

Community Support Services and Functioning of the Seriously Mentally Ill

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ABSTRACT: A cohort of 729 chronically mentally ill patients receiving community support services (CSS) were followed over a nine-month period. Receiving needed community support services was shown to predict change in client functioning as measured by the Global Assessment Scale (GAS) even after the initial values on the GAS, as well as demographic, psychiatric, residential and medication maintenance variables were considered. Adequacy of social support from family, friends and others also contributed to predicting change in global functioning of the CSS patients.

Stimulated by the National Institute of Mental Health Community Support Program (CSP), a number of states during the past decade attempted to develop comprehensive community support systems (Baker & Intagliata, 1992; Anthony & Blanch, 1989; Tessler & Goldman, 1982). Integrated by case management, these systems of medical,

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rehabilitative and social support services sought to sustain and maintain the long-term severely mentally ill in noninstitutionalized settings.

During the 1980s, such a community support services approach was incorporated into state-wide funding of special community programs for the seriously mentally disabled in New York State. Funding was provided for case management and a variety of other community support services in response to local proposals to build support systems for this client group (NYSOMH, 1978).

This paper presents some of the results of a larger project which attempted to evaluate various aspects of this state-wide program. Previous publications have presented the overall design of the project (Baker, 1988), the development of various measures (Baker, Burns, Libby & Intagliata, 1985; Baker & Intagliata, 1982), descriptions of patients and services provided (Baker & Intagliata, 1984a, 1984b & Intagliata & Baker, 1984), and analyses of the effects of housing (Baker & Douglas, 1990). The functioning of the clients served by the program is the focus of this paper.

Evaluation of the community support systems (CSS) approach to organizing community-based services for the deinstitutionalized long-term seriously mentally ill offered particular problems and challenges. Schulberg and Bromet (1981) have discussed a number of these difficulties and stressed the importance of considering the theoretic basis of a particular CSS program.

The New York State CSS program, like other community support systems, was guided implicitly, if not always explicitly, by a theoretical model which called for the provision of a complex set of multi-level, multi-component interventions which were intended to help a vulnerable mentally disabled population meet their needs and develop their potential without unnecessary isolation from the community. Clients received a unique package of CSS services depending upon the residence in which they lived, the types, variety, and quality of the services funded and available, and the nature of the environmental settings in which they spent the greater part of their waking hours. Therefore, it was necessary to use an evaluation research design which measured a complex set of programmatic, environmental, and patient variables so that it would be sufficiently powerful to match the complexity of the program model.

Thus, in undertaking an evaluation of this complex multi-faceted initiative, we were faced with the need not only to try to evaluate the effects of the specific service elements being funded, but also to take into account a variety of other individual, residential and community

variables that would affect the community adjustment of CSS clients. The model that we used was basically ecological and viewed the behavior of individuals in a particular environment as reflecting the characteristics and behavioral capabilities and styles that they brought with them to that environment as well as the behavior that the environment shaped and reinforced. According to this approach, the community adjustment displayed by clients was only partially explainable by the services provided, but also was a reflection of the contribution made by client, residential and community variables as well (Baker, 1988).

A design was implemented which involved following a cohort of CSS clients over time and examining the extent to which services, residential, other community environmental variables and individual client variables were related to changes in community functioning while the clients were enrolled in this type of comprehensive community-based care. This type of longitudinal design overcomes some of the limitations of typical cross-section designs which capitalize on the covariation of items across a set of respondents.

The range of outcome measures available for use in assessing the effects of community support services is quite broad. In the research reported here, a standard psychiatric measure of global functioning, the Global Assessment Scale (GAS) (Endicott, Spitzer, Fleiss & Cohen, 1976) was employed. This instrument is particularly suited to studies of client functioning in the community and can be easily completed by trained observers.

METHOD

Procedure

The subjects in this evaluation consisted of a stratified random sample of 844 clients served by seven selected CSS programs in the four upstate mental health regions in New York. While the seven programs included in the evaluation study did not necessarily represent all CSS service sites in these four regions, the sample of programs studied did vary on such key dimensions as regional location, availability of support services, and number of clients being served. The selection of program sites was guided by information provided by the central and regional departments of the New York Office of Mental Health and by the consideration that high degrees of cooperation would be required from program administrators and staff to facilitate the project's extensive data-gathering requirements. The seven CSS program sites cooper-

ating in the study were based at: a community mental health center working in cooperation with a state mental hospital serving the same catchment area, three other state mental hospitals, a general hospital, and two voluntary human services agencies.

The random sample was stratified according to whether clients had entered the program during the last previous six months, had been in the program for six months to two years, or had been in the program for two years or more. Since there was particular concern with being able to assess the impact of the program on clients during the initial phase of their receiving CSS services, oversampling was carried out for those clients enrolled in service for less than six months. In subsequent analyses of the overall sample, the data were weighted to select the appropriate distribution according to the time the client had been in the program for the sites studied. Another basis for stratification of the sample was limiting the number of clients from each case manager's caseload to about fifteen, so as not to overburden the individual case managers who already had to complete a considerable amount of paperwork.

Case managers were trained by senior evaluation project staff at each site in completing the community adjustment questionnaire which constituted the major data-collecting instrument used in this study. The community adjustment questionnaire consisted of two parts. The first part collected information on the clients' demographic characteristics, residential situations, global level of functioning, grooming skills, community living skills, maladaptive behavior, and services needed and being received. The second part of the questionnaire required the case manager to interview the client, and included several measures of client satisfaction and perceived quality of life, as well as information regarding the availability and adequacy of social support for the client. On-site research assistants were made available to answer questions as the case managers completed the questionnaires concerning clients and services. The questionnaire was readministered approximately nine months later.

Subjects

After the administration of the second questionnaire, 729 (86.4%) of the original cohort of 844 patients were still enrolled in the CSS program and receiving community services. The comparisons of change over time presented below focus on this group of 729 CSS clients.

The median age of the clients was 56 years with a range from 18 to 81. More than half were women (56%) and 86 percent were white. Only 8.3

percent of the cohort were currently married and 58 percent had never been married. Nearly half of the sample (42.8%) were high school graduates and 14.6 percent had at least some college education. The most frequently reported primary diagnosis for the cohort was schizophrenia (65.2%) with the next most common diagnosis being affective disorder (13.7%). The median age at which clients had first been admitted to an inpatient psychiatric facility was 27.9 years. While nearly all clients had been hospitalized for psychiatric care at least some time in their lives, only 23.9 percent had been hospitalized during the year preceding our study.

A previous paper has presented a comparison of this New York State CSS client group to a group of chronic mentally ill persons studied by the National Institute of Mental Health who were enrolled in its national community support program (CSP) and found to be similar in most demographic characteristics (Baker and Intagliata, 1984a). The CSS group was somewhat older and included fewer clients living in unsupervised settings. Clinically, clients in both the NIMH CSP sample and our New York State CSS sample were likely to be schizophrenic, to have been hospitalized for psychiatric illness and to be suffering from some chronic medical problem as well.

The Global Assessment Scale

The primary measure used to assess program outcome was the Global Adjustment Scale (Endicott, et al., 1976) which provides a rating of a patient's overall functioning on a scale from 0 to 100. Endicott and her colleagues originally developed the scale as a modification of Luborsky's Health-Sickness Rating Scale and conducted a number of reliability studies. They found high interrater reliability, with a standard error of measurement of about five points. The interrater correlation in this study for the GAS was .64, which indicates an acceptable level of reliability given that the second rater was generally not as familiar with the client as the first rater.

Data Analysis

Regression analysis was performed to determine the extent to which various sets of variables were related to change in Global Assessment Scale (GAS) score for these clients. The six sets of independent variables used in the analysis were included because they represent the important components of the CSS program and included: 1) demographics,

2) psychiatric history, 3) residence, 4) medication, 5) services, and 6) social support.

Only a subset of the available variables was used in the regression analysis. It was decided to include in each set only the variables which individually had the strongest correlation with change in GAS. The variables selected to represent each set in the analysis are reported below.

The regression analysis performed was hierarchical in nature, with each set of variables entered in a specific order. The set of service variables was entered in the next-to-last position (only the social support set was entered later) in order to provide a very conservative estimate of the effect of services. This means that the service effects reported are over and above the effects of demographics, psychiatric history, residence and medication.

The variables in the demographic and psychiatric sets do not involve measurement of change since these variables were not expected to reflect relevant change over time. However, the other sets of predictor variables including residence, services, medication and social support all involved change in the variables as they affect change in global functioning. The actual type of change measured by each independent variable is explained below.

Independent Variables

The particular variables that were selected to be included in the regression analyses representing each of the six sets of independent variables were as follows:

1. Demographic variables
 - client's age
 - client's sex
2. Psychiatric history
 - client's diagnosis (schizophrenia or not)
 - number of psychiatric admissions in the previous year
3. Residence
 - change in rating of overall condition of client's residence
 - change in rating of adequacy of components of client's residence for their intended use (e.g., the kitchen)
 - change in rating of appropriateness of residence for the client
4. Medication
 - change in rating of how well the client maintained prescribed medication

5. Services
 - change in the number of service clusters needed but not received by the client
 - change in proportion of service clusters needed but not received
 - change in receipt of certain specific individual service clusters
6. Social support
 - change in the number of people available as social supports
 - change in perceived adequacy of social support from various sources (e.g., family, friends, etc.)

The first two service variables mentioned above are measures of unmet service needs. These service clusters were derived by performing a cluster analysis on the 15 individual service items used in the study. Based on the results, the individual service items were combined into seven major groupings or categories to make the later analyses simpler and more powerful.

Variables involving change in the receipt of particular individual service clusters which had been observed to affect individual outcome variables in earlier repeated measures analyses of variance conducted by the authors (Baker and Intagliata, 1983) were also included. In the regression analysis for GAS, change in the receipt of the day treatment service cluster and of the evening and weekend service cluster were included. These variables measured change in whether the client received, needed, or needed but did not receive each service cluster. For example, the client might have received a service from the day treatment cluster at the time of the first survey, and have needed but not received a service from this cluster at the time of the second survey.

Services from the day treatment cluster typically involve programs or activities provided on weekdays, usually away from the client's residence. Services from the evening and weekend activity cluster typically involve activities provided during non-weekday periods with an emphasis on socialization.

RESULTS

The results of the regression analysis for changes in Global Assessment Scale ratings are presented in Table 1. The multiple R^2 indicates that the full model accounts for 48.9% of the variance. Of this, 37.4% represents the stability of the GAS measure across waves. The remaining 11.5% represents the contribution of the other six sets of variables to

TABLE 1

**Regression of Client, Residence and Service Variables on
Global Assessment Scale Changes**

<i>Sets of Variables</i>	<i>Total R²</i>	<i>Increment in R²</i>	<i>df</i>	<i>F</i>
Initial GAS	.374	.374	1,482	288.07***
Demographic	.398	.024	2,480	9.63**
Psychiatric	.401	.002	2,478	0.94
Residence	.413	.012	5,473	2.00
Medication	.420	.007	3,470	1.89
Services	.476	.056	18,452	2.69**
Social Support	.489	.013	2,450	5.62**

*.05
**.01
***.001

change in GAS. As was expected, the initial GAS scores accounted for the largest proportion of change score variance; however, demographic, service and social support were also significant contributors. Services had the greatest effect on changes in GAS scores of these three significant variable sets. The demographic set, consisting of sex and marital status, had the next largest effect. Although entered last, the social support set was also significant. There was no significant effect for change in medication.

Further regression analyses within significant sets allowed the clarification of which members of the set were responsible for the significant contribution of variance for that set to the overall regression equation for a particular outcome variable. The SPSS computer program employed (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975) considered the contribution of the variables within each set simultaneously. The significant contribution made by the demographic variables set to the prediction of GAS resulted from females being significantly more likely to show an increase in GAS ($F_{(1,481)} = 10.40, p < .001$) by the time of the second administration of the measure.

The significant contribution made by the services variable set resulted primarily from changes shown by two groups of clients. The first included those patients who had received day treatment initially and then were not receiving it at the time of the second survey. These

individuals showed a significant decrease in GAS scores ($F_{(1,461)} = 9.36$, $p < .01$) associated with their discontinuance of day treatment services. The second group of clients contributing significantly to the observed effect of services included clients who were judged to not be in need of the evening and weekend recreation services cluster initially but who were judged to be in need of and not receiving it at the time of the second survey. These patients also had shown a significant decrease in GAS ($F_{(1,469)} = 5.92$, $p < .05$). Finally, the significant contribution of the social support set to the GAS regression equation was accounted for by the adequacy of social support measure. Clients whose rating on adequacy of their social support increased between questionnaire waves showed a significant increase in GAS ($F_{(1,450)} = 7.21$, $p < .01$).

DISCUSSION

The criterion of showing a significant contribution to the prediction of changes in outcome scores is a particularly stringent one against which to assess the effectiveness of a treatment or program intervention. However, community support services were shown to be important in predicting change in global functioning of patients enrolled in the CSS program even after the initial values on the scale, as well as demographic, psychiatric, residential and medication maintenance variables were considered. The multiple correlation coefficients were moderate in size, but that is not unusual in examining contributions of unique variance to prediction of change scores.

The finding in the present study that receipt of needed community support services, especially continuing in those services for an extended period of time, is significantly related to maintenance of functioning is quite consistent with the existing body of research on treatment of the chronically mentally ill. A major theme in this research literature is that in order to maintain or improve their levels of functioning, clients must not only receive comprehensive services but do so on an ongoing rather than time-limited basis (Test, 1981; Test, 1992; Test and Stein, 1977). According to a review by Hogarty (1977), the discontinuation of any treatment, whether chemotherapeutic, social, psychological or behavioral, results in a reversal of initial treatment related gains for a majority of schizophrenic patients.

The finding of significant contribution of social support to predicting change in global functioning agrees with a growing body of research emphasizing the importance of social support for maintenance of

chronic mental patients in the community (Baker, Jodrey, & Intagliata, 1992; Beard, Malamud and Rossman, 1978; Mosher and Keith, 1980; Nelson, Hall, Squire & Walsh-Bowers, 1992; Test, 1981; Test, 1992; Test and Stein, 1978). In the present study, social support was treated as a multidimensional variable, as suggested by Weiss (1974), and included a variety of different types of support provided to clients by friends, family members, and professionals other than the client's case manager. Interestingly, it was not the absolute amount of such support that was found to be associated with improvement in functioning, but rather the degree to which clients rated their level of available support as adequate to their own particular needs. This finding supports another important assertion in the literature on the chronically mentally ill; that is, treatment approaches for this population must be highly individualized such that a level of support or stimulation that is "just right" for one client may be too little or too much for another (Test, 1981; Test and Stein, 1977; Bachrach, 1983; Goldberg, Schooler, Hogarty and Roper, 1977).

In closing, results of the present study offer encouraging support regarding the efficacy of the community support services concept. While maintenance of functioning level rather than improvement was the outcome for the majority of clients in the study sample, this is a reasonable goal for the chronic mentally ill (Lamb, 1979), especially when it is contrasted with the deterioration in functioning observed for those clients who were not receiving needed services. Clearly, there is a need for further studies to continue to examine and more precisely identify those aspects of the community support systems concept that are most critical to the target chronic patient population for which it has been developed. Evaluation of such a complex program model is a difficult and challenging undertaking (Schulberg and Bromet, 1981; Bachrach, 1982). Thus, results from the present longitudinal study, while they are limited, do contribute to the growing outcome evaluation literature examining the impact of community programs on the seriously mentally ill.

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