

## Quality of life of patients with obsessive compulsive disorder

Fahmida Ahmed,<sup>1</sup> Meherunnessa Begum,<sup>2</sup> Md Abdul Wahab,<sup>3</sup> Sayed Kamaluddin Ahmed<sup>4</sup>

<sup>1</sup>Associate Professor, Department of Psychiatry, Ibn Sina Medical College, Dhaka, Bangladesh; <sup>2</sup>Assistant Professor, Department of Community Medicine, Ibn Sina Medical College, Dhaka, Bangladesh; <sup>3</sup>Professor, Department of Psychiatry, Monno Medical College, Manikganj, Bangladesh; <sup>4</sup>Former Head and Professor, Department of Psychiatry, Holy Family Red Crescent Medical College, Dhaka, Bangladesh.

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### Summary

Obsessive-Compulsive Disorder (OCD) is a severe and debilitating anxiety disorder which causes severely impaired quality of life. The objective of the study was to assess the quality of life of the patients suffering from OCD. It was a cross-sectional study conducted from January 2011 to June 2011 among 46 patients who attended the out-patient department of the National Institute of Mental Health Sher-E-Bangla Nagar, Dhaka, Bangladesh and Holy Family Red Crescent Medical College and Hospital, Dhaka, Bangladesh by using purposive sampling technique. A Semi-structured questionnaire, Dhaka University Obsessive Compulsive Scale (DUOCS), World Health Organization Quality of Life-Scale Brief Version (WHOQOL-BREF), Diagnostic and Statistical Manual for Mental Disorder, 4th edition (DSM-IV) were used in each case for this assessment. Results showed that mean age of the patients was (29.07±6.11) years, majority of the respondents (71.7%) were male, 63.0% were unmarried and 34.8% were students. Patients were least satisfied with social domain and patients having only obsession had lower mean score (23.54±1.80) in environmental domain than in patients having both obsession and compulsion (25.15±3.70). OCD patients having major conflict (52.2%) were least satisfied with environmental health domain and patients suffering from OCD for more than ten years (78.3%) had low score than those suffering for less than ten years (21.7%) in overall quality of life domain. Patients having strained family relationship (34.8%) were less satisfied to psychological health domain and patients getting medication (91.3%) had better quality of life in all domains than those getting no medication (8.7%).

### Correspondence

Fahmida Ahmed,  
E- mail: fahmidassmc@gmail.com  
Phone no: +8801715066640

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### Introduction

Obsessive-Compulsive Disorder (OCD) is a common psychiatric disorder, twice as prevalent as schizophrenia and bipolar disorder, and the fourth most common psychiatric disorder, occurring in 2-3% of the US population.<sup>1,2</sup> The disorder often remains untreated for years, resulting in a chronic and disabling course.<sup>3</sup> OCD is a severe and debilitating disorder manifesting with intrusive thoughts (obsessions) and repetitive behaviors (compulsions). Obsession can be violent, religious or sexual nature and manifest themselves as preoccupations with contamination, pathological doubting, concerns with symmetry and a general sense that something unpleasant or dangers will happen if a particular rituals not performed precisely. Typical compulsions include washing, cleaning, counting, checking, repeating and arranging behaviors.<sup>1,4</sup> Though most of the patients manage to keep their symptoms secret, there is often a delay of 10 years and more before patients seek professional help.<sup>1,3,5</sup>

Obsessive-compulsive disorder ranked tenth in the World Bank's and World Health Organization's 10<sup>th</sup> leading causes of disability, and in women aged 15-44 years, OCD even occupied the fifth position.<sup>6</sup> The high co-morbidity of OCD with other psychiatric disorders entailed a significant worsening of quality of life. Although OCD impacts everyday life negatively regarding academic, occupational, social and family function, until recently there were surprisingly few data on this subject.<sup>4,7</sup> Studies found that Quality Of Life (QOL) was more severely impaired in those with OCD than in the general population.<sup>8,9</sup> Furthermore, QOL of OCD patients was lower than that of their counterparts with schizophrenia.<sup>10</sup> Among out-patients with OCD, severity of depression and obsessions rather than severity of compulsions predicted interference in QOL.<sup>3,11,12</sup> The objective of the study was to assess the quality of life of patients suffering from OCD attending OPD of tertiary care hospital and to find out the relationship between socio-demographic variables, severity and nature of symptoms among the patients of OCD. There is hardly any local data available on the quality of life of patients

suffering from OCD. The findings should however also provide baseline information to stimulate further research.

### Materials and methods

This was a cross-sectional study done on 46 patients with OCD attending in the out-patient department of the National Institute of Mental Health (NIMH) and Holy Family Red Crescent Medical College and Hospital, Dhaka, from 1<sup>st</sup> January 2011 to 30<sup>th</sup> June 2011 using purposive sampling technique. Patients under treatment and follow up were only included and the age range of the patients was 18 to 55 years. The research instruments were Diagnostic and Statistical Manual for Mental Disorder 4th edition (DSM-IV), a semi-structured questionnaire containing socio-demographic variables and other relevant information, Dhaka University Obsessive-Compulsive Scale (DUOCS) for assessment of severity of symptoms, World Health Organization Quality Of Life Scale, brief version (WHOQOL-BREF) for assessing the quality of life of the patients with OCD. Face-to-face interview was done using a semi-structured interview schedule to collect socio-demographic information. Confidentiality of the patients was strictly maintained. Each respondent was assessed and the diagnosis of each case was confirmed clinically by using DSM-IV diagnostic criteria for OCD by a consultant psychiatrist. Finally, data on quality of life were evaluated with the help of WHOQOL-BREF. The researcher used the pre-tested and validated Bengali version of the instrument. Data were analyzed with the help of computer software program Statistical Package for Social Sciences (SPSS) for windows Version 12. Descriptive statistics, such as frequencies, mean values, standard deviation and student's t test were used to summarize the data.

### Results

The mean age of the patients was 29.07 ( $\pm 6.11$ ) years. Most of the patients (60.9%) were in the age range of 20 to 29 years (Table 1). The most common type of obsessive-compulsive symptom was repeated thought of dirt and contamination with repeated washing and cleaning (41.3%). Other symptoms were repeated doubt accompanied by counting and checking (30.4%), repeated anti-religious thought (10.9%), obsessional rumination (8.7%) and sexual obsession (8.7%) (Table 2). 47.8% of respondents had neither bad nor good rating of overall quality of life and 54.3% of respondents were dissatisfied on health (Table 3).

**Table 1: Age distribution of the respondents (n= 46)**

| Age in years    | Respondents |       |
|-----------------|-------------|-------|
|                 | Frequency   | %     |
| < 20            | 01          | 02.2  |
| 20-29           | 28          | 60.9  |
| 30-39           | 14          | 30.4  |
| <sup>3</sup> 40 | 03          | 06.5  |
| Total           | 46          | 100.0 |

Mean  $\pm$  SD (years): 29.07 ( $\pm 6.11$ )

**Table 2: Distribution of respondents by presentation of different symptoms (n= 46)**

| Symptoms   | Frequency | %    |
|--|-----------|------|
| Repeated thought of dirt and contamination followed by repeated washing and cleaning | 19        | 41.3 |
| Repeated doubt with counting and checking  | 14        | 30.4 |
| Repeated anti- religious thought   | 05        | 10.9 |
| Obsessional rumination   | 04        | 8.7  |
| Sexual obsession   | 04        | 8.7  |

**Table 3: Distribution of the respondents by rating of overall quality of life and satisfaction on health (n=46)**

| Rating of overall quality of life  | Frequency | %    | Mean( $\pm$ SD)    |
|------------------------------------|-----------|------|--------------------|
| Very bad                           | 01        | 02.2 | 3.15 ( $\pm 8.4$ ) |
| Bad                                | 08        | 17.4 |                    |
| Neither bad nor good               | 22        | 47.8 |                    |
| Good                               | 13        | 28.3 |                    |
| Very good                          | 02        | 04.3 |                    |
| <b>Satisfaction on health</b>      |           |      |                    |
| Very dissatisfied                  | 03        | 6.5  | 2.48 ( $\pm 8.6$ ) |
| Dissatisfied                       | 25        | 54.3 |                    |
| Neither satisfied nor dissatisfied | 12        | 26.1 |                    |
| Satisfied                          | 05        | 10.9 |                    |
| Very satisfied                     | 01        | 2.2  |                    |

The social domain was mostly affected (Table 4). The mean ( $\pm$  SD) severity of symptoms among the OCD patients was 36.74( $\pm 10.49$ ) which was in the range of moderate severity in DUOCS (Table 5). There was no significant difference in the mean score in different domains among the patients having only obsession and those having both obsession and compulsion ( $P > 0.05$ ) However, environmental health was found more affected in patients with only obsession and P value reached from 't' test (Table 6).

**Table 4: Distribution of mean score of different domain of quality of life among respondents (n=46)**

| Variables                          | Respondent Mean ( $\pm$ SD) |
|------------------------------------|-----------------------------|
| Domain I: Physical life            | 21.54 ( $\pm 2.59$ )        |
| Domain II: Psychological life      | 18.17 ( $\pm 2.72$ )        |
| Domain III: Social life            | 7.54 ( $\pm 2.17$ )         |
| Domain IV: Environmental condition | 24.70 ( $\pm 3.34$ )        |

**Table 5: Distribution of the respondents by severity of OCD symptoms presentation (n= 46)**

| Severity of OCD  | Frequency | %     |
|------------------|-----------|-------|
| Mild (up to 23)  | 05        | 10.9  |
| Moderate (24-40) | 26        | 56.5  |
| Severe (41-49)   | 09        | 19.6  |
| Profound (50-90) | 06        | 13.0  |
| Total            | 46        | 100.0 |

Mean  $\pm$  SD 36.74( $\pm 10.49$ )

**Table 6: Quality of life scale and obsession & compulsion among respondents (n= 46)**

| Variables                          | Obsession (13)     | Obsession & Compulsion (33) | p value |
|------------------------------------|--------------------|-----------------------------|---------|
|                                    | Mean ( $\pm$ SD)   | Mean ( $\pm$ SD)            |         |
| Domain I: physical life            | 21.08( $\pm$ 1.80) | 21.73( $\pm$ 2.85)          | 0.451   |
| Domain II: psychological life      | 18.23( $\pm$ 1.92) | 18.15( $\pm$ 3.01)          | 0.930   |
| Domain III: social life            | 7.54( $\pm$ 1.33)  | 7.55( $\pm$ 2.45)           | 0.992   |
| Domain IV: Environmental condition | 23.54( $\pm$ 1.80) | 25.15( $\pm$ 3.70)          | 0.143   |
| Overall QOL                        | 3.31( $\pm$ .85)   | 3.09( $\pm$ .84)            | 0.438   |

The relationship between socio-demographic characteristics and different domain in quality of life scale among the patients with OCD showed a statistically significant difference in social domain with regard to sex, and similar difference was also found in occupation and marital status. Male patients,

students and unmarried subjects were found to have significant deterioration in social domain ( $p < 0.05$ ). But the data revealed no other statistically significant difference in other socio-demographic parameters in rest of the domains. (Table 7).

**Table 7: Socio-demographic characteristics and quality of life of the respondents (n= 46)**

| Variables                       | No (%)    | Domain I           | Domain II          | Domain III        | Domain IV          | Overall QOL       |
|---------------------------------|-----------|--------------------|--------------------|-------------------|--------------------|-------------------|
| <b>Sex</b>                      |           |                    |                    |                   |                    |                   |
| Male                            | 33(71.7%) | 21.58( $\pm$ 2.78) | 18.15( $\pm$ 2.97) | 6.94( $\pm$ 2.04) | 24.88( $\pm$ 3.53) | 3.21( $\pm$ .82)  |
| Female                          | 13(28.3%) | 21.46( $\pm$ 2.14) | 18.23( $\pm$ 2.08) | 9.08( $\pm$ 1.75) | 24.23( $\pm$ 2.89) | 3.00( $\pm$ .91)  |
| p value                         |           | 0.895              | 0.930              | 0.002             | 0.560              | 0.448             |
| <b>Occupation</b>               |           |                    |                    |                   |                    |                   |
| Service                         | 08(17.4%) | 21.75( $\pm$ 1.90) | 18.38( $\pm$ 1.18) | 8.13( $\pm$ 2.23) | 23.38( $\pm$ 2.38) | 2.88( $\pm$ .64)  |
| Student                         | 16(34.8%) | 20.44( $\pm$ 2.47) | 17.38( $\pm$ 3.44) | 6.06( $\pm$ 1.38) | 24.31( $\pm$ 2.96) | 3.13( $\pm$ .61)  |
| Housewife                       | 11(24.0%) | 21.36( $\pm$ 1.91) | 18.45( $\pm$ 2.16) | 9.55( $\pm$ 1.44) | 24.27( $\pm$ 2.86) | 3.00( $\pm$ .89)  |
| Business                        | 07(15.2%) | 23.14( $\pm$ 2.61) | 19.00( $\pm$ 3.21) | 7.00( $\pm$ 2.08) | 26.57( $\pm$ 4.39) | 3.43( $\pm$ 1.13) |
| Unemployed                      | 04(8.7%)  | 23.25( $\pm$ 4.42) | 18.75( $\pm$ 2.63) | 7.75( $\pm$ 2.50) | 26.75( $\pm$ 4.99) | 3.75( $\pm$ 1.25) |
| p value                         |           | 0.110              | 0.689              | 0.001             | 0.258              | 0.417             |
| <b>Marital status</b>           |           |                    |                    |                   |                    |                   |
| Married                         | 17(37.0%) | 21.59( $\pm$ 1.66) | 18.47( $\pm$ 2.50) | 9.47( $\pm$ 1.41) | 24.12( $\pm$ 2.49) | 3.06( $\pm$ .74)  |
| Unmarried                       | 29(63.0%) | 21.52( $\pm$ 3.04) | 18.00( $\pm$ 2.87) | 6.41( $\pm$ 1.70) | 25.03( $\pm$ 3.75) | 3.21( $\pm$ .90)  |
| p value                         |           | 0.930              | 0.578              | 0.001             | 0.376              | 0.571             |
| <b>Duration of illness</b>      |           |                    |                    |                   |                    |                   |
| $\leq$ 10 year                  | 36(78.3%) | 21.64( $\pm$ 2.74) | 18.39( $\pm$ 2.85) | 7.58( $\pm$ 2.27) | 24.97( $\pm$ 3.42) | 3.28( $\pm$ .84)  |
| >10 year                        | 10(21.7%) | 20.40( $\pm$ 2.07) | 18.20( $\pm$ 1.48) | 7.80( $\pm$ 1.30) | 24.00( $\pm$ 1.41) | 2.60( $\pm$ .89)  |
| p-value                         |           | 0.340              | 0.886              | 0.837             | 0.538              | 0.104             |
| <b>Presence of conflict</b>     |           |                    |                    |                   |                    |                   |
| Yes                             | 24(52.2%) | 22.00( $\pm$ 2.55) | 18.33( $\pm$ 1.90) | 7.79( $\pm$ 2.08) | 23.92( $\pm$ 3.21) | 3.00( $\pm$ .88)  |
| No                              | 22(47.8%) | 21.05( $\pm$ 2.60) | 18.00( $\pm$ 3.45) | 7.27( $\pm$ 2.29) | 25.55( $\pm$ 3.34) | 3.32( $\pm$ .78)  |
| p value                         |           | 0.217              | 0.684              | 0.426             | 0.100              | 0.204             |
| <b>Relationship with family</b> |           |                    |                    |                   |                    |                   |
| Harmonious                      | 30(65.2%) | 21.53( $\pm$ 2.03) | 18.57( $\pm$ 2.71) | 7.63( $\pm$ 2.25) | 24.70( $\pm$ 2.98) | 3.20( $\pm$ .84)  |
| Strained                        | 16(34.8%) | 21.56( $\pm$ 3.50) | 17.44( $\pm$ 2.68) | 7.38( $\pm$ 2.09) | 24.69( $\pm$ 4.04) | 3.06( $\pm$ .85)  |
| p value                         |           | 0.972              | 0.184              | 0.706             | 0.991              | 0.604             |
| <b>Current medication</b>       |           |                    |                    |                   |                    |                   |
| Yes                             | 42(91.3%) | 21.52( $\pm$ 2.66) | 18.36( $\pm$ 2.67) | 7.57( $\pm$ 2.15) | 24.86( $\pm$ 3.21) | 3.19( $\pm$ .86)  |
| No                              | 04(8.7%)  | 21.75( $\pm$ 2.06) | 16.25( $\pm$ 2.87) | 7.25( $\pm$ 2.75) | 23.00( $\pm$ 4.76) | 0.75( $\pm$ .50)  |
| p value                         |           | 0.870              | 0.142              | 0.781             | 0.294              | 0.323             |

## Discussion

The study showed that the QOL in patients with OCD was lower across all the domains in WHOQOL-BREF scale and the difference was statistically significant ( $p < 0.05$ ). The findings showed similarities to other studies.<sup>3,5,13-16</sup> Among the five domains, poorest rated domain was social domain. This result was also consistent with other findings, where it was reported that OCD impacted the patients' lives by disrupting their careers and their relationship with family and friends. However, in an earlier study Koran et al found that mostly affected domain was psychological domain.<sup>3,5,9,16,17</sup> The social domain of the WHOQOL-BREF contains questions about satisfaction with personal relationship, with support by friends and one's sexuality, which were regularly affected in psychiatric disorders.<sup>8</sup> The patients with OCD were troubled by repeated obsessions and/or compulsions as well as by thoughts and behaviors which seemed senseless and repugnant, that further restricted their occupational and social functioning. In addition, patients with OCD often provoke their friends or family members to engage in their illness-related behaviours, which often results in conflicts. Thus compared to healthy controls impaired subjective QOL in social domain may be expected.<sup>3</sup>

In the current study, the second most affected domain found in the study population was psychological domain. Issues in this domain were associated with negative feeling of mood, sadness, anxiety and dissatisfaction with oneself. Furthermore, there were questions about the sense of life and the degree to which people were able to enjoy their lives. Therefore, psychological domain may be impaired in OCD patients for several reasons. Firstly, obsessive and compulsive symptoms of the disorder were incomprehensible and bizarre. The affected subjects struggle between the "obtrusive thinking" to carry out the compulsions and the "reason" or "normal insight" to stop the repetitive rituals. Secondly, comorbid depression, and thirdly, secondary consequences e.g, grief, blame and social stigma may be associated with the disorder.<sup>3</sup> OCD patients suffer from severe restlessness to accomplish their obsessive thoughts and as a result sometimes might develop anxiety or depressive symptoms. So, their psychological domain might be affected more in comparison to control population.

Other studies showed that physical domain of QOL was less affected in OCD patients than the general population. In the current study, absence of impact in physical domain was much more prominent because it included, as mentioned earlier, the population free from any major physical disorder in both the comparison groups whereas the other studies included general population who might have physical disorders.<sup>8,18</sup>

Environmental domain, although least affected in OCD patients in this study, was more affected in all facets in patients population

in comparison to the controls, because OCD patients were more exposed to environmental stressors. The findings in this domain were consistent with other previous studies.<sup>3,6,13,17,19</sup>

Symptom severity of OCD patients in this study was measured by DUOCS<sup>20</sup> and the mean score was found 36 which is considered moderate severity. The OCD symptoms of only moderate severity and the treatment effect of symptoms might have caused their QOL to become less overt. The reason for lower severity of symptoms may be explained by the nature of the study population. The sample was collected from the patients, who were under treatment in a tertiary-care hospital and their symptom severity might have been reduced due to medication and other modes of treatment.

The findings of the study showed that quality of life of the patient population almost equally affected by obsession alone and obsession with compulsion. It was however found that environmental domain was more affected by obsession only, it may be because of the severity of anxiety and inner restlessness causing increased stress.<sup>3,11,17</sup> Moreover, compulsive symptoms were relatively easier to deal with and respond better to different treatment modalities. Available literatures also showed that QOL was particularly affected more by obsession than compulsion.<sup>3,11,17</sup>

In present study OCD patients were under treatment and so their quality of life was gradually improving. Other studies also found that QOL was improved with the improvement of the symptom severity after treatment.<sup>16,21,22</sup> A comparison relationship between socio-demographic characteristics of the OCD patients and different domains of QOL showed that the social domain was significantly affected in males, students and in unmarried population. Social domain included satisfaction on personal relationship, satisfaction on sexual life and satisfaction on support from friends. Literatures suggested that OCD was associated to marital distress, dissatisfaction, negative impact on friendship, school performances and work functioning.<sup>16,21</sup> In the present, study most of the recruited subjects were males. In this society males were socially involved than females; moreover, females somehow adjust to their symptom related stressor and therefore their impairment was less reported. The reason of QOL of unmarried population was more affected may be explained by more unmarried population in the sample. Different other studies showed that majority of the OCD patients remain unmarried and unmarried people are less socially involved when a comprehensive spectrum of social functioning is considered. Students had lower functioning when considered from a broader perspective.<sup>17</sup> However, in some faculties students were the more socially involved group and OCD symptoms might have contributed affecting their social function more.

When the relationship of the type of family with the different domains of QOL was considered it was found that OCD patients coming from both nuclear and joint families were equally affected in all the domains except social domain, where members of joint family were found little less affected.<sup>7</sup> Other parameters were not found to have any significant impact on different domains of QOL. The findings might appear somewhat unusual specially if these were compared with findings of other studies. However, smaller sample size, a different perception of parametric components in the culture and ongoing treatment might have contributed to such revelation.

### Conclusion

It has shown OCD to be a very devastating disorder impacting the everyday life of patients. So when obsessive-compulsive symptoms subside under modern treatment, adequate family support is needed to improve residual deficits in psychological functioning and quality of life.

### References

1. Jenike MA. An update on obsessive-compulsive disorder. *Bullin Meninger Clin* 2001;(65):4-25.
2. Zahiruddin Md, Shahanur Hossain Md, Mohit MA. Characteristics of patients with obsessive-compulsive disorder. *Bang J of Psychiatry* 200;21(2):5-12.
3. Strengler W, Kroll M, Matschinger H. Subjective quality of life of patients with obsessive-compulsive disorder. *Soc Psychiatry Epidemiology* 2006;(41):662-8.
4. Stein DJ. Obsessive-compulsive disorder. *Lancet* 2002;(360):397-405.
5. Lockner C, Mogotsi M, du Toit PL, Kaminer D, Nichaus DJ, Stein DJ. Quality of life in anxiety disorders: a comparison of obsessive-compulsive disorder, social anxiety disorder and panic disorder. *Psychopharmacology* 2004;(36):255-62.
6. World Health Organization. The 'newly defines' burden of the mental problems. Geneva: World Health Organization; 1999.
7. Steketee G. Disability and family burden in obsessive-compulsive disorder. *Can J Psychiatry* 1997;(42):919-28.
8. Koran LM, Thienemann ML, Davenport R. Quality of life for patients with obsessive-compulsive disorder. *Am J Psychiatry* 1996;(153):783-8.
9. Eisen J, Maria A, Pinto A, Meredith E, Pagano M, Stout R, et al. Impact of obsessive compulsive disorder on quality of life. *Compre Psychiatry* 2006;(47):270-5.
10. Bystritsky A, Libermann RP, Hwang S, Wallace CJ, Vapnik T, Saxena S. Social functioning and quality of life comparisons between obsessive-compulsive and schizophrenic disorders. *Depress Anxiety* 2001;(14):214-8.
11. Masellis M, Rector NA, Richter MA. Quality of life in obsessive-compulsive disorder: differential impact of obsession, compulsions and depression co-morbidity. *Can J Psychiatry* 2003;(48):72-7.
12. Rapaport MH, Clary C, Fayyad R, Endicott J. Quality of life impairment in depressive and anxiety disorders. *Am J Psychiatry* 2005;(162):1171-8.
13. Bobes J, Gonzalez MP, Bascaran MT, Arango C, Saiz PA, Bousoño M. Quality of life and disability in patients with obsessive-compulsive disorder. *Eur Psychiatry* 2001;(16):239- 45.
14. Maria MC, Greenberg B, Grant EJ, Pinto A, Eisen J, Rasmussen S. Correlates of occupational disability in a clinical sample of obsessive-compulsive disorder. *Compr Psychiatry* 2008;(49):43- 50.
15. Fontenelle SI, Fontenelle FL, Borges CM, Prazeres MA, Mendliwicz VM, Range PB, et al. Quality of life and symptom dimensions of patients with obsessive-compulsive disorder. *Psychiatry Research* 2010;(179):198-203.
16. Hollander E, Kwon JH, Stein DJ, Broatch J, Rowland CT, Himelein CA. Obsessive-compulsive and spectrum disorders: overview and quality of life issues. *J Clin Psychiatry* 1996;57(8):3-6.
17. Beatriz R, Helen D, Manuel A, Paola C, Mercedes N, Maria M, et al. Perceived quality of life in obsessive-compulsive disorder. *BMC Psychiatr* 2006;(6):20.
18. Monti M, Sombvani N, Sacrini F. Obsessive-compulsive disorder in dermatology. *J Eur Acad Dermatol Venereal* 1998;(11):103-8.
19. Albert U, Maina G, Bogello F, Chiarle A, Mataix-Cols D. Clinical predictors of health related quality of life in obsessive-compulsive disorder. *Compr Psychiatry* 2010;51(2):193-200.
20. Majumdar K, Begum R. Development of Dhaka University Obsessive-compulsive scale. *Bangladesh Psychological Studies* 2005;(15):115-31.
21. Melissa M, John EC, Robyn J, Cohen MS, Bradley CR. Quality of life in obsessive-compulsive disorder: an evaluation of impairment and a preliminary analysis of the ameliorating effects of treatment. *Depression and Anxiety* 2008;(25):248-59.
22. Lutfullah B, Faruk U, Erten Y, Mehmet Y, Rustem A, Adem A. Psychopharmacological treatment and quality of life in obsessive-compulsive disorder. *Turk Psikiyatri Dergisi* 2008;(19):154-62.