from this study.

The data supported our hypothesis that the experimental program would show a higher rate of successful outcomes than the comparison group. Clients in the experimental program not only had higher rates of successful outcomes on several measures, but also examination of alternative hypotheses suggested that the outcomes were most likely due to programmatic differences rather than client characteristics or program use. Furthermore, the experimental program also reported lower rates of attrition. Thus, with a lower rate of attrition and with very similar client characteristics, the experimental program reported higher rates of success in assisting this sample of dually diagnosed homeless. This finding lends credence to the hypothesis that care for dually diagnosed homeless focused on psychosocial rehabilitation and fostering organic solidarity might be more effective than a therapeutic community approach that fostered mechanical solidarity. Our data suggest that many dually diagnosed homeless people cannot accept an environment that is too restrictive and rigid. Our experience with this sample suggests that they should be cared for individually, and the process of learning to change their behaviors should come from within rather than be imposed from the outside. Many of the clients may be assisted better by positive rewards, verbal as well as tangible, than by warnings, punishments, public confrontations, and threats of expulsion.

Generalizations from our findings should be made cautiously, and the following limitations should be acknowledged. Both programs lost many clients—of the 176 eligible clients, only 89 stayed over 60 days. This is a common yet worrisome rate of attrition. Our measure of success was based on a minimum 3-month period of permanent residency, no mental health hospitalization, and abstinence. This period of 3 months may be too short to indicate long-term effects. Further, the clients are all inner-city residents; no suburban or rural clients were included. Thus, more overarching generalizations can be achieved only after further program replications.

Another limitation of this study was raised by workers in both sites who claimed that the measures of success, as defined in our study, and even abstinence or housing stability alone are too much to expect from many of the dually diagnosed homeless. It is possible that the overall lower rate of success in both programs (20%) indicates that our expectations were not realistic. It is more reasonable to assume that these clients will be system dependent for a long time, and relapses will occur even among those who successfully graduated from the

programs. Yet, the workers contended that clients, even if not "successful," may have gained something valuable. They had experienced warmth and human care and concern. They were valued and appreciated and had a positive experience with the service system. Although these matters are difficult to measure, they should at least be acknowledged.[45]

One possible explanation for the limited though higher success of the experimental program is that it focused on the whole person in the rehabilitation process and not just on the clients' substance abuse and mental health problems. Moreover, the experimental program had a prolonged period of engagement in which specific client-chosen rehabilitation goals were set very low to guarantee success, and programming focused on areas other than substance abuse. The much lower attrition rate for the experimental program suggests that this was an effective engagement tool.

Programmatically, the data analysis suggests several conclusions. First, staff expectations should be set so as not to encounter disappointments with the many failures, and funding sources should expect that their money will yield relatively modest results. Second, rehabilitation of these clients is a long, slow process, as indicated by the average length of stay, especially for those with positive outcomes. These clients must overcome so many disabilities and so many unsuccessful life experiences that it is not surprising that it took many months of intensive residential care to reach meaningful success.

Third, multifaceted interventions are helpful.[46] For example, clients attending day programming did better. This may be due to the joint effort of another set of individuals working on problems during the day (in off-site day programs), and reiteration of the same messages from different sources. The experimental program offered intensive case management as well as extensive on-site services, day programs, and staff monitoring.

Fourth, positive rewards are very important to clients who have experienced so many failures in their lives. These positive rewards not only shaped behaviors but also provided self-esteem and proof that, with effort, life can be rewarding. The positive rewards are part of the use of organic solidarity in which the client is invited to join the group, yet his or her individuality and pace are respected.

In summary, our study provides much useful information about the treatment needs of the dually diagnosed homeless. It supports the notion that a residential service modeled after the principles of psychosocial rehabilitation and stressing organic solidarity may be more effective than a modified therapeutic community stressing mechanical solidarity. Our findings suggest one set of appropriate interventions with dually diagnosed homeless. Because the comparison program reported significantly lower rates of successful outcome, it may be

logical to conduct future demonstration studies by comparing our experimental program to different program models. As both programs yielded low rates of successful outcomes, more innovative and intensive interventions are needed to meet the needs of these multiply disabled individuals. Many dually diagnosed clients will relapse and drop out. However, the alternative is a life on the streets with a high risk of morbidity and abuse.

Notes

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