ORIGINAL REPORT

Quality of Life in Patients with Bipolar I Disorder: Is It Related to Disorder Outcome?

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Abstract- Bipolar I disorder (BID) and its treatments have shown to be associated with deep impacts on patients' subjective feelings and quality of life (QOL). There are also some comments about impact of these feelings on course and outcome of patients with BID. This study was aimed to evaluate quality of life in patients with BID and to assess its relationship with course of disorder. Fifty patients with BID were recruited based on the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) from May 2008 and followed for 12 months. Quality of life and mood disorder recurrence were assessed through World Health Organization Quality of Life and SCID-I tools respectively at baseline and after 6 and 12 months. Repeated measures analysis and logistic regression were used to analyze the independent effect of QOL and demographic factors on BID recurrence. Fifty patients (66% male; 48% never married; 48% in primary school level) with mean ± SE age and age of BID onset 33.8±1.5 and 26.6±1.1 years were studied. They had 3.4±0.6 episodes already. Twenty eight percent suffered from recurrences during the follow-up. The QOL scores at baseline, after 6 and 12 months were 70±1.8, 69.6±1.1 and 73±1.3 respectively. There were no significant change in QOL and its sub-domains during the follow-up (P=0.37). QOL showed no independent relationship with BID recurrences (P>0.1). No change in the QOL during the follow-up could denote lack of effectiveness of routine interventions on this factor. Also, short-term follow-up might be concerned as the possible reason. Of prime importance is to consider quality of life independently in treating patients with bipolar disorder.

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Keywords: BDPF; Bipolar I Disorder; Quality of life; Recurrence

Introduction

Quality of life (QOL) sometimes referred as alternative health outcome instead of mortality or morbidity is defined as subjective well-being and functional status of patients (1). QOL on psychiatric patients generally refers to functioning level that perceived by patients (2). QOL affects patients probably even more than morbidity in chronic conditions such as diabetes, hypertension and obviously mental disorders such as bipolar mood disorders (1,3). There are debates regarding quality of life in bipolar disorder (BD) as subjective feelings and judgment of subjects are affected by disorder toward falsified status considered in course of disorder by physicians. BD by its nature has a chronic course of remitting relapsing episodes of mania and depression and tends to deteriorate mental and cognitive functions of patients through the disorder course. The disorder affects deeply the function and feelings of subjects and in this way would have negative impacts on quality of life. Considering that subjects with bipolar mood disorder spend most of their life in depressed mood rather than euthymic or manic episodes (4,5), emphasizes the importance of quality of life as treatment

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goal in management of these patients.

Bipolar disorder is a prevalent psychiatric disorder; the life time prevalence for bipolar I disorder (BID) was reported between 0-2.4% and for full bipolar spectrum between 2.6-7.8% (6,7). The disorder has chronic course, recurrent mood episodes, and high rate of mortality especially due to suicide as well as function loss and cognitive impairment that produce significant burden to patients' family, society and health systems (8).

Management of BD traditionally was area of interest for researchers and psychiatrists and along with introducing new medications, social supports systems and psychotherapies to achieve better disease outcome, there are efforts also to setup new treatment goals in addition to episode remission and prevention of relapse such as level of functioning, and among them QOL. QOL can be assumed as a product of subjective report of patients from their condition about social, physical and mental functioning. But regarding BD it was always questioned if QOL could be affected by impaired judgment that may sometimes seen in patients or if it could affect outcome of disorder in terms of remission and relapse (9-12).

This study was designed to address the relationship between QOL and outcome of bipolar disorder in a cohort of patients in Iran.

Materials and Methods

This study was conducted as a part of (13) in patients with BID hospitalized in Iran Hospital of Psychiatry (Tehran, Iran). The detailed project methods are presented and published earlier (13).

Setting

The project is prospective cohort of patients with BID that were admitted in Iran Hospital of Psychiatry. The hospital is located in Tehran, Iran and as a referral center for psychiatric disorders in the country serves all psychiatric patients who need admission.

Subjects

The subjects were recruited from admitted patients in the hospital from May 2008 that met inclusion criteria for the study. The sequential sampling method of all eligible subjects was used. The inclusion criteria are: being 18 years old or older, being able to communicate in official language of study (Persian) with research team, being able to participate in follow-up visits so living in Tehran, Karaj and suburbs, having the diagnosis of BID by a board certified psychiatrist according to the Diagnostic and Statistical Manual of Mental Disorders, Forth Edition-Text Revision (DSM-IV-TR)(14) and also confirmed diagnosis of BID based on the Structured Clinical Interview for DSM-IV axis I disorders (SCID-I)(15) performed by a trained resident of psychiatry, having at least one telephone line as well as one cell phone to facilitate the contact and giving informed written consent. The subjects also needed being not mentally retarded or having any other permanent cognitive decline. The detailed process of sampling and subjects enrollment have been published elsewhere (13). The Persian clinical version of the SCID-I has been standardized for the Iranian population (16).

50 patients were enrolled to the study and were assigned to residents of psychiatry as co-researchers and each resident carries out all measurements on her/his probands and follows them up. The residents invite the probands to continue their treatment with coming to the outpatient clinic of the hospital in a regular basis and refer to the follower physician. Whenever the patients' attendance at the outpatient clinic of the hospital would not be possible on the scheduled date, a home visit is planned. If the patient or her/his family does not allow for a home visit, a telephone follow-up will be the final way.

The probands are evaluated at the beginning of the study and 6 months and 12 months after enrollment.

Main measurements

The main outcome measured in the study was relapse/recurrence of the disorder after remission of last mood episode defined as new depressive or manic episode based on the DSM-IV-TR criteria measured through the SCID-I.

The World Health Organization Quality of Life (WHOQOL)-BREF were used for assessment of QOL (17). This is a self-report questionnaire with 26 items including four domains that are used to assess the patients' quality of life. Each item is scored from 0 to 5. Its Persian version has been provided on behalf of the World Health Organization. A favorable reliability for the Persian version has been reported on an Iranian clinical sample (18).

The questionnaire measures QOL in four domains: domain 1, physical health; domain 2, psychological; domain 3, social relationships and domain 4, environment. Each domain independently assesses facets relevant to each domain as follows: Physical health: Activities of daily living, Dependence on

medicinal substances and medical aids, Energy and fatigue, Mobility, Pain and discomfort, Sleep and rest, and Work capacity; Psychological: Bodily image and appearance, Negative feelings, Positive feelings, Self-esteem, Spirituality, Religion, Personal beliefs, Thinking, learning, memory and concentration; Social relationships: Personal relationships, Social support, and Sexual activity; Environment: Financial resources, Freedom, physical safety and security, Health and social care accessibility and quality, Home environment, Opportunities for acquiring new information and skills, Participation in and opportunities for recreation / leisure activities, Physical environment (pollution, noise, traffic, climate), and Transport (17).

Analysis

We used SPSS 16.0 for windows (SPSS Inc., Chicago, Ill.) for data analysis and repeated measures analysis was used to test hypothesis for relationship between variations in QOL during study and patients outcome. The significance level was assumed less than 0.05. Cronbach's alpha was calculated for reliability assessment of aforementioned QOL inventory.

Results

Fifty patients with BID were enrolled. During study two subjects lost to follow-up at 2nd and 6th months respectively. The mean (± SE) age were 33.9±1.5 and thirty three (66%) were male. Subjects reported having 3.4±0.6 previous episodes of admission due to BID and one form six of them reported history of receiving electroconvulsive treatment in their previous admissions.

Baseline demographic data about age of onset, duration of illness, marital status and education level of subjects were presented in table 1. During the period of 12 month of follow-up fourteen (28%) patients were diagnosed as having BID episodes relapse; eleven (22%) in month 6 and five (10%) in month 12, while two (4%) subjects had criteria for relapse in both month 6 and 12.

Correlation tests showed significant relationship between admission numbers and QOL domain 3 score at 6th month (Pearson correlation r=0.47, $P<0.01$). YMRS scores also showed correlation with QOL scores in all domains and totally (Pearson correlation r=0.67, $P<0.001$) but not in follow-up tests.

Table 1. Demographic data of subject with BID and their QOL scores** during 12 month follow-up.

	Total (N=50)	Subjects with relapse (N=14)	Subjects without relapse (N=36)	*P*-value
Age, years; mean ± SE	33.8 ± 1.47	33.93 ± 1.07	33.81 ± 1.69	0.98†
Age of onset, years; mean ± SE	26.6 ± 1.13	25.23 ± 2.59	27.14 ± 1.24	0.51†
Illness duration, years; mean ± SE	7.37 ± 1.04	9.62 ± 2.21	6.54 ± 1.16	0.23†
Gender				
Male; n (%)	33 (66%)	4 (28.6%)	13 (36.1%)	0.61 ‡
Female; n (%)	17 (34%)	10 (71.4%)	23 (63.9%)	
Marital status				
Never married; n (%)	24 (48%)	7 (50%)	17 (48.6%)	0.94‡
Widow, divorced; n (%)	7 (14%)	2 (14.3%)	5 (14.3%)	
Married; n (%)	18 (36%)	5 (35.7%)	13 (37.2%)	
Education level				
Basic, elementary; n (%)	24 (48%)	7 (50%)	17 (48.6%)	0.68 ‡
High school; n (%)	8 (16%)	3 (21.4%)	5 (14.3%)	
Diploma; n (%)	14 (28%)	3 (21.4%)	11 (31.4%)	
College/university; n (%)	3 (6%)	1 (7.1%)	2 (5.8%)	
N of previous episodes; mean ± SE	3.36 ± 0.56	3.8 ± 1.0	3.2 ± 0.7	0.63§
N of ECT*; mean ± SE	0.16 ± 0.09	0.9 ± 0.9	0.00 ± 0.00	0.013§
QOL** score at baseline; mean ± SE	70.0 ± 1.76	67.6 ± 3.8	70.9 ± 1.9	0.39§
QOL score at month 6; mean ± SE	69.57 ± 1.06	48.4 ± 1.8	70.1 ± 1.3	0.47§
QOL score at month 12; mean ± SE	73.0 ± 1.28	70.0 ± 1.9	74.7 ± 1.6	0.13§

†. Students t test; ‡Fisher's exact test; §Mann-Whitney U test; *Electroconvulsive therapy, **Quality of life According to WHOQOL

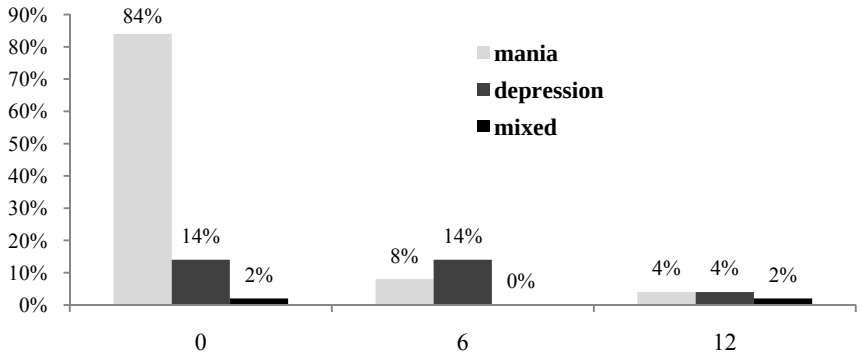
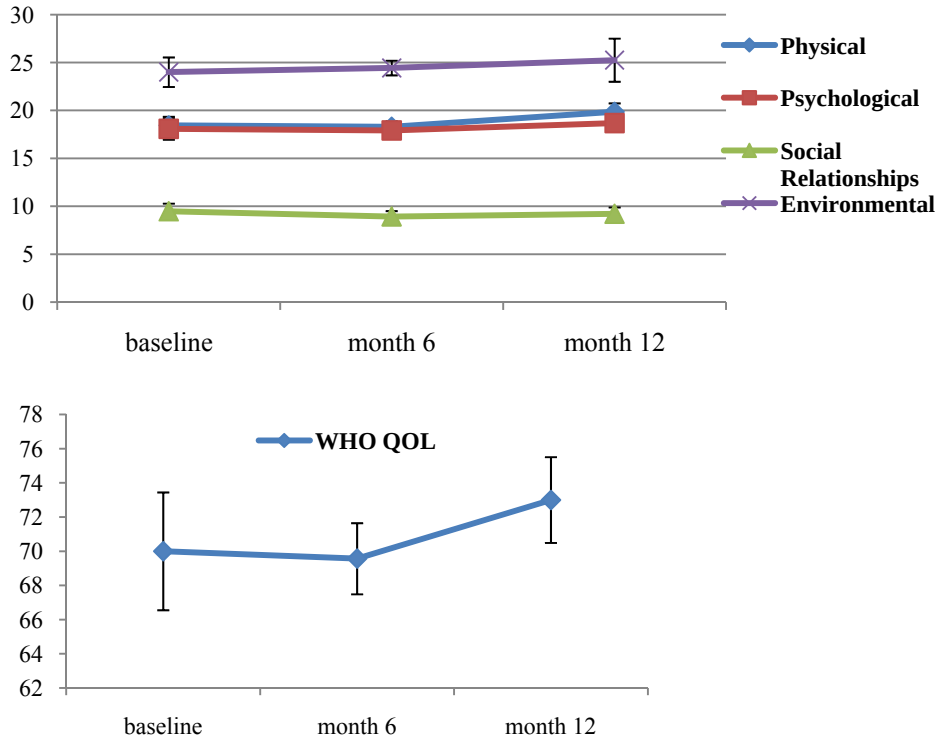


Figure 1. Frequency of episodes type of subjects with BID at baseline and at follow-up visits.

There were also a positive correlation between HDRS-7 score at baseline and QOL domain 3 score at the same time (Pearson correlation r=0.33, $P<0.05$). There were no significant correlation between YRMS, HDRS-7 and SAPS scores at baseline and in follow-up and QOL measures in sub domains and generally in all measured intervals (in all tests $P>0.05$). There were also no significant correlation between age, age at onset and duration of illness and QOL measures at baseline and follow-up intervals (in all tests $P>0.05$).

QOL scores showed no significance variations during study time (repeated measures, $P=0.377$, Table 2, Figure 2) on all subjects as well as in subjects with or without relapses, so there was no significant relationship between relapse of BID and QOL scores in 12 months of follow-up period (Table 1) Repeated measures analysis showed no significant independent relationship between age at onset, duration of illness, gender, admission numbers and relapse and changes of QOL measures in consecutive assessments but patients with the onset of illness by major depressive episode showed significant increase in QOL measures in domain 2 and total scores but not other domains scores. Other types of onset episodes (mania and unknown) showed no significant changes during follow-up (repeated measures, $P<0.05$). (Figure 3)

The results of reliability assessment for WHO-QOL-BREF questionnaire Farsi translate that we used in this study were 81.1% and for domains 1, 2, 3 and 4 were 79.9%, 53.8%, 57.3% and 64.1% respectively.



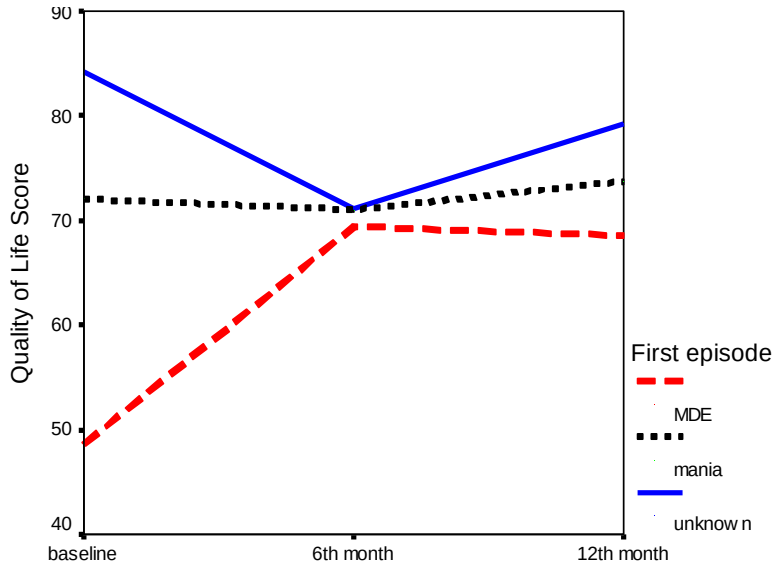
(mean values and 95% confidence intervals, Repeated Measures test, $P=0.377$).

Figure 2. Variations in QOL scores at baseline and follow-up visits.

Table 2. Total and domain scores of QOL* at baseline and during follow-up of subjects with BID.

	Baseline	Month 6	Month 12
Domain1	18.44 ± 0.46	18.30 ± 0.30	19.86 ± 0.45
Domain2	18.08 ± 0.58	17.91 ± 0.39	18.68 ± 0.42
Domain3	9.48 ± 0.41	8.93 ± 0.29	9.21 ± 0.34
Domain4	24.00 ± 0.79	24.43 ± 0.39	25.25 ± 1.15
Total	70.00 ± 1.76	69.57 ± 1.06	73.00 ± 1.28

Numbers denote mean ± SE; ✶: Quality of life According to WHOQOL



MDE: Major depressive episode

Figure 3. Estimated marginal means of quality of life scores in consecutive follow-up measures in patients with bipolar I disorder according to onset episode type.

Discussion

QOL is one of potential alternative goal in management of patients with bipolar disorder (19) so in this study we assessed possible relationship between relapse of BID and QOL reported by patients. There are increasing interest in studies of QOL in BD (20-22) while the results are to somewhat complex and controversial. The controversies both in the relationship and of implications of QOL in management and assessment of subjects with BD have led to minimal application of QOL in them (23).

In this study, we followed fifty patients with BD for one year and while detecting relapse of BD in 28% of subjects there were no significant decline in QOL measures during follow-up period.

There are several reports showing decreased QOL in BD (24,25) even if patients were in remission or euthymic mood status (9,26).

The impact of mood status in the subjective reported QOL measures have not showed clearly. There are reports on negative impact of depressive mood episodes on QOL scores (24,27,28). The depressive symptoms rather than hypo/mania were most consistently reported as predictor and determinant of QOL in BD (28).

BD is determined by mood episode(s) and impacts on patients' educational, vocational and financial function, and other areas such as feelings, social and intimate relationships. In addition, there are impairments in areas of judgments and insight to their condition, so subjective measures such as QOL that needs real time assessment of the subjective status by probands may lead to complex relationship between BD and QOL as seen in some reports (29-31). This relationship is a result of interactive processes between mood status and judgment to self-condition and subjective feeling about QOL in the other hand and it seems that interpreting the studies on QOL and BD needs considering this complex

interactive relationship to achieve reliable data. Mood episodes, depression and mania as well as mixed episodes, may interfere with subjective reports of QOL (9,20). In this study, the severity of mood and psychosis symptoms as measured by YMRS, HDRS-7 and SAPS were not correlated with QOL measures; higher baseline mania symptoms were positively correlated with QOL scores in all domains. This may explained by the interference between mood episodes and QOL, however the relationship were not the case in further follow-up assessments of BD patients in our study.

Poor insight was reported to have negative effects on physical QOL (9) and adverse effects of medication were negatively related with QOL especially in physical and environmental domains (9,32,33). The negative impact of insight and adverse effects of medication on QOL of patients need to be considered in clinical practice and research projects.

Several interventions have been proposed to promote QOL and function in BD such as psychotherapy and psychoeducation (34,35). Targeting adherence to treatment also would be an option to improve QOL in BD (36).

Although we found no relationship between relapse of BID and QOL in this study, there are reports of effects of mood episodes in BD on functioning of the subjects(37). In our study 22% of subjects had relapse at month 6 (14% depression, 8% mania) and 14% at month 12 (8% depression, 4% mania, and 2% mixed episodes) but there were no decrements in QOL score in them as well as in subjects without relapse. This may in somewhat related to few episodes (mean: 3.4 episodes) and short duration of illness (mean: 7.4 years) in this study so the effects of BD on QOL got no prominent yet. There is also possible that intensive follow-up programs such as what was done in BDPF project may have impact on QOL in BD patients by preventing and decreasing relapses and also improvements in adherence or therapeutic relationships and so prevents decline in QOL in BD patients.

Different instruments have been used in studies such as Quality of life, Medical Outcomes Study 36-Item Short Form (SF-36), SF-12, Quality of Life Enjoyment and Satisfaction (QLESQ), Quality of Life Enjoyment and Satisfaction Questionnaire [Q-LES-Q(SF), the Quality of Life in Depression Scale (QLDS), as well as WHOQOL-BREF we used in this study and this also made it difficult reach comprehensive interpretations from these studies (38-40).

To summarize, there are complex finding about QOL in BD, inconsistent finding about implication of QOL in prediction of function in BD over the course of illness and wide variety of tool used to measure QOL in BD in addition to growing need for using new outcome measures in management of BD especially interactive measures using patients value and reports.

That our study found no change in the QOL during the follow-up, could denote lack of effectiveness of routine interventions on this factor; nevertheless short-term follow-up might be concerned as the possible reason. As several studies mentioned before emphasized the decline in QOL measures in BD, our findings of no change in QOL measure in one year follow-up of fifty BD patients may to somewhat indicate the possible role of follow-up programs in preventing decrease in QOL in BD patients. It is also could indicate that comprehensive therapeutic programs that include intensive follow-up of BD patients may have impacts on relapse prevention and QOL by different routs so the independence of relapse and QOL that we found in this study could be rationalized. These are speculations in this regard that needs further research in larger sample of patients that followed longer periods to be generalized.

Of prime importance is to consider quality of life independently in treating patients with BD. Meanwhile we believe that QOL needs comprehensive and independent clinical attention in management of patients with BD.

We also suggest further studies especially for development of a disease-specific measure of QOL for patients with BD may result in more specific and reliable data.

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