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TEMPERAMENT AND CHARACTER TRAITS IN PATIENTS WITH OBSESSIVE-COMPULSIVE DISORDER

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Summary

Background: *"Personality" is an essential variable in order to understand the course of Obsessive-Compulsive Disorder (OCD). Among the studies investigating the relationship between OCD and personality traits, the most common finding is that individuals diagnosed with OCD was reported to have higher levels of Harm Avoidance (HA) trait compared to healthy controls. In addition, OCD group was found to have lower scores regarding Self- Directedness (SD), Cooperativeness (C) or Novelty Seeking (NS).*

Subjects and Methods: *The patient group of the study consisted of patients were diagnosed with OCD by SCID-I scanning. The healthy control group had similar age, gender, and educational level characteristics as the patient group. The patients and the control group were asked to fill out a Sociodemographic Data Form, Temperament and Character Inventory (TCI), Beck Depression and Beck Anxiety Scales. For the patient group, Yale-Brown Obsessive-Compulsive Scale, and Yale-Brown Symptom Checklist were filled out by the clinician who conducted the psychiatric interview.*

Results: *Patients with OCD (n=70) were characterized by higher HA ($p<0.001$) scores and lower C ($p=0.034$), and SD ($p<0.001$) scores than the healthy control group (n=65). When comparing pure OCD patients (n=23) with the healthy control group, their HA scores were higher and the self-transcendence (ST) scores were lower. Compared to the healthy control group, OCD patients with psychiatric comorbidity (n=47) had a higher HA score and a lower SD score.*

Conclusions: *Comorbid OCD patients' SD scores were lower and ST scores were higher compared to the patients with Pure OCD. No significant relationship was found between OCD severity and TCI subscales. Our findings indicate the importance of considering the presence of comorbid psychiatric diagnoses for the evaluation of personality dimensions in OCD patients. The assessment of temperament and character traits in OCD may provide clinical benefit in terms of predicting the prognosis and planning appropriate psychotherapeutic interventions.*

Keywords: *Obsessive-compulsive disorder, TCI, temperament, character, severity of OCD symptoms, pure OCD*

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INTRODUCTION

Personality, whether conscious or unconscious, means all of the deep-rooted patterns of behavior, thought, and emotion that emerges as a result of social experiences, development, and structural characteristics of individuals and which have become habits that form a way of harmony with that person's lifestyle (Sahin & Boke 2007).

Personality disorders detected in patients with obsessive-compulsive disorder (OCD) vary between 9% and 75% depending on the samples taken and the differences in the diagnostic tools used (Bejerot et al. 1998, Uğuz et al. 2006, Crino & Andrews 1996). It was reported that 50% of OCD patients also have a personality disorder in Turkey (Uğuz et al. 2006). The personality disorders that are most commonly associated with OCD were reported to be belong to cluster C, and the prevalence of any cluster C personality disorder in OCD is also between 20-55% (Bejerot et al. 1998, Uğuz et al. 2006, Denys et al. 2004).

While a categorical approach was often used in OCD to assess personality disorders previously, the dimensional approach has come into prominence lately. A multidimensional standpoint could be a useful approach in describing personality functioning (Alonso et al. 2008). A psychobiological model of personality, that includes four temperament dimensions, and three character dimensions, has been proposed by Cloninger and associates (Cloninger 1987, Cloninger et al. 1993). Temperament dimensions are defined by individual diversity in associative learning in response to novelty, danger, and reward. Temperament dimensions are inheritable components, and are hypothesized to be in relations with specific neurotransmitter systems (Goldsmith et al. 1987). Character components are believed to be culturally inherited and matured by the personal or social activity that comes with adulthood (Köse et al. 2004).

The most consistent result of the studies that examine the personality traits of patients with OCD using the Temperament and Character Inventory (TCI) is having higher harm avoidance (HA) scores compared to healthy controls. The studies on other TCI subscales in patients with a diagnosis of OCD are not that consistent. Lower

Self-Directedness (SD), Cooperativeness (C), or Novelty Seeking (NS) scores and higher Reward Dependence (RD) scores have been reported in patients diagnosed with OCD in the literature (Alonso et al. 2008, Kim et al. 2009, Lyoo et al. 2001, Bejerot et al. 2000).

The conclusions are contradictory about the relationship between temperament and character dimensions and the severity of obsessive-compulsive symptoms. In some studies, lower SD and higher HA scores are correlated with the severity of obsessive-compulsive symptoms (Lyoo et al. 2001, Cruz-Fuentes et al. 2004), while in some others, there is no association in between (Kim et al. 2009). There are also inconsistent results in the studies conducted with a sample group of small and limited number regarding the relationship between obsessive-compulsive symptom sets and personality traits (Alonso et al. 2008).

In this study, we aimed to evaluate the temperament and character traits that distinguish OCD patients from healthy individuals and the relationship of temperament and character traits with clinical variables such as OCD symptom severity and the presence of psychiatric comorbidity.

SUBJECTS AND METHODS

The study population consisted of patients who applied to Psychiatry Clinic Zonguldak Bülent Ecevit University Faculty of Medicine between July 2011 and March 2013 and were diagnosed with OCD. Among the patients, the ones who were under the age of 18, had a mental disorder, were illiterate, had a chronic and severe physical illness, were diagnosed with OCD due to organic reasons, and those who did not accept to participate in the study were excluded. A healthy control group having similar age, gender, and educational level characteristics as the patient group was selected. The patients who agreed to participate in the study and the healthy control group were screened for psychiatric diseases through The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I). The psychiatric comorbidities of the patients with a confirmed diagnosis of OCD through SCID I were also determined by SCID-I. The individuals who were not found to have any psychiatric disorders by SCID-I were participated in the study as healthy control group. This study was approved by Zonguldak Bülent Ecevit University Clinical Studies Ethical Committee on July 19, 2011 with an approval number of 2011/07. The patients were informed about the aim of the study and voluntarily signed informed consent. The study complies with the Declaration of Helsinki.

Patients and the healthy control group were asked to fill out the 240-item self-rating Temperament and Character Inventory (TCI) and the Beck Depression and Anxiety scales. Socio-demographic Information Form, the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), and the Yale-Brown Symptom Check List (YBSCL) were also implemented to the OCD patient group.

The socio-demographic Information Form consists of questions regarding age, gender, marital status, education level, employment status, age of OCD onset, previous duration of OCD, and the time until the first psychiatric administration.

Temperament and Character Inventory measured temperament and character features in OCD and control subjects. It consisted of 240 items, four dimensions of temperament [Novelty Seeking (NS), Harm Avoidance (HA), Reward Dependence (RD), and Persistence (P)], and three dimensions of character [(Self-Directedness (SD), Cooperativeness (C), Self-Transcendence (ST)]. The validity and reliability of the Turkish version of TCI were established. Cronbach's coefficients were between 0.60 and 0.85 on temperament dimensions, and they were between 0.82 and 0.83 on character dimensions (Köse et al. 2004).

The severity level of OCD was evaluated with a clinician-administered Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) (Goodman et al. 1989) which establishes the Obsession, Compulsion subscales scores, and Y-BOCS total score. It consisted of 10 observer-rated items of the five-point Likert scale, from 0 to 4 points. The Yale-Brown Symptome Check List (YBSCL) was also applied for determining the types of obsessions and compulsions.

The severity of depressive and anxiety symptoms were assessed by the Beck Depression Inventory (BDI) (Beck et al. 1961) and the Beck Anxiety Inventory (BAI) (Beck et al. 1988), respectively. Each inventory had 21 items of four-point Likert scales ranging from 0 to 3.

Statistical analysis

This study is a cross-sectional descriptive study. While evaluating the findings obtained by the study, SPSS 13 program was used for the statistical analyses. Measurement variables were shown with mean, standard deviation, median, minimum and maximum values, and the categorical ones were shown with frequency and percentage. The compatibility of measurement variables with normal distribution was checked with the Shapiro-Wilk test. For 2-group comparisons of normally distributed variables, the significance test (t-test) of the difference between the two means was used; for 2-group comparisons of non-normally distributed variables the Mann-Whitney U test was used and for comparison of 3 or more groups, the Kruskal Wallis test was used. For group comparisons of categorical variables, Pearson's chi-square, Fisher's exact chi-square test, and Yates' corrected chi-square test

applied where necessary. The relationship between the measurement variables was analyzed with Spearman's correlation analysis. In all statistical analyses, comparisons with a p-value below 0.05 were considered statistically significant.

RESULTS

There were no difference in age (p= 0.095), gender (p= 0.530), and marital status (p= 0.117) between the OCD group and the control subjects. The demographic and clinical characteristics of the OCD and the control group are shown in Table 1.

A significant negative correlation was found between age and ST (r= −0.245, p=0.041) in the OCD group, and between age and NS (r= −0.405, p=0.001) in the control group. There were no age differences detected on the other TCI scores for the OCD or control groups.

There were also no gender differences deteted regarding the TCI scores in the OCD group, apart from, for the HA subscale in which women scored significantly higher than men (24.8±5.3 vs. 20.8±5.1, p=0.006). No gender differences in terms of the TCI scores were reported in the control group, except for the C subscale in which women scored significantly higher than men (30.5±5.2 vs. 27.4±5.2, p=0.025).

The clinical features and comorbid psychiatric disorders of the OCD group were presented in Table 2. Of the cases, 8% (n=6) did not use any psychiatric medicine, 46% (n=32) used only antidepressants, and 46% (n=32) used other psychopharmacological agents (such as benzodiazepines, antipsychotics, mood-regulating agents) in addition to the antidepressants. In addition, the distribution of the types of obsessions and compulsions in OCD cases is shown in Table 3.

The TCI profiles of the OCD patients and the healthy volunteers are figured in Table 4. Subjects with OCD

Table 1: Comparison of demographic and clinical characteristics of the patient group and the control group

		OCD	**Control**	
		n (%)	**n (%)**	**p**
		70 (51.9)	**65 (48.1)**	
Age	Mean±SD	34.43±11.46	37.45±11.70	0.095
	Min-max	18-67	18-67	
Gender	Female	50 (71.5)	36 (55.4)	0.530
	Male	20 (28.5)	29 (44.6)	
Marital status	Married	40 (57.1)	46 (70.8)	
	Single	25 (35.7)	18 (27.7)	0.117
	Divorced/widowed/separated	5 (7.1)	1 (1.5)	
Education level	Primary school	24 (34.3)	13 (20.0)	
	Secondary school	8 (11.4)	3 (4.6)	0.700
	High school	21 (30.0)	30 (46.5)	
	College/University	17 (24.3)	19 (29.2)	
Profession	Housewife – unemployed	40 (57.1)	17 (26.2)	
	Official	10 (14.3)	20 (30.8)	
	Worker	7 (10.0)	19 (29.2)	**<0.001**
	Student	11 (15.7)	5 (7.7)	
	Retired	2 (2.9)	4 (6.2)	
Average BDI score		21.37±13.66	6.75±5.30	**<0.001**
Average BAI score		24.14±15.47	6.29±5.05	**<0.001**

BDI: Beck depression inventory BAI: Beck anxiety inventory OCD: Obsessive-Compulsive Disorder

Table 2: The clinical features of the OCD group (n=70)

		Pure OCD (n=23) Mean ± SD (Min-Max)	**OCD with psychiatric comorbidity (n=47)** Mean ± SD (Min-Max)	**p**
Age		30.91±12.34 (18.00-67.00)	36.15±10.72 (18.00-56.00)	0.072
Age at Onset of the Disorder		22.22±11.44 (7.00-60.00)	26.07±10.60 (9.00-52.00)	0.061
Duration of the Disorder (years)		8.43±7.06 (1.00-28.00)	10.07±9.10 (0-36.00)	0.647
The duration of seeking medical advice from a doctor (year)		2.71±3.09 (0-11.00)	3.88±4.81 (0-18.00)	0.711
Y-BOCS obsession sub-score		10.22±3.27 (5.00-17.00)	12.57±3.43 (6.00-20.00)	**0.026**
Y-BOCS compulsion sub-score		9.39±4.16 (0-17.00)	12.13±3.93 (0-20.00)	**0.025**
BAI		12.65±9.10 (1.00-34.00)	29.77±14.86 (1.00-59.00)	**<0.001**
BDI		10.87±8.02 (0-32.00)	26.51±12.93 (0-60.00)	**<0.001**
			n (%)	
Comorbid psychiatric disorders	Depression		27 (38.6)	
	Dysthymia		5 (7.1)	
	Panic Disorder		4 (5.7)	
	Social Phobia		3 (4.3)	
	Special Phobia		2 (2.9)	
	Generalized Anxiety Disorder		2 (2.9)	
	Bipolar Disorder I-II		2 (2.9)	
	Post-Traumatic Stress Disorder		1 (1.4)	
	Adjustment Disorder		1 (1.4)	

BDI: Beck depression inventory BAI: Beck anxiety inventory OCD: Obsessive-Compulsive Disorder YBOCS: Yale-Brown obsessive compulsive scale

Table 3: Distribution of obsessive-compulsive symptoms of the patients

		n	**%**
Types of obsessions	Contamination	59	84.3
	Symmetry	36	51.4
	Religious	19	27.1
	Sexual	16	22.9
	Aggression	11	15.7
	Other	8	11.4
	Collecting/Storing	3	4.3
	Somatic	3	4.3
Types of compulsion	Cleaning	58	82.9
	Controlling	42	60.0
	Sorting, organizing	39	55.7
	Counting	25	35.7
	Repetitive/Ceremonial behavior	23	32.9
	Other	6	8.6
	Collecting, storing	3	4.3

NOTE: Since more than one obsession and compulsion may coexist in the same patient, the total percentage is higher than 100%.

were characterized by higher HA (p<0.001) scores and lower C (p= 0.034) and SD (p <0.001) scores than the healthy control group.

No significant correlations between the TCI scores and the onset ages of OCD, previous duration of the disorder, and the time until the first psychiatric administration were detected. The relationships between the YBOCS, BDI, and BAI scale scores of the OCD group and their temperament character traits are shown in Table 5. Presence of depressive symptoms assessed by the BDI was correlated positively with HA (r= 0.442, p<0.001) and ST (r= 0.243, p=0.043); negatively with SD (r= -0.582, p<0.001) and C (r= -0.354, p=0.003). Presence of anxiety symptoms assessed by the BAI was correlated positively with HA (r= 0.254, p= 0.034) and, ST (r= 0.361, p=0.002); negatively with SD (r= -0.472, p<0.001). The Obsession and the Compulsion subscales of Y-BOCS were correlated negatively with SD and, C. Total score of Y-BOCS was correlated negatively only with SD.

In order to evaluate the effect of psychiatric comorbidity on temperament and character traits, we divided OCD patients into two groups as comorbid and non-comorbid ones. The comparisons between pure OCD, comorbid OCD, and the control group in terms of TCI are shown in Table 6. The 47 subjects with a comorbid psychiatric disorder differed significantly from the 23 patients without the comorbid psychiatric disorder, on the TCI scales measuring ST, which was significantly higher among those with a comorbid disorder (19.1±5.2 [20 (8-28)] vs. 15.5±3.9 [15 (7-21)], p=0.005), while SD (21.3±6.0 [20 (12-39)] vs. 26.8±6.0 [28 (11-37)], p<0.001) was lower. In our study, when comparing pure OCD patients with the healthy control group, it was found that the HA score was higher and the ST score was lower. OCD patients with psychiatric comorbidity had higher HA scores and lower SD scores compared to the healthy control group. It was found that OCD patients with psychiatric comorbidity had lower SD scores and higher ST scores compared to Pure OCD patients.

DISCUSSION

Although there are many studies in the literature related to the comorbidity of personality disorder in OCD patients, studies evaluating personality in terms of dimensional analysis have been started to be conducted in recent years (Alonso et al. 2008). In these studies, the most important finding that recurred steadily was that patients with OCD had a higher HA score compared to the healthy control group. There are also studies reporting lower SD, C, or NS scores or higher RD scores in relation to other TCI subscales in patients with OCD (Alonso et al. 2008, Lyoo et al. 2001, Kim et al. 2009, Bejerot et al. 2000). In our study, HA scores were found higher and ST scores were found lower in the pure OCD group compared to the control group, similar to the studies in the literature.

Harm Avoidance (HA) reflects the tendency to stop a behavior to avoid punishment or disappointment, without winning any reward (Alonso et al. 2008). In studies comparing healthy volunteers and OCD patients, it was reported that HA scores were higher in OCD patients. In our study, HA scores were found to be significantly higher in both pure OCD and OCD with psychiatric comorbidity groups compared to the control group which is in line with the literature (Bejerot et al. 1998, Kim et al. 2009, Lyoo et al. 2001, Cruz-Fuentes et al. 2004, Kusunoki et al. 2000). Bejerot et al. tried to explain the high HA scores by reporting that OCD patients have anxiety and rapid fatigue characteristics and generally avoid situations that can cause harm (Bejerot et al. 1998).

Table 4: Assessment of temperament and character traits of the patients with obsessive-compulsive disorder and the control group

Temperament and Character Dimensions	OCD (n=70) Mean ± SD	Control (n=65) Mean ± SD	p
Novelty Seeking (NS)	16.84±4.80	16.15±4.69	0.401
Harm Avoidance (HA)	23.68±5.58	17.06±4.97	**<0.001**
Reward Dependence (RD)	14.34±3.66	13.33±3.37	0.101
Persistence (P)	4.77±1.87	5.29±1.71	0.075
Self-Directedness (SD)	23.15±6.53	28,53±6.22	**<0.001**
Cooperativeness (C)	27.10±5.72	29.16±5.45	**0.034**
Self Transcendence (ST)	17.95±5.12	19.16±5.29	0.108

OCD: Obsessive-compulsive disorder

Table 5: Relationships between the YBOCS subscale, BDI, and BAI scores of the OCD group and their temperament and character traits

	NS		HA		RD		P		SD		C		ST	
	r	p	r	p	r	p	r	p	r	p	r	p	r	p
BAI	-0.153	0.206	**0.254**	**0.034**	-0.071	0.557	-0.042	0.727	**-0.472**	**<0.001**	-0.198	0.100	**0.361**	**0.002**
BDI	-0.211	0.080	**0.442**	**<0.001**	-0.100	0.411	-0.118	0.330	**-0.582**	**<0.001**	**-0.354**	**0.003**	**0.243**	**0.043**
YBOCS	-0.109	0.367	0.017	0.890	-0.101	0.407	-0.077	0.527	**-0.334**	**0.005**	-0.232	0.053	0.062	0.608
Y-BOCS obsession sub-score	-0.161	0.183	-0.004	0.972	-0.068	0.577	-0.057	0.640	**-0.289**	**0.015**	**-0.248**	**0.038**	0.097	0.426
Y-BOCS compulsion sub-score	-0.037	0.761	0.045	0.714	-0.141	0.244	-0.095	0.434	**-0.358**	**0.002**	**-0.243**	**0.042**	0.030	0.807
Age of onset of OCD	-0.083	0.495	-0.005	0.967	-0.079	0.517	-0.116	0.340	-0.159	0.189	-0.101	0.407	0.111	0.361
Duration of OCD	0.054	0.657	0.154	0.204	0.125	0.304	0.058	0.635	-0.024	0.843	-0.034	0.781	0.154	0.203
Time until the first psychiatric administration	0.013	0.914	0.205	0.089	-0.082	0.498	0.009	0.940	-0.091	0.454	-0.163	0.179	0.033	0.789

BDI: Beck depression inventory,
BAI: Beck anxiety inventory,
OCD: Obsessive Compulsive Disorder,
YBOCS: Yale-Brown obsessive compulsive scale,
NS: Novelty Seeking, HA: Harm Avoidance,
RD: Reward Dependence,
P: Persistence, S: Self-Directedness,
C: Cooperativeness,
ST: Self Transcendence

Table 6: Comparison of temperament and character dimensions of pure OCD, OCD with psychiatric comorbidity and the control group

	Pure OCD (n=23)		OCD with psychiatric comorbidity (n=47)		Healthy control (n=65)		p	Post hoc
	median	min-max	median	min-max	median	min-max		
NS	19.00	9.00-24.00	16.00	8.00-30.00	16.00	5.00-28.00	0.208	-
HA	23.00	14.00-34.00	25.00	11.00-35.00	17.00	2.00-27.00	**<0.001**	Pure OCD = OCD_c OCD_c > Control Pure OCD > Control
RD	15.00	4.00-21.00	14.00	4.00-21.00	13.00	5.00-19.00	0.139	-
P	5.00	2.00-8.00	5.00	1.00-8.00	5.00	2.00-8.00	0.201	-
SD	28.00	11.00-37.00	20.00	12.00-39.00	29.00	15.00-40.00	**<0.001**	Pure OCD > OCD_c OCD_c < Control Pure OCD = Control
C	30.00	15.00-36.00	27.00	15.00-39.00	30.00	18.00-39.00	0.065	-
ST	15.00	7.00-21.00	20.00	8.00-28.00	20.00	4.00-28.00	**0.004**	Pure OCD < OCD_c OCD_c = Control Pure OCD < Control

NS: Novelty Seeking, HA: Harm Avoidance, RD: Reward Dependence, P: Persistence, S: Self-Directedness, C: Cooperativeness, ST: Self Transcendence, OCD: Obsessive-Compulsive Disorder OCD_c: OCD with psychiatric comorbidity

Novelty Seeking (NS) is assumed to be a hereditary tendency that generates intense vitality or excitement as a reaction to a new stimulus or a potential reward or a potential punishment (Alonso et al. 2008). In some studies in the literature, it was reported that the patients with OCD have lower NS scores compared to the control groups (Alonso et al. 2008, Lyoo et al. 2001, Kusunoki et al. 2000). Avoiding harm due to the person's exaggerated perception of risks because of a distorted assessment may explain why OCD patients perceive the condition as dangerous until it is proven to be safe when a new condition arises. It is thought that excessive anticipation anxiety about potential problems or a tendency to suppress investigative activities that may lead to new potential dangers, in other words, high HA and low NS scores are compatible with cognitive schemas explaining OCD (Alonso et al. 2008). On the other hand, there are also studies that do not support this perspective and report that there is no difference between OCD patients and the healthy control group in terms of NS scores (Kim et al. 2009, Bejerot et al. 1998, Cruz-Fuentes et al. 2004, Pfohl et al. 1990). Although higher HA scores were found in OCD patients in our study, similar to the ones in the literature, there was no statistical difference between the groups in terms of NS scores, unlike in the literature.

Reward Dependence (RD) reveals the tendency to respond to reward signals (especially verbal signals such as social approval, emotionality, and help) (Alonso et al. 2008). In the studies of Alonso et al. and Kim et al., a lower RD score was reported in OCD patients than in the control group. Lower RD scores demonstrate social sensitivity, attachment capacity, and the inability of adaptation (Alonso et al. 2008, Kim et al. 2009). In our study, there was no significant difference between the RD scores of pure OCD, OCD patients with psychiatric comorbidity, and the control group, unlike the literature.

Self-Directedness (SD) is a person's ability to accept responsibility, set meaningful goals, and develop skills and confidence in solving problems (Alonso et al. 2008). In many studies in the literature, it has been reported that OCD patients exhibit a lower SD score than the control group (Alonso et al. 2008, Kim et al. 2009, Bejerot et al. 1998, Kusunoki et al. 2000, Lyoo et al. 2003). In a previous study, SD, which is one of the character dimensions, was found negatively correlated with depression, anxiety, and lifelong mental disorder (Jylhä & Isometsä 2006); besides, it was associated with difficulty in regulating emotions that cause the development and progression of mental disorders (Komasi et al. 2022). In our study, unlike the literature, no difference was found between pure OCD and the control group in terms of SD scores. Also, SD scores were reportedto be lower in the OCD patients with psychiatric comorbidity than the ones in the control group, similar to the literature. Based on this finding, we thought that the characteristic of self-directedness was associated with comorbid depression and anxiety rather than OCD.

Cooperativeness (C) is defined as accepting other people's individual differences (Köse et al. 2004). Kim et al. reported that OCD patients had a lower C score

than the control group. Kusunoki et al. also found that OCD patients and major depression patients had a lower C score than the scores of the healthy control group (Kim et al. 2009, Kusunoki et al. 2000). In a study which adolescents aged 14 to 17 were evaluated, it has been shown that adolescents with many cooperative behaviors experienced very few psychopathological symptoms (Landazabal 2006). In our study, there was a significant difference between the OCD group and the control group in terms of C score (p= 0.034, Table 4). On the other hand, no significant difference between pure OCD, OCD with comorbidity, and the control group in terms of C score was found in our study, unlike the literature. Individuals high in C are described as socially tolerant, empathetic, helpful, and compassionate (Yalçın et al. 2020). The number of studies which evaluating the relationship with C and diagnosis categories is few. In a recent meta-analysis, it has been indicated that C is correlated negatively with all anxiety disorders except panic disorder, and the greatest effect dimension was correlated with OCD (Komasi et al. 2022). Previous studies reported a negative correlation between depression and anxiety, and cooperativeness (Bozkuş et al. 2021). In our study, the reason why no meaningful difference was detected among groups in terms of C scores when patients were classified according to comorbidity status can be related with many reasons such as the fewness of case numbers, the already high BAI and BDI scores in all OCD, the differences in OCD symptom profiles, the nature of accompanying comorbidity status etc.

Self-Transcendence (ST) is a human capacity to expand personal boundaries in many ways and reflects the tendency to spirituality, the ability to build identification with a wider world, and the ability to accept uncertainty (Alonso et al. 2008, Reed 2018).Similar to our study, it has been reported in the literature that ST scores are similar between OCD and control groups (Alonso et al. 2008, Kim et al. 2009, Bejerot et al. 1998, Lyoo et al. 2003). Although Kim et al. reported that 18.5% of OCD patients in their study sample had comorbid depression, they did not make a separate statistical evaluation on the comorbid group (Kim et al. 2009). Although comorbidity was not excluded in other studies, the depression effect was checked during the analysis. In our study, unlike the literature, the ST score was found to be lower in the pure OCD group compared to both the OCD with comorbidity and control groups. Based on this finding, we thought that self-transcendence, accepting uncertainties, and identification of the world had a stronger relationship with depressive mood, and these abilities decreased with OCD. When we are impatient and judgmental, there is a decrease in self-transcendence, and we will be busy to struggle with problems that we cannot control (Garcia et al. 2020). This situation can explain the lowness of self-transcendence in pure OCD group scores compared to the control group in our study.

According to the literature it has been emphasized that the relationship between high ST and HA and low SD characteristics may form an indicator of schizotypy, and thus it may represent a vulnerability to major depression. In the literature, as our study suggested, it has also been reported that ST is high in OCD patients with comorbid major depression and that ST may be associated with magical thinking, dissociative tendencies, and dysfunctional strategies to get over the sense of fear (even with psychotic symptoms) (Komasi et al. 2022, Richter et al. 2003).

In the studies of the literature that are investigating the relationship between depressive mood and temperament and character traits, HA and SD were found to be strongly associated with the severity of depressive mood, both dimensionally and at the level of subscales. It has been reported that another character dimension that shows a significant relationship is C. The combination of low SD and C with high HA predisposes a person to develop a depressed mood (Richter et al. 2003, Peirson & Heuchert 2001, Arkar 2010). For this reason, OCD patients may have a high comorbid major depressive disorder. In our study, it was found that HA scores increased and SD and C scores decreased as the BDI scores increased in the OCD group. In addition, while the HA scores of the OCD with psychiatric comorbidity group were found similar to the Pure OCD group, the SD scores of the OCD with psychiatric comorbidity group were found to be lower than both the Pure OCD and the Control group. According to our study results, while OCD does not affect self-directedness skills, the addition of comorbidity significantly reduces self-directedness. In our study, Depression and Dysthymia were the most common comorbidities in OCD patients. This finding also explains why depression comorbidity is associated with adverse prognostic characteristics in OCD patients.

In a study conducted by Jylhä and Isometsä on the general population of Finland, it was reported that the increase in anxiety symptoms evaluated with BAI is associated with high HA and low SD scores (Jylhä & Isometsä 2006). In our study, in line with the literature, it was found that HA scores increased and SD scores decreased as the BAI scores increased in the OCD group. It was reported that low SD scores are associated with poor character development, low self-confidence, and a tendency to blame others and accordingly, they have low problem-solving skills and feel more stressed and anxious (van Berkel 2009). In our study, having HA scores higher in both OCD

with psychiatric comorbidity and Pure OCD groups compared to the control group suggests that harm avoidance is associated with both OCD and comorbid depression and anxiety. While the correlation between SD scores and BDI and BAI scores showed a strong negative correlation in our study, the relationship between SD scores and YBOCS scores showed a weak negative correlation. On the other hand, SD scores of the OCD with psychiatric comorbidity group were found to be significantly lower than both the Pure OCD and the Control group. When these findings are evaluated together, it may be thought that low SD scores are related to comorbid depression and anxiety rather than OCD itself. This situation may be related to the fact that the functionality is worse in OCD patients with psychiatric comorbidity.

In the study by Kim et al., they found that lower SD and C scores projected higher YBOCS scores (Kim et al. 2009). It has been reported by Lyoo et al. that the presence of high HA and low SD scores would have a significant relationship with the severity of obsessive-compulsive symptoms, nonetheless of the level of depression and anxiety (Lyoo et al. 2001). In our study, compared to the control group, HA scores were found to be higher in both Pure OCD and OCD with comorbidity groups regardless of accompanying, in other words, comorbid anxiety and depression. However, no correlation was found between HA scores and OCD severity. Alonso et al., on the other hand, did not find a relationship between TCI sub-dimensions and YBOCS scores after excluding the effect of age and depressive symptoms (Alonso et al. 2008). Similar to the study of Alonso et al., our study showed no statistically significant relationship between TCI scores and OCD severity which were assessed with YBOCS.

The fact that this study is a cross-sectional study, there is no field work, it has a small sample number, and the evaluations were made through the scales filled by the patients themselves, the personality disorder comorbidity was not screened, and the effects of interventions such as medication or behavioral therapy on TCI were not evaluated are the points that should be counted among the limitations.

CONCLUSIONS

As a result of our study, it was found that harm avoidance was high in OCD patients regardless of psychiatric comorbidity, and the addition of comorbidity led to a decrease in self-directedness skills and an increase in self-transcendence skills. Having an increase in the HA scores and a decrease in the SD and C scores as the scores of BDI and BAI increase in OCD patients may be associated with a loss of functionality caused by the comorbidity condition in OCD patients. The frequent occurrence of depression comorbidity in OCD patients makes it difficult to separate the effects of both disorders. In addition, it was found that there was no significant relationship between OCD severity and TCI subscales in our study. In light of all these findings, there is a need for long-term followed-up studies with larger sample groups which also address the response to treatment regarding the temperament and character traits of OCD patients. These findings indicate the significance of taking the presence of comorbid psychiatric diagnoses when evaluating personality dimensions in OCD patients. Evaluation of temperament and character traits in OCD can be of clinical benefit in terms of predicting the prognosis and planning appropriate psychotherapeutic interventions.

Ethical Considerations: Does this study include human subjects? YES
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References

Alonso P, Menchón JM, Jiménez S, Segalàs J, Mataix-Cols D, Jaurrieta N et al.: Personality dimensions in obsessive–compulsive disorder: Relation to clinical variables. Psychiatry Res 2008; 157: 159-68.

Arkar H: Depresif Duygudurum ile Kişlilik Arasındaki İlişki: Beck Depresyon Envanteri ile Mizaç ve Karakter Envanteri'nin Karşılaştırılması. [The Relationship between Depressive Mood and Personality: Comparison of the Beck Depression Inventory and the Temperament and Character Inventory – in Turkish] Yeni Symposium 2010; 48: 116-21.

Beck AT, Epstein N, Brown G & Steer RA: An inventory for measuring clinical anxiety: psychometric properties. J Consult Clin Psychol 1988; 56: 893-7.

Beck AT, Ward CH, Mendelson M, Mock J & Erbaugh J: An inventory for measuring depression. Arch Gen Psychiatry 1961; 4: 561-71.

Bejerot S, Schlette P, Ekselius L, Adolfsson R & von Knorring L: Personality disorders and relationship to personality dimensions measured by the Temperament and Character Inventory in patients with obsessive-compulsive disorder. Acta Psychiatr Scand 1998; 98: 243-9.

Bejerot S, von Knorring L & Ekselius L: Personality traits and smoking in patients with obsessive-compulsive disorder. Eur Psychiatry 2000; 15: 395-401.

Bozkuş F, Ateş S, Orhan FO & Samur A: Temperament and character profile assessment of anxiety and depression in tuberculosis patients. Eurasian J Pulmonol 2021; 23: 159.

Cloninger CR: A systematic method for clinical description and classification of personality variants: A proposal. Arch Gen Psychiatry 1987; 44: 573-88.

Cloninger CR, Svrakic DM & Przybeck TR: A psychobiological model of temperament and character. Arch Gen Psychiatry 1993; 50: 975-90.

Crino RD & Andrews G: Obsessive-compulsive disorder and axis I comorbidity. J Anxiety Disord 1996; 10: 37-46.

Cruz-Fuentes C, Blas C, Gonzalez L, Camarena B & Nicolini H: Severity of obsessive-compulsive symptoms is related to self-directedness character trait in obsessive-compulsive disorder. CNS Spectr 2004; 9: 607-12.

Denys D, Tenney N, van Megen HJ, de Geus F & Westenberg HG: Axis I and II comorbidity in a large sample of patients with obsessive-compulsive disorder. J Affect Disord 2004; 80: 155-62.

Ferrão YA, Silva R, Gonçalves L, Porto R & Pizutti L: Self-Transcendence In Obsessive Compulsive Disorder: An Exploratory Study of Psychopathological, Sociodemographic and Clinical Aspects. Eur Neuropsychopharmacol 2018; 28: 773-4. https://doi.org/10.1016/j.euroneuro.2017.10.017.

Garcia D, Rosenberg P, Lester N, Cloninger KM & Cloninger CR: Self-Transcendence. In: Zeigler-Hill V & Shackelford TK (eds): Encyclopedia of Personality and Individual Differences, 4811-3. Springer, Cham, 2020.

Goldsmith HH, Buss AH, Plomin R, Rothbart MK, Thomas A, Chess S et al.: Roundtable: What is Temperament? Four approaches. Child Dev 1987; 58: 505-29.

Goodman WK, Price LH, Rasmussen SA, Mazure C, Fleischmann RL, Hill CL et al.: The Yale-Brown Obsessive Compulsive Scale. I. Development, use, and reliability. Arch Gen Psychiatry 1989; 46: 1006-11.

Jylhä P & Isometsä E: Temperament, character and symptoms of anxiety and depression in the general population. Eur Psychiatry 2006; 21: 389-95.

Kim SJ, Kang JI & Kim CH: Temperament and character in subjects with obsessive-compulsive disorder. Compr Psychiatry, 2009; 50: 567-72.

Komasi S, Rezaei F, Hemmati A, Rahmani K, Amianto F & Miettunen J: Comprehensive meta-analysis of associations between temperament and character traits in Cloninger's psychobiological theory and mental disorders. J Int Med Res 2022; 50: 3000605211070766.

Köse S, Sayar K, Ak İ, Aydin N, Kalelioğlu Ü, Kirpinar I et al.: Mizaç ve Karakter Envanteri (Türkçe TCI): Geçerlik, Güvenirliği ve Faktör Yapısı. [Turkish version of the Temperament and Character Inventory (TCI): reliability, validity, and factorial structure – in Turkish] Klinik Psikofarmakoloji Bulteni 2004; 14: 107-31.

Kusunoki K, Sato T, Taga C, Yoshida T, Komori K, Narita T et al.: Low novelty-seeking differentiates obsessive-compulsive disorder from major depression. Acta Psychiatr Scand 2000; 101: 403-5.

Landazabal M: Psychopathological Symptoms, Social Skills, and Personality Traits: A Study with Adolescents. Span J Psychol 2006; 9: 182-92.

Lyoo IK, Lee DW, Kim YS, Kong SW & Kwon JS: Patterns of temperament and character in subjects with obsessive-compulsive disorder. J Clin Psychiatry 2001; 62: 637-41.

Lyoo IK, Yoon T, Kang DH & Kwon JS: Patterns of changes in temperament and character inventory scales in subjects with obsessive-compulsive disorder following a 4-month treatment. Acta Psychiatr Scand 2003; 107: 298-304.

Peirson AR & Heuchert JW: The relationship between personality and mood: comparison of the BDI and the TCI. Pers Individ Differ 2001; 30: 391-9.

Pfohl B, Black D, Noyes R Jr., Kelley M & Blum N: A test of the tridimensional personality theory: association with diagnosis and platelet imipramine binding in obsessive-compulsive disorder. Biol Psychiatry 1990; 28: 41-6.

Reed PG: Theory of self-transcendence. In Smith MJ & Liehr PR (eds): Middle Range Theory For Nursing (4th ed.), 119-46. Springer, New York, 2018.

Richter J, Polak T & Eisemann M: Depressive mood and personality in terms of temperament and character among the normal population and depressive inpatients. Pers Individ Differ 2003; 35: 917-27.

Sahin AR & Boke O: Obsesif-Kompulsif Bozukluk. In Koroglu E & Gulec C (eds): Psikiyatri Temel Kitabı (2nd ed.), 343-52. Hekimler Yayın Birliği, Ankara, 2007.

Uğuz F, Aşkın R & Çilli AS: Obsesif kompulsif bozukluğun eksen I ve Eksen II bozuklukları ile birlikteliği. [The comorbidity with axis I and axis II disorders of obsessive-compulsive – in Turkish] Türkiye'de Psikiyatri 2006; 8: 1-5.

van Berkel HK: The relationship between personality, coping styles and stress, anxiety, and depression. 2009: Thesis of Master of Science Psychology, University of Canterbury. https://ir.canterbury.ac.nz/bitstream/handle/10092/2612/thesis_fulltextpdf.pdf;jsessionid=173D3469893F4241F5DB607A6B66B098?sequence=1

Yalçın M, Baş A, Ergelen M, Gökçe E, Usta Sağlam NG, Öcek Baş T et al.: Psychiatric comorbidity and temperament-character traits of the patients with lichen simplex chronicus: The relation with the symptom severity of the disease. Dermatologic Therapy 2020; 33: e14389.

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