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Patient rejection scale: correlations with symptoms, social disability and number of rehospitalizations

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Abstract The Patient Rejection Scale (RPS), which was developed to assess rejecting attitudes and feelings of relatives toward mental patients, was administered to a German sample of 44 family members or significant others living with first-admitted schizophrenics. Both at admission (t_0) and 6 months later (t_6), the PRS was significantly correlated with the number of rehospitalizations during the first 3 years after admission. In comparison, the association between PRS scores and different measures of psychopathology during the 2-year follow-up period was weak. Thus, rejecting attitudes of patients' relatives seem to imply a higher risk of relapse without substantial mediation by symptoms. We suspect that relatives with rejecting attitudes towards a patient might tend to apply for readmission more easily than more accepting relatives.

Key words Schizophrenia · Patient rejection scale
Social disability · Rehospitalization · Expressed emotion (EE)

Introduction

Meanwhile a number of studies has shown that schizophrenic patients living with relatives characterized by high expressed emotion ("high EE") are more likely to relapse after discharge from hospital than patients living in "low EE" surroundings (e.g. Kuipers and Bebbington 1988; Watzl et al. 1989). In these studies, relatives were categorized as high or low EE on the basis of the Camberwell Family Interview, a standardized interview technique not to be used without special training. The Camberwell Family Interview provides a score combining critical comments, hostility, and emotional overinvolvement into a single measure of EE. After a period of 9 to 12 months, the average relapse rate of patients from high EE families

is estimated to be 50% as compared to 20% in low EE families (Kavanagh 1992). But despite the considerable predictive power of the EE measure, it does not appear to be specific for schizophrenic relapse. For instance, the EE measure is also a significant predictor of relapse in depression (Hooley et al. 1986; Vaughn and Leff 1976) and in recent-onset mania (Miklowitz et al. 1987).

A simple economical method for the assessment of the main EE components may be provided by the Patient Rejection Scale (PRS), developed by Kreisman et al. (1979). The original PRS is an 11-item self-report scale that can be completed by relatives in a few minutes. In the study of Rist and Watzl (1989), the PRS score was significantly correlated with the EE components "criticism" ($r = 0.23$) and "hostility" ($r = 0.20$), although not with "emotional overinvolvement". Further the PRS score was found to be significantly associated with rehospitalizations ($r = 0.20$ – 0.22), psychotic exacerbations ($r = 0.31$), various symptoms ($r = 0.11$ – 0.56), premorbid adjustment ($r = 0.32$), and family burden ($r = 0.61$) (Kreisman et al. 1979; Heresco-Levy et al. 1992; Rist and Watzl 1989). An expanded version of the PRS has also been predictive of relapse (Kreisman et al. 1988; Lebell 1983).

However, it is not known if similar relations between relatives' attitudes and outcome are found in German patients. To clarify also the influence of variables which may intervene between PRS and outcome, we studied the relationship between PRS scores, positive and negative symptoms, social disability and number of rehospitalizations in a longitudinal study of first-admitted schizophrenics.

Method and subjects

This study is part of a larger, still ongoing longitudinal study of first-admitted schizophrenics. The patients and their relatives were interviewed at index admission (t_0) and at 3 follow-up points 6 (t_6), 12 (t_{12}), and 24 months (t_{24}) later. Fortyfour patients lived together with relatives or significant others before their first hospitalization (t_0) and after discharge (see Table 1). Only data from these patients and their relatives were included in the present study. As outcome variable, the number of rehospitalizations throughout the follow-up periods of one, 2 and 3 years was considered. Taking into ac-

Table 1 Respondents to the Patient Rejection Scale at index admission (t_0) and 6 months later (t_6)

Respondent	t_0 ($n = 44$)	t_6 ($n = 44$)
Mother	20	20
Father	2	1
Spouse	15	15
Friend/others	7	8

count all the time points would have reduced the group size, due to missing data. All patients were hospitalized for the first time in their life because of an acute psychotic episode. At admission (t_0) all patients (28 male, 16 female; median age = 25 years, ranging from 18 to 54 years; 59% were unmarried) met the criteria of the International Classification of Diseases (ICD-9) for schizophrenia (295.1: $n = 1$; 295.2: $n = 1$; 295.3: $n = 32$; 295.7: $n = 6$; 295.9: $n = 2$) or other types of paranoid psychoses (297.0: $n = 1$; 298.3: $n = 1$).

Assessment

The PRS was translated into German and differed only slightly in its wording from the German version published by Rist and Watzl (1989). This is an 11-item self-report scale containing statements like "I'm tired of having to organize my life around him/her" (Kreisman et al. 1979). The response distributions and item statistics of our Mannheim sample are almost identical to the data published by Watzl et al. (1986) for their Konstanz sample. As an estimate of scale reliability, Cronbach's alpha coefficient for our German translation at index admission and the first follow-up (t_6) was calculated as alpha = 0.71 and 0.77.

The patient's symptoms and social adjustment were assessed with the following schedules:

1. The Present State Examination (PSE; Wing et al. 1974) was used to assess acute symptoms. Positive symptoms were operationalised by the PSE subscore DAH ("delusional and hallucinatory syndrome").
2. Negative symptoms were rated with the Scale for the Assessment of Negative Symptoms (SANS; Andreasen 1982).
3. The degree of social adjustment or "social disability" was assessed by means of the Disability Assessment Schedule (DAS), which evaluates the social role performance during the last 4 weeks (WHO 1988; Jung et al. 1989).

Results

The correlations between PRS scores and different course of illness parameters are presented in Table 2. The PRS scores, measured at index admission (t_0), are significantly correlated only with negative symptoms, measured at the same time (t_0). We found high positive correlations between the PRS scores at index admission (t_0) and the number of rehospitalizations during the following years. Three years after index admission this correlation was $r = 0.56$, ($P < 0.001$).

The PRS scores, measured 6 months after index admission (t_6), were positively correlated with social disability, positive symptoms, and negative symptoms at cross section (t_6) and also in the follow-up, 12 and 24 months after index admission.

Paired t -tests were performed to test for a change in patients' psychopathology levels or in relatives' attitudes

Table 2 Spearman rank correlations between PRS and course of illness parameters within a 24-month follow-up period. Sample size: $n = 44$ –34. ^a Higher scores indicate more symptoms and disability. ^b The 3-year follow-up period was considered here

Course of illness parameters	Follow-up month	Patient rejection scale	
		t_0	t_6
Positive symptoms ^a (PSE-DAH)	t_0	-0.15	0.00
	t_6	0.06	0.34*
	t_{12}	0.09	0.20
	t_{24}	0.12	0.39**
Negative symptoms ^a (SANS)	t_0	0.29*	0.03
	t_6	0.20	0.18
	t_{12}	0.20	0.22+
	t_{24}	0.12+	0.35*
Social disability ^a (DAS)	t_0	0.12	0.20
	t_6	0.15	0.28*
	t_{12}	0.18	0.33*
	t_{24}	0.26+	0.27+
Number of rehospitalizations ^b	t_{12}	0.30*	0.18
	t_{24}	0.30*	0.24+
	t_{36}	0.56***	0.33*

Significance level: + = $P < 0.10$, * = $P < 0.05$, ** = $P < 0.01$, *** = $P < 0.001$

between index admission (t_0) and the next follow-up point, 6 months later (t_6).

Both a significant decrease in positive symptoms ($t = 9.74$, $P < 0.001$) and an increase in social disability ($t = 2.47$, $P = 0.018$) was found. Neither the level of negative symptoms ($t = 0.20$) nor relatives' attitudes in the PRS changed over time ($t = 0.74$; PRS mean _{t_0} 15.8; PRS mean _{t_6} 15.9).

Obviously, the remission of positive symptoms did not lead to more positive attitudes toward the mentally ill family member.

In the EE literature the predictive power of the EE score is usually demonstrated by dividing the relatives according to a cut-off point into two groups of low and high EE family members and comparing the relapse rates of the associated patients. However, for the PRS no cut-off point has yet been established.

As a first step, we examined two different PRS cut-off points to predict whether patients relapsed. Relapse was defined as having at least 1 more readmission to a psychiatric hospital within the first 3 years after index admission. In the first comparison, relatives with PRS scores above the median PRS (median = 15) were assigned to a high PRS group ($n = 23$). The remaining relatives formed the low PRS group ($n = 21$). The cross-tabulation of the number of relapsed patients versus the PRS group yielded a χ^2 of 3.20 ($P = 0.07$; phi = 0.27). However, this cut-off point does not take into account that relapses occurred in more than 50% of the patients. If there is actually a linear relationship between PRS scores and the risk of rehospitalization, the strength of this relation would be less apparent when applying a median cut-off point. In the sec-

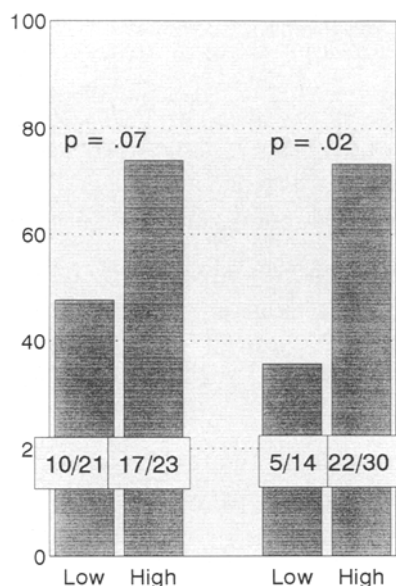


Fig. 1 Relative frequency of relapsers in low and high PRS groups obtained with two different cut-off points

ond comparison, the base rate of 61% relapse throughout the 3 year follow-up period was taken into account to allow for the maximum possible association between PRS group membership and relapse. This was achieved by assigning all relatives with PRS score above and also equal to the median to the high PRS group. This procedure assigned 32% to the low PRS group, 68% to the high PRS group. The cross-tabulation resulted in a χ^2 of 5.69 ($P = 0.02$; $\phi = 0.36$). Figure 1 shows the frequency of relapses obtained in high and low PRS groups resulting from the two cut-off points. It is obvious that the risk of a relapse in the high PRS group remained virtually the same (73%) irrespective of the cut-off point, but that the risk of a relapse for low PRS patients decreased from 48% to 36% when only one third of the relatives were assigned to the low PRS group. This comparison suggests that the predictive power of the PRS is enhanced when it is used to identify a small group of patients with a particularly low risk of relapse.

Discussion

This prospective longitudinal study of first admitted schizophrenics offers further support for the relationship between the attitudes of family members towards their ill relative and the course of the illness. Schizophrenic patients with relatives who tend towards rejection of the patient run a higher risk of psychiatric rehospitalization and show more social disability, positive symptoms, and negative symptoms over a 2-year follow-up period. In an early stage of the illness, a high rejection score seems to indicate a bad course. We are aware that this correlation does not necessarily imply a causal relation between rejection and relapse or even a "poor" course of illness.

The relation between rejecting attitudes towards the patient and the risk of rehospitalization during the following 2 years seems to be partly mediated by symptom level or social disability, as the PRS score is significantly correlated with these variables at one or more time points during the follow-up. However, none of these correlations approaches the correlation of $r = 0.56$ between the PRS score and the risk of rehospitalization. Considering the comparatively low reliability of the PRS and the multitude of variables which finally may lead to rehospitalization of the patient, the strength of this relation is striking. A straightforward explanation is that rejecting relatives show less tolerance for the deficiencies of the patient and call for rehospitalization more frequently than do more accepting relatives. Our comparison of cut-off points suggests that compared to unselected groups of patients a particularly low risk is prevalent within a small group of relatives without rejecting attitudes towards the patients.

Furthermore, the results of our study supply additional evidence for the high cross-cultural consistency of the PRS. The item statistics and response distribution of the PRS in our German sample was found to be similar to that reported for other samples from different cultures (Kreisman et al. 1979; Heresco-Levy et al. 1992; Watzl et al. 1986).

From a practical point of view it is remarkable that such a simple procedure as the PRS, containing only 11 items focusing exclusively on negative attitudes, should achieve such a high association with the risk of a rehospitalization. This suggests that from among the diverse attitudes which are assessed in the Camberwell Family Interview, critical comments explain most of the variance of the outcome measures.

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