



## Quality of Life of Patients with Obsessive Compulsive Disorder in Saudi Arabia

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### Authors' contributions

This work was carried out in collaboration between both authors. Authors HMAG and AWA designed the study and wrote the protocol. Author HMAG performed the statistical analysis, managed the literature search and wrote the first draft of the manuscript with the assistance of author AWA. Both authors read and approved the final manuscript.

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### ABSTRACT

**Background:** Obsessive compulsive disorder (OCD) is an anxiety disorder that involves recurrent obsessions and repetitive compulsions which are severe enough to cause clinically significant distress or impairment in social, occupational or other important areas of functioning of those who suffer from this chronic disorder.

**Objective:** The aim of this community-based study was to assess, comparatively the subjective quality of life (QOL) of patients with OCD and control group.

**Methods:** Participants with OCD and control general population group were assessed with the Yale Brown Obsessive Compulsive Scale (Y-BOCS) and Beck Depression Inventory -II (BDI-II) to ascertain severity of obsessive and compulsive symptoms and depression, respectively. The 26-WHOQOL instrument was used to assess the quality of life of both patients with OCD (n=60) and control group (n=67).

**Results:** The mean scores of patients with OCD related to four QOL domains were significantly lower compared with general population ( $p < 0.01$ ). Both participants with OCD (73.7%) and general

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population group (85%) were satisfied with their QOL. A 39% of variance in QOL of participants with OCD was explained only by obsessions.

**Conclusions:** Participants with OCD showed significant reduction in all four domains of QOL compared with general population group. The severity of obsessions contributed significantly to diminished QOL of patients with obsessive compulsive disorder with a trend showing that depression also affects their quality of life. This research calls for a larger controlled study in the community nationwide.

*Keywords: Obsessive compulsive disorder; obsessions; quality of life; depression; Saudi Arabia.*

## 1. INTRODUCTION

Obsessive compulsive disorder (OCD) is a type of anxiety disorder that involves recurring obsessions or compulsions which are severe enough to be time consuming, usually an hour or more a day, or causing distress or significant impairment in functioning of patients with OCD [1,2]. According to the DSM IV [1], obsessions are recurrent and intrusive thoughts, feelings, ideas or sensations experienced by patients as disturbing and inappropriate. On the other hand, compulsions are conscious and recurring patterns of behavior, i.e., acts performed to ward off dreadful thoughts triggered by unpredictable events. In severe cases, which constitute 20% of those with OCD, obsessions and compulsions often occupy the entire day and result in profound disability [3]. In untreated cases with OCD, the probability of remission is extremely low [4]. Unlike other anxiety disorders, OCD appears to have chronic waxing and waning symptoms often attributed to stressors such as the birth of a child, promotion to a new job, or the death of a family member [1,5]. Recently DSM-V recognized a new group of disorders called Obsessive Compulsive and Related Disorders (OCRD), which shows not only similarities and features in common but also important differences that make them distinct from each other [6]. In addition to OCD, this group also includes body dysmorphic disorder, trichotillomania, hoarding disorder and excoriation disorder.

The majority of patients with OCD experience both obsessions and compulsions. Approximately less than 25% has only obsessions and about 5% has only compulsions [1]. There is a considerable variation in reported prevalence of OCD. The lifetime prevalence of OCD in the general population is estimated at 1.9% to 3.1% [1]. Other studies estimated the prevalence to be about 1 in 40, approximately 2.5% of population, as some time in their lifetime [7, 8] and a 1-year prevalence of between 0.5% and 2.1% in adults [1]. These prevalence

estimates make OCD the fourth most common psychiatric disorder in the United States after phobias, substance abuse and major depressive disorder [9] and twice as prevalent as schizophrenia and bipolar disorder [7,10]. According to the World Health Organization [2], OCD is ranked as the tenth most disabling condition across all medical and psychological conditions. Notably, women are more affected by OCD and female to male ratio for lifetime prevalence ranges from 1.1 to 3.1. Recent studies from UK reveal rates of OCD 1% in men and 1.5% in women. The peak age of onset is between 16 and 24 years and most of patients present to psychiatric services approximately 7 years after the onset of the symptoms [11]. Conversely, the history of birth trauma is reported more commonly in males than females, and males appear to have an earlier age of onset. Some authors suggested that an early onset of OCD could be a form of OCD subtype, with characteristics such as male preponderance, co-morbidity with tics and Tourette's syndrome, attention-deficit disorder and a family history of OCD. In contrast, OCD in females tends to have a later age of onset and women with the disorder are more likely to be married together with higher rates of other co-morbid anxiety disorders [11]. With regard to psychiatric co-morbidity, up to two-thirds of patients with OCD may have another major psychiatric diagnosis and up to one-third may develop a co-morbid depressive illness with a negative effect on outcome [11]. However, the lifetime risk of having another anxiety disorder in OCD is enormous; 17.9% generalized anxiety disorder, 2.1% social phobia, and 1.8% panic disorder [11].

The interest in quality of life (QOL) of patients with OCD was first published in a seminal paper by Koran and colleagues [12]. Subsequently, Kugler and colleagues [13] found that while severity of obsessive-compulsive symptoms negatively correlate with emotional health, social functioning and general health, the depressive symptoms appear to mediate the relationship

between them. Srivastava and Bhatia [14] found impairment in several aspects of QOL in patients with OCD, such as loss of time and social isolation and concluded that proper diagnosis and treatment of concomitant depressive symptoms could improve patient's QOL. Stengler-Wenzke and associates [15] used WHOQOL-Bref to study the impact of obsessions and compulsions on QOL of patients with OCD. Their findings indicated depressive symptoms as a strong predictor of poor QOL in patients, compulsions reduced QOL in domains of environment, physical and psychological well-beings and obsessions did not have any impact on patients' QOL ratings. In a pre-and-post treatment study by Moritz and others [16] decline in QOL in patients with OCD was strongly correlated with depression severity and obsessive compulsive symptoms. Apart from low social and emotional QOL in the majority of patients, a large subgroup also reported lower physical well being. Decreased scores on this subscale were mainly associated with length of illness, depression, and number of compulsions. Overall, QOL was significantly improved in therapy responders relative to non-responders [16].

The concept of QOL is often considered a missing measurement in healthcare [17]. However, over the last two decades, more concern had been focused on assessment of QOL of individual's subjective experience on various life domains rather than on traditional views of success and assessments of well being [18]. Inquiry into QOL proved to be useful because several studies in the recent time showed association between QOL and distress that often leads to worsening of disorder symptoms such as those of OCD [19,20]. There had been scant research on QOL among psychiatric patients in Arab and African population, and this issue of QOL and OCD has not been investigated in Saudi Arabia. In an electronic search of the literature, we found only two publications, one from Egypt [21] and another one from South Africa [22]. Hence, the aim of the present study was to assess and quantify QOL in Saudi patients suffering from OCD and compare it with healthy control persons.

### 1.1 Importance of the Study

The study would help clinicians to broaden their concept of disease outcome to include dimension of QOL of patients with OCD. The assessment of

subjective experience of patients with OCD would further help clinicians to have more in-depth knowledge of patients' inner world and provide better treatment options. Patients would have the opportunity to know about their subjective world rather than being evaluated objectively by clinician alone, which is rather unreliable. Patients with co-morbid depression would benefit from specific interventions that target the severity of their symptoms. Policy makers and healthcare providers would be able to articulate policy and therapeutic management measures including OCD patient's quality of life experiences.

## 2. MATERIALS AND METHODS

### 2.1 Operational Definitions

The study used the WHO definition of QOL as individuals' perception of life in the context of their culture and value system in which they live and in relation to their goals, expectations, standards and concerns [23]. The focus was on subjective QOL, as distinct from objective QOL. The participant's satisfaction was defined as the level of positive appreciation for each item. Each group's satisfaction was quantified with each item as at least 50% of participants in the group positively appreciating the item; dissatisfaction (< 50%); bare satisfaction (50 – 65%); moderate satisfaction (66 – 74%); and highest satisfaction ( $\geq 75\%$ ) [19,20,24].

### 2.2 Subjects and Setting

This was a cross-sectional study. A purposive sample of 60 patients with OCD was selected from the following clinical settings: 29 patients from the Outpatient Department (OPD) of King Fahd University Hospital (KFUH), 5 patients from Al-Amal Complex for Mental Health (ACMH) in Dammam, 17 patients from (ACMH) in Riyadh, and 9 patients from Specialized Psychiatry Clinic (SPC) in Riyadh, permission to carry out the study was obtained for the authorities of each hospital or clinical setting. The sample recruited diagnosed patients in stable conditions, of either gender, ranged in age from 18 - 60 years, and with ascertained diagnosis of OCD according to DSM-IV-TR criteria [1]. The study excluded: a) participants with past history or evidence of schizophrenia, bipolar disorder, affective disorder, major depressive disorder, organic mental disorder, seizure disorder and intellectual disability and b) participants with clinically significant and unstable renal, hepatic,

cardiovascular, respiratory or cerebrovascular disease or any other serious and progressive physical disease. All participants voluntarily provided oral informed consent.

The general population sample was composed of 76 participants from Riyadh and Dammam cities, who were selected from public places such as government ministries, educational institutions, Quran memorization centers, etc. The participants were consented voluntarily to participate in the study. The questionnaires were completed privately and in the presence of the main investigator (HMAG) or research assistants who were available to clarify questions. All the completed questionnaires were collected by research assistants.

## **2.3 Instruments Employed**

### **2.3.1 Yale Brown Obsessive Compulsive Scale (Y-BOCS)**

Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) is a 10-item clinician-rated scale. Each item is rated from 0 (no symptoms) to 4 (extreme symptoms). For all items, a higher numerical score corresponds to greater illness severity. The total Y-BOCS score is the sum of all items 1 to 10 (range, 0 to 40). There are separate subtotals for severity of obsessions (sum of items 1 through 5) and compulsions (sum of items 6 through 10). Symptoms are assessed with regard to how much they occupy the patient's time, interfere with normal functioning, cause subjective distress, are actively resisted by him and can actually be controlled. Thus, the core items (1 to 10) of the YBOCS measure the severity of the cardinal symptoms of OCD (i.e. obsessions and compulsions) along the dimensions of time, interference, distress, resistance and control.

The scale was developed by Goodman and colleagues [25, 26] and evaluated by Kim and colleagues [27] to verify its reliability and validity. In a study involving four raters and 40 patients with OCD at various stages of treatment, interrater reliability for the total Yale-Brown Scale score and each of the 10 individual items was excellent, with a high degree of internal consistency among all item scores demonstrated with Cronbach's alpha coefficient ( $\alpha=0.93$ ). Based on pretreatment assessment of 42 patients with OCD, each item was frequently endorsed and measured across a range of severity. These findings suggest that the Yale-

Brown Scale is a reliable instrument for measuring the severity of illness in patients with OCD with a range of severity and types of obsessive-compulsive symptoms. The scale was translated into Arabic language by the Department of Psychiatry, Ain Shams University in Cairo and has been used in several studies since 1994 [28].

### **2.3.2 The WHO Quality of Life-BREF (WHOQOL-BREF)**

The WHOQOL-BREF is a generic and short instrument containing 26 items that were extracted from the WHOQOL-100 field trial data to measure the following broad domains: physical health, psychological health, social relationships, and environment. It is a short version of the World Health Organization Quality of Life – 100 Scale (WHOQOL -100) [23]. The response options range from 1 (very dissatisfied/very poor) to 5 (very satisfied/very good). Assessments are made over the preceding two weeks. It consists of domains and facets (or sub-domains). The items on “overall rating of QOL” (OQOL) and subjective satisfaction with health constitute the general facet on OQOL and health. The aim was to develop an international cross-culturally comparable QOL assessment instrument. QOL is defined as the individuals' perceptions in the context of their culture and value systems, and their personal goals, standards and concerns [29]. The WHOQOL instruments were developed collaboratively in a number of centers worldwide, and have been widely field-tested.

The WHOQOL-BREF contains one item from each of the 24 facets of QOL included in the WHOQOL-100, plus two 'benchmark' items from the general facet on overall QOL and general health (not included in the scoring) (see Table 6). The facets were originally subsumed within one of six domains but factor analysis of the WHOQOL-100 indicated that Domain 1 could be merged with Domain 3 (physical with independence), and Domain 2 with Domain 6 (psychological with spirituality, religion and personal beliefs) thereby creating four domains of QOL [30]. Similar results were found during the extraction of data for the WHOQOL-BREF [29] which is currently scored in four domains: Domain 1: Physical health, Domain 2: Psychological, Domain 3: Social relations and Domain 4: Environment, with all facet items scored as part of their hypothesized domain. Domains are not scored where 20% of items or

more are missing, and are unacceptable where two or more items are missed (or 1-item in the 3-item social domain). The scores are transformed on a scale from 0 to 100 to enable comparisons to be made between domains composed of unequal numbers of items.

The validated Arabic version of WHOQOL-BREF was used in this study [31]. The Intra-class coefficient (ICC) for the test-retest statistic (0.95) was highly significant. Similarly, the internal consistency values for the full questionnaire and the domains met the 0.7 Cronbach's alpha value requirement. The internal consistency for the 26 items, using responses of all participants was 0.93, with split-half reliability of 0.89.

### **2.3.3 Beck Depression Inventory (BDI-II)**

Beck Depression Inventory-II (BDI-II) was developed to measure depression symptoms and severity in people ages 13 years and older [32, 33]. BDI-II, a substantially revised version of the original BDI and BDI-IA, omitted items relating to weight loss, body image, hypochondria, and working difficulty so that the assessment of depression symptoms such as cognitive, affective, somatic and vegetative align to the DSM-IV criteria [32] and has timeframe of two weeks to meet the criteria for major depressive disorder (MDD) [32,33]. The BDI-II has a higher internal consistency than BDI-IA, and Cronbach's alpha was reported to be 0.92 for outpatients and 0.93 for college students [34]. Factor analysis of the BDI-II yielded two factors in terms of somatic-affective and cognitive, which are consistent with other studies in medical outpatients [32,35].

Like the original BDI, the Arabic version of BDI-II has 21 items, each of which consists of four self-evaluative statements in a time frame of two weeks, and scored 0 to 3, with increasing scores indicating greater depression severity [36]. The inventory was standardized twice into Arabic by Ghareeb [28] and recently by Turkait and Ohaeri [36] for its use in Arabic speaking population. The internal consistency for the 21 items, using responses of all participants was high (0.83). The Arabic version of BDI-II consisted of 21 symptoms of depression. Studies of reliability and validity scale either in the foreign communities or in the Arabic community were presented in this study. The participants in the Algerian version of BDI-II used in the present study were 437 males and 525 females. They represented an adult sample drawn from university students and employees, and

psychiatric patients. Chronbach's alpha was reported to be relatively high for all participants (0.84) [37].

All instruments employed were self-administered by participants, but the researcher or experienced research assistants were available to assist in reading/clarifying items aloud where self-completion was not possible, usually for reasons of illiteracy or disability. Following standard instructions, socio-demographic details and an item on current health status were completed before answering the items of each instrument.

## **2.4 Data Analysis**

Statistical analysis was performed using the Statistical Package of Social Sciences (SPSS) version 20. Sociodemographic and clinical data were analyzed using frequencies, percentages, two-tailed student's t-test for continuous variables and Chi-square test for categorical variables. Comparison of the physical, psychological, social and environmental domains of the QOL of OCD patients and healthy control was done by using analysis of variance (ANOVA) for variables with more than two categories. All tests of significance were 2-tailed (P value of <0.05), and Pearson's correlation calculated to examine the association between the change in QOL scores and changes in symptom severity of both Y-BOCS and BDI-II.

## **2.5 Ethical Consideration**

The authors submitted research protocol to the Ethical Committee of University of Dammam and obtained approval from this higher education institution. All participants were informed in nontechnical language the objectives of this study and they gave verbal as well as written informed consent for participation in this study. Besides, the main investigator took permission individually from the administrative authorities of each healthcare setting where this research was conducted.

## **3. RESULTS**

Table 1 shows the sociodemographic characteristics of the two groups of participants (OCD=60, Control=76). The analysis of these variables distributed by OCD group and controls revealed that male gender, low education and unemployment were observed to have significant association with OCD.

**Table 1. Socio-demographic characteristics of participants with OCD (n=60) and controls (n=76)**

Sociodemographic data	OCD group	Control	p
	No (%)	No (%)	
<b>Age</b> (Mean±SD)	32.18 ± 9.87	30.1 ± 11.26	0.255
<b>Gender</b>			
Male	29 (48.3)	13 (17.1)	0.0001
Female	31 (51.6)	63 (82.9)	
<b>Education</b>			
Elementary	1 (1.7)	-	0.002
Intermediate	11 (18.3)	4 (5.3)	
High school	17 (28.3)	26 (34.2)	
Diploma	3 (5.0)	1 (1.3)	
University	28 (46.7)	45 (59.2)	
<b>Occupation</b>			
Unemployed	34 (56.7)	24 (31.6)	0.0001
Student	10 (16.7)	40 (52.6)	
Employed	16 (26.6)	12 (15.8)	
<b>Marital status</b>			
Single	28 (46.7)	37 (48.7)	0.815
Married	32 (53.3)	39 (51.3)	

The data showed the WHOQOL-Bref reliability indices across all QOL domains. The internal consistency values for the responses of all participants on WHOQOL-Bref were ranged from adequate to acceptable to highly significant; physical (0.78), psychological (0.77), social (0.65) and environment (0.82) domains. Similarly, the internal consistency values for Y-BOCS (0.88) and BDI (0.93) were highly significant. The overall Cronbach's alpha was highly significant at .91 [Table 2].

**Table 2. Reliability indices across all instruments used in this study**

Instrument	Strength	Cronbach's alpha
<b>WHOQOL – BRIEF</b>		
Physical	Adequate	0.78
Psychological	Adequate	0.77
Social relation	Acceptable	0.65
Environment	Excellent	0.82
BDI-II	Excellent	0.88
YBOCS	Excellent	0.93
Total	Excellent	0.91

A comparison of depression severity between two genders of all participants is shown in Table 3. From a total of 136 participants, 25 (18.4%) men and 70 (51.4%) women reported no depression and 7 (5.1%) men and 2 (1.5%) women were observed to have severe depression. The majority of all participants (n=95, 69.9%) report to have no depression

whereas the remaining participants were reported to have mild (n=16, 11.8%) to moderate (n=16, 11.8%) to severe (n=9, 6.6%) depression.

The Y-BOCS severity scores [Table 4] were significantly higher for participants with OCD compared to general population group. None of the participants from two groups endorsed OCD symptoms at the most severe level. There were significant differences between the two groups in severity of OCD symptoms (p<0.0001).

The mean scores of WHOQOL-Bref among participants with OCD and general population group showed that they were significantly lower, reflecting dissatisfaction in all four domains of OCD group compared with controls [Table 5]. Furthermore, highest satisfaction was observed in all domains of WHOQOL-BREF related to control group participants compared to OCD patients (p<0.001). However, highest satisfaction was observed in social relationship domain in OCD group compared to control group (p<0.01). Notably, none of the two groups endorsed QOL items at the dissatisfaction level and no items were rated negatively by at least 55% of all participants. The control group endorsed 19 items at the high levels of satisfaction compared to OCD participants who endorsed only mobility (81.7%) and transport (77.7%) at the high levels of satisfaction. Most of the sub-domains (92.3%) endorsed by participants with OCD were from moderate to bare levels of satisfaction. Conversely, 73.1% (n=19 items) of WHOQOL-

Bref sub-domains endorsed by control group were at the high levels of satisfaction. Both groups showed bare satisfaction regarding participation in recreation activities and negative feeling reflecting bidirectional relationship (detailed data available upon request from HMAG). The alpha coefficient for the social relations domain (0.65) was short of the required level of a 0.7 mark and this problem is well known in the literature [31] as missing values especially on sexual item usually lower alpha level [38].

Table 6 showed differences in Beck Depression Inventory (BDI) scores between the OCD participants and control group. In all levels of symptoms severity, the results showed significant difference in gender between participants with OCD and general group (p=0.001). However, 58.3% (n=35) of female participants with OCD and 85.5% (n=65) of female controls report to have no or minimal

depressive symptoms whereas 45% (n=27) male participants with OCD and 72.4% (n=55) male control report to have no or minimal depressive symptoms. There are more males with OCD than females who scored higher at the severe range of depressive symptoms. Conversely, none of female among control endorsed severe depression versus only 2 (2.6%) males among controls who have endorsed severe depressive symptoms. When WHOQOL-Bref and BDI-II scores for male and female participants with OCD were compared to determine the association between levels of satisfaction with QOL and depressive symptom severity, all satisfaction levels with WHOQOL - Bref domains were significantly affected by depressive symptom severity (p=0.001). In other words, the moderate to severe levels of depressive symptoms were associated with worse levels of QOL satisfaction compared to mild symptoms of depression.

**Table 3. Comparison of depression severity between genders (n=136)**

Gender	Non-depressed		Mild		Moderate		Severe		Total	
	No	%	No	%	No	%	No	%	No	%
Male	25	(18.4)	5	(3.7)	5	(3.7)	7	(5.1)	42	(30.9)
Female	70	(74.5)	11	(8.1)	11	(8.1)	2	(1.5)	94	(69.1)
Total	95	(69.9)	16	(11.8)	16	(11.8)	9	(6.6)	136	(100)

**Table 4. Y-BOCS severity scores of participants with OCD (n=60) and control (n=76)**

Severity	OCD		Control		P value
	No	%	No	%	
Normal	14	(23.3)	43	(56.6)	0,0001
Mild	21	(35)	23	(30.3)	
Moderate to severe	25	(41.7)	10	(13.2)	
Very severe	-		-		
Total	60	(100)	76	(100)	

**Table 5. Distribution of scores on the WHOQOL-Bref by OCD group and control**

Domains of WHOQOL BREF	OCD	Control	P value
	Mean±SD	Mean±SD	
Physical	23.6 (4.79)	27.2 (3.91)	0.001
Psychological	18.9 (4.21)	22.3 (3.57)	0.001
Social	10.1 (2.68)	1.9 (2.02)	0.01
Environment	27.4 (5.82)	30 (5.61)	0.01
Total	79.9(14.79)	91.7(11.97)	0.001

**Table 6. Distribution of BDI-II scores by OCD group (n=60) and control (n=76)**

Gender	Non/minimal	Mild	Moderate	Severe	P value
	No. (%)	No. (%)	No. (%)	No. (%)	
Female OCD	35(58.3)	12(20)	7(11.7)	7(11.7)	0.001
Control	65(85.5)	7(9.2)	4(5.3)	-	
Male OCD	27(45)	12(20)	11(18.3)	10(16.7)	0.001
Control	55(72.4)	13(17.1)	6(7.9)	2(2.6)	

Analysis of relevant data revealed negative correlations between all domains of QOL and obsessions and compulsions, meaning thereby if QOL of domains increases severity of obsessions/compulsion decreases [Table 7]. All domains of WHOQOL-Bref were significantly correlated with obsession and compulsion ( $p < 0.05$ ), though this relationship was more powerful with obsession than compulsion. Logistic regression analysis after controlling socio-demographic and clinical confounders revealed that 38.8% of diminished QOL of participants with OCD (dependent variable) was explained by obsession adjusted over compulsion, age, gender, education and marital status [Table 8].

**Table 7. Correlation between WHOQOL –Bref and obsessions and compulsion**

WHOQOL-BREF	Obsessions	Compulsions
Physical	-0.589**	-0.528**
Psychological	-0.573**	-0.543**
Social relationships	-0.463**	-0.438**
Environment	-0.433*	-0.414**
Total	-0.604**	-0.565**

\*\* $p = 0.01$ , \* $p = 0.05$

#### 4. DISCUSSION

In this study, most participants' subjective ratings of their QOL were located at moderate level of satisfaction, the items reflecting socioeconomic indices endorsed were general social supports, personal relations, and health services except transport facet endorsed at the high satisfaction level attributable to a number of factors including rapid urbanization and affluent societies. Notably, more than half of the world's population including Saudi Arabia now lives in modern cities, making the creation of a healthy urban environment a major policy priority [39] and consequently causing mental health stress and risks that negatively affect emotional wellbeing of city

dwellers [40]. Furthermore, also inability to process social stress in the urban environment underlies the greater risk for mental illness [40, 41]. The nature and severity of symptoms is another cause for diminished social support in the QOL of patients with OCD who tend to preoccupy with the disorder and feel embarrassed as well as attempt to hide their OCD symptoms from social and family networks especially their family caregivers and friends. Further, the fear of criticism, a form of high expressed emotion, that a person with OCD might be prone to make them less socially interactive and more isolated, which, in turn, justifies the diminished level of QOL satisfaction among OCD population [21].

Accordingly, OCD is a chronic and disabling condition that negatively affects the occupational and work relationships, financial, academic achievement, family relationships, friendships, and social life of patients with this disorder [22,42-45] Social support is diminished among family and persons with OCD, since the disorder does not only affect the lives of patients but also their family members [45]. Severe OCD is associated with significant disability, poor QOL and high family burden [46]. The moderate level of satisfaction with the health services provided may be ascribed to the lack of the private psychiatric clinics which are often limited to the government hospitals. Unfortunately, this leads to long-term appointments for the therapy sessions required, and this consequently associated with the delay in the patients' improvement and, in turn, increase in patients suffering.

According to this study, the general population group shows significantly higher QOL domain scores than the participants with OCD. Conversely, greater impairments in all QOL domains of physical, psychological, social and environment among 60 participants with OCD were significantly higher compared to control

**Table 8. Logistic regression coefficients (QOL-dependent variable)**

Model Variable	Unstandardized coefficient		Standardized coefficient	T	P value
	$\beta$	S.E	Beta		
(Constant)	93.763	9.741	-	9.626	0.000
Obsessions	-1.354	0.436	-0.813	-3.103	0.002*
Compulsions	3.056	3.585	0.224	0.852	0.396
Gender	-1.384	2.346	0.044	-0.590	0.556
Age	0.056	0.129	0.041	0.433	0.666
Education	0.709	1.392	0.037	0.509	0.611
Marital Status	-1.842	1.262	-0.135	-1.46	0.147

\*significant



group, which is consistent with other studies [14,21]. For instance, Awadalla and colleagues [19] study has shown an association between QOL and distress that often leads to worsening of disorder symptoms such as those of OCD. However, these findings contradict those of Koran and colleagues [12] who have found ratings of physical health domains in OCD to be similar to those in the general population. Similarly, Rodriguez-Salgado and colleagues [47] have found significant differences between OCD patients and control in all SF-36 QOL subscales except for those related to physical health and pain. This contradiction can be understood if we consider the fact that culture influences the perception of the corresponding subjective QOL [48] and that patients in Arab culture are more alexithymic, meaning thereby using physical complaints to express underlying suffering (somatic language) instead of verbally describing their emotions and feelings [21]. Local studies support the cultural influence of physical pain as more than 60% of the sample in a Saudi-Egyptian study appear to have somatic obsessions [21]. The causal explanation of lower QOL among participants with OCD compared to controls can be explained by many factors, among others, including co-morbid disorder [49], social functioning in interpersonal and work environment [50], and distress related to intrusive obsessions and reflexive compulsions [51-53].

This research revealed that participants with high scores on Y-BOCS exhibit more obsession than compulsion symptoms, and those with co-morbid depression have lower subjective QOL. The higher prevalence of obsession than compulsion symptoms in this study has been supported by the American Psychiatric Association's report [1] which has found global prevalence rates of approximately less than 25% obsessions as opposed to 5% compulsions. In the same vein, a clinical study by Freeston et al. [54] reported that between 17% and 44% patients with OCD experience obsessions without overt compulsions. Furthermore, Erfan and Rakhawy [21] reported that 60% of their Saudi patients had experienced obsessions of a sexual, religious, somatic and contamination nature. This has important implication because patients with higher scores for sexual and religious dimension of obsessions are associated with overall poorer social functioning, suicidal ideations or plans [55] and poor responses to cognitive behavior therapy [56]. This contradicts other studies which have shown cognitive behavior therapy to be effective in helping those with obsessions more

than compulsion [4,54,57]. What makes treatment of OCD participants in a conservative country like Saudi Arabia more complicated is that these obsessions, especially religious and sexual thoughts are often considered morally corrupt both by the traditional conservative community and healthcare practitioners, which is supported by other studies [58]. Furthermore, 38.8% of diminished QOL is explained by obsessions after controlling for socioeconomic and clinical confounders, which is congruous with other studies, the latter have shown that QOL impairment is more robustly associated with obsession severity than compulsion severity [10, 59] and sexual and religious thoughts can be more distressing than other symptoms [60] and can therefore have a more significant impact on QOL of social relations domain [61]. The findings of present study also indicate that the more severe depressive symptoms among the participants with OCD the more likely for these patients to exhibit diminished QOL. Presumably, severe depressive symptoms caused by OCD could contribute to impaired functioning and low QOL across all domains. In a study of 43 patients with OCD, Masellis and colleagues [10] reported that unlike compulsions, severity of obsessions and co-morbid depression predicted diminished QOL of patients with OCD, and severity of depression alone was the greatest predictor of poor QOL that accounted for 54% of variance. Notably, as many as 75% of patients presenting to clinics tend to experience significant depression, the reduction of depression in OCD by appropriate interventions seems essential for improved QOL [10].

## 5. LIMITATIONS

This study has some limitations. The study design is cross-sectional with a small sample size and participants with OCD are drawn from hospitals and hence not representative of the general population in Saudi Arabia. Therefore, the findings can be generalized to hospital patients with OCD rather than to general population in the country. Other caveat was related to the self- assessment tools instead of face-to-face diagnostic interviews. Notably, what participants report on the self-administered questionnaire reflects its face value, which is a weak measure of validity [62]. Some reported potential sources of bias when employing self-report screening instruments include; 1) selective memory, 2) telescoping, 3) attribution, and 4) exaggeration [63]. Another drawback of this study is the use of Arabic version of BDI-II that

has limited power to assess the severity of depression symptoms in OCD patients and hence may have affected the reported results in the present study. Furthermore, some commenters may view significant difference in gender between the two groups as a limitation of this study. The strength of the study is that participants with OCD have been investigated in multiple locations and compared with general population group also recruited from different places in the country to assess the impact of OCD disease on subjective QOL. Notably, the study administered the standardized Arabic version of WHOQOL-Bref questionnaire for the assessment of subjective QOL, which has been used in Arabic-speaking persons and shown to have superior psychometric properties [64,65].

## 6. IMPLICATIONS AND RECOMMENDATION

The findings of this study showed diminished QOL among patient with OCD compared with general population, therefore intervention programs need to be in place for improving QOL of these patients, especially in the QOL indices that they have bare satisfaction. Clinicians should make assessment not only on mental aspects of patients' life but also on their subjective QOL. Patients should have the opportunity to rate their own QOL than being rated by clinicians, because patients rate themselves more rigorous than clinicians [66]. Notably, about 39% of variance in diminished QOL of participants with OCD is explained by obsessions, clinicians must therapeutically address them in their clinical practice for enhancing QOL of patient with obsessive compulsive disorder.

## 7. CONCLUSION

In conclusion, participants with OCD showed a reduction in QOL and satisfaction levels across all domains of QOL compared with general population group. In addition, both severity of co-morbid depression symptoms and OCD strongly contributed to participants' diminished quality of life, however 39% of variance in diminished QOL of participants with OCD was explained only by obsessions.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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