A Treatment Outcome Study of Community-Based Residential Care

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Objective: The authors describe two psychosocially oriented community residential facilities for patients with persistent and severe mental disorders and multiple failures at community tenure, and they report a retrospective study designed to evaluate treatment outcomes of program residents. Methods: The study employed a retrospective single-group repeated-measures design to evaluate 104 patients who completed the one-year follow-up. One-year mean number of admissions to and days in a hospital or crisis center during the two years before program entry were compared with mean admissions and days for the follow-up year; employment status, living status, and Global Assessment of Functioning (GAF) Scale scores at program entry and at one-year follow-up were also compared. Thirteen sociodemographic and clinical variables were individually tested for association with outcome. Results: Hospital and crisis center admissions and days were significantly reduced during the follow-up year. At one-year follow-up, a significantly greater proportion of patients were employed and living independently, and fewer were homeless. GAF scores were significantly higher. No significant correlations between outcome and sociodemographic and clinical variables were found. Conclusions: Despite design limitations of the study, the findings suggest that psychosocial residential treatment models can offer cost-effective and clinically efficacious care to persistently mentally ill patients.

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Residential programs are emerging as treatment modalities that hold great promise for the care of persistently and seriously mentally disordered persons (1,2). Despite the increasing popularity of such programs, little relevant literature on their efficacy is available, although much of what has been reported has been positive.

Hofmeister and associates (3) found general improvement in living and vocational status during a three-year posttreatment follow-up of patients with prolonged mental illness who had received residential care. Lipton and associates (4) studied the effectiveness of community-based residential treatment for homeless chronic mentally ill patients. Compared with a control group who had received routine discharge planning, the subjects in the residential treatment program spent significantly more nights in adequate shelter, spent fewer nights in hospitals or undomiciled, and were more satisfied with and committed to their living arrangements during the one-year follow-up.

In the current climate of escalating hospital-medical costs and shrinking resources, providers of mental health services are being asked to document the necessity and efficacy of care. Treatment outcome studies and program evaluations, especially of residential treatment, will be important in shaping the future of rehabilitation of chronic mentally ill patients.

In this paper, we describe two residential treatment programs, Casa Pacifica and Chrysalis Center in San Diego, California, that were designed to provide a supportive psychosocial therapeutic milieu for persistently mentally disordered persons who had repeatedly been unable to maintain community tenure. We report the results of a retrospective study evaluating treatment outcomes for program residents during the year after they were discharged from treatment. The study used a single-group, repeated-measures design in which each resident served as his or her own control.

The residential programs

Between 1985 and 1992, San Diego County Mental Health Services and the San Diego Veterans Affairs Homeless Outreach Program funded two adult residential treatment facilities in San Diego: Casa Pacifica, with 14 beds, and Chrysalis Center, with 12 beds. Referrals came from many sources, but most patients were recently discharged from a hospital or crisis center. All admissions required verification from the county mental health services staff that the patient had a severe and persistent mental disorder, a history of psychi-

atric hospitalizations, and repeated failures at attempts to live in the community.

Both facilities were located in large residential buildings in predominantly residential neighborhoods. They were licensed as social rehabilitation facilities by the California Department of Social Services and certified by the California Department of Mental Health. The staff of each facility was composed of a program director with at least a master's degree, a consulting psychologist, and residential counselors. Both facilities had employed consumer staff members. The staff-to-patient ratio was .7 to 1, or one full-time-equivalent staff member for each 1.4 patients.

The central goal of the programs was to help patients develop the social skills, living skills, and coping strategies necessary to make a successful and stable transition to community living while reducing or eliminating crisis relapses and subsequent hospital or crisis residential readmissions. A major component of the program was providing an ongoing postdischarge support system for the patient.

The programs operated on a psychosocial rehabilitation model that emphasized providing treatment in the least restrictive setting and avoiding hospitalization whenever possible. A central theme was that the staff and residents could together become a caring and supportive surrogate family in which healthy interpersonal interactions and adaptive problem solving were modeled. These relationships were believed to be the most powerful aspect of the treatment modality. The relationships formed during treatment were intended to continue indefinitely.

Patients participated in the formulation of individualized treatment plans that served as general guides for achieving treatment goals and delineated individualized criteria for transition through four program phases. The treatment plan also helped integrate and coordinate outside services provided to the clients such as case management, day treatment, or socialization services. Each patient was seen by an outpatient psychiatrist and received psychotropic medication. Initially, staff dispensed medication. However, during their stay and with the approval of the psychiatrist, most clients successfully self-administered medication.

The programs provided therapeutic, educational, and recreational activities that included self-government and community meetings; group and individual training in daily living skills, social skills, problem solving, and stress reduction; task- and process-oriented groups; and an ongoing in-house 12-step program for residents with comorbid substance abuse diagnoses. Residents were also expected to engage in the routine activities usually associated with independent living, including menu planning, budgeting, cooking, shopping, laundry, personal hygiene, and maintenance of their rooms and personal space.

Patients' progress was structured into four hierarchically ordered phases intended to indicate individual improvement and achievement of the treatment milestones specified in the treatment plan. Thus transitions between phases were not tied to standardized criteria or a particular time frame but reflected the individual pace of each resident. In phase one, performance objectives were simple and were individually tailored for success. As patients progressed to other phases, increased emphasis was placed on vocational training, employment (either supported or competitive), education, or volunteer work.

Phase four was the discharge planning period. During this most important phase, residents had to develop a specific plan and budget for living in the community, explore available housing options, and arrange payment for their postdischarge housing. By the time patients reached this phase, they were also self-administering medications.

Some of the most important aspects of the program began at the time of discharge. Clients who successfully completed the program became alumni and were encouraged to return to the facility for social events. This arrangement, together with the expectation that staff-patient relationships would continue after discharge, helped keep patients in contact with program staff and added a sense of continuity to their transition from the facility to community living. Alumni's continuing contact with the facility also allowed them to serve as positive role models for current residents.

Staff were available 24 hours a day to assist former residents in times of crisis or difficulty. This option further extended the scope and continuity of care and helped reduce rehospitalization.

The cost of services was $65 dollars a day, or approximately $2,000 a month. (The daily cost was derived by dividing the all-inclusive costs of the program from 1985 to 1992 by the number of patient days of care.) Services were provided to patients regardless of ability to pay.

Methods

Subjects. The subjects were drawn from all patients who were treated in the two programs from June 1985 until April 1992 and who completed a one-year postdischarge period. The study period covered the time from the opening of both programs to the loss of county funding for both programs in 1992 and the closing of the Chrysalis Center. The total number of patients discharged in the study period was 316; of those, 31 patients did not complete the initial 30-day evaluation period, and 12 discharged themselves against staff advice.

Of the remaining 273 patients (84.4 percent), 212 patients (77.7 percent) had been discharged long enough to complete the one-year postdischarge period by the end of the study. Complete follow-up data were collected on 104 patients, or 49.1 percent of the 212 eligible patients. Data were collected on only about half of the eligible patients largely because of limited staff availability and time constraints. A comparison of the sociodemographic characteristics of patients for whom follow-up data were complete and patients for whom data were incomplete indicated no significant differences between the two groups.

The 104 subjects had a mean±SD age of 31.4±8.5 years. Sixty patients

Table 1
Days of hospital and crisis center treatment for 104 patients before entry to a psychosocial residential program and during follow-up year

Facility type	Before entry[1] M	Before entry[1] SD	Follow-up year M	Follow-up year SD	t[2]	p
Hospital	63.19	122.62	4.79	11.46	4.81	<.001
Crisis center	9.90	14.40	2.16	6.10	5.63	<.001
Total	73.09	121.57	6.95	13.79	5.50	<.001

[1] Preentry data are based on one-year mean number of days in the two years before program entry.
[2] For all comparisons, df=103

(57 percent) were men. The majority, 85 patients (82 percent) were Caucasian, six (5 percent) were African American, five (5 percent) were Hispanic, and eight (8 percent) were members of other ethnic groups. Seventy-four patients (71 percent) were single, 19 (18 percent) were divorced, six (6 percent) were separated, four (4 percent) were married, and one (1 percent) was widowed.

Based on *DSM-III-R* criteria (5), the primary diagnostic classifications for these patients at admission were schizophrenia, 37 patients (36 percent); major depression, 21 (20 percent); bipolar disorder, 20 (19 percent); and schizoaffective disorder, 15 (14 percent). The remaining 11 patients (11 percent) had other disorders. The average length of stay in the community treatment program was 262.2±113.7 days.

Procedures. For the study patients, we compared the one-year mean number of admissions to hospitals and crisis centers during the two-year period before program entry with the number of such admissions during the one-year postdischarge follow-up. We also compared the mean numbers of inpatient days for the two time periods. The preentry data were based on a two-year time period because for some patients hospitalization episodes lasted longer than one year.

Data on other indicators of patients' general functioning at admission and at one-year follow-up, such as employment status and living situation, were also compared, as were clinicians' ratings of patients' overall functioning on the Global Assessment of Functioning (GAF) Scale (5) at those two time points. We also tested 13 sociodemographic and clinical variables such as age, gender, diagnosis, and length of stay to determine if they were related to outcome.

In general, preadmission data came from extensive psychosocial histories taken during the admission process and from the referral sources. Data on inpatient episodes both before and after patients' tenure in the residential program were cross-validated with the inpatient facilities. Data on services received during the follow-up period were also available from the management information system of the San Diego County Mental Health Services.

Mean numbers of hospital and crisis center admissions, inpatient days, and GAF scores were compared with paired t tests. Changes in living situation and employment between the preadmission and follow-up periods were examined with the McNemar test for related samples with binomial distributions.

Results

Treatment outcome at one-year follow-up. The mean number of hospital and crisis center admissions was reduced from 2.28±1.26 in the period before program entry (reflecting the one-year mean of the two years before program entry) to .56±.62 during the one-year follow-up; the difference was significant (paired t= 8.51, df=103, p<.001). Given that a single admission could last several months, we felt that numbers of hospital and crisis center admissions were potentially misleading indicators of improvement; thus we also analyzed the number of days of inpatient care before and after program entry. As Table 1 shows, the number of days decreased from a yearly mean of 73.09 days before entry to 6.95 days, a 90 percent reduction. Hospital days decreased by 92 percent, and crisis center days decreased by 78 percent.

Also, as Table 2 shows, compared with their status at program entry, a significantly greater proportion of the residents were employed and living independently, and significantly fewer were homeless, at one-year follow-up.

Patients' mean GAF scores increased from 44.18±9.38 at program entry to 59.96±10.93 at discharge, also a significant difference (t= −19.39, df=103, p<.001). The scores represent a 35.7 percent increase.

Because partial funding for the programs was provided by the VA, we compared a subgroup of 23 veterans treated in these programs with the other patients in our sample across a number of different background and outcome variables. We found no significant differences between these groups on the treatment outcome indexes. On background variables, the veterans did have a higher incidence of homelessness

Table 2
Employment and living status of 104 patients at program entry and at one-year follow-up

Variable	At entry N	At entry %	At one-year follow-up N	At one-year follow-up %	p[1]
Employed	14	13.5	24	23.1	.006
Living independently	19	18.3	43	41.3	.001
Homeless	23	22.2	5	4.8	.001

[1] Computed using McNemar tests with binomial distributions.

(N=16, or 70 percent of the subgroup) during the two years before admission. However, because many had been referred from the San Diego Veterans Affairs Homeless Outreach Program, this difference was expected.

Correlation of patient factors and outcome. No significant correlations were found between various indexes of outcome and the 13 sociodemographic and clinical variables: age, gender, marital status, one-year mean number of admissions to a hospital or admissions to a crisis center during the two years before program entry, one-year mean number of days in a hospital or days in a crisis center during the two years before program entry, employment and living situation before program entry, means of financial support, use of other treatment providers during the treatment period, length of stay, and diagnosis.

Discussion

Although data are scarce, previous evidence suggests that chronically mentally disordered individuals can be treated effectively in community-based residential programs. The underlying premise of the psychosocial approach is that if most psychiatric clients are ultimately expected to live in the community, then the community itself may be a good place for them to learn the skills to function there. Our study results lend support to this idea. Patients who participated in Casa Pacifica and Chrysalis Center programs showed dramatic reductions in psychiatric hospital and crisis center admissions after completing their residential stays. Perhaps more important, a significant portion of these clients moved toward being contributing members of the community; we saw significant increases in employment and independent living and significant decreases in homelessness.

We believe that a major factor in the successful treatment outcome for these programs was the postdischarge support services, which included ongoing staff-patient relationships, encouragement to attend program social events, and 24-hour availability of staff support for former residents in crisis.

Furthermore, it appears that successful treatment in the programs was independent of factors such as age, diagnosis, use of other treatment providers during the treatment period, prior inpatient care, veteran status, and other preentry factors. We were surprised that length of residence was not related to subsequent outcome, although this finding was congruent with the programs' philosophy of discharging patients when they are prepared to reenter the community rather than according to some predetermined timeline.

The results of this study should be interpreted cautiously, considering some of the methodological limitations inherent in a retrospective, single-group, repeated-measures design. Although we are assuming that the observed changes are the result of treatment, the passing of time or client maturation are alternative explanations that cannot be ruled out. The selection for evaluation only of patients who had completed one postdischarge year may have contributed to the positive findings of the study as well. However, we think this contribution is small because patients who completed the follow-up year made up 86 percent of all discharges, and patients were unable to fulfill the one-year criterion because the study ended, not for other reasons such as loss to follow-up.

Regression toward the mean, which can be a major source of confounding in designs such as the one employed, was empirically tested and did not appear to be present in our data (6). Also, the use of a subjective instrument like the GAF to assess patient functioning complicates interpretation. Despite the study limitations, we believe that nonexperimental outcome studies such as this one can be valuable additions to the literature.

With the costs of psychiatric hospitalization continuing to escalate, issues of cost containment and treatment efficacy are becoming increasingly important. In turn, effective and less costly alternatives, such as community-based interventions, become more attractive. Indeed, the savings in hospital costs alone for our subjects far exceed the annual costs of the programs.

This study, along with others cited, suggests that the psychosocial residential treatment model can offer cost-effective, clinically efficacious care to the persistently mentally ill. Although these results are promising, better-controlled studies need to be conducted and reported. This process will further refine the community residential model toward achieving maximal therapeutic benefit for the largest number of patients.

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