

Patients' Assessment of Treatment Predicting Outcome

by Stefan Priebe and
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Abstract

Using a visual analog scale, 34 schizophrenia patients receiving long-term treatment in community care rated the extent to which their treatment was right for them. We investigated whether these assessments would predict the duration of patient hospitalization during an initial followup period of 12 months and a longer followup period of 30 months. The duration of full and partial hospitalization was assessed by means of a hospitalization index. Patients who assessed their treatment more negatively had significantly higher hospitalization indices in the two followup periods. The predictive value of the patients' assessments of treatment was not explained by the influence of other variables.

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How patients assess their ongoing or past psychiatric treatment has been investigated in numerous studies. While patients may assess different but related aspects of treatment, such as how helpful, right, or satisfactory it is, most studies have focused on satisfaction. Because of several methodological problems (Locker and Dunt 1978; Lebow 1982), a standardized and widely accepted method of measuring patient satisfaction has not yet been established (Gruyters and Priebe 1992); nevertheless, there is sufficient empirical evidence in support of the overall finding that most patients express a high level of global satisfaction with the treatment they are receiving. This applies to hospital and day hospital treatment,

outpatient settings, and community care (Weinstein 1979; Lebow 1982; Kalman 1983; Corrigan 1990).

However, the degree of satisfaction varies among patients, some of whom are less satisfied than others. Satisfaction is associated with certain patient characteristics, although no correlation between the two has consistently been found in studies that have investigated the issue. Some studies have found that women, older patients, and patients with less severe current psychopathological symptoms are likely to be more satisfied with treatment (Denner and Halprin 1974; Eisen and Grob 1979; Larsen et al. 1979; LeVois et al. 1981; Hansson et al. 1985; Conte et al. 1989; McIntyre et al. 1989; Gruyters and Priebe 1992). Others indicate that psychotic patients (Getz et al. 1975; Berger 1983), members of a racial minority (Ciarlo and Reihman 1977; Larsen et al. 1979), unmarried patients, and those with a lower level of school education (Berger 1983) tend to be less satisfied. Patients whose past treatment has been regarded as less successful, both by themselves and by the clinicians, are also less satisfied (Edwards et al. 1978; Willer and Miller 1978; Eisen and Grob 1979; Fiester 1979; Larsen et al. 1979; Hansson and Berglund 1987).

While patient assessments of treatment may reflect past therapeutic success, they may also be predictive of future outcome. Subjective response to treatment has been shown to predict—to some extent—the short-term outcome of

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hospital treatment in mixed samples of patients (Brady et al. 1959) and in patients with depression (Priebe 1987), of day hospital treatment (Priebe 1992), and of neuroleptic medication in schizophrenia patients (Van Putten and May 1978; Van Putten et al. 1981, 1984; Hogan et al. 1985; Bartkó et al. 1987). In these studies, subjective response was investigated during the initial stages of treatment and included the patients' assessments of whether the treatment or medication was right for them. It remains unclear, however, whether such assessments also have some predictive value for the outcome of long-term treatment.

Using a sample of schizophrenia patients receiving long-term treatment in community care, we investigated whether their global assessments of treatment predicted the duration of their full and/or partial hospitalization within a followup period of 12 months and a longer one of 30 months. Hospitalization was used as the outcome criterion because the prevention and shortening of periods of hospitalization are central—although certainly not sole—goals of treatment in community care and because it can be measured exactly.

Method

The study was carried out in a community care system that serves Charlottenburg, an inner district of Berlin (Steinhart and Priebe 1992). The system includes three partial hospitalization programs (day hospital, night clinic, and therapeutic printing workshop), community-based services (a day care center, a drop-in center, single and group protected-living apartments), and various outpatient facilities. In-

patient treatment is provided in cooperation with psychiatric hospitals. Continuity of care is guaranteed by clinical case managers (psychiatrists and social workers) who follow the patients' path through the system's institutions (Thornicroft 1990; Priebe and Gruyters 1993) and remain in charge of therapeutic decisions. The system is oriented toward providing long-term treatment for patients with severe and chronic mental disorders.

At the time of the study, approximately 90 schizophrenia patients were undergoing long-term treatment in the care system (excluding the drop-in center). A sample of 47 patients seen consecutively by their case managers within a period of 4 weeks took part in the study. All 47 patients had been diagnosed with schizophrenia according to the *DSM-III-R* (American Psychiatric Association 1987) and had been receiving treatment in the care system for at least 4 months. An interviewer not otherwise involved in treatment asked the patients to assess their treatment ("Is the treatment you are currently receiving right for you?"). The answers were self-rated on a 100-mm-long visual analog scale (VAS; extreme points: 0 = not right at all, 100 = completely right). Each 10-mm interval was marked so that the scale combined qualities of a VAS with features of an 11-point rating scale (Luria 1975; Guyatt et al. 1987). This simple method was used to reflect the often vague and generalizing attitudes of the patients and to have an instrument that could be easily understood by all patients. In addition, the patients were asked in a standardized open question whether they would like the treatment to be different in

any way, and if so, what changes they would most urgently like to be made. Sociodemographic variables (e.g., level of school education, professional qualifications, family and occupational status, financial situation, accommodation) and data from the patients' psychiatric histories (e.g., duration of illness, frequency of previous full and partial hospitalizations, previous medication, and psychotherapy) were recorded in a standardized interview. Psychopathological symptoms were rated on the Brief Psychiatric Rating Scale (BPRS; Overall and Gorham 1962) by the reviewer.

For both followup periods (12 months and 30 months), we recorded the total number of days of both full and partial hospitalization. A hospitalization index (HI) was calculated for each of the two periods (Steinhart and Priebe 1992). In a modification of similar indices used by Lavik (1983) and Tansella et al. (1986), the HI reflects the degree (full or partial) and duration of all periods of hospitalization: $(n \text{ days in full hospitalization} \times 3) + (n \text{ days in partial hospitalization} \times 2) / (\text{days in the observation period})$.

Results

By the end of the 30-month followup period, 13 of the original 47 patients were no longer being treated in the care system. Thus, the association between satisfaction with treatment and the duration of hospitalization during followup was established for only 34 patients. Although these 34 patients had a longer duration of illness than the 13 who left the care system during the followup period, this difference just failed to reach

statistical significance (11.0 vs. 6.2 years; $t = 1.71$, $p < 0.10$). The two groups did not differ significantly with respect to any other clinical or sociodemographic variables. Nor was there a significant difference in global satisfaction with treatment, although the dropouts were slightly less satisfied (66.2 vs. 72.5; not significant [NS]).

The mean age of the 34 patients (18 women, 16 men) was 41.1 years (range = 26–64, standard deviation [SD] = 10.6). Four patients had not completed their secondary school education, 24 had completed secondary school, and 6 had completed higher education. Twelve patients had no occupational qualifications, 19 had completed an apprenticeship, and 3 held university degrees. At the time of the interview, 19 patients were living alone, 10 were living with partners, 3 were living with parents, and 2 were in therapeutic institutions. Only 10 had a job (7 full time and 3 part time).

All the patients were diagnosed as having schizophrenia according to the *DSM-III-R* (19 disorganized type, 6 paranoid type, and 9 residual type). The duration of illness varied between 9 months and 31 years (mean = 6.2 years, SD = 7.6). The number of previous periods of full hospitalization ranged from 1 to 17 (mean = 3.6); that of partial hospitalization, from 0 to 24 (mean = 4.5). Patients had been treated within the community care system for between 6 months and 15 years (mean = 6.5 years, SD = 7.4). At the time of the interview, the mean BPRS score was 28.1 (range = 18–46, SD = 7.6). Twenty-seven patients were on neuroleptics, and seven were not taking any psychotropic medication. There was no statistically significant difference between the patients who

were receiving medication and those who were not on any other variable recorded in the study; however, patients not on medication tended to have a higher HI for the longer followup period of 30 months ($p < 0.08$).

The mean score on the VAS measuring global assessment of long-term treatment was 72.5 (SD = 24.6). The extent to which patients rated treatment as being right was correlated to age (Pearson's $r = 0.50$, $p < 0.01$), duration of illness ($r = 0.34$, $p < 0.05$), and BPRS score ($r = -0.42$, $p < 0.01$). The women assessed their treatment more positively than the men (point-biserial $r = 0.44$, $p < 0.01$); patients stating that they would like some change in treatment assessed their treatment more negatively (point-biserial $r = 0.43$, $p < 0.01$). Other variables were not significantly correlated to the patients' assessments.

Seventeen patients stated that they would like their treatment to be changed, and 17 did not state it. Four patients most urgently wanted the dosage of their medication to be reduced. One patient would have liked more independence from the institution, one wanted real psychotherapy, one wanted more therapeutic group sessions, and one wanted fewer informal group meetings. Two patients wanted more intensive talks with their case managers, another wanted less criticism from that individual, and another wanted more respect. One patient said he would like no further change in case managers, another one wished to have fewer symptoms, and three patients expressed wishes that did not seem to be directly related to treatment—namely, a better apartment, a better pension, and a restored driving license.

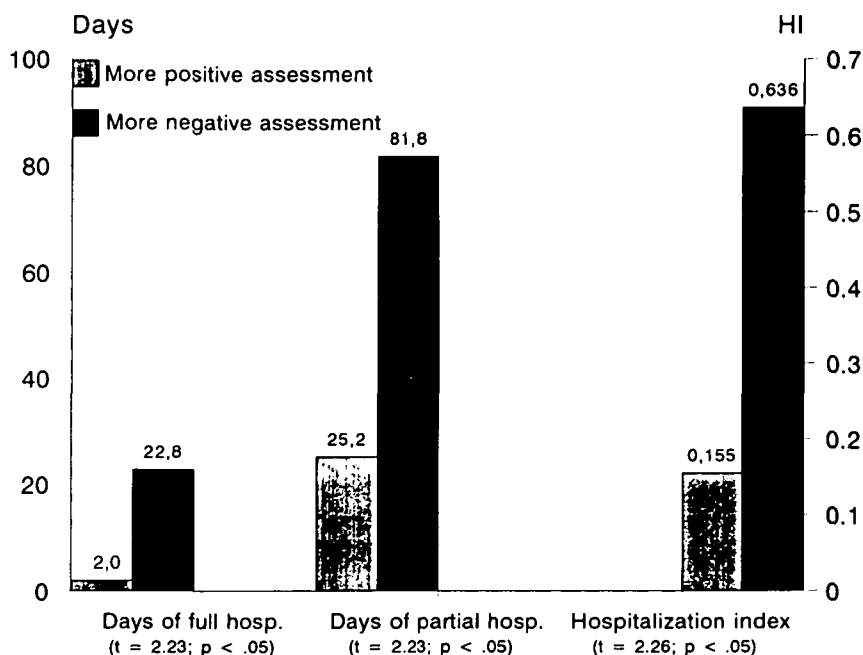
During the 12 months following the interview, the patients spent between 0 and 100 days in full hospitalization (mean = 12.4, SD = 28.9), and between 0 and 306 days in partial hospitalization (mean = 53.5, SD = 95.1). Within the 30-month followup period, the number of days of full hospitalization ranged from 0 to 301 (mean = 37.4, SD = 63.1), and of partial hospitalization, from 0 to 550 (mean = 99.3, SD = 158.7). The mean HI was 0.40 (SD = 0.66) for the first 12 months and 0.34 (SD = 0.44) for the full 30-month followup period.

In accordance with the VAS ratings, the patients were divided into two subgroups—one with a more positive and the other with a more negative (or less positive) assessment of treatment. The median (80.0) was used as the cutoff point so that 17 patients were regarded as having assessed their treatment more positively and 17 were regarded as having assessed their treatment more negatively.

Figure 1 shows how the numbers of days of full and partial hospitalization and the HIs of the two groups differed during the first 12 months after the interview. The patients who assessed their treatment more negatively spent substantially more days in both full and partial hospitalization. Consequently, the mean HI for this group is more than four times higher than that for the patients with a more positive assessment. All differences are statistically significant.

Figure 2 summarizes the differences in duration of hospitalization within the 30-month followup period. The difference between the number of days of full hospitalization in the two groups, approximately 20 days, is not greater

Figure 1. Days of full and partial hospitalization and hospitalization index (HI) in patients giving a more positive assessment and in those giving a more negative assessment of treatment at 12-month followup (each group $n = 17$, all t -tests two-tailed)



than that in the first 12 months and is no longer statistically significant. However, the patients with a more negative assessment spent five times as many days in partial hospitalization than did those with a more positive assessment. This difference is even greater than that during the first 12 months. The resulting difference in the HI is significant ($p < 0.01$).

The VAS scores for global assessment of treatment were found to be significantly correlated to the HI for both the 12-month (Pearson's $r = -0.46$, $p < 0.01$) and the 30-month ($r = -0.49$, $p < 0.01$) followup periods. We then examined whether these correlations were owing to a third variable that in-

fluenced both global assessment of treatment and the HIs similarly or whether the patients' assessments of long-term treatment would have a predictive quality of their own independent of the predictive value of the other variables. Of all the sociodemographic and clinical variables recorded in this study, five variables—age; the BPRS sum score; and the BPRS items of anxiety, tension, and hostility—were significantly correlated both to patient assessment and to at least one of the two HIs for the followup periods. These correlations are summarized in table 1. The correlations were then adjusted for the regression on each of the five variables, as shown in table 2. In

each case, the adjusted associations are somewhat lower but remain statistically significant.

Multiple regression analyses with the two HIs as dependent variables show that patient assessment of treatment is the best single predictor of future outcome. The stepwise inclusion of all other variables, including all the data from the patients' histories such as frequency of hospitalization in the past, does not significantly increase the degree of explained variance.

Discussion

The patients' global assessments of long-term treatment in community care were, on the average, fairly positive. The relationships between assessment and age, sex, and psychopathology are in line with the findings of research on patient satisfaction. However, what makes patients assess long-term treatment more or less positively is still poorly understood (Berger 1983). In this study, the patients' wishes concerning changes in treatment were recorded. Some of the patients who assessed their treatment more negatively did not express any wish for change, and some of the wishes that were expressed were not related to what clinicians might regard as essential elements of treatment. Therefore, it remains unclear whether what patients would like to be changed reflects the actual reasons for a negative assessment, and whether global assessment of long-term treatment can be improved by specially designed therapeutic interventions.

Patient assessment of treatment proved to predict the duration of hospitalization within a 12-month followup period and, to a similar extent, within a longer period of 30 months; however, this assess-

Figure 2. Days of full and partial hospitalization, and hospitalization index (HI) in patients giving a more positive assessment and in those giving a more negative assessment of treatment at 30-month followup (each group $n = 17$, all t -tests two-tailed)

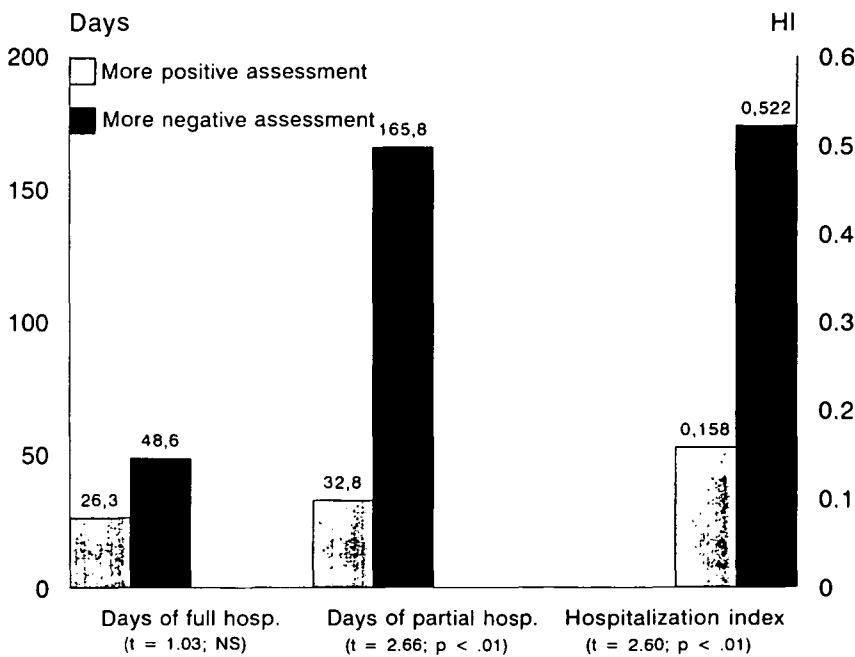


Table 1. Correlations of age, BPRS score, and BPRS items with assessment of treatment and hospitalization indices (HI) for 12 and 30 months

	Assessment of treatment	HI (12 months)	HI (30 months)
Age	0.50 ¹	-0.29 ²	-0.32 ²
BPRS score	-0.42 ¹	0.33 ²	0.27
BPRS items			
Anxiety	-0.38 ²	0.31 ²	0.30 ²
Tension	-0.55 ³	0.28 ²	0.31 ²
Hostility	-0.43 ¹	0.34 ²	0.25

Note.—BPRS = Brief Psychiatric Rating Scale (Overall and Gorham 1962).

¹ $p < 0.01$.
² $p < 0.05$.
³ $p < 0.001$.

ment may be assumed to change over time and not be entirely consistent for 2½ years (Gruyters

and Priebe 1992). For both periods, the difference between the more positive and more negative pa-

tients was not only statistically significant but also clinically relevant, the HIs for the patients with a more negative assessment being three to four times higher than those for the patients with a more positive assessment. The median (80 on a 100-mm VAS) was used as cutoff point for distinguishing between the more positive and more negative patient assessments. Only four patients rated a score closer to the negative extreme (treatment was “not at all” right) than to the positive one (treatment was “completely” right). Therefore, the patients who gave a more negative assessment simply expressed a less positive assessment than the other group, and the majority of them did not give an explicit negative assessment of long-term treatment. In this study, patients assessed the rightness of their treatment and not their satisfaction with it because items on perceived rightness have been shown to predict the outcome of short-term treatment, and it was in outcome prediction that we were interested. In the case of long-term treatment, patients’ satisfaction with treatment and their assessment of its rightness may be assumed to be highly correlated but not necessarily identical.

Any interpretation of the results must take into account that the sample was fairly small and selective, and that the study was carried out in a special setting that is a model institution in Germany. Thus, until these results have been replicated in different settings, it remains an open question as to how far they can be generalized.

Moreover, while the predictive relationship between patient assessment and duration of hospitalization was not influenced by any of the other variables included in the

Table 2. Adjusted correlations between assessment of treatment and hospitalization indices (HI) with the influence of a third variable eliminated (partial correlations)

Variable of which influence is eliminated	Adjusted <i>r</i> between assessment of treatment and HI (12 months) before adjustment <i>r</i> = -0.46¹	Adjusted <i>r</i> between assessment of treatment and HI (30 months) before adjustment <i>r</i> = -0.49¹
Age	-0.37 ²	-0.39 ²
BPRS score	-0.38 ²	-0.43 ¹
BPRS items		
Anxiety	-0.39 ²	-0.43 ¹
Tension	-0.38 ²	-0.40 ²
Hostility	-0.36 ²	-0.44 ¹

Note.—BPRS = Brief Psychiatric Rating Scale (Overall and Gorham 1962).

¹*p* < 0.01.

²*p* < 0.05.

study, only basic variables were recorded. It therefore remains unclear by what processes patients' assessments of the treatment's rightness and subsequent periods of hospitalization are linked. Patients assessing their treatment more negatively either may be less responsive to this particular form of treatment—and possibly to others, too—or may have received a different kind of treatment because of poorer compliance or less empathic and involved case managers. It might be speculated that a positive therapeutic relationship between patient and case manager or a congruence between the patient's expectations and the institution's treatment ideology also plays a role. On the other hand, satisfaction with treatment has been found to be associated with general life satisfaction and social situation (Larsen et al. 1979; LeVois et al. 1981), so other variables such as perception of social support may have influenced our findings. However, the patients' assessment of and satisfaction with

their life situations were not examined in this study.

Conclusions

Whatever the exact explanation may be, schizophrenia patients' global assessment of long-term treatment does predict outcome in terms of the duration of subsequent hospitalization. Having demonstrated the predictive validity of these patients' subjective responses to pharmacotherapy, Van Putten and May (1978) concluded that "the consumer has a point." According to the results of this study, their conclusion applies not only to short-term neuroleptic treatment but also to long-term treatment in a setting as complex as community care. Patients' assessment of how right their current treatment is may be regarded as a relevant criterion for the evaluation of psychiatric institutions and should influence the conceptualization of mental health care settings on a political level. Beyond this, our findings suggest

that it also predicts the outcome of individual treatment. Patient's assessment of long-term treatment should be taken as a relevant factor within the individual therapeutic process, regardless of how rational or irrational the patient's reasons behind their assessments may seem to the clinician.

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