

QUALITY OF LIFE IN PATIENTS WITH BIPOLAR DISORDER – A COMPARISON WITH SCHIZOPHRENIC PATIENTS AND HEALTHY CONTROLS

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SUMMARY

Background: In the past, the first goal of bipolar disorder treatment was the reduction of symptoms of mania or depression, rather than the recovery of social functioning. Recently, as a result of an increased emphasis on patient needs, the concept of quality of life (QoL) has been brought into the treatment of physical illnesses.

Subjects and methods: The purpose of the present study was to examine QoL data in patients with bipolar disorder in clinical remission and to determine the extent of the effects of demographic and clinical data on QoL in these patients. The second aim was to compare the QoL data of these patients to that of patients with schizophrenia in clinical remission and to that of healthy controls.

Data were obtained using a QoL questionnaire (Quality of Life Enjoyment and Satisfaction Questionnaire, or Q-LES-Q) for 41 bipolar patients in clinical remission. The data were then compared with the data of 40 schizophrenic patients in clinical remission and with 40 healthy controls.

Results: There were higher mean scores in most Q-LES-Q summary scales in the bipolar patients than in the schizophrenic patients. There were higher mean scores in the bipolar patients in some summary scales than in the healthy controls.

Conclusions: Our results suggest the same or higher subjective QoL in bipolar patients in clinical remission in comparison with healthy controls and higher subjective QoL in bipolar patients in clinical remission than in schizophrenic patients in clinical remission.

Key words: quality of life - bipolar disorder – schizophrenia – remission - controls

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INTRODUCTION

In the past, the first goal of bipolar disorder treatment was the reduction of symptoms of mania or depression (Rosa et al. 2009), rather than the recovery of social functioning. Recently, as a result of an emphasis on patient needs, the concept of quality of life (QoL) has been brought into the treatment of physical illnesses. The focus of treatment has therefore shifted from alleviating symptoms to improving the patient's satisfaction with QoL and social activities. Because of this trend, attempts to evaluate the effects of treatment using QoL as an indicator have been made in the field of clinical psychiatry, including treatments and rehabilitation for bipolar disorder and schizophrenia (Michalak et al. 2005). QoL is considered to be important in research on treatment outcome for bipolar disorders and schizophrenia.

The basic concept of QoL emphasizes the patient's subjective appraisal of their own satisfaction. Self-evaluations by people with psychiatric disorders were previously thought to lack reliability because of the presence of psychopathological symptoms and poor awareness of the disease (Browne et al. 1996). Hence

many trials have used objective QoL evaluations, such as the Quality of Life Scale (QLS), (Heinrichs et al, 1984) which rely on interviews with psychiatrists or other trained interviewers. Lehman (1983a, b) demonstrated that QoL data from patients with chronic mental illness were reliable and concluded that subjective QoL evaluation was applicable for such patients.

The Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q) (Endicott 1993) for the subjective assessment of QoL has been used in bipolar patients in various clinical and research contexts (Ozer et al. 2002, Perlis et al. 2004, Revicki et al. 2003, Ritsner et al. 2002). In a report that is particularly important from a clinical standpoint, Chand et al. (2004) compared the Q-LES-Q results of 50 stabilized bipolar patients, 20 stabilized schizophrenic patients, and 20 healthy controls. As expected, the bipolar patients and the healthy controls had higher Q-LES-Q scores than the schizophrenic patients. Somewhat unexpectedly, the bipolar patients also had numerically higher values than the healthy controls. This work was done in India. We decided to attempt a replication and extension of these results in Czech subjects.

SUBJECTS AND METHODS

Subjects were outpatients diagnosed with bipolar disorder or with schizophrenia according to ICD-10 Diagnostic Criteria for Research (1996). The subjects all gave their written consent to participate in the research. Patients fulfilling both of the following criteria were enrolled in the study: (a) presence of lifetime bipolar or schizophrenic disorder, (b) in clinical remission (on the Clinical Global Impression – Severity scale at 1 or 2) at the time of the study. Demographic data, including age, sex, age at disorder onset, disorder duration, number of psychiatric hospital admissions, and number of manic and depressive episodes were obtained in an interview.

Evaluation of psychopathological symptoms

Patients were recruited from the outpatient department of the Department of Psychiatry of Olomouc University Hospital. The ICD research criteria for bipolar disorder or schizophrenia (ICD-10, 1996) in remission were administered by trained psychiatrists. All patients had been hospitalized for bipolar disorder or schizophrenia in their history. The diagnosis of lifetime bipolar disorder or schizophrenia was confirmed by patient documentation and a clinical interview. At the time of evaluation, all the patients were confirmed by an experienced psychiatrist to be in clinical remission, on the Clinical Global Impression – Severity (CGI-S) scale at 1 or 2. The diagnosis was confirmed with the M.I.N.I. (MINI-International Neuropsychiatric Interview; Sheehan et al, 1998), as evaluated by an experienced psychiatrist. After the psychiatrist's evaluation, the patients filled in the self-administered demographic questionnaires and Q-LES-Q.

Subjective QoL evaluation

The Quality of Life Satisfaction and Enjoyment Questionnaire (Q-LES-Q) has 93 questions divided into 8 domains, answered mainly as a five-point Likert-type scale. It is usually self-administered, or possibly with the help of an investigator (Ritsner et al, 2005). Q-LES-Q is useful for assessing life satisfaction and enjoyment in schizophrenic patients and schizoaffective and mood disorder patients (Endicott et al. 1993). The questionnaire takes from 20 to 40 minutes to complete, according to the health status of the patient. The domains of physical health, feelings, leisure, social relations, and overview of the quality of life are all completed by the patient; the domains of work, home, and school are completed only where relevant (Müllerova et al. 2001).

Statistical analysis

Demographic and baseline clinical characteristics were analyzed using column statistics. The normal distribution of the demographic and QoL variables was determined by the Shapiro-Wilk W test. The differences

among the patients with bipolar disorder or schizophrenia and the healthy controls were analyzed using one-way ANOVA (for comparison of all three groups) with Tukey's multiple comparison test, and unpaired t-tests (to compare differences between pairs of diagnostic groups). For the analysis of categorical data, we used the χ^2 test or Fisher's exact test. The relationships between variables with a normal distribution were calculated using the Pearson correlation analysis, while Spearman's rank correlation was used for variables with non-normal distribution. STATISTICA version 8.0 was used, and the level of significance was set at 5%.

RESULTS

Demographic data

Forty-one patients with bipolar disorder in clinical remission between the ages of 23 and 70 years (58.5% females; mean age 45.17 ± 14.52) were included in the study. The basic clinical characteristics of the patients were: mean disorder duration 12.29 ± 8.29 years, mean age at disorder onset 32.66 ± 9.45 years, mean number of previous manic episodes 2.49 ± 1.90 , mean number of previous depressive episodes 2.73 ± 1.73 , mean number of hospitalizations 2.39 ± 2.36 , mean actual remission duration 1.51 ± 2.15 years. All of the patients used psychotropic medication: mood stabilizers ($n=34$; mean defined daily dosage of mood stabilizers were 0.94 ± 0.45); antipsychotics ($n=30$; mean defined daily dosage of antipsychotics were 0.97 ± 0.56); antidepressants ($n=20$; mean defined daily dosage of antidepressant was 1.06 ± 0.60). Some also used benzodiazepines ($n=15$; mean defined daily dosage of benzodiazepines was 0.68 ± 0.53). Doses of drugs were converted to defined daily doses using data provided by the Czech State Institute for Drug Control (SÚKL 2010).

The data of the bipolar patients were compared with the data of the schizophrenic patients and the healthy controls from our previous study (Sidlova et al. 2010). Forty schizophrenic patients between 21 and 60 years of age (55% females; mean age 37.55 ± 10.81 years) from the outpatient department of the Department of Psychiatry were included in the previous study. All used psychotropic medication: mood stabilizers, antidepressants, and antipsychotics. Forty healthy controls (47.5% females) without any lifetime psychiatric diagnosis were recruited through a local advertisement. The controls were aged between 21 and 59 years (mean age 37.43 ± 10.96 years). There were statistically significant differences for age, employment, marital status, and education level among the bipolar patients, schizophrenic patients, and healthy controls, but not for gender or number of children. The bipolar patients were statistically significantly older than the schizophrenic patients and the healthy controls. More bipolar patients had attained a higher level of education than the schizophrenic patients, but lower than the healthy

controls. More bipolar patients were married than the schizophrenic patients. More bipolar patients were single (never married) or divorced than the healthy controls. There were also significant differences in employment status: more healthy controls were employed in comparison with both groups of patients.

Quality of life

Differences between the bipolar patient group and the other two groups were seen in several Q-LES-Q domains (see Table 1):

- *Physical health*: There were highly statistically significant differences between groups in this domain. The bipolar patients felt healthier than the schizophrenic patients. There was no difference between the bipolar patients and the healthy controls.
- *Subjective feelings*: According to the scores in this domain, the bipolar patients felt the same as the healthy controls, and much better than the schizophrenic patients.
- *Work*: In this domain, the bipolar patients felt more satisfied than both the schizophrenic patients and the healthy controls. It is important to note that only 36.6% of the bipolar patients and 42.5% of the schizophrenic patients were employed, compared to 80% of the healthy controls (χ^2 ; $p < 0.0001$). When we compare only the employed subjects in this domain, the bipolar patients felt the quality of their work life was better than the healthy controls did.
- *School*: None of the bipolar patients was attending school.

- *Household duties*: The bipolar patients felt significantly better in this domain than the schizophrenic patients or the healthy controls.
- *Leisure activities*: There were significantly higher scores in this domain in the bipolar patients than in the schizophrenic patients. There were no differences between the bipolar patients and the healthy controls.
- *Social activities*: The bipolar patients felt better in this domain than the schizophrenic patients, but not better than the healthy controls.
- *General life quality*: In the general life quality domain, there were significant differences between the bipolar patients and the schizophrenic patients, but not between the bipolar patients and the healthy controls.

There were also statistically significant different total scores of Q-LES-Q between the bipolar patients and the schizophrenic patients, but not between the bipolar patients and the healthy controls.

Relationships between demographic data and quality of life

Age

The correlation matrix of the scores for each of the Q-LES-Q domains and *age* in all subjects (both the patient groups and the healthy controls) showed a positive age correlation only with the household duties domain (Pearson $r = 0.2506$; $p < 0.05$). Other Q-LES-Q domains did not correlate with age. The correlation matrix of the scores for each of the Q-LES-Q domains and age in the bipolar patients did not show a correlation

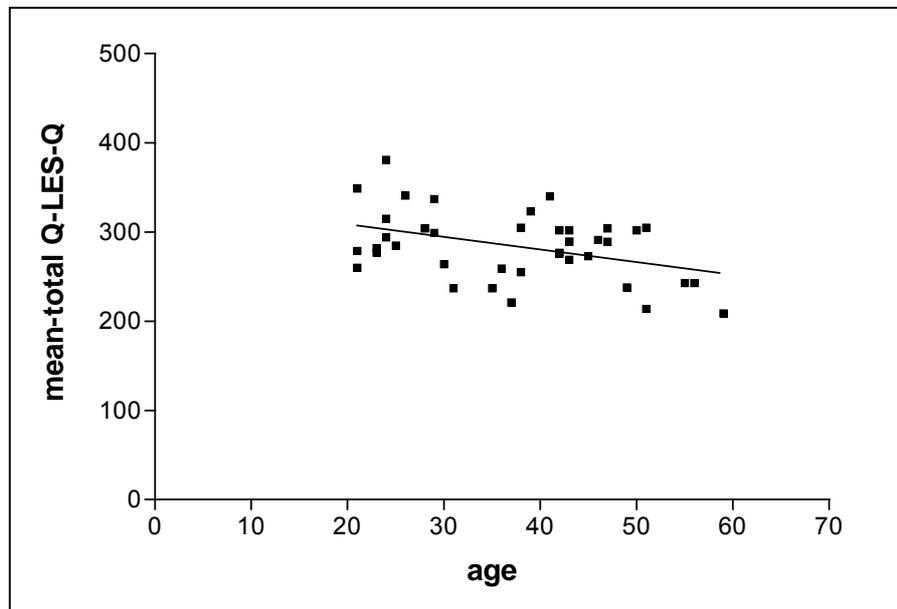
Table 1. Quality of life

Quality of life domains	Bipolar disorder (N=41) Means \pm SD	Schizophrenia ^a (n=40) Means \pm SD	Controls (n=40) Means \pm SD	One-way ANOVA: BiD x Sch x Con	Statistic		
					Tukey's multiple comparison test BiD x Sch	BiD x Con	Sch x Con
Physical health	47.8 \pm 9.0	35.5 \pm 11.4	43.5 \pm 6.5	F=15.65, df=120; p < 0.0001	p < 0.001	ns	p < 0.001
Feelings	50.1 \pm 8.5	40.6 \pm 8.8	48.9 \pm 8.2	F=14.8, df=120; p < 0.0001	p < 0.001	ns	p < 0.001
Work	56.6 \pm 5.4 (n=15)	43.1 \pm 12.1 (n=17)	47.5 \pm 7.4 (n=32)	F=10.24, df=62; p < 0.0001	p < 0.001	ns	p < 0.001
Household	43.5 \pm 4.7 (n=37)	29.8 \pm 8.0 (n=23)	33.0 \pm 7.9 (n=35)	F=34.81, df=94; p < 0.0001	p < 0.001	ns	p < 0.001
School/study	- (n=0)	29.9 \pm 1.4 (n=2)	31.4 \pm 3.6 (n=7)	-	-	-	-
Leisure	25.5 \pm 3.8	22.1 \pm 6.5	25.1 \pm 4.4	F=5.636, df=120; p < 0.005	p < 0.001	ns	p < 0.001
Social activities	41.6 \pm 8.5	36.2 \pm 12.8	39.8 \pm 7.6	F=3.114, df=120; p < 0.05	p < 0.05	ns	ns
General	56.9 \pm 7.0	44.5 \pm 12.5	54.3 \pm 7.9	F=19.4, df=120; p < 0.0001	p < 0.001	ns	p < 0.001
Total	281.8 \pm 43.2	216.7 \pm 69.7	284.0 \pm 37.8	F=21.64, df=120; p < 0.0001	p < 0.001	ns	p < 0.001

BiD - bipolar disorder; Sch - schizophrenia; Con - controls; SD - standard deviation; ns - nonsignificant

in any of the domains. The correlation matrix of the scores for each of the Q-LES-Q domains and age in the schizophrenic patients did not show a correlation in any of the domains. The correlation matrix of the scores for each of the Q-LES-Q domains and age in the healthy controls showed a negative correlation with three domains: leisure time (Pearson $r = -0.3675$; $p < 0.05$), social activity (Pearson $r = -0.3758$; $p < 0.05$), and general

life quality (Pearson $r = -0.3973$; $p < 0.05$). There was also a strong negative correlation between age and the total Q-LES-Q score in the healthy controls (Pearson $r = -0.4098$; $p < 0.01$). Linear regression analysis suggested that subjective total QoL score decreased with age in the healthy control group (see Figure 1) ($p < 0.01$) but not in either of the patient groups.



Q-LES-Q = Quality of Life Satisfaction and Enjoyment

Figure 1. Linear regression between age and total Q-LES-Q score in controls

Gender

There were no statistically significant differences in *gender* in the Q-LES-Q domains in either patient group. There was a statistically significant difference in the household duties domain between males and females in the healthy control group, with a greater satisfaction score in females. A separate comparison of the patient groups according to gender revealed some differences. There were significantly higher mean scores in all of the Q-LES-Q domains in male bipolar patients than in schizophrenic patients. The household duties domain was the only domain with a significant difference between the bipolar patients and the healthy controls. Among females, there were significantly higher mean scores in the bipolar patients than in schizophrenic patients in four domains: physical health, subjective feelings, work, and general life quality. There were no differences between the bipolar female patients and the healthy female controls in any domains.

Employment status

The comparisons of Q-LES-Q domains in the employed and unemployed bipolar patients show a statistically significant difference between these subgroups only in the general life quality domain. The comparisons of employed and unemployed schizophrenic patients show statistically significant differences in three domains: physical health, subjective

feelings, and general life quality. The comparisons of employed and unemployed healthy controls show no statistically significant differences in any domain.

The comparison between diagnostic groups of *employed subjects* using one-way ANOVA showed statistically significant differences between groups in four domains: subjective feelings, work, household duties, and general life quality. In a post test (Tukey's multiple comparison test) to separately compare the diagnostic groups, there were differences between the bipolar patients and the healthy controls in three domains: work, household duties, and general life quality. There were differences between the bipolar patients and the schizophrenic patients in five domains: physical health, subjective feelings, work, household duties, and general life quality.

The comparison between diagnostic groups of *unemployed subjects* showed statistically significant differences between the groups in six domains: physical health, subjective feelings, household duties, leisure activities, social activities, and general life quality. Tukey's multiple comparison test revealed differences between the bipolar patients and the healthy controls only in the household duties domain; between the bipolar patients and the schizophrenic patients, there were differences in five domains: physical health, subjective feelings, leisure activities, social activities, and general life quality.

Medication

When we calculated the influence of medication on the Q-LES-Q domains, there was no correlation between mood stabilizers, antipsychotics, or benzodiazepines at any dosage on any Q-LES-Q domain.

A positive correlation was found between the dosage of antidepressants and two domains: subjective feelings and general life quality. The Q-LES-Q scores compared according to medication type are presented in Table 2.

Table 2. Correlations between medical dosage and Q-LES-Q domains

Type of Medication		Physical Health	Feelings	Work	Household Duties	Leisure Activities	Social Activities	General Life Quality	TOTAL
mood stabilisers	Pearson r	-0.126	-0.09953	-0.03101 (n=12)	0.01709	0.04576	-0.04009	0.01912	-0.03279
n = 35	p value	0.4707	0.5694	0.9238	0.926	0.7941	0.8192	0.9132	0.8517
antipsychotics	Pearson r	-0.1593	-0.1235	-0.2669 (n=12)	-0.2909	-0.1063	-0.3106	-0.05154	-0.1059
n = 28	p value	0.3838	0.5005	0.4017	0.1332	0.5627	0.0835	0.7794	0.564
antidepressants	Pearson r	0.5307	0.6006	0.8066 (n=19)	0.06176	0.2989	0.01458	0.2195	0.5617
n = 19	p value	0.0194*	0.0065**	0.0991	0.8077	0.2139	0.9528	0.3667	0.0123*
benzodiazepines	Pearson r	0.2422	0.1578	Not applicable (n=0)	0.4785	0.2703	0.3611	0.1391	0.3629
n = 15	p value	0.2422	0.1578	-	0.4785	0.2703	0.3611	0.1391	0.3629

* p < 0.05; ** p < 0.01

DISCUSSION

There were higher mean QoL scores in most Q-LES-Q domains in the bipolar patients than in the schizophrenic patients, and in some domains there were higher scores for the bipolar patients than for the healthy controls. These results replicate, in an ethnically different population, those reported by Chand et al (2004). The results comparing the bipolar patients with the healthy controls are of particular interest, because fewer of the bipolar patients were employed than the healthy controls. We can speculate that the higher Q-LES-Q scores can be explained psychologically by a higher satisfaction in remission and the fact of having a job despite a serious disorder for the 15 employed bipolar patients, or the fact of having social insurance benefits without the stress of unemployment and with a lot of free time in the other 26 patients. The healthy unemployed controls are under stress from looking for a job. Another possibility is that the bipolar patients in remission have a higher level of dissociation, and therefore they can see their lives better than healthy controls. This possibility is in correspondence with the data of our previous study, which showed a significantly higher level of dissociation in remitted bipolar patients than in healthy controls (Latalova et al. 2010). Further studies with a higher number of patients could resolve these speculations. Furthermore, such studies could address the effects on Q-LES-Q of subthreshold depressive symptoms (Ozer et al. 2002, Ritsner 2002), time of illness onset (Perlis et al. 2004), life events

(Chand et al. 2004, Perlis et al. 2004), and other clinical factors.

The present study had several limitations. The subjective self-rating measurements of QoL were used with unknown reliability in this population. QoL in our study was measured with the Q-LES-Q, which is not a QoL questionnaire specific to bipolar disorder or schizophrenia.

CONCLUSION

Our results suggest that the subjective quality of life in patients with bipolar disorder in clinical remission is the same as or higher than that of healthy controls, and that the subjective quality of life in bipolar patients in clinical remission is higher than that of schizophrenic patients in clinical remission.

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