Predictors of Quality of Life in Major Psychoses: A Naturalistic Follow-Up Study

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Background: Improved quality of life (QOL) of patients suffering from major psychoses has become an important treatment goal. We sought to determine predictors of perceived QOL and to explore the changes that occur regarding QOL among individuals with schizophrenia as compared to patients with schizoaffective/mood disorders.

Method: In a naturalistic longitudinal design, 148 inpatients with schizophrenia and 51 inpatients with schizoaffective/mood disorders (DSM-IV) were tracked for 16 months (SD = 4.6 months). Subjects were assessed at 2 timepoints for psychopathology, stress process–related factors, and perceived QOL, as measured by the Quality of Life Enjoyment and Satisfaction Questionnaire. Predictors of fluctuations in QOL index scores during the follow-up period were identified using multiple regression techniques.

Results: We found that poor QOL is not a more severe problem for schizophrenia patients than for schizoaffective/mood disorder patients. Improved QOL of schizophrenia patients is associated with reduced paranoid and distress (obsessiveness, somatization) symptoms and increased self-efficacy and self-esteem ratings. Individual changes in QOL index scores among patients with schizoaffective/mood disorders are associated with changes in depression, sensitivity, expressed emotion, and task-oriented coping scores.

Conclusion: Predictors of changes in satisfaction with life quality over time among schizophrenia patients are distinct from those associated with schizoaffective/mood disorders. Changes in stress process–related factors, rather than psychopathology, predict change in perceived QOL and should be considered when evaluating QOL outcomes.

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During the past 2 decades, the concept of quality of life (QOL) has become an important outcome measure for psychiatric patients. The concept of QOL is distinct from health, though related to it. Most conceptualizations of health-related QOL include dimensions of physical, social, and role functioning and mental health and general health perceptions, with important concepts such as energy, fatigue, pain, and cognitive functioning included in these broader categories.[1] Physical, psychological, and social domains of health are influenced by one's experiences, beliefs, expectations, and perception.[2] While there is no universal operational definition of QOL, most researchers agree that patients' statements on satisfaction with domains of daily functioning are relevant indicators of perceived QOL.[1–3]

Previous studies have tried to clarify factors that influence life quality of patients with major psychoses. Although cross-sectional data show that patients with these disorders reported poorer satisfaction with QOL than the general population,[4] longitudinal changes in QOL ratings and their indicators have not been adequately addressed. While some researchers did not find significant improvement in the subjective QOL of schizophrenia patients followed for 9 months[3] or 7- to 10-year periods,[5,6] others report positive changes in QOL domains during hospitalization[7,8] and/or after 1-year follow-up.[9] This inconsistency might be explained by substantive differences in treatment settings, baseline profiles, and patient sample size and variability of protective and distress factors influencing QOL ratings. Several longitudinal studies found that reduction in anxiety, depression, and general psychopathology contributes substantially to improved QOL of schizophrenia and schizoaffective disorder patients.[3,10,11]

There are several possible limitations in the abovementioned studies. First, narrow focus relating life dissatisfaction primarily with symptom severity did not include evaluation of psychosocial factors. Second, perceived and rater-observed QOL are not necessarily closely related and may have different determinants in patients with schizophrenia. Finally, the sample sizes of patients studied were small.

Few psychosocial or stress process–related (SPR) factors have been explored in a cross-sectional design. Among the SPR factors, distress, self-esteem, self-

efficacy, coping with stressful situations, expressed emotion, and social support have been reported to play a significant role in life satisfaction outcomes.[4,12,13] However, these studies did not evaluate longitudinal relationships between SPR factors and QOL ratings.

Several studies have reported contradictory findings regarding differences in QOL between patients with various major psychoses. While some researchers did not find differences in global satisfaction with QOL between patients with schizophrenia and schizoaffective disorders,[4,14–19] others report that patients with schizophrenia reported better life satisfaction than patients with major depression and bipolar disorders.[20,21] Since no longitudinal study was conducted, the question regarding differences in QOL between schizophrenia patients and individuals with schizoaffective and mood psychoses remains unclear.

The current naturalistic longitudinal survey broadens our previous studies on QOL in major psychoses[4,22] by examining longitudinal data on changes of QOL together and related factors over time. In the present study, we sought to determine predictors and changes in perceived QOL among schizophrenia patients compared to patients with schizoaffective and mood disorders. We hypothesized that (1) poor QOL is not a more severe problem among schizophrenia than schizoaffective/mood disorder patients, (2) predictors of QOL ratings would vary among patients in different diagnostic categories, and (3) across time, SPR factors rather than psychopathology would predict fluctuations in perceived QOL ratings of patients with major psychoses.

METHOD

Study Design

This research is part of the Sha'ar Menashe Longitudinal Study of Quality of Life (SMLS-QOL), a larger ongoing naturalistic prospective investigation of QOL and its correlates among psychiatric patients. A detailed description of the SMLS-QOL design, data collection, and measures is reported elsewhere.[4,22] In brief, initial data concerning all adult patients with major psychoses consecutively admitted to closed, open, and rehabilitation hospital settings of Sha'ar Menashe Mental Health Center (Hadera, Israel) were collected between August 1998 and August 2000. Participants met DSM-IV criteria[23] for schizophrenia, schizoaffective disorder, major depressive disorder, or bipolar disorder; were aged 18 to 65 years; were inpatients; and were able to provide written informed consent for participation in the study. Patients with comorbid mental retardation, organic brain diseases, severe physical disorders, or drug/alcohol abuse and those with low comprehension skills were not enrolled. The Internal Review Board and the Israel Ministry of Health approved the study, and all participants gave written informed consent after receiving a detailed explanation of study procedures.

Data Collection

Baseline assessment was at hospital admission (N = 339), and follow-up evaluation was at least 1 year later. At the follow-up evaluation, 199 (58.7%) of 339 patients were available for evaluation (the follow-up sample). Two patients had died, 14 could not be evaluated because of severely declined mental status, 51 withdrew consent, and less than 12 months had elapsed for 73 of the patients (these patients will be evaluated as the study progresses). There were no significant differences between the follow-up sample (N = 199) and those patients not followed up in terms of sociodemographic and clinical characteristics (age, sex, diagnosis, age at onset, number of hospitalizations, and symptoms severity).

Subjects

For the present study, data at 2 points in time (baseline and last follow-up assessments) for 199 patients were drawn from the database. The sample was 74.9% male (N = 149), with a mean age of 38.9 (SD = 10.1; range, 18–60) years. A total of 148 patients were diagnosed with schizophrenia and the remaining 51 patients with either schizoaffective disorder (N = 33) or mood disorders (N = 18). Among the schizophrenia patients, 104 presented with paranoid type, 27 with residual type, 8 with disorganized type, 8 with undifferentiated type, and 1 with catatonic type. Of the schizoaffective disorder patients, 24 had depressive type and 9 had bipolar type. The mood disorders group included 9 patients with major depressive disorder and 9 patients with bipolar I disorder (5 had recent manic episodes with psychotic features, 1 had a recent depressed episode, and 3 had a recent mixed episode).

Patients were followed up for a mean of 16.4 (SD = 4.6) months after baseline assessment. At last follow-up, 66 were reassessed after discharge, 71 before discharge from a consecutive hospitalization, and 62 patients during the same hospitalization. Mean age at application to psychiatric care was 24.6 (SD = 8.3) years; mean duration of disorder was 14.1 (SD = 9.3) years; and mean number of hospitalizations was 7.6 (SD = 4.4; range, 1–15 hospitalizations). Patients were treated with a variety of antipsychotic medications (51% conventional, 15% atypical neuroleptics, and 12% combination) and additional medications (32% benzodiazepines, 21% antidepressants, and 30% mood stabilizers) as clinically indicated. All patients were physically healthy, with recent normal physical examination findings and normal blood and urine laboratory test results.

Measures

Current levels of psychopathologic symptoms were assessed using the Positive and Negative Syndrome Scale (PANSS)[24] and Mania Rating Scale (MRS).[25] Pharmacologic treatments were recorded for the month prior to each assessment. The severity of adverse effects as well as psy-

chological response to medication was measured with the Distress Scale for Adverse Symptoms (DSAS),[4,22] a clinician-administered rating scale including a checklist of 22 of the most frequently observed side effects of antipsychotic drug therapy. Responses are scored on a 5-point scale, with higher scores indicating higher severity and greater distress attributed to the given side effect. Three indices were computed: number of adverse symptoms (Cronbach $\alpha = 0.87$), mental distress index (Cronbach $\alpha = 0.78$), and somatic distress index (Cronbach $\alpha = 0.85$).

In addition to illness-related variables, a number of psychosocial or stress process–related (SPR) factors were examined. We chose to use the terminology *SPR factors* instead of the more general and popular term *psychosocial factors* in order to focus on the influence of internal and external stressors on coping capabilities and QOL. Assessment of SPR factors was done using the following standardized questionnaires.

The Talbieh Brief Distress Inventory (TBDI) is a 24-item self-report instrument that measures severity of emotional distress.[26,27] The Brief Symptom Inventory-Somatization Scale (BSI-S)[28] reflects somatic distress arising from perceptions of bodily dysfunction. Task-oriented, emotion-oriented, and avoidance-oriented coping styles were evaluated with the Coping Inventory for Stressful Situations (CISS).[29,30] The General Self-Efficacy Scale (GSES) evaluates the sense of personal competence in stressful situations.[31] The Rosenberg Self-Esteem scale (RSES) is a 10-item self-report questionnaire for measuring self-esteem and self-regard.[32] The Expressed Emotion Scale (EES) is a 38-item questionnaire designed to assess levels of criticism, hostility, and emotional overinvolvement described by the psychiatric patient's relative as perceived by the patient.[33] For the present sample, Cronbach α coefficients of the above-mentioned questionnaires ranged from 0.69 to 0.97.

The Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q)[34] is a self-report questionnaire comprising 93 items. In the current study, we used a 60-item version of the Q-LES-Q that excluded scales irrelevant for hospitalized patients. Responses are scored on a 1- to 5-point scale, with higher scores indicating better QOL. We used the perceived QOL index, the average of the scores of all 60 items (Cronbach $\alpha = 0.93$).[4] Internal consistency of the 6 summary scales of the instrument (physical health, subjective feelings, leisure time activities, social relationships, general activities, and satisfaction with medicine) as measured by Cronbach α coefficient ranged from 0.83 to 0.91 for the present sample.

Data Analysis

The NCSS 2000 PC program[35] was used for all analyses. Mean values with standard deviation are presented. For comparison of repeated measures within the groups of patients, 2-tailed paired t tests were used. Two-tailed t tests were performed for comparison of other continuous variables. Where the assumption of normality was dubious, the corresponding nonparametric tests were used to confirm the results of the t tests. Differences in frequency of categorical variables were examined using chi-square with Yates correction. Multiple analysis of variance (MANOVA) was applied for testing the main effect of diagnosis on QOL domain scores. Analysis of covariance (ANCOVA) was used to examine how interaction of the various factors affects longitudinal differences of QOL index ratings. Finally, the model's predictions were examined using a series of regression analyses with stepwise backward selection. For prediction variability of the perceived QOL index during the follow-up period (dependent variable), changes in scores between 2 examinations of the following clinical and SPR variables were used: PANSS (anergia, thought, activation, paranoid, and depression factors), MRS, DSAS indices, TBDI subscales (obsessiveness, hostility, anxiety, paranoid ideation, sensitivity, and depression), BSI-S, CISS (3 coping styles), GSES, RSES, and EES.

RESULTS

Baseline Comparisons

Baseline QOL index and specific domain scores between hospitalized schizophrenia and schizoaffective/mood disorder (bipolar and depressive) patients were compared with MANOVA. Schizophrenia patients differed from both schizoaffective ($F = 4.95$; $df = 2,181$; $p = .027$) and mood disorder patients ($F = 3.48$; $df = 2,166$; $p < .001$), whereas schizoaffective and mood disorder patients had quite similar ratings on QOL index and specific domains ($F = 0.42$; $df = 2,51$; $p = .89$). Therefore, for the following analyses, we jointly assessed schizoaffective and mood disorder patients. Baseline data showed that schizophrenia patients were significantly more dissatisfied with social relationships ($t = 3.05$, $df = 197$, $p < .01$) and with medicine ($t = 2.3$, $df = 197$, $p < .05$) than schizoaffective/mood disorder patients (Table 1).

Table 2 compares sociodemographic characteristics of the study groups. Notably, no differences were found with respect to patients' age, education, living arrangements, employment status, total number of hospitalizations, and length of follow-up. Schizophrenia patients, as compared to schizoaffective and mood disorder patients, were more likely to be male, without a spouse, younger at onset of illness, with longer duration of illness, and hospitalized at follow-up assessment. These differences were tested in the following analysis.

Changes Over Time

After the follow-up period, schizoaffective/mood disorder patients showed no significant changes in QOL

Table 1. Change of Quality of Life Domain Scores From Initial to Follow-Up Assessment for Patients With Schizophrenia and for Patients With Schizoaffective/Mood Disorders

	Schizophrenia Patients (N = 148)						Schizoaffective/Mood Disorder Patients (N = 51)					
	Initial Assessment		Follow-Up Assessment				Initial Assessment		Follow-Up Assessment			
Domain	Mean	SD	Mean	SD	95% CI[a]	t Value	Mean	SD	Mean	SD	95% CI[a]	t Value
Physical health	43.6	12.2	45.3	10.8	–0.4 to 3.8	1.6	45.6	11.7	44.3	11.0	–4.5 to 1.8	0.9
Subjective feelings	48.5	12.8	52.0	13.2	1.1 to 6.0	2.9**	51.6	13.8	52.4	13.2	1.8 to 4.3	0.4
Leisure time activities	19.3	6.4	21.2	6.6	0.7 to 3.1	3.0**	20.5	6.6	20.8	6.2	–1.7 to 2.5	0.4
Social relationships	36.8	9.6	37.6	10.4	–1.1 to 2.7	0.9	41.5	9.2	39.3	10.0	–5.3 to 0.8	1.5
General activities	46.9	11.9	47.7	11.8	–1.2 to 2.8	0.8	48.5	12.4	47.3	10.9	–4.8 to 2.2	0.7
Satisfaction with medicine	3.5	1.2	3.7	1.1	0.0 to 0.4	1.7	4.0	1.1	3.6	1.2	–0.8 to 0.1	1.7
Quality of Life index	3.4	0.7	3.5	0.7	0.0 to 0.3	2.3*	3.6	0.9	3.5	0.8	–0.3 to 0.2	0.7

[a]95% confidence interval for differences. *p < .05; **p < .01.

Table 2. Sociodemographic Characteristics of the Study Sample

Characteristic	Schizophrenia Patients (N = 148)	Schizoaffective/ Mood Disorder Patients (N = 51)	Significance Tests[a] χ^2 or t	df	p Value
Male, N (%)	121 (81.8)	28 (54.9)	14.5	1	< .001
Age at examination, mean ± SD, y	38.2 ± 9.5	41.1 ± 11.3	1.77	197	.08
Marital status, N (%)					
Single	97 (65.5)	15 (29.4)	23.5	2	< .001
Married	25 (16.9)	24 (47.1)			
Other[b]	26 (17.6)	12 (23.5)			
Education, mean ± SD, y	10.2 ± 2.7	10.7 ± 2.8	1.14	197	.25
Living arrangement					
Independent	84 (56.8)	37 (72.5)	5.10	2	< .078
Family	21 (14.2)	7 (13.7)			
Group home	43 (29.0)	7 (13.7)			
Employment status					
Employed	52 (35.1)	17 (33.3)	0.05	1	.81
Unemployed	96 (64.5)	34 (66.7)			
Age at onset,[c] mean ± SD, y	22.9 ± 7.1	29.4 ± 9.6	4.4	197	< .001
Illness duration, mean ± SD, y	15.0 ± 9.1	11.5 ± 9.7	2.3	197	.02
Total number of hospitalizations, mean ± SD	7.8 ± 4.5	7.4 ± 4.3	0.52	197	.60
Change in treatment setting during follow-up period, N (%)					
Same hospitalization	59 (39.9)	3 (5.9)	2.9	2	< .001
Readmitted	48 (32.4)	23 (45.1)			
Discharged	41 (27.7)	25 (49.0)			
Length of follow-up, mean ± SD, mo	16.7 ± 4.8	15.5 ± 3.9	1.77	197	.079

[a]2-tailed t test and the chi-square test.
[b]Widowed or divorced.
[c]According to applying to mental health care.

ratings, whereas schizophrenia patients reported significant improvement in the QOL index, subjective feelings, and leisure time activities (Table 1). At follow-up, cross-sectional comparisons showed no significant differences between these 2 groups on QOL index and specific domain scores (F = 0.64; df = 1,198; p = .74).

Since patients in the compared groups differed in terms of gender, marital status, age at onset, and place at follow-up assessment (see Table 2), changes in QOL ratings were tested with ANCOVA. When these variables and length of follow-up period were controlled as covariance, the 2 patient groups differed regarding changes in the perceived QOL index (F = 5.0, p = .026), and satisfaction with medicine (F = 5.5, p = .020; all df = 1,198). Post hoc analysis with Bonferroni multiple comparison test showed that schizophrenia patients showed improvement in the QOL index (0.16 ± 0.8) and satisfaction with medicine (0.19 ± 1.3), whereas the schizoaffective/mood disorder patients showed mild deterioration (–0.11 ± 0.7 and –0.38 ± 1.4; df = 197; p = .037 and p = .024, respectively).

Given that the schizoaffective/mood disorder sample (N = 51) was one third the size of the schizophrenia group (N = 148), the effect of sample size on the findings was tested. Changes in QOL domain ratings were reevaluated on a subsample of schizophrenia patients (N = 51) matched by gender, age, education, and place at and length of follow-up assessment to the sample of schizoaffective/mood disorder patients. The schizophrenia patients of this

Table 3. Change in Symptom and Psychosocial Scores From Initial to Follow-Up Assessment for Patients With Schizophrenia and for Patients With Schizoaffective/Mood Disorder

	Schizophrenia Patients (N = 148)						Schizoaffective and Mood Disorder Patients (N = 51)					
	Initial Assessment		At Follow-Up Assessment				Initial Assessment		At Follow-Up Assessment			
Variables	Mean	SD	Mean	SD	95% CI[b]	t Value	Mean	SD	Mean	SD	95% CI[b]	t Value
PANSS												
Scales												
Positive syndrome	17.0	6.1	15.4	5.8	–2.7 to –0.4	2.6*	15.3	7.9	11.9	4.9	–5.2 to –1.4	3.5***
Negative syndrome	25.1	6.6	26.2	7.0	–0.4 to 2.2	1.7	18.8	7.1	18.3	6.9	–1.6 to 1.8	0.5
General syndrome	41.9	10.6	40.8	10.8	–3.6 to 2.2	0.9	40.4	12.1	35.0	8.9	–7.9 to –0.9	3.1**
Factors												
Anergia	11.1	3.2	11.4	3.2	–0.3 to 1.0	1.1	8.9	3.6	8.9	3.2	–0.9 to 1.0	0.1
Thought	10.1	4.2	9.6	3.8	–1.3 to 0.2	1.4	8.7	5.3	6.8	2.9	–3.2 to –0.6	2.9**
Activation	7.1	2.4	6.7	2.2	–0.9 to 0.1	1.6	7.3	3.2	6.1	2.0	–2.2 to –0.1	2.2*
Paranoid	7.4	2.6	6.7	2.5	–1.2 to –0.2	2.8**	5.7	2.4	4.9	2.1	–1.5 to 0.05	2.2*
Depression	8.3	3.3	7.3	2.8	–1.6 to –0.4	3.4***	9.5	3.9	8.1	3.2	–2.6 to –0.3	2.4*
MRS												
Mania severity	1.7	3.9	0.9	2.1	–1.4 to –0.2	2.2*[a]	4.9	6.6	2.1	3.3	–0.5 to –0.7	3.1**[a]
DSAS												
Number of adverse symptoms	0.33	0.3	0.30	0.3	–0.1 to 0.04	0.9	0.41	0.3	0.32	0.3	–0.2 to 0.03	1.5
Mental distress index	0.34	0.4	0.29	0.3	–0.1 to 0.02	1.4	0.49	0.4	0.40	0.3	–0.2 to 0.06	1.1
Somatic distress index	0.20	0.3	0.19	0.2	–0.1 to 0.05	0.3	0.31	0.4	0.21	0.3	–0.2 to 0.02	1.6
TBDI												
Distress index	1.3	0.8	1.1	0.8	–0.3 to –0.1	3.4***[a]	1.3	0.8	1.3	0.8	–0.3 to 0.2	0.4
CISS												
Task coping	51.7	16.8	51.6	17.7	–2.8 to 3.2	0.1	52.4	15.8	49.4	17.9	–8.8 to 1.0	1.2
Emotion coping	43.8	14.1	41.8	12.8	–4.6 to –0.1	2.3*[a]	47.1	13.7	45.6	13.0	–4.8 to 4.0	0.7
Avoidance coping	47.8	14.2	47.2	15.9	–3.1 to 2.3	0.5	48.8	14.2	46.4	15.5	–7.2 to 0.8	1.2
GSES												
Self-efficacy	27.0	8.0	28.5	8.2	0.1 to 2.9	1.8	29.1	8.8	28.4	8.1	–3.2 to 1.5	0.6
RSES												
Self-esteem	18.1	4.8	19.1	4.9	0.3 to 1.8	2.4*	18.2	5.7	18.2	5.2	–2.0 to 1.4	0.02
EES												
Expressed emotion	77.8	19.2	72.9	17.9	–8.9 to –0.9	2.6**	77.8	18.9	75.0	19.0	–7.3 to 1.7	0.9[a]

[a]Wilcoxon signed rank test.
[b]95% confidence interval for differences.
*p < .05; **p < .01; ***p < .001.
Abbreviations: CISS = Coping Inventory for Stressful Situations, DSAS = Distress Scale for Adverse Symptoms, EES = Expressed Emotion Scale, GSES = General Self-Efficacy Scale, MRS = Mania Rating Scale, PANSS = Positive and Negative Syndrome Scale, RSES = Rosenberg Self-Esteem Scale, TBDI = Talbieh Brief Distress Inventory.

subsample showed improvement only in the QOL index (from 3.2 ± 0.6 to 3.6 ± 0.7, t = 3.09, p = .0025).

Table 3 summarizes differences and stability over time in psychopathology and SPR factor scores. At follow-up examination, patients of both cohorts had markedly lower psychopathology, excluding negative symptoms. Schizophrenia patients showed significant positive improvement in emotional distress (TBDI index), emotion-related coping style, expressed emotions, and self-esteem ratings. Among patients with schizoaffective/mood disorders, most SPR factors, excluding criticism (EES) scores, were quite stable over time.

Prediction of Changes in QOL Index

While testing regression models, we used the step-wise backward selection procedure in order to reduce the number of independent variables (see Data Analysis) for fewer predictors. A summary of multiple regression analysis is presented in Table 4. Regression analysis established different sets of predictors and accounted for 36% and 55% of the total variance of the individual changes in QOL index scores during the follow-up period of the schizophrenia and schizoaffective/mood disorder patients, respectively. Increasing self-efficacy and self-esteem ratings together with a reduction in distress symptoms (obsessiveness, somatization) and paranoid severity influenced improvement in QOL index scores among schizophrenia patients. Changes in distress intensity account for 12.2%; self-constructs, 11.7%; and paranoid factor, 2.8% of the fluctuations in QOL index scores. Among patients with schizoaffective/mood disorders, changes in task-oriented coping, expressed emotion, sensitivity, and depression severity scores account for 23%, 22.2%, 18.8%, and 11.2% of the changes in QOL index scores, respectively.

DISCUSSION

This is the first naturalistic longitudinal study of perceived QOL and multidimensional measures of related factors in patients with schizophrenia and schizoaffective/

Table 4. Summary of Multiple Regression Analysis to Predict Change in Quality of Life (QOL) Ratings From Change in Ratings of Symptoms and Stress Process–Related (SPR) Factors in 2 Groups of Patients[a]

Dependent Variable (change in QOL index scores during follow-up period)	Independent Variables and Model's Properties	β[b]	Partial R^{2c}
Schizophrenia patients (N = 148)	Paranoid factor (PANSS)	–0.14	0.028
	Obsessiveness (TBDI)	–0.23	0.066
	Somatization (BSI)	–0.21	0.056
	Self-efficacy (GSES)	0.18	0.040
	Self-esteem (RSES)	0.25	0.077
	$R^2 = 0.36$; adjusted $R^2 = 0.33$, F = 15.7, df = 5, $p < .0001$		
Schizoaffective/mood disorder patients (N = 51)	Depression factor (PANSS)	–0.27	0.112
	Sensitivity (TBDI)	–0.37	0.188
	Expressed emotion (EES)	–0.36	0.222
	Tasked-oriented coping (CISS)	0.37	0.230
	$R^2 = 0.55$; adjusted $R^2 = 0.51$, F = 13.7, df = 4, $p < .0001$		

[a]Change in QOL index scores during follow-up period.
[b]Standardized regression coefficient. All independent variables included in the table are statistically significant ($p < .001$).
[c]Partial R^2 reflects the variation in the dependent variable (QOL dimensions) explained by each independent variable adjusted to the effects of the rest of the independent variables. The higher the R^2 value, the greater contribution of the independent variable to the model.
Abbreviations: BSI = Brief Symptom Index, CISS = Coping Inventory for Stressful Situations, EES = Expressed Emotion Scale, GSES = General Self-Efficacy Scale, PANSS = Positive and Negative Syndrome Scale, RSES = Rosenberg Self-Esteem Scale, TBDI = Talbieh Brief Distress Inventory.

mood disorders systematically ascertained from various hospital settings, representing routine hospital practice. Our general assumption was that similar QOL levels among schizophrenia and schizoaffective/mood disorder patients would be associated with different predictor patterns. To test this assumption, 3 specific hypotheses were tested and confirmed in the present study.

The major finding of this study is that schizophrenia and schizoaffective/mood disorder patients reported similar overall levels of satisfaction with QOL 16 months after baseline. This finding is quite consistent with cross-sectional studies[4,17–19] that did not find considerable differences in overall perceived QOL level between schizophrenia and schizoaffective/mood disorder patients and contradict those studies that suggested[20,21] that patients with schizophrenia reported more life satisfaction than patients with major depression and bipolar disorder. Schizophrenia patients reported improvement on the QOL index and on some specific domains. We found that some demographic characteristics, illness history features, and sample size influenced changes in specific QOL domains. Our longitudinal findings of improved perceived QOL for schizophrenia patients support reports of improved overall satisfaction with QOL of schizophrenia patients across time.[7–9]

Another important finding of this study is that despite similarities in levels of QOL among patients belonging to different diagnostic categories, there are considerable between-group differences among the predictors of life satisfaction. Particularly, improvement in the QOL index among schizophrenia patients was influenced by positive changes in distress (obsessiveness, somatization) and paranoid symptoms, self-efficacy, and self-esteem scores. Contradictorily, individual fluctuations in QOL index scores among patients with schizoaffective/mood disorders were associated with changes in depression severity, sensitivity, task-oriented coping, and expressed emotion scores. Due to the lack of QOL studies concerning the SPR factors among patients with various major psychoses, comparison of our QOL findings with other research data is difficult.

Finally, we assumed that SPR factors (psychological, social) rather than psychopathology would predict perceived QOL of patients with major psychoses. Results of multiple regression analysis confirmed this assumption: for both groups of patients, changes in SPR factors contributed substantially more to long-term changes in perceived QOL when compared with psychopathology. These findings are consistent with cross-sectional results.[4] The fact that SPR factors have stronger predictive values as compared with psychopathologic factors does not seem to actually be paradoxical since SPR factors and psychopathology present 2 different realities that coexist within the mentally ill individual: internal (psychological) as well as external (clinical) worlds.[27] The psychological reality expressing the subjective experience of disease or suffering may be accessible only through patient self-report (primary factors), while clinical reality is presented through psychopathologic symptoms that can be ascertained by clinician observation of behavior and interview using observer-based scales (secondary factors). Primary factors are closest to the individual and determine his or her perception of QOL and health status. Therefore, we suggest that secondary clinical factors influence subjective QOL via primary psychological factors.

Several possible explanations for the above findings need to be considered. First, reduction of severity of symptoms and stabilization of mental health status may explain similar levels of QOL outcomes among patients with schizophrenia and schizoaffective/mood disorders.

To test these assumptions, changes in psychopathology over time were analyzed for both groups of patients. As expected, during the follow-up period, both schizophrenia and schizoaffective/mood disorder patients showed marked improvement in severity of symptoms.

Second, the similar level of QOL outcomes among patients with major psychoses may be explained by a relatively small contribution of psychopathology to QOL ratings. Indeed, regression analysis revealed that reduction in symptoms severity over time accounted for about 3% (paranoid factor) of the variance in QOL index scores among schizophrenia patients and for 11% (depression) of the variance among schizoaffective/mood disorder patients. Furthermore, negative symptoms, considered to be important prognostic indicators in cross-sectional studies,[10,11,36] do not appear to predict variability of QOL index scores over time. The strong relationship between the presence of psychological distress, illness symptoms,[37,38] and adverse effects of antipsychotic agents[4,22] should be kept in mind. It therefore is not surprising that changes in psychological distress symptoms account for 12% to 19% in the fluctuation of QOL index scores among persons with major psychoses. SPR factors may have a moderating/mediating effect on the influence of psychopathology on QOL ratings, thus compromising the place of psychopathologic symptoms in QOL research. Therefore, we suggest that the contribution of depression to QOL was overestimated in previous studies[39,40] because it did not account for the influence of distress symptoms and SPR factors. Our findings clearly contradict prior studies[3,10,11] that describe QOL of mentally ill persons mainly in terms of clinical factors or adverse effects of antipsychotics and support those focusing on the complex interplay among symptoms, distress, and personal resources in QOL appraisal.[22,41,42]

How can we explain the difference in SPR indicators of QOL between schizophrenia and schizoaffective/mood disorder patients? One possible interpretation could be a confounding effect between psychopathologic symptoms and coping mechanisms. These findings may be also interpreted in the framework of the vulnerability-stress model as follows: patients with various major psychoses apparently responded differently to heightened stressors and had different impaired coping patterns for stress. Further testing of this hypothesis is warranted.

There are several possible limitations in evaluating these results. First, most participants were male. Second, we did not analyze the effects of treatment interventions, specific stressful life events, and daily hassles. These limitations will hopefully be resolved as the study progresses. Third, because the baseline data were received from inpatients, we cannot generalize our findings to patients in a more stable outpatient phase where a study of these relationships would be even more useful. Finally, there are no data for psychotic patients who were unable or refused to participate in the study. The last limitation, however, is common for most studies using self-report methodology for investigating QOL and psychological resources in severely ill psychiatric patients. However, the primary strength of our study is that data were collected from a systematically ascertained sample with repeated multidimensional measures in a naturalistic follow-up.

Findings of this study have important clinical implications. Do clinicians' treatment efforts directed toward the amelioration of symptoms of the illness adequately address the need to improve subjective QOL of psychiatric patients? Inasmuch as controlling morbid symptoms may be important clinical goals, findings presented here suggest that the contribution of these factors to changes in patients' QOL over time is very limited. Intervention focusing on changes in SPR factors should be addressed in an effort to improve patients' life quality outcomes. Changes in SPR factors, rather than psychopathology, predict change in perceived QOL and should be considered when evaluating QOL outcomes.

Future studies should test the mediating effect of psychological distress and coping styles between severity of symptoms and perceived QOL and should also focus on personal characteristics and inner resources that underlie domain-specific quality of life.

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