

Quality of Life In Major Depressive Disorder: A Cross-Sectional Study

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Abstract

Objective: To investigate quality of life and its association with depression in patients with major depressive disorder.

Method: The study included 74 patients diagnosed with major depressive disorder according to DSM-IV. The Hamilton Depression Rating Scale (HAM-D) was used to assess the severity of depression; and the, Medical Outcomes Study Short Form-36 (MOS SF-36) and EuroQol 5-D (EQ-5D) were used to measure quality of life.

Results: In the assessment of quality of life, it was determined that Patients with major depressive disorder scored significantly lower on all domains of MOS SF-36 compared to Turkish normative data. The depressive disorder patients had lower EQ-5D health utility index scores, in comparison to Turkish normative data. There was a significant negative correlation between mean HAM-D score and all domains of MOS SF-36 and EQ-5D health utility index scores. When quality of life in depressive patients was compared according to episode type, patients with recurrent type major depressive disorder had lower quality of life in terms of physical functioning, general health perception, and physical component summary score than patients with single episode type major depressive disorder.

Conclusion: All domains of quality of life were lower in patients with major depressive disorder and quality of life decreased as severity of depression increased. Physical health perception was impaired to a greater degree in patients with recurrent major depressive disorder when compared with single episode depressive patients.

Key Words: Major depressive disorder, quality of life, MOS SF-36, EQ-5D

INTRODUCTION

Quality of life is a measure of personal satisfaction with adaptation to the conditions of life and is affected by an individual's responses to the physical, psychological, and social effects of disease (Eser, 2006). In fact, quality of life is briefly described as perceived health. In this regard quality of life is not a concept specific to any disease, but it is a multi-dimensional concept for exploring the effects of disease on patients' lives. With the increasing number of treatment alternatives and achievements in the treatment of diseases, patients have to live with their chronic diseases longer; therefore, disease-related pathophysiological parameters are inadequate and parameters beyond these need to be measured (Aydemir,

2006). In addition to the mortality, morbidity and disability caused by the diseases, perceived quality of life is being assessed.

Disability caused by the disease is measured by calculating quality adjusted life years (QALY) as a method of health-utility analyses. It brings the opportunity to take the illness experience of the patient into consideration and compare it with his/her good times. Health-utility provides indicators based on health economics and reflects the preferences of the patients in relation with the perceived illness.

Major depressive disorder is a relatively prevalent disorder having significant effects on quality of life (Papak-

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TABLE 1. Demographic and clinical features of the patients.

Age (years)	Mean: 39.6 ± 13.5	
Gender	n	%
Male	27	36.5
Female	47	63.5
Education	n	%
Primary school	20	27.4
High school	27	36.3
University	27	36.3
HAM-D*	mean: 23.5 ± 6.6	
Depression type	n	%
Single episode	50	67.6
Recurrent	24	32.4
Duration of illness (years)	mean: 3.3 ± 5.1	
Duration of last episode (months)	mean: 4.8 ± 6.3	
Number of episodes	mean: 3.0 ± 1.7	

*Hamilton Depression Rating Scale.

ostas et al., 2004). Unipolar depression is currently the leading cause of disability in developed countries, and the fourth leading cause of disability worldwide (Murray and Lopez 1997a). Projections estimate that Major Depressive Disorder (MDD) will rise to be the second leading cause of disability worldwide by the year 2020 (Murray and Lopez 1997b). Major depressive disorder is worse than many chronic medical diseases with its negative effect on quality of life (Hays et al. 1995). In addition, quality of life in major depressive disorder is negatively correlated with the severity of the depression (Lepine et al., 1997). Furthermore, it is reported in a Brazilian study that even in subsyndromal depression the quality of life is impaired (da Silva Lima and de Almeida Fleck, 2007). Moreover, the impairment in quality of life may persist even after the remission of depression (Ormel et al., 1993).

It is a topic of interest how major depressive disorder affects the daily life of the patients and to what extent it changes the perceived health. However, there is lack of comprehensive studies in this field in our country. There is one comparative study on major depressive disorder carried out in Ankara and Berlin to evaluate the effect of migration on patients with major depressive disorder (Iren Akbiyik et al., 2008). The results of the study indicate that the factors which affect the quality of life in major depressive disorder are marital status, duration of marriage, number of occupants per household, religious attitude, information about the illness, initial help seeking behavior, and levels of symptoms. However, quality of life in Turkish patients with depression, the affected domains and its association with clinical features are waiting to be studied. How major depressive disorder is experienced

and perceived by the patients in our culture is crucial to better understand how major depressive disorder changes the health perception of the patients. Since there is not such a study until now, it is aimed to cover this area.

In this study, it is aimed to evaluate quality of life in patients with major depressive disorder and its association with clinical depressive features.

METHOD

The study was carried out with patients attending Ankara Oncology Training Hospital, Kirikkale State Hospital, and Celal Bayar University Hospital.

Subjects

Inclusion criteria were being at the age between 18-65 years, having a diagnosis of major depressive disorder according to DSM-IV criteria, having competency sufficient to comply with study protocol. The exclusion criteria of the study are having any other psychiatric disorder other than major depressive disorder, having any comorbid physical or neurological disease requiring treatment and having any long-term treatment. The study was approved by the local ethical committee of every study centre and all patients were asked to give written informed consent.

Instruments

In the assessment of severity of depression, 17-item Hamilton Depression Rating Scale (HAM-D) was applied to the patients and the reliability and validity study of the Turkish version was performed by Akdemir et al. (1996). Before starting the study, all the study members from the three centers had a meeting but did not have any practice in terms of inter-rater reliability.

In the evaluation, Medical Outcomes Study Short Form-36 (SF-36) which is the most popular instrument), which is the most preferred instrument in measuring quality of life, was used. SF-36 was developed by Ware and Sherbourne (1992) and the reliability and validity study of the Turkish version was performed by Kocyigit et al. (1999). It is a self-rated instrument consisting of 36 items which provides assessment in 8 domains: physical functioning, social functioning, role limitations due to emotional problems (role – emotional), role limitations due to physical problems (role – physical), bodily pain, vitality, mental health, and general health perception. The score ranges between 0-100, and higher score represents better quality of life. The norm values of SF-36 for the Turkish population were studied by Demiral et al. (2006).

TABLE 2. Domains of patient quality of life.

	Depression n = 74	Population norms	t	p
SF-36* Physical functioning	48.4 ± 10.0	86.6 ± 25.2	-2.64	0.010
SF-36 Role difficulties – physical	42.4 ± 13.2	89.5 ± 29.6	-6.98	< 0.0001
SF-36 Bodily pain	48.5 ± 11.3	86.1 ± 20.6	-6.25	< 0.0001
SF-36 General health perception	37.1 ± 13.3	73.9 ± 17.5	-9.40	< 0.0001
SF-36 Vitality	34.3 ± 8.9	67.0 ± 13.8	-19.66	< 0.0001
SF-36 Social functioning	22.6 ± 10.6	73.5 ± 11.6	-17.84	< 0.0001
SF-36 Role difficulties – emotional	33.5 ± 13.3	94.7 ± 20.9	-12.98	< 0.0001
SF-36 Mental health	31.6 ± 11.1	94.8 ± 14.2	-21.19	< 0.0001
SF-36 Physical component summary	51.9 ± 11.6	52.6 ± 8.8	-0.50	0.615
SF-36 Psychic component summary	22.6 ± 11.5	51.7 ± 5.6	-21.59	< 0.0001
EQ-5D** Health-utility index	0.4±0.3	0.8±0.1	-12.69	< 0.0001
EQ-5D Visual analogue scale	38.2 ± 22.3			
EQ-5D	No difficulty	Moderate difficulty	Extreme difficulty	
Mobility	71.6%	27.0%	1.4%	
Self-care	83.8%	14.9%	1.4%	
Usual activities	35.1%	40.5%	24.3%	
Pain/discomfort	56.8%	37.8%	5.4%	
Anxiety/depression	1.3%	36.5%	62.2%	

*Short Form-36

**Euro-QOL-5D

In the measurement of health-utility, Euro-QOL 5-D (EQ-5D) was used. EQ-5D is a self-rated scale and it assesses five domains with five items. These five domains are mobility, self-care, usual activities, pain/discomfort and anxiety/depression. “Mobility” provides an assessment in the range from walking without any difficulty to being confined to bed; “self-care” provides an assessment in the range from routine daily self-care without any difficulty to not being able to wash and dress himself/herself; “usual activities” provides an assessment in the range from performing usual activities without any difficulty to not being able to perform any activity; “pain” provides an assessment in the range from no pain to extreme pain and discomfort; and “anxiety/depression” provides an assessment in the range from feeling well to extreme feelings of anxiety or depression. Every item of the scale has a three-point Likert type rating. Beside the ratings of the domains, a health-utility index score can also be calculated. In addition there is a visual analog scale containing a measure between 0 and 100 ranging from “the worst health condition imagined” to “the best health condition imagined”. The EQ-5D is developed by the EuroQOL Study Group. The reliability and validity study of the Turkish version and the establishment study for the Turkish norm values were performed by Eser et al. (2007). In this present study in the calculation and interpretation of the EQ-5D index score York Tariff was used.

Statistical Analysis

In the statistical analysis of the data, for the comparison of the scores of the quality of life measures with the Turkish population norm scores, one sample T Test was used. For the comparison of the study subgroup in terms of variables such as gender, depression episode type, T Test was performed. Correlation of the severity of depression (HAM-D) with quality of life scores (SF-36 and EQ-5D domains) was performed with Pearson Correlation Test.

RESULTS

Demographic and Clinical Features

Seventy five patients fulfilling inclusion and exclusion criteria were invited to the study, but since one patient had some missing data in the study scales, the study was carried out with 74 patients. Twenty five patients were recruited in the Ankara Oncology Training and Research Hospital, 25 patients were recruited in the Kirikkale State Hospital, and 24 patients were recruited in the Celal Bayar University Hospital. The demographic and clinical features of the patients were shown in Table 1. The mean age of the patients was 39.6 ± 13.5 and 47 (63.5%) patients were female and 27 (36.5%) were male.

The mean HAM-D score was found to be 23.5 ± 6.6 . Fifty (67.6%) patients had single episode and 24

TABLE 3. Correlation coefficients between severity of depression and quality of life domains.

	EQ-5D Index	Physical functioning	Role difficulties physical	Pain	General health perception	Vitality	Social functioning	Role difficulties emotional	Mental health
HAM-D*	-0.77 ¹	-0.41 ¹	-0.51 ¹	-0.53 ¹	-0.59 ¹	-0.79 ¹	-0.70 ¹	-0.59 ¹	-0.78 ¹
EQ-5D **		0.47 ¹	0.56 ¹	0.61 ¹	0.57 ¹	0.76 ¹	0.71 ¹	0.63 ¹	0.76 ¹

¹P < 0.0001. *Hamilton Depression Rating Scale. **Euro-QOL-5.

(32.4%) had recurrent depression. The duration of illness was 3.3 ± 5.1 years (ranging between 1-34 years). The number of episodes in patients with recurrent major depressive disorder was 3.0 ± 1.7 (ranging between 2-8). The duration of the last episode was 4.8 ± 6.3 months (ranging between 1-48 months).

Quality of life measures

Mean scores of the patients in the domains of SF-36 and Turkish population norm data were shown in Table 2. The patients had the highest mean score (79.2 ± 23.9) in physical function, and the lowest mean score (23.9 ± 18.8) in vitality. When compared with Turkish population norm data, all domains of SF-36 showed significantly lower mean scores in patients with major depressive disorder. However, the physical component summary score was not statistically different when compared with the population norm data.

The domain scores of EQ-5D were shown in Table 2. In EQ-5D, 71.6% of the patients showed no difficulties in mobility, 83.8% in self-care, 35.1% in usual activities, 56.8% in pain, and 1.4% in anxiety/depression. The health utility index of EQ-5D was calculated to be 0.4 ± 0.3 with a range between -0.35-1.00. While two (2.7%) patients had negative scores, two (2.7%) other patients had a full score of 1. When compared with the Turkish population norm data, it is significantly lower. In EQ-5D the mean score of VAS was 38.2 ± 22.3 .

Correlation of severity of depression with quality of life measures

In the correlation of severity of depression with the domains of quality of life (Table 3), moderate correlation (between -0.41 and -0.59) was found between HAM-D total score and mean scores of the physical domains of SF-36. On the other hand, HAM-D score had a moderate to good correlation (between -0.59 and -0.79) with the mean scores of the mental domains of SF-36. EQ-5D health utility index showed good correlation with HAM-D score ($r = -0.77$). Also, EQ-5D VAS score showed a good correlation with HAM-D score ($r = -0.76$).

Comparison of quality of life measures in terms of gender and episode type of depression

The patients with a single episode ($n = 50$) had a better quality of life in physical domains than the patients with recurrent depression ($n = 24$) (Table 4). Patients with recurrent depression had significantly worse quality of life in physical functioning ($t = 3.74$, $P < 0.0001$), general health perception ($t = 2.76$, $P = 0.005$) and physical component summary score ($t = 3.03$, $P = 0.003$) than the patients with a single episode.

When gender was taken into consideration, female patients ($n = 47$) had worse quality of life in all physical domains than male patients ($n = 27$) (Table 4). In female patients, physical functioning ($t = -3.41$, $P = 0.001$), pain ($t = -3.07$, $P = 0.003$), general health perception ($t = -2.66$, $P = 0.010$) and physical component summary score ($t = -3.21$, $P = 0.002$) were significantly worse than in male patients.

When the duration of the last episode was taken into consideration, no domain of quality of life was statistically different. In the correlation between the quality of life domains and the number of episodes in patients with recurrent depression, only pain domains of both SF-36 ($r = -0.684$, $P = 0.020$) and EQ-5D ($r = 0.706$, $P = 0.023$) were significantly correlated.

DISCUSSION

In this study quality of life in patients with major depressive disorder is evaluated and quality of life is significantly low in patients with major depressive disorder when compared with the general population. Major depressive disorder is a disease which affects patient's daily life significantly (Ozyuksel and Ulug, 2007) and which therefore impairs quality of life and health perception (Papakostas et al., 2004). Quality of life and health utility in major depressive disorder are not well studied before in our country, and in this study, the relation between quality of life and depression is tried to be evaluated.

Quality of life in major depressive disorder

When compared with the Turkish population norm

TABLE 4. Comparison of quality of life measures in terms of gender and type of depression episode.

	EQ-5D* Index	Physical functioning	Role difficulties physical	Pain	General health perception	Vitality	Social functioning	Role difficulties emotional	Mental health	Physical component summary	Psychic component summary
Episode type	0.45±0.29	85.9±18.6	55.5±46.0	67.9±25.1	49.0±25.8	25.0±18.3	41.5±26.7	31.3±41.7	25.4±17.8	54.6±10.6	21.4±11.7
Single	0.41±0.31	65.4±27.9 ³	42.7±48.6	64.4±29.5	29.5±18.3 ²	21.6±19.9	41.1±24.0	30.5±43.8	30.5±20.6	46.2±11.8 ²	25.0±11.0
Recurrent											
Gender	0.4±0.3	73.2±26.0	47.8±46.8	60.0±25.5 ²	36.2±25.0 ¹	20.7±14.9	39.8±25.6	28.3±41.1	28.2±18.1	48.8±11.8 ²	23.0±11.1
Female	0.5±0.3	89.6±15.2 ²	57.4±47.4	78.6±24.3	53.9±31.1	29.4±23.4	43.9±26.2	35.8±44.2	25.0±20.2	57.3±9.1	21.8±12.5
Male											

¹P < 0.05; ²P < 0.01; ³P < 0.0001.

*Euro-Qol-5D.

data, quality of life in major depressive disorder is impaired in all domains. The diagnostic criteria for major depressive disorder indicate the impairment in both psychic and social domains as well (American Psychiatric Association 1994). In this study, it is also found that functioning in both psychological and social domains is impaired in depressive patients and that patients have emotional role difficulties.

Saarijavi et al. (2002) suggest that there is impairment in perceived health and therefore in quality of life in patients with depression. It is not surprising that major depressive disorder cause impairment in mental health, social functioning, emotional role difficulties and vitality, and that patients report the negative impact of this impairment in their daily life. In other words, it is crucial for the diagnosis of depression that the symptoms of depressive patients cause significant distress. Patients perceive and experience problems caused by their negative affectivity in their daily life. Patients report that they experience distress and impairment both in social and occupational functioning due to the emotional problems caused by depression. In addition, disability due to fatigue or weakness also disturbs patients. However, impairment in physical functioning and emotional role difficulties caused by major depressive disorder point out how challenging the major depressive disorder is (Saarijarvi et al., 2002). Patients perceive and experience impairment in their physical well-being and therefore disability in their daily life. In a study performed in primary health care, physical well-being of patients with major depressive disorder was more impaired than the patients with asthma, hypertension, gastrointestinal problems or migraine (Wells and Sherbourne 1999). Major depressive disorder causes impairment in physical domain, which can be comparable with many physical diseases. On the other hand, the association of pain and depression is a well-studied field because of its etiological closeness (Breslau et al., 2000; Wingenfeld et al., 2007)

and similarities in symptomatology (Lipton et al., 2000; Wolfe et al., 1995). When all of these evidences are put together, physical functioning of patients with major depressive disorder should not be neglected since patients perceive their health negatively in these domains. The impairment in perceived health in every aspect of their life in patients due to their depression explains how these patients are withdrawn from their daily life and how they lose their occupational functioning (Saarijarvi et al. 2002).

Health utility in major depressive disorder is studied for the first time in our country. In almost all patients, moderate to severe disturbances in anxiety/depression domain were found. This is an expected finding and it was previously reported in other studies (Sapin et al., 2004). Another affected domain in health utility is usual activities. Almost 2/3 of the patients reports moderate to severe disturbances in usual activities. In a study carried out by Sapin et al. (2004), it is found in 3/4 of the patients. However, in our work the prevalence of severe disturbances in usual activities is higher. This finding points out that depression can significantly impair functioning of patients in daily life. The domain of pain/discomfort was more impaired in the study done by Sapin et al. (2004) when compared with our findings. This result suggests that physical domain is also disturbed in depressive patients in Western culture. When health-utility index is taken into consideration, the score of patients with major depressive disorder (0.4) is much lower than the population norm score (0.8). It is very close to the score (0.33) found by Sapin et al. (2004). This is evidence that perceived health in depressive patients is very low. Moreover, negative score was calculated in two patients (2.7%) in our study suggesting that patients experience depression as worse than death. Sapin et al. (2004) found negative score in 8% of their sample. In our study, since most of the patients have their first episode, health-utility index score is not that much low.

Correlation of severity of depression with quality of life domains

In this study, there was significantly negative correlation between HAM-D score and scores of SF-36 domains and EQ-5D health-utility index. In other words, in major depressive disorder, as the depression is more severe the perception of quality of life is more impaired and quality of life is lower. The psychic domains of quality of life have higher correlation with the severity of depression, whereas physical domains have moderate correlation. Saarijarvi et al. (2002) also found similar results. As depression gets more severe, not only the symptoms worsen, but health perception of the patients also gets more impaired. The physical, psychological and social aspects of the patients' daily life are all affected. In severe depression, it is suggested that to manage the patient with a holistic biopsychosocial approach is the need of the physician as well as the need of the patient.

Comparison of quality of life measures in terms of gender and episode type of depression

In this study, there is a significant difference in patients with a single episode when compared with patients with recurrent depression in terms of physical domains. If the patients have recurrent depression, they have not only psychic disturbance, but also physical impairment, and the patients feel themselves worse physically. In patients with recurrent depression, as the number of episodes increases, pain domain of quality of life gets more impaired. It is noteworthy to mention that none of the patients had comorbid physical disease and that there was no difference in terms of age between the patients with a single episode (38.9 ± 14.4) and the patients with recurrent depression (41.0 ± 11.4). Skarsater et al. (2006) report that depressive patients with a single episode have better perception of quality of life in physical domains but lower scores in social and mental domains. They also report that quality of life in physical domains do not change during the follow-up. In other words, in the first episode of depression, the physical health perception of the patients is more positive and as the depression recurs, it gets more impaired. In a study on quality of life in major depressive disorder carried out in the Netherlands (NEMESIS), Kruijschaar et al. (2003) report that the episode type of depression is not a specifier in the impairment of quality of life, but the severity of depression is the factor to affect quality of life. Therefore, as the depression gets more severe, quality of life is more impaired. In this study, even though in terms of depression severity (HAM-D score) there is not any significant

difference between the depressive patients with a single episode (22.6 ± 6.3) and the patients with recurrent depression (25.4 ± 6.8), it is very close to statistical significance ($p=0.08$). This finding may explain the difference of quality of life scores between the depressive patients with a single episode type and with recurrent type in our study. However, because of the impaired or distorted perception of a recurrent/chronic illness in our culture (Kara Kasikci and Alberto, 2007), impaired health perception and negative perception of physical functioning may occur independent of depression severity. To clarify this issue, new studies are needed.

When gender is taken into consideration, female patients have a worse quality of life than male patients in terms of physical domains. In fact, both in the studies for calculating Turkish population norm values of the two scales (Demiral et al. 2006, Eser et al. 2007) and in the previous studies on quality of life in major depressive disorder with the same scales (Saarijarvi et al. 2002, Skarsater et al. 2006), no effect of gender on quality of life was reported. In this study, in the evaluation the effect of gender on quality of life, it is remarkable that female patients (38.3%) had more recurrent depression when compared with male patients (22.2%) and that the severity of depression was higher in female patients (24.0 ± 7.2) than in the male patients (22.5 ± 5.4). The difference in quality of life according to gender seems to not to be caused by the gender itself, but by the clinical features of depression in female patients. To clarify this issue, controlled studies with greater sample size are needed.

The limitations and advantages of the study

The cross-sectional nature of this study is the first limitation. The change of the data in a longitudinal follow-up study will be helpful in the understanding and interpretation of the findings. Therefore, longitudinal studies with the same methodology should be performed. In addition, the sample size makes the generalization of the results difficult since subgroup analyses are performed with relatively small sample size. To overcome this limitation, studies with greater sample size are needed.

To carry out the study in three different cities in three different institution types is the advantage of the study. Therefore the patients are more acceptable to represent the general practice. In this study, to have two different types of measures representing two different aspects of quality of life enriches the study. Another advantage of the study is to have the population norm values in the comparison analyses instead of a control group.

CONCLUSION

As a result of this study, all domains of quality of life in major depressive disorder are found to be impaired. In other words, depressive patients perceive their health negatively in all domains. As the depression is more severe, this perception gets worse. Patients with recurrent

depression have more impaired physical health perception than depressive patients with a single episode. In the management of depressive patients, negative perception of the patients in every domain of health should be taken into consideration, and if depression is recurrent or severe, especially physical health perception is more impaired.

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