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After completing this educational activity, physicians practicing clinical psychiatry should be able to:

- Discuss the impact of psychosocial factors on the quality of life in patients with serious mental disorders
- Employ strategies for rehabilitation and intervention that promote feelings of self-efficacy
- Encourage the use of task-oriented coping strategies by patients with serious mental illness

Statement of Need and Purpose

Little is known about the relationship between quality of life and psychopathologic and psychosocial factors in patients with serious mental disorders such as schizophrenia and mood disorders. This CME activity is designed to address the needs of physicians who have requested information on the quality of life in patients with serious mental disorders. There are no prerequisites for participating in this CME activity.

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Dr. Ponizovsky is an employee of Israeli Ministry of Immigrant Absorption.

Drs. Barak, Endicott, Goldin, Modai, Nechamkin, Ritsner, and Rivkin have no significant commercial relationships to disclose relative to the presentation.

Differences in Quality of Life Domains and Psychopathologic and Psychosocial Factors in Psychiatric Patients

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Background: Although treatment of severe mental disorders should strive to optimize quality of life (QOL) for the individual patient, little is known about variations in QOL domains and related psychopathologic and psychosocial factors in patients suffering from schizophrenia, schizoaffective disorder, and/or mood disorders. We hypothesized that QOL in severe mental disorder patients would have a more substantial relationship with psychosocial factors than with illness-associated factors.

Method: A case-control, cross-sectional design was used to examine QOL of 210 inpatients who met DSM-IV criteria for a severe mental disorder and who were consecutively admitted to closed, open, and rehabilitation wards. Following psychiatric examination, 210 inpatients were assessed using standardized self-report measures of QOL, insight, medication side effects, psychological distress, self-esteem, self-efficacy, coping, expressed emotion, and social support. QOL ratings for patients and a matched control group (175 nonpatients) were compared. Regression and factor analyses were used to compare multidimensional variables between patients with schizophrenia and schizoaffective and mood disorders.

Results: In all QOL domains, patients were less satisfied than nonpatient controls. Patients with schizophrenia reported less satisfaction with social relationships and medication when compared with patients with schizoaffective and/or mood disorders. Regression analysis established differential clusters of predictors for each group of patients and for various domains of QOL. On the basis of the results of factor analysis, we propose a distress protection model to enhance life satisfaction for severe mental disorder patients.

Conclusion: Psychosocial factors rather than psychopathologic symptoms affect subjective QOL of hospitalized patients with severe mental disorders. The findings enable better understanding of the combining effects of psychopathology and psychosocial factors on subjective life satisfaction and highlight targets for more effective intervention and rehabilitation.

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Although quality of life (QOL) ratings for patients with severe mental disorders are difficult to interpret,[1–3] many previous studies have tried to clarify the various factors that influence the QOL of these patients. Clinical variables associated with poor life quality of schizophrenic patients can be summarized as follows: negative symptoms,[4,5] general psychopathology,[6,7] tardive dyskinesia and other medication side effects,[8,9] overall duration of illness, and hospitalizations.[10] Data regarding the effect of positive symptoms on subjective QOL are controversial.[11–14] Mood symptoms should be considered when assessing QOL in severe mental disorder patients, since affective disturbances can seriously distort subjective appraisals of QOL. Theoretically, negative affect and cognitive attitudes of depressed patients predict lower QOL ratings, while manic symptoms seem to have the opposite effect. Nevertheless, empirical testing of these predictions has yielded inconsistent findings. Some studies found that the severity of depressive symptoms is inversely related to QOL in patients with major depression[15,16] and schizophrenia,[17] while others found no correlation between the two.[18] Similarly, some studies[19,20] failed to discriminate between patients with schizophrenia and schizoaffective disorder in subjective life satisfaction and well-being measures. Hence, the question of how affective status is related to subjective QOL remains unclear. The majority of stud-

ies on illness-related factors are cross-sectional in nature, have a small sample size, and do not report systematic ascertainment of patient samples.

Progress in conceptualization of QOL resulted in exploring a mediating role of self-related constructs (factors) in QOL appraisal. Low self-esteem, low self-efficacy, and self-report of poor coping strategies explain much of the negative effect of mental illness attributes on life quality.[21–28] Lack of perceived social support was also associated with lower QOL of psychiatric patients in community settings.[9,21,29,30] However, to date, we lack knowledge about the specific relationship between disorder- and self-related factors in QOL of severely mentally ill patients. Additional information of protective factors is necessary to establish an effective model of QOL.

Various models have been proposed to interpret QOL data, such as a "clinical" model involving symptoms, medication side effects, and psychosocial performance[31]; a vulnerability-stress-coping model[32]; or a "mediational" model.[33–36] However, these models are generally descriptive rather than analytically predictive and need further development, testing, and validation.

In the present study, we sought to (1) compare specific domains of life satisfaction of hospitalized patients with severe mental disorders versus healthy control subjects, (2) study differences in QOL domains and related factors between patients suffering from schizophrenia and schizoaffective/mood disorders, (3) analyze predictions of QOL and specific domains for each patient group, and, finally, (4) establish an empirically based model of QOL for the severe mental disorder population.

METHOD

The study reported here is part of a larger project evaluating QOL of patients with severe mental disorder hospitalized in Sha'ar Menashe Mental Health Center (Haifa, Israel). The Sha'ar Menashe Longitudinal Study of Quality of Life (SMLS-QOL) is a comprehensive project that includes (1) systematic recruitment of severe mental disorder patients in various hospital settings; (2) a wide battery of instruments for evaluating disorder-related, self-related, and socially related variables; and (3) a repeated-measures longitudinal design that enabled data collection from the same patients at a number of points before and after discharge from the hospital.

Study Design

The present report presents preliminary results of the SMLS-QOL. A case-control, cross-sectional design was used to examine QOL of patients with severe mental disorders consecutively admitted to various hospital settings (closed, open, and rehabilitation wards).

Patients were considered to have severe mental disorders if they had major mental illness(es) and at least 2 years of major role dysfunction. The inclusion criteria were DSM-IV criteria for schizophrenia or schizoaffective and/or mood disorders, inpatient status, an age of 18 to 65 years, and the ability to provide written informed consent for participation in the study. Patients with associated diagnoses of mental retardation, organic brain diseases, severe physical disorders, or drug/alcohol abuse, those with low comprehension skills, and recent immigrants (with length of residence in the country less than 5 years) were not enrolled in the study. The study protocol was approved by the Internal Review Board and the Ministry of Health, Israel.

Data Collection

A list of all adult patients with severe mental disorders in all hospital settings was obtained from a computerized monitoring system, and data collection was initiated on August 5, 1998. Patients hospitalized prior to baseline were assessed within 4 initial weeks of the study (cohort 1), and those admitted during the first year of the study were assessed within 2 weeks of admission (cohort 2). During the first year, 669 inpatients with severe mental disorders from both cohorts were approached and interviewed. Of those, 353 patients (52.8%) were excluded from the study for the following reasons: associated diagnoses of mental retardation and organic brain impairments (N = 9), serious physical disease (N = 1), and drug/alcohol abuse/dependence (N = 2). The mentally ill immigrants (N = 341) were also excluded to avoid possible distortion (reduction) in QOL values influenced by intense psychological distress, which is inevitably experienced by newcomers during the first several years after resettlement.[37–39] Of 316 remaining patients, 45 (14.2%) were excluded owing to low comprehension skills and 61 (19.3%) were unwilling to sign written informed consent. Thus, 210 patients were enrolled (response rate, 66.5%; 210/316). According to the Clinical Global Impressions scale, nonparticipants (N = 106; mean ± SD = 5.2 ± 0.9) appeared to be more severely ill than participants (N = 210; mean ± SD = 4.7 ± 0.9, $t = 5.79$, $df = 314$, $p < .001$).

Subjects

The sample was 75.2% male (N = 158), with mean ± SD age of 38.7 ± 9.6 years (range, 19–63 years). There were 115 patients (54.8%) in cohort 1 and 95

Table 1. Characteristics of Patients With Severe Mental Disorders[a]

Characteristic	Schizophrenia (N = 161)		Schizoaffective/ Mood Disorders (N = 49)		Statistics[b]		
	N	%	N	%	χ^2 or t	df	p
Sex							
Male	130	80.7	28	57.1	11.2	1	< .001
Female	31	19.3	21	42.9			
Marital status							
Single	109	67.7	18	36.7	18.8	2	< .0001
Married	29	18.0	21	46.9			
Widowed/divorced	23	14.3	7	16.3			
Age at onset of illness, y[c]							
14–19	61	37.9	8	16.3	68.9	3	< .001
20–29	74	46.0	21	42.9			
30–39	20	12.4	13	26.5			
40–49	6	3.7	7	14.3			
	Mean	SD	Mean	SD			
Age at onset of illness, y	22.8	7.5	28.3	8.8	4.35	208	< .0001
Education, y	10.1	2.9	11.1	2.4	2.21	208	.028
Age at present examination, y	38.3	9.3	40.2	10.4	1.23	208	.22 (NS)
Duration of illness, y	15.1	2.9	11.6	9.3	2.33	208	.021

[a]Abbreviation: NS = not significant.
[b]Two-tailed t test or chi-square test with Yates correction.
[c]According to applying to mental health care.

patients (45.2%) in cohort 2; the cohorts did not significantly differ on QOL ratings. A total of 161 patients were diagnosed with schizophrenia, and the remaining 49 patients were diagnosed with either schizoaffective disorder (N = 33) or mood disorders (N = 16). DSM-IV diagnoses of the schizophrenic patients included 116 patients with paranoid type (295.30), 20 with residual type (295.60), 10 with disorganized type (295.10), and 15 with undifferentiated type (295.90). Fifteen patients with depressive type (295.70D) and 18 patients with bipolar type (295.70M) presented with schizoaffective disorder. The mood disorder group comprised 9 patients with major depressive disorder (296.23, 296.31–34) and 7 patients with bipolar I disorder, 4 of whom had had a recent manic episode with or without psychotic features (296.43–44). One of the bipolar patients had had a recent depressed episode (296.53), and 2 had had recent mixed episodes (296.62). Thus, at examination, 24 patients had manic/mixed types and 25 had depressive types of the schizoaffective/mood disorders.

Mean ± SD duration of disorder was 14.3 ± 9.2 years; mean duration of current hospitalization was 34.5 ± 54.4 months for cohort 1 and 1.9 ± 4.1 months for cohort 2 patients. A total of 60.5% of patients were never married, and 24.3% had only primary school education. Mean length of education was 10.3 ± 2.8 years.

Schizophrenia patients, as compared with those with schizoaffective and mood disorders, were more likely to be male, without a spouse, younger at onset of illness, and with longer duration of illness (Table 1).

The nonpatient control group included 175 hospital staff members and excluded physicians. Inclusion was based on the availability of respondents for the interview. Controls had no history of psychiatric illness and did not fulfill DSM-IV criteria for any mental disorder. This sample was 37.1% male, with mean ± SD age of 38.4 ± 9.9 years (range, 20–61 years), and mean ± SD length of education was 13.6 ± 2.2 years. A total of 132 subjects (75.9%) were married, 24 (13.8%) were single, and 18 (10.3%) were widowed or divorced. The control subjects were comparable to the patients with regard to age, but female, married, and more-educated subjects were overrepresented.

Measures

All respondents participated in the initial interview, and diagnoses were made according to DSM-IV criteria.[40] The Schedule for Assessment of Mental Disorder (SAMD) (M.R., unpublished data), a semistructured interview, was used for collecting data covering background and demographic characteristics, family psychiatric history, personal psychiatric history, details of the present illness and medication, general medical history, and current laboratory tests. Information from a patient's relative, close companion, or file records supplemented the SAMD. The Checklist for Patients Not Entered Into Database (SAMD-0) was used to register nonenrolled patients.

Manifest psychopathology and severity of illness were assessed using the following interview-based instruments: the Positive and Negative Syndrome Scale (PANSS),[41] the Montgomery-Asberg Depression Rating Scale (MADRS),[42] the Mania Rating Scale (MRS),[43] and the Clinical Global Impressions scale (CGI).[44] The overall level of functioning was assessed with the Global Assessment of Functioning (GAF).[40]

For objective assessment of insight for illness, the Insight and Treatment Attitudes Questionnaire (ITAQ)[45] was employed. It includes 11 questions concerning the patient's general views on recognition of mental problems, the need for treatment, and the value of treatment, without evaluating awareness/attribution of individual symptoms. Responses are scored on a 3-point scale, where 0 = no, 1 = questionable, and 2 = good insight.

The presence and severity of adverse effects of medication as well as psychological responses to them were measured with the Abnormal Involuntary Movement Scale (AIMS)[44] and the Distress Scale for Adverse Symptoms (DSAS).[46] The DSAS is a 22-item checklist covering mental, neurologic, somatic, and autonomic dysfunctions caused by current medication. The adverse symptoms are rated by a clinician in a face-to-face interview on a 5-point intensity scale where 0 = none or questionable symptom to 4 = extreme expression of the symptom. A patient is then asked the question: "How much discomfort did each of these symptoms cause you during the previous week?" and responses are scored in the same way, with higher mean scores indicating greater intensity of associated distress.

A research team of 15 trained psychiatrists performed all of the evaluations under ongoing supervision of 2 of the authors (M.R. and A.P.). Interrater reliability for the above instruments as measured by interclass correlation coefficient ranged from 0.78 to 0.95 (PANSS = 0.87, MADRS = 0.89, MRS = 0.81, CGI = 0.95, GAF = 0.78, ITAQ = 0.82).

All severe mental disorder patients were administered the part II interview, which took an average of 1.5 to 3 hours to complete and included standardized self-report questionnaires.

We used the Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q)[47] to assess QOL because of its psychometric properties, validity, reliability, sensitivity to change over time, and successful use among various diagnostic categories of psychiatric patients.[48] It is a self-report questionnaire comprising 93 items grouped into 10 summary scales as follows: physical health, subjective feelings, leisure time activities, social relationships, general activities, work, household duties, medication satisfaction, school/course work, and life satisfaction and enjoyment. Responses are scored on a scale of 1 to 5, with higher scores indicating better QOL. The raw summary scores were expressed as a percentage of the maximum score and thereby enabled comparison of functioning domains within the same subject or groups of subjects. In the current study, we used 7 of the Q-LES-Q scales, excluding the household duties, school/courses, and work scales as irrelevant for hospitalized patients. Internal consistency of the 7 summary scales of the instrument as measured by Cronbach α coefficient ranged from 0.85 to 0.93 for the present sample. We added the Perceived QOL index, which was an average of the scores of the 60 items of the 7 remaining Q-LES-Q scales (Cronbach $\alpha = 0.95$).

Assessment of well-being and psychosocial factors used the following standardized self-report questionnaires: the Talbieh Brief Distress Inventory (TBDI),[49] the Brief Symptom Inventory-somatization scale (BSI),[50] the Expressed Emotion Scale (EES),[51] the General Self-Efficacy Scale (GSES),[52,53] the Insight Self-Report Scale (IS)[54] for subjective assessment of insight, the Coping Inventory for Stressful Situations (CISS),[55] the Rosenberg Self-Esteem Scale (RSES),[56] and the Multidimensional Scale of Perceived Social Support (MSPSS).[57]

Overall, 47 clinical and psychosocial variables were analyzed. These included severity of mental disorder (CGI score), level of functioning (GAF score), psychopathologic symptoms (10 PANSS dimensions: total score, positive, negative, composite, general psychopathology scales; anergia, thought, activation, paranoid, and depression factors), depression (MADRS score), mania (MRS score), objective (ITAQ score) and subjective (4 IS dimensions: relabel, awareness, needs, total score) assessment of insight, side effects (AIMS score and 3 DSAS dimensions: drug adverse side effect intensity, side effect–related distress, and DSAS general index), psychological distress (7 TBDI dimensions: obsessiveness, hostility, sensitivity, depression, anxiety, paranoid ideation, and TBDI distress index score), somatic distress (BSI score), expressed emotion (5 EES variables: emotion, intrusiveness, irritability, criticism, total score), self-efficacy (GSES score), coping styles (5 CISS variables: task-, emotion-, and avoidance-oriented coping styles; distraction; and social clusters), self-esteem (RSES), and perceived social support (4 MSPSS variables: family, friends, others, and total support score).

The self-report questionnaires were filled out in the patient's native language. Previously, they were translated into Hebrew, Russian, and Arabic, taking into account cultural aspects of the questions, colloquialisms, and

Table 2. Mean Scores for Life Domains in the Quality of Life Enjoyment and Satisfaction Questionnaire for Controls and Patients With Severe Mental Disorders

	Schizophrenia (N = 161)		Schizoaffective/ Mood Disorders (N = 49)		Schizophrenia vs Schizoaffective/ Mood Disorders[a]	Control (N = 175)		Schizophrenia vs Control[b]	Schizoaffective/ Mood Disorders vs Control[c]
Domain	Mean	SD	Mean	SD		Mean	SD		
Health	43.0	12.4	43.5	12.0	0.26	51.3	8.9	7.0***	4.2***
Subjective feelings	48.1	12.9	51.5	13.4	1.58	59.8	8.0	9.9***	4.1***
Leisure time activities	19.3	6.4	20.9	6.4	1.59	22.8	4.3	5.8***	1.96*
Social relationships	36.8	9.9	40.8	10.1	2.48**	44.4	5.9	5.1***	2.4*
General activities	46.8	12.5	48.9	12.7	0.99	57.5	7.1	9.5***	4.5***
Life satisfaction	3.3	1.2	3.2	1.3	0.41	4.2	0.6	8.6***	5.2***
Perceived quality of life index	3.3	0.7	3.6	0.8	1.59	4.2	0.4	14.3***	5.1***
Satisfaction with medication	3.5	1.2	3.9	1.0	2.11*				

[a]df = 208.
[b]df = 334.
[c]df = 222.
*p < .05, 2-tailed t test.
**p < .01, 2-tailed t test.
***p < .001, 2-tailed t test.

slang. A bilingual research assistant then translated them back to English. Back-translations were compared with the original questionnaires; the few discrepancies revealed were discussed by both translators, and a third bilingual staff member was consulted. After a tentative decision was reached, the items in question were presented as a pilot test to the first 10 subjects. Evaluation of the responses confirmed validity of the translation. For the present samples, internal consistency of the above instruments was quite satisfactory (Cronbach α coefficients ranged from 0.69 to 0.97).

Data Analysis

The NCSS-2000 PC program[58] was used for all analyses. Differences between groups on continuous variables were evaluated with 2-tailed t tests. Mean values with standard deviation are presented. Differences in frequency of categorical variables were examined using chi-square tests with Yates correction, if indicated.

Multivariate regression analyses were used for predicting the Perceived QOL index from the above-mentioned 47 clinical and psychosocial variables. Prior to testing regression models, we used a stepwise backward selection procedure to reduce the number of independent variables to a much smaller number of predictors.

Factor analysis with varimax rotated factor matrix was performed for the entire sample to identify the factors associated with the Perceived QOL index. This analysis was carried out on the correlation matrix of the observed variables by the principal axis method. Communality is the proportion of the variation of the variable that is accounted for by the factors retained.

RESULTS

Quality of Life

Schizoaffective disorder patients (N = 33) were significantly more satisfied than schizophrenic patients with Q-LES-Q domains concerning subjective feelings (mean ± SD score = 53.2 ± 12.9 for schizoaffective disorder patients vs. 48.1 ± 12.9 for schizophrenic patients; $t = 2.04$, $df = 192$, $p < .05$), social relationships (41.7 ± 9.4 vs. 36.8 ± 9.9; $t = 2.69$, $df = 192$, $p < .01$), and medication treatment (4.0 ± 1.1 vs. 3.5 ± 0.26; $t = 2.31$, $df = 189$, $p = .025$). Since schizoaffective and mood disorder patients had quite similar ratings on all QOL domains, we joined these 2 subgroups for analyses below. Overall, patients' mean ± SD score for the Perceived QOL index was 3.4 ± 0.8 compared with the control subjects' mean score of 4.2 ± 0.4, a highly significant difference ($t = 12.9$, $df = 383$, $p < .001$). Table 2 presents the QOL profiles for the schizophrenia and schizoaffective/mood disorder groups versus the control group; both patient groups were significantly less satisfied than controls with all QOL domains. These differences could not be explained by higher educational levels in controls, because there was a negative correlation between educational levels and the Perceived QOL index ($r = –0.36$, $p < .01$).

Although no significant differences were found in the mean Perceived QOL index score between schizophrenic

Table 3. Summary of Multiple Regressions to Predict Quality of Life (QOL) Index and Domain Scores in 2 Groups of Patients[a]

	Schizophrenia Group (N = 161)			Schizoaffective/Mood Disorder Group (N = 49)		
Dependent Variable	Independent Variable	β	R^2	Independent Variable	β	R^2
Perceived QOL Index	Depression (TBDI)	–0.34	0.17	Obsessiveness (TBDI)	–0.37	0.22
	Somatization (TBDI)	–0.13	0.03	Severity of disorder (TBDI)	–0.10	0.08
	Anergia (PANSS)	–0.16	0.06	Expressed emotion (EES)	–0.06	0.01
	Abnormal movements (AIMS)	–0.15	0.05	Self-efficacy (GSES)	0.54	0.40
	Emotion coping (CISS)	–0.12	0.02	Insight, total (IS)	0.04	0.001
	Activation (PANSS)	0.02	0.001			
	Task coping (CISS)	0.26	0.10			
	Social diversion (CISS)	0.18	0.06			
	Support from others (MSPSS)	0.19	0.05			
	Family support (MSPSS)	0.08	0.01			
	$R^2 = 0.65$, F = 9.55	df = 10	p < .001	$R^2 = 0.62$, F = 13.4	df = 5	p < .0001
Physical health	Depression (TBDI)	–0.26	0.19	Obsessiveness (TBDI)	–0.34	0.37
	Somatization (BSI)	–0.19	0.11	Anxiety (TBDI)	–0.26	0.30
	Self-efficacy (GSES)	0.18	0.16	Self-efficacy (GSES)	0.33	0.33
	Avoidance coping (CISS)	0.22	0.12	Insight, total (IS)	0.36	0.10
	$R^2 = 0.32$, F = 18.5	df = 4	p < .001	$R^2 = 0.66$, F = 21.2	df = 4	p < .0001
Subjective feelings	Depression (TBDI)	–0.46	0.37	Abnormal movements (AIMS)	–0.20	0.20
	Anergia (PANSS)	–0.18	0.08	Psychological distress (TBDI)	–0.49	0.36
	Depression factor (PANSS)	–0.17	0.15	Self-efficacy (GSES)	0.47	0.48
	Task coping (CISS)	0.24	0.14	Insight, needs (IS)	0.20	0.004
	Support from others (MSPSS)	0.20	0.14	Family support (MSPSS)	0.18	0.06
	$R^2 = 0.56$, F = 39.8	df = 5	p < .001	$R^2 = 0.71$, F = 20.9	df = 5	p < .0001
Leisure activities	Anxiety (TBDI)	–0.21	0.10	Self-efficacy (GSES)	0.45	0.42
	Self-efficacy (GSES)	0.24	0.21	Friend support (MSPSS)	0.28	0.07
	Social diversion (CISS)	0.33	0.22	Intrusiveness (EES)	0.44	0.27
	Social support, total (MSPSS)	0.26	0.20			
	$R^2 = 0.35$, F = 20.3	df = 4	p < .001	$R^2 = 0.59$, F = 21.2	df = 3	p < .0001
Social relationships	Psychological distress (TBDI)	–0.46	0.11	Anergia (PANSS)	–0.32	0.17
	Sensitivity (TBDI)	0.29	0.04	Sensitivity (TBDI)	–0.30	0.15
	Social diversion (CISS)	0.33	0.22	Self-efficacy (GSES)	0.40	0.40
	Social support, total (MSPSS)	0.26	0.20	Task coping (CISS)	0.24	0.24
				Insight, needs (IS)	0.22	0.03
	$R^2 = 0.37$, F = 22.6	df = 4	p < .001	$R^2 = 0.65$, F = 16.3	df = 5	p < .0001
General activities	Somatization (TBDI)	–0.14	0.20	Obsessiveness (TBDI)	–0.50	0.31
	Abnormal movements (AIMS)	–0.16	0.04	Emotion (EES)	–0.250	0.06
	Emotion coping (CISS)	–0.16	0.04	Self-efficacy (GSES)	0.28	0.30
	Depression (TBDI)	0.30	0.33	Insight, awareness (IS)	0.345	0.15
	Self-efficacy (GSES)	0.17	0.22			
	Insight, needs (IS)	0.15	0.01			
	Avoidance coping (CISS)	0.22	0.18			
	Social support, total (MSPSS)	0.29	0.29			
	$R^2 = 0.64$, F = 33.3	df = 8	p < .001	$R^2 = 0.63$, F = 18.0	df = 4	p < .0001

[a]Abbreviations: AIMS = Abnormal Involuntary Movement Scale, BSI = Brief Symptom Inventory-somatization scale, CGI = Clinical Global Impressions scale, CISS = Coping Inventory for Stressful Situations, EES = Expressed Emotion Scale, GSES = General Self-Efficacy Scale, MSPSS = Multidimensional Scale of Perceived Social Support, PANSS = Positive and Negative Syndrome Scale, Q-LES-Q = Quality of Life Enjoyment and Satisfaction Questionnaire, RSES = Rosenberg Self-Esteem Scale, TBDI = Talbieh Brief Distress Inventory.

and schizoaffective/mood disorder patients, the schizophrenic patients were significantly more dissatisfied with social relationships ($p < .01$) and medication ($p < .05$) than their affectively impaired counterparts. Given that the schizoaffective/mood disorder group (N = 49) is about one third the size of the schizophrenia group (N = 161), the effect of sample size on the findings was tested. When 49 gender/age-matched pairs from both groups were compared, the only additional difference that emerged was lower satisfaction with subjective feelings in the schizophrenics as compared with the schizoaffective/mood disorder patients (mean ± SD score = 45.3 ± 14.1 vs. 51.5 ± 13.4; $t = 2.2$, $p < .05$). Additional comparisons between patients with manic (N = 24) and depressive (N = 25) types of the schizoaffective/mood disorders were made. The former exceeded the latter on the mean Perceived QOL index (3.79 ± 0.7 vs. 3.34 ± 0.9; $t = 3.4$, $p < .05$), and those subjects were more satisfied with leisure time activities (23.4 ± 4.5 vs. 18.6 ± 7.2; $t = 4.8$, $p < .01$) and social relationships (43.0 ± 9.4 vs. 38.7 ± 10.4; $t = 4.3$, $p < .01$).

Predictors of QOL

We used multiple regression analysis with stepwise backward selection, removing statistically insignificant variables, to determine a parsimonious set of factors predicting a perceived QOL index and 5 of the QOL domains (dependent variables) from 47 characteristics (independent variables). As a result, 6 distinct reduced models were obtained for each patient group (Table 3).

For the schizophrenia group, we found 6 predictors of poor QOL (depression, somatization, anergia, activation, drug-induced abnormal involuntary movements, and emotion-focused coping behaviors) and 4 predictors of good QOL (task- and avoidance-oriented [social diversion] coping styles, perceived social support from family, and perceived social support from significant others). For the schizoaffective/mood disorder group, the predictive model included 3 negative (obsessiveness, severity of illness, and expressed emotion) and 2 positive (self-efficacy, and insight for illness and treatment) predictors of life quality. Predictors of poor QOL accounted for 45% and predictors of good QOL for 48% of the total variance in Q-LES-Q scores.

Between-group comparisons of patterns predicting satisfaction/dissatisfaction with distinct QOL domains were made. Intergroup differences for predictors having maximum contribution to each specific domain of life satisfaction are presented below.

Physical health. Different components of psychological distress contributed to perception of poorer physical health in each group. For schizophrenia patients, these components included depressive and somatic symptoms, and for their schizoaffective/mood disorder counterparts, anxious and obsessive symptoms. Self-efficacy was a main predictor of better physical health for both groups.

Subjective feelings. For schizophrenic patients, depression was a main predictor of dissatisfaction in this domain. Psychological distress and abnormal movements predicted poor QOL in their affectively disturbed counterparts. Correspondingly, task-focused coping, support from others (schizophrenic patients), and feelings of self-efficacy (schizoaffective/mood disorder patients) promoted satisfaction in this domain.

Leisure time activities. Social diversion along with total social support predicted satisfaction with this domain for the schizophrenia group, and the intrusiveness dimension of the EES predicted satisfaction for the schizoaffective/mood disorder group.

Social relationships. Again, social diversion in tandem with total social support in schizophrenics, and feelings of self-efficacy and use of task-oriented coping in schizoaffective/mood disorder patients, accounted for satisfaction with interpersonal relationships. Correspondingly, the intensity of generalized psychological distress (schizophrenic patients), anergia, and interpersonal sensitivity (schizoaffective/mood disorder patients) predicted dissatisfaction in this domain.

General activities. Symptoms of depression and somatization predicted low satisfaction and enjoyment of general activities for patients with schizophrenia, and obsessive symptoms were predictive in this regard in affectively disturbed patients. Avoidance coping combined with total social support explained greater satisfaction and enjoyment in general activities in the schizophrenic group and feelings of self-efficacy in their schizoaffective/mood disorder counterparts.

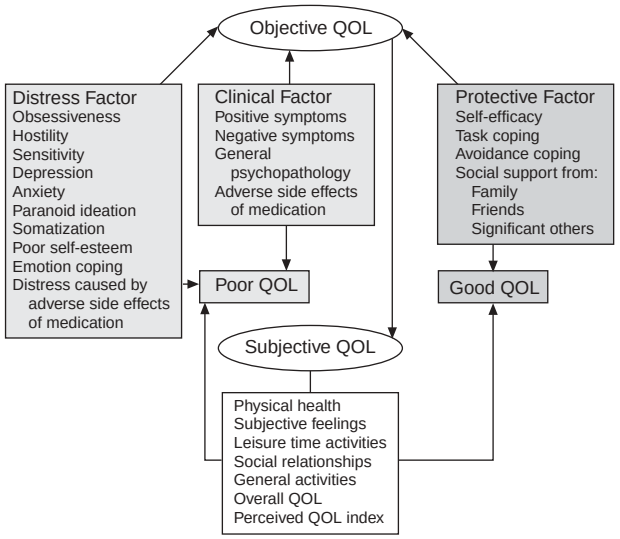
Model of Factors Associated With QOL

To identify the main factors associated with the Perceived QOL index, we made an exploratory factor analysis for the entire sample. Of the 47 initial variables, 15 (the total scores of each measure) were removed to avoid augmenting scores. Variables with an absolute loading greater than the amount set in the minimum loading option (> 0.4) were selected. Three factors were identified on the highest eigenvalues (5.51, 4.50, and 2.18, respectively). The first was constructed with Perceived QOL index (–0.52), symptoms of psychological distress (0.54 to 0.77) and depression (0.42), as well as emotion coping (0.65), self-esteem (–0.58), and distress from drug-induced adverse symptoms (0.53). The second factor was constructed with a Perceived QOL index (–0.59), task coping (–0.71), and avoidance coping (–0.92) styles; self-efficacy (–0.53); and all sources of social support (–0.44 to –0.48). Finally, the third factor included positive, negative, and common psychopathologic symptoms (0.71, 0.47, and 0.75, respectively) and drug adverse symptoms (0.40). Accordingly, the first was labeled a distress factor, the second a resource-protection factor, and the third a clinical factor. Correspondingly, the factors accounted for 43.3%, 35.4%, and 17.1% of the total variance among the 32 measures (Figure 1).

DISCUSSION

The results presented here are consistent with data of previous research[1,59,60] reporting that patients with severe mental disorder are less satisfied with all aspects of their life than members of the general population. Similarly, like in some studies,[19,20] we did not find considerable differences in overall levels of QOL between the schizo-

Figure 1. A Distress/Proctection Model of Opposing Forces Influencing Quality of Life (QOL) Levels in Patients With Severe Mental Disorders



phrenic and schizoaffective/mood disturbed patients, although schizophrenics demonstrated lower satisfaction with some particular life domains (interpersonal relationships, subjective feelings, and medication). As expected, manic patients surpassed depressed patients on global QOL rates. However, this superiority was due not to total satisfaction with all life domains (as predicted theoretically) but only with leisure time activities and social relationships. Despite the similarity in levels and partial similarity in structure of QOL among patients belonging to different diagnostic categories, determinants of their life satisfaction differed considerably. Each diagnostic group had a specific makeup of QOL predictors, but for both groups, self-related and socially related variables contributed substantially more to this prediction when compared with disease-associated factors.

Regarding particular determinants of life quality, our findings support those investigations that reported negative symptoms and tardive dyskinesia to be inversely correlated with QOL.[9,13] The symptoms of psychological distress (depression and somatization in schizophrenic patients and obsessiveness in schizoaffective/mood disorder patients) were of primary importance when predicting poor QOL. Unlike previous studies[61,62] that reported that increased insight for illness was correlated negatively with subjective QOL, in this study, insight did not predict QOL domains in schizophrenic patients. However, consistent with Browne and colleagues' study,[9] insight into the nature of the illness appeared to be a good predictor for a better QOL in our nonschizophrenic patients.

The most striking findings concern the relationship of psychosocial factors with perceived QOL. In particular, self-efficacy is believed to mediate the patient's coping efforts.[63] Self-efficacy and more-frequent use of task-focused coping behavior are most highly associated with overall life quality and its specific domains in severe mental disorder patients. Likewise, the self-efficacy construct was the strongest predictor of life satisfaction among patients with schizoaffective/mood disorders. Task-oriented coping and perceived social support from family and significant others accounted for a better QOL in schizophrenic patients.

Our findings concerning a significant association of the psychosocial factors with QOL in patients with severe mental disorders are congruent with Macdonald and colleagues' data[64] concerning patients with early psychosis who experienced less stress if they had greater feelings of self-efficacy and perceived social support and used more problem-focused coping strategies. This coincidence in results of the 2 independent studies strongly suggests that the link between self-related constructs and personal resources with subjective well-being evaluations is independent of the stage of the illness.

Results of factor analysis supported a 3-factorial model (a distress/protection model) of QOL for patients with severe mental disorders. The first factor was interpreted as a distress factor, since it included nearly all the psychological distress symptoms and the distress caused by drugs' adverse symptoms (positive loadings). It also included emotion-focused coping, self-esteem, and QOL (with negative loading for the latter 2). Hence, in the distress factor, poor QOL is associated with self-reported symptoms of psychological distress and depression, poor self-esteem, and emotion-focused coping behavior. The second factor included almost exclusively self-related constructs, personal and social resources that are believed to protect a patient from external and internal stresses; it was therefore considered a protective factor. This factor incorporates QOL, feelings of self-efficacy, all coping styles except for emotional coping, and all sources of social support. Loadings in this factor were all negative. The third (clinical) factor included psychopathologic symptoms and adverse symptoms of drugs. All loadings in this factor were positive.

QOL was included in both the distress and protective factors, suggesting it has a meaningful relation to both psychological distress symptoms and self- and social re-

sources. Distress from symptoms was included in both the clinical factor and the psychological distress factor. These findings are interesting, since they may reflect underlying qualities: while the distress factor and the protective factor are based mainly on subjective measures, the clinical factor is based mainly on objective ones. By definition, the inclusion of QOL in both of the subjective factors represents its subjective construct.

The distress/protection model differs from other reported models[32–36] in the greater number of factors involved and in the way these factors influence the various QOL domains.

The present study has some methodological limitations: the relatively small sample size of the patients with schizoaffective and mood disorders and the absence of controlling for pharmacologic and psychological interventions, as well as for stressful life events and daily hassles. These problems seem to result from the fact that the SMLS-QOL is still in an early stage. These limitations will hopefully be resolved as the study progresses. The primary strength of our study is that the data come from a systematically ascertained sample from various hospital settings and include severe mental disorder patients, who were comprehensively evaluated by a wide battery of multidimensional assessment instruments for disorder-related, self-related, and socially related variables.

In summary, the findings of this study suggest obvious clinical implications for improving QOL of patients hospitalized with severe mental disorders. We must focus not only on simple reduction of symptomatology and/or enhancing levels of functioning, but also on the patient's subjective well-being and needs. Rehabilitation and intervention should be directed toward promoting feelings of self-efficacy, perceived social support, and use of task-oriented coping strategies. The presented distress/protection model of life quality may offer a useful theoretical framework for designing psychosocial interventions.

Prospective systematic studies of QOL determinants and their interplay may be useful, since the findings of this study indicate that the degrees of association vary, at least in part, upon diagnosis and probably upon self-constructs and psychosocial variables as well. We will direct our future research toward further understanding the unique and combined effects of these variables on QOL in severe mental disorder patients and toward empirically establishing a distress/protection model of QOL.

Disclosure of off-label usage: The authors have determined that, to the best of their knowledge, no investigational information about pharmaceutical agents has been presented in this article that is outside U.S. Food and Drug Administration–approved labeling.

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1. Schizophrenic patients are less satisfied than patients suffering from schizoaffective and mood disorders with the following quality of life (QOL) domain:
a. Social relationships
b. Leisure time activities
c. Physical health
d. Work

2. The percentage of the total variance in the QOL scores of patients with severe mental disorders accounted for by poor QOL predictors is:
a. 60%
b. 45%
c. 15%
d. 29%

3. Poor QOL in schizophrenic patients is *not* associated with:
a. Negative symptoms
b. Tardive dyskinesia
c. Physical health
d. Friend support

4. Task-oriented and avoidance-oriented (social diversion) coping styles along with perceived social support from family and significant others predict a good QOL for patients suffering from:
a. Schizophrenia
b. Schizoaffective disorder
c. Major depression
d. Bipolar disorder

5. The percentage of the total variance in the QOL scores in patients with severe mental disorders accounted for by good QOL predictors is:
a. 55%
b. 28%
c. 48%
d. 19%

6. Schizophrenic patients are less satisfied than schizoaffective and mood disorder patients with the following QOL domain:
a. Work
b. Medication
c. Leisure time activities
d. Physical health

7. Which of the following factors predicts satisfaction with the social relationships domain for patients with schizophrenia?
a. Self-efficacy and task-oriented coping
b. Expressed emotion and insight
c. Self-esteem and emotion coping
d. Social diversion coping and total social support

8. Self-efficacy and insight for illness and treatment are predictors of a good QOL for patients with:
a. Schizophrenia
b. Schizoaffective disorder
c. Major depression
d. Bipolar disorder

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