Outcome Evaluation of a Short-Term Mental Health Day Treatment Program

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**Objectives:** To determine whether a structured, 6-week mental health day treatment program was meeting its objectives and to examine the program’s effectiveness with specific patient groups.

**Method:** Self-report questionnaires focusing on psychiatric symptoms, assertiveness, stress management, and social functioning were completed by patients directly prior to admission (pretest), at discharge (posttest), and at 4-month follow-up. Clinician ratings, including the DSM-III-R Global Assessment of Functioning (GAF) scale, were collected. Ninety-one participants completed pre- and posttests, and 51 completed the 4-month follow-up.

**Results:** The majority of the participants displayed affective disorders or adjustment disorders. There was significant reduction in psychiatric symptoms and improvement in assertiveness, social functioning, and stress management from pretest to posttest. These gains were maintained at follow-up. All diagnostic groups responded similarly, except the bipolar disorder group.

**Conclusion:** These data indicate that the program was meeting its objectives and offer strong support for the usefulness of short-term day treatment for a wide range of patients. The bipolar group performed differently compared with the other subsamples. The reliability of the GAF scale and when it may be most useful are discussed.

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**Key Words:** day treatment, skill development, group therapy, program evaluation

Mental health day treatment programs have proved less costly than inpatient programs (1–3) and show comparable or better outcomes relative to inpatient or outpatient programs for many psychiatric patients (2,4–6). With health care reform and the rationalization of services, greater emphasis is being placed on partial hospitalization programs. Reviews of the literature, however, indicate that programs are underutilized (1,7,8). A lack of clarity in the definition of the appropriate clinical population, the purpose, the usual length of stay, and the program elements of partial hospitalization (1–4,8), as well as referral clinician bias and lack of standardization, have contributed to the underuse of such systems (1,4,9,10).

Hoge and others (4,11) suggest a narrower definition of partial hospitalization focused on short-term day hospitalization for acutely ill patients. Further delineation has developed between community-based chronic care rehabilitation and intensive, short-term treatment (1). There is limited empirical evidence available to determine who does best in partial hospitalization programs (12).

Herz (6) recommends that studies in day treatment include careful diagnosis, a clear description of the program, valid and reliable measurements, medication information, and
demographic information. The Health Services Research Group (13,14) stresses that research should attempt to identify the elements of care that have a clear influence on outcome, and Hoge and others (15) have concluded that more reliable methods are needed to identify the unique program elements which create therapeutic change. Finally, Mason and others (9) recommend that measures of symptom severity and level of functioning should be included to assess outcome.

The day program examined in our study is an intensive, 6-week, group-based program for adults with psychiatric problems. The objectives of the program are to reduce overt psychiatric symptoms, develop coping strategies, and improve communication skills, ability to handle relationships, and overall functioning. The purpose of our study was to determine if the program objectives were being met, to assess the program’s effectiveness with different patient groups, and to examine whether clinical changes were maintained at 4-month follow-up.

Method

The Mental Health Day Treatment Program

Participants were referred by a psychiatrist, had stable accommodation, and were able to identify treatment goals. The only exclusion criteria were acute psychosis and active substance abuse.

At any one time, 12 to 17 adult patients attended the 6-week, goal-specific, group-based program daily. The group structure (that is, goal setting/goal review, assertiveness, stress management, health and lifestyle, community, fitness and leisure groups) was open, with patients constantly admitted and discharged. A strong community orientation was insured by a treatment focus on work, volunteer, or leisure functioning, routine home visits, and involvement of family, social network, school, and employer. The staff was multidisciplinary.

<table>
<thead>
<tr>
<th>Table 1. Number of patients reporting history of specific problems</th>
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<tbody>
<tr>
<td>Variable</td>
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<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Past hospitalization</td>
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<tr>
<td>History of suicide attempts</td>
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<tr>
<td>Drug abuse</td>
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<tr>
<td>Alcohol abuse</td>
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<tr>
<td>Alcohol and/or drug abuse</td>
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<tr>
<td>Sexual abuse</td>
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<tr>
<td>Physical abuse</td>
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<tr>
<td>Other trauma</td>
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<tr>
<td>Family history of alcohol problems</td>
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<tr>
<td>Family history of psychiatric admissions</td>
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</tbody>
</table>

Participants

Ninety-one participants voluntarily completed the pretest and posttest evaluations; 51 completed the 4-month follow-up questionnaires. An additional 35 completed the pretest but chose not to complete the posttest survey. The basic demographic data of the participants who completed the pretest only were similar to the group who completed pre- and posttests, with the exception of a higher percentage of women in the former group.

The average age of the pretest–posttest sample (n = 91; 47 men and 44 women) was 35.53 years (standard deviation [SD] = 11.78), and average educational level was 11.95 years (SD = 2.33). Seventy-seven percent of these subjects were not employed, and 57% lived with family members or friends. Forty-three percent of the participants were single, whereas 28% were married. Further sample characteristics are included in Table 1. Sixty-eight percent had been admitted to the program on a transitional basis, 17% as an alternative to hospitalization, 8% for thorough assessment, and 7% for other reasons. The mean number of medications at the time of admission was 2.32 (SD = 1.59, n = 81). Only 10% of the sample were not taking medication at the time of admission.

The mean age of the follow-up sample (n = 51; 24 men and 27 women) was 36.90 years (SD = 12.56), and their average educational level was 12.16 years (SD = 2.41). The mean number of medications at admission was 2.26 (SD = 1.47, n = 47). Only 13% of the follow-up sample were not taking medication at the time of admission. On all other demographic variables examined, the follow-up sample was generally equivalent to the pretest–posttest sample.

Procedures and Tests

The participants completed a series of self-report questionnaires directly prior to assessment for admission to the program (that is, pretest). The second series of questionnaires was completed in the final week of the program (that is, posttest). The third series of questionnaires was mailed to participants approximately 4 months following discharge. The response rate was 56% at 4-month follow-up. The pretest and posttest phase was piloted on a small group of participants prior to conducting the present study.

At pretest, the following self-report questionnaires were administered: 1) the Symptom Checklist-90-Revised (SCL-90-R), a general measure of psychological distress (16); 2) the Rathus Assertiveness Schedule (17); 3) the Stress Management Questionnaire, constructed by the authors and focused on patients’ use of adaptive and maladaptive coping strategies; and 4) the Social Functioning Questionnaire, constructed by the authors and focused on patients’ ratings of their social functioning in 7 areas.

Clinicians (psychiatrist and case coordinators) were trained before they performed independent DSM-III-R GAF
ratings at pretest. This scale has been shown to be modestly reliable and valid (18), and it is useful as a measure of problem severity and functioning (19,20). For a subsample, an objective rater (that is, an external, independent psychologist with access only to referral information) interviewed patients and rated them on this scale. At pretest, extensive demographic information, including diagnosis, history of physical and sexual abuse, and alcohol or drug abuse, was collected in a structured manner by the case coordinator.

At posttest, patients completed the SCL-90-R, the Rathus Assertiveness Schedule, Stress Management Questionnaire, and Social Functioning Questionnaire. Participants also completed the Self-Efficacy Stress Management Questionnaire, in which they predicted how frequently they would use each of the 13 strategies in 4 months’ time. Participants also rated their overall functioning at discharge compared with admission on a 9-point Likert scale. Finally, patients completed the User Satisfaction Questionnaire, which consisted of one general item (7-point Likert scale) and 10 specific items (5-point Likert scales) focused on the helpfulness of specific components of the program (for example, assertiveness group). Clinician ratings on the GAF scale were again independently completed by the case coordinator and psychiatrist. The objective rater interviewed a subsample of the participants at posttest. None of the raters had access to their pretest GAF scores at the time of the posttest evaluation. The case coordinators and psychiatrist completed the Overall Functioning Rating for each participant at posttest.

At 4-month follow-up, patients completed the SCL-90-R, the Rathus Assertiveness Schedule, Stress Management Questionnaire, Social Functioning Scale, and Overall Functioning Rating.

Results

Results are presented for the pretest and posttest sample and then for the follow-up sample. Because the study lacked a no-treatment control group, our primary focus was on within-group differences. The size and characteristics of our sample allowed us to examine between-group differences within the sample (for example, gender differences, differences among diagnostic groups), and these findings are briefly summarized. A conservative error rate of 0.001 per comparison was employed for t tests, analyses of variance, and correlational statistics.

Pretest and Posttest Findings

Diagnoses. The DSM-III-R diagnoses for the pretest–posttest sample on Axis I and Axis II are presented in Table 2. These diagnoses were generated by the psychiatrist and case coordinator according to DSM-III-R criteria. We have grouped diagnoses on Axis I by type of disorder. At admission, the majority of patients displayed either an adjustment disorder or a depressive disorder (that is, major depression, dysthymia, depressive disorder). This was also the case at discharge, but depression was diagnosed less frequently. The frequency of no diagnosis on Axis I increased from admission to discharge. Although only 5 participants met criteria for substance abuse (included in the “other” diagnosis group), 51% (see Table 1) had a history of alcohol and/or drug abuse.

On Axis II, 29% of the sample met criteria for personality disorder or displayed marked traits on admission, whereas 41% did so at discharge. The majority of these cases met criteria for personality disorder. It is noteworthy that at admission, the majority of patients (n = 59) displayed an Axis I diagnosis only, 21 participants had both Axis I and Axis II diagnoses, and 4 had only an Axis II diagnosis. The frequencies were similar at discharge. Thus it was not possible to examine a personality disorder group in absence of Axis I disorder.

Self-Report Questionnaires. On the SCL-90-R, there was a significant reduction in the mean Global Severity Index and mean Positive Symptom Index from pretest to posttest assessments (t = 9.76, P < 0.001 and t = 8.69, P < 0.001, respec-
The mean Global Severity Index scores are depicted in Figure 1. On the Rathus Assertiveness Schedule, the mean scores significantly increased from pretest to posttest ($t = -9.17$, $P < 0.001$) (see Figure 2).

On the Stress Management Questionnaire, participants generally reported significant increases in their average use of adaptive coping strategies and significant reductions in their use of maladaptive strategies from pretest to posttest. For example, on a 5-point Likert scale measuring frequency with 1 = “never” and 5 = “all the time,” subjects recorded the following mean results: relaxation—pretest 3.14, posttest 3.66, $t = -5.25$, $P < 0.001$; focus on what has helped before—pretest 2.91, posttest 3.50, $t = -5.50$, $P < 0.001$; drink alcohol—pretest 1.94, posttest 1.26, $t = -5.65$, $P < 0.001$; keep feelings to self—pretest 3.63, posttest 2.93, $t = -5.28$, $P < 0.001$. Patients subjectively reported significant reduction in their use of medication (pretest 2.78, posttest 1.97, $t = -5.39$, $P < 0.001$). It is noteworthy that the mean number of medications did not differ significantly from admission to discharge, but 20% of the sample were not taking medications at discharge compared with 10% at admission.

On the Social Functioning Questionnaire (7-point Likert scale), participants reported no difference in the amount of time they spent with family from pretest to posttest ($t = -0.21, P > 0.05$ and $t = -4.31, P < 0.001$, respectively). The mean ratings of their ability in 7 areas of social functioning, including their overall level, increased significantly over time. Most mean posttest ratings were at their usual or better level on all dimensions, except for ability to handle intimate relationships.

On the User Satisfaction Questionnaire, participants felt satisfied with the program (mean ± SD = 5.98 ± 1.24, n = 90). Most aspects of the program were rated as helpful, but goal-setting group, assertiveness group, talking to patients, and talking to staff were rated as most helpful.

With respect to overall functioning, patients rated themselves as improved (7.28 ± 1.40, n = 86). Following completion of the program, 78% of the participants were referred for outpatient treatment, the majority to psychiatrists.

Clinic Ratings. As illustrated in Table 3, the clinicians rated participants more highly on the DSM-III-R GAF scale at posttest relative to pretest. The objective rater also noted improvement in the smaller subsample that he rated.

The data for the consistency of GAF ratings were variable. At pretest, the raters displayed poor interrater reliability, but at posttest, interrater reliability was improved, albeit limited. With respect to overall functioning, case coordinators and the psychiatrist rated patients as improved at the end of the program (6.98 ± 1.22 and 7.16 ± 0.90, respectively).

<table>
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<tr>
<th>Rating pairs</th>
<th>Mean for rater 1</th>
<th>Mean for rater 2</th>
<th>N</th>
<th>r</th>
<th>2-tailed t test</th>
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<td>Psychiatrist versus case coordinator</td>
<td>45.79</td>
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<td>75</td>
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<td>-2.70</td>
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<td>52</td>
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<td>-4.36</td>
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<td>53</td>
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<td>0.56</td>
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<td>Psychiatrist versus objective rater</td>
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<td>36</td>
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<td>1.44</td>
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<tr>
<td>Case coordinator versus objective rater</td>
<td>60.54</td>
<td>60.29</td>
<td>37</td>
<td>0.42</td>
<td>0.14</td>
</tr>
</tbody>
</table>

Consistency of GAF ratings

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Selected Between-Group Comparisons

The pretest and posttest findings reported for the entire sample were robust and were replicated within subgroups (that is, male and female samples, diagnostic groupings). The male and female samples were equivalent on most of the demographic variables and on pretest mean scores, with the exception of education. Both men and women significantly improved on most measures from pretest to posttest, and each gender mirrored the overall group effects.

The mean scores for the adjustment disorder, depression, anxiety disorders, and other disorder groups (based on Axis I diagnoses) improved significantly from pre- to posttest, with
occasional exceptions, on all major dependent variables. The bipolar disorder group (n = 10) responded differently, however. Although some of the bipolar scores on specific variables improved from pretest to posttest, the differences were not significant. The only exceptions to these findings were the psychiatrist’s and case coordinators’ GAF ratings (that is, bipolar patients were rated as displaying significantly improved functioning at posttest). The objective rater’s GAF scores indicated only a trend. These data suggest that the bipolar patients were perceived differently.

Follow-up Findings

Diagnoses. The distribution of Axis I diagnoses for the follow-up sample, based on discharge diagnoses, was similar to that reported earlier for the entire sample (see Table 2).

Self-Report Questionnaires. The follow-up findings for the SCL-90-R (Global Severity Index) and Rathus Assertiveness Schedule are included in Figures 1 and 2, respectively. The follow-up sample maintained the significant changes observed from pretest to posttest for the entire sample.

On the Stress Management Questionnaire, there were no significant differences between the participants’ reported use of the 13 strategies from posttest to follow-up. Comparison of participants’ Self-Efficacy Stress Management Questionnaire responses at posttest to their responses at 4-month follow-up revealed that participants expected they would use 5 strategies significantly more often at follow-up than they actually reported (namely, relaxation, talking to someone, exercise, time management, thinking about what has helped before). They also predicted at posttest that they would think about stress and worry less at follow-up than they actually reported. Finally, on the Social Functioning Scale, the participants maintained the improvement observed from pretest to posttest at the follow-up assessment.

Discussion

Usefulness and Value of Program

Participants reported significant reduction in symptoms, increased adaptive coping strategies, and improved assertiveness and communication skills, social functioning, and overall functioning at the end of the program. These results support the usefulness of our intensive 6-week program. The patients’ reported improvement was supported by clinician ratings, as well as by an external, objective rater. Other studies have also reported reduction in acute symptomatology (15,19,21,22). The data also indicate that those participants who chose to participate at 4-month follow-up (56%) maintained the changes. These findings are consistent with Piper and others’ (21) follow-up results for patients with serious, long-term psychiatric problems.

Improvement in functioning was replicated within subgroups (that is, males and females, different Axis I diagnostic groups), and this attests to the usefulness of the program with a wide range of patients. A noteworthy exception was the
bipolar group, which did not show significant improvement. It may be that our program is not as well suited for bipolar patients as it is for those with adjustment, depressive, and anxiety disorders, and changes are needed to meet the needs of the bipolar group more adequately (that is, more emphasis on symptom reduction and behaviour containment, less focus on personal effectiveness training). Also, the bipolar group was a more chronic group (that is, had a longer psychiatric history) and may require a longer rehabilitation program.

The findings of our study support the value of specific program elements. The goal-setting and assertiveness groups were rated as most helpful by the participants. It is in these groups that patients were expected to set and meet goals, to identify interactional problems, and to work on changing their behaviour through role play and practice in their home and community life. The interactions with other patients and staff in which new behaviours and skills were practised were also rated as positive aspects of the program.

**Patient Characteristics**

Our patients were generally young to middle-aged, and there was a balance of men and women. The most frequent admission diagnoses for our sample were adjustment and depressive disorders. These results are consistent with past studies (19) and reflect our program’s focus on short-term treatment of acutely distressed patients. The majority of our patients did not display either personality disorders or marked personality traits, and most of those who did displayed an Axis I diagnosis. The low incidence of personality disorder limits our conclusions concerning the value of this program for individuals with personality disorders and may have contributed to our positive outcome data. It is noteworthy, however, that Piper and others (21) evaluated an 18-week intensive day program and reported that their patients with affective and personality disorders showed significant improvement. Further, Dufton and Siddique (19) reported a higher incidence of personality disorder in their evaluation of a 7.55-week average stay program, in which patients responded positively.

Given that 68% of the patients in our sample were admitted from inpatient psychiatry, often reducing the length of patient stay, and that an additional 17% were admitted as an alternative to inpatient hospitalization, the potential cost savings of short-term day programs are noteworthy in this time of health care reform.

**DSM-III-R GAF**

The GAF scale (20) was selected as a standardized measure to allow us to collect clinician ratings, as well as an objective rating by a psychologist not involved in the program. The average improvement from pre- to posttest ratings in our study was somewhat larger than observed in past studies (22).

Examination of the consistency of the ratings at pretest and posttest revealed poor interrater reliability at pretest and improved interrater reliability at posttest. The interrater agreement obtained at posttest is generally consistent with past findings (18). One possible explanation for poor interrater reliability at pretest is that this scale is difficult to use reliably when the clinician does not know the patient well and has access to only limited information. The psychiatrist and case coordinators knew the patients better at posttest, which was also the objective rater’s second interview with each patient. These findings raise questions about the reliability of the GAF scale and about when it may be most useful (for example, in ongoing therapy where the clinician knows the patient well or when the clinician has been trained to use this scale and is given occasional refresher training).

**Suggested Program Improvements**

Our program evaluation has generated the following ideas for program improvements: 1) ongoing program evaluation to inform staff whether the program is meeting its objectives; 2) brief reassessment during the program to better identify patients having problems and to implement individualized strategies to improve their functioning; 3) booster sessions on a monthly basis after completion of the program to maintain change; 4) quantification of individual treatment goals upon admission so that these can be objectively evaluated; 5) more contact with alcohol and drug treatment programs because of the high incidence of past substance abuse; and 6) review of approaches with bipolar patients.

**Conclusions**

Although our study has several strengths (for example, use of standardized tests and clinician ratings, pretest–posttest design with follow-up), it is important to acknowledge the limitations. One major limitation was the lack of a no-treatment control group. Thus we were unable to address the issues of spontaneous recovery or improvement and treatment efficacy as objectively as we would have liked. The acute nature of our sample’s problems and our program mandate, which necessitates a 2-day response time for inpatient referrals, precluded the use of a waiting list control group. Second, not all day program patients participated by completing the posttest and then the follow-up. Our sample may, therefore, have been biased. An increased response rate may have been obtained by making the completion of the questionnaires mandatory, but this would raise ethical issues. Finally, although we used clinician ratings on a limited basis, our data are primarily based on patient self-report measures.

Our study, as well as past research (4–6,19,22), indicates that focused, short-term day programs are beneficial, especially as a transition from inpatient to outpatient treatment. It also supports continuation and expansion of short-term programs with specific treatment targets.
Clinical Implications

- The findings support the usefulness of intensive, short-term day treatment programs for a wide range of psychiatric patients.
- Patients maintained clinical gains from posttest to 4-month follow-up.
- Modifications to day hospital programs may be required for patients with bipolar disorder.

Limitations

- The lack of a no-treatment control group limits our conclusions.
- Although we used clinician ratings on a limited basis, our data were primarily based on patient self-report.

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References


Résumé

Objectifs : Déterminer si un programme de traitement de jour structuré en santé mentale d’une durée de 6 semaines a atteint ses objectifs et examiner l’efficacité du programme auprès de groupes de patients spécifiques.


Conclusion : Ces données révèlent que le programme a atteint ses objectifs et contribuent largement à confirmer l’utilité du traitement de jour de courte durée chez un large éventail de patients. Le groupe du trouble bipolaire a obtenu un résultat différent de celui des autres sous-échantillons. La fiabilité de l’Échelle d’EGF et le moment où elle risque d’être la plus utile font l’objet d’une discussion.