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Development and Establishment of Reliability and Validity of Obsessive-Compulsive Disorder Scale

Asma Riffaqt

BS Graduate, Department of Psychology, University of Peshawar

asmak14046@gmail.com

Dr. Roomana Zeb (Corresponding Author)

Assistant Professor, Department of Psychology, University of Peshawar

roomazeb@uop.edu.pk

Abstract

Obsessive Compulsive Disorder (OCD) is a chronic disorder increasing overtime, hence in need of its proper timely assessment. To achieve this objective a valid and reliable tool is needed which gives the accurate assessment of the disorder. There are some scales which already fulfill this function but they are in foreign language which may not yield sound results. For the said purpose 70 statements in Likert format were devised which were reduced to 50 after the thorough check by the expert. The remaining items were scrutinized quantitatively by applying it on a sample of 300 respondents (n=122 OCD & n=178 normal). Item-total correlations resulted in the deletion of five statements less than .30 loading. Independent sample t test also showed that OCD sample scored significantly high than normal population on the scale. Coefficient alpha of .931 also revealed that the newly developed scale is a highly reliable scale. The present scale can be used in clinical and research settings for the proper assessment and treatment of OCD.

Keywords: *Obsessive Compulsive Disorder, Qualitative Item Analysis, Foreign Language, Chronic Disorder*

Introduction

Obsessive–Compulsive Disorder (OCD) is a common and heterogeneous mental disorder, and it involves two salient sides of obsessions and compulsions. Obsessions are unwelcome and repetitive thoughts that falsely come to the mind of a person whereas compulsions are recurrent tasks or thought processes that an individual is urged to perform in an effort to ease the anxiety caused by the thoughts (Bokor & Anderson, 2014). Research conducted by Stein, Ruscio, Altwaijri, and others (2025) regarding the World Mental Health Survey reached the conclusion that OCD is a prevalent and chronic disorder, young onset and lifetime prevalence of 4.1 all over the world. OCD continues to be subjected to severe under treatment despite the fact that its prevalence is colossal with only a small number of individuals in low and middle-income nations being treated. Although both the development of obsessions and compulsions are similar, around two out of ten OCD cases can result in obsessions only and such are commonly oriented around the phobia of harming others (Psychiatria Polska, 2021). OCD is believed to be polygenic and hereditary in nature i.e., the assembly of a variety of genes, some of which are rare and destructive, which may be spontaneously manifested. Moreover, there is some genetic vulnerability in OCD that is common in other related conditions such as Tourette syndrome and anorexia nervosa suggesting that OCD has a similar biological cause (Mahjani et al., 2021). The twin studies are evidenced to suggest that genetic factors play a major role and the heritability in this case is estimated at about 48% (Fernandez, Leckman, & Pittenger, 2018). It also has some areas of the brain that govern emotions, make decisions and guide behavior related to OCD

(Bokor & Anderson, 2014). OCD is usually treated using a combination of both psychotherapy and medication and in the worst-case scenario brain stimulation or surgery. The most appropriate psychological therapy is exposure and Response Prevention (ERP). As a type of drug, Selective Serotonin Reuptake Inhibitors (SSRI) are also preferred, and it is administered to reduce the intensity of the obsessive and compulsive symptoms. The extreme treatment options to be discussed include treatment options such as the use of electroconvulsive therapy (ECT) or transcranial magnetic stimulation (TMS; Bokor & Anderson, 2014). Abramowitz et al. (2010) determined four key dimensions of OCD symptoms:

- Fear of contamination,
- Need for symmetry or completeness,
- Responsibility for harm or mistakes, and
- Intrusive taboo thoughts (such as immoral or violent ideas).

The initial theory of OCD behavioral theory was the Dollard and Miller theory that provided an adaptation of the two-factor theory of Mowrer (Mowrer, 1960). They further postulated that fears are learnt during the process of classical conditioning and are maintained as a result of avoidance and escape behaviors that are not reinforced (Dollard, & Miller, 1950). The cognitive-behavioral model that added further to this idea was on how beliefs and appraisals unfolded. It is proven that intrusive thoughts are present in the majority of the people (Gibbs; Rachman & de Silva, 1978) though in OCD the intrusive thoughts are wrongly interpreted as dangerous or meaningful (Frost & Steketee, 2002). Finally, there is the Reciprocal Interaction Model (RIM) that integrates the behavioral, cognitive, and neurocognitive (Abramowitz, & Jacoby, 2015). It does not eliminate the vicious circle of obsessions and compulsions (Abramowitz et al., 2010) and adds that the executive control also interacts with the anxiety and belief. The RIM states that executive control is weak and anxiety is high and results to compulsions, executive control is also strong and symptoms become less prevalent (Cohen et al., 2014; Kalanthroff et al., 2016; Cohen et al., 2015; Linkovski et al., 2013; Anderson & Green, 2001; Anderson & Levy, 2009).

As the study by Bürkle, Schmidt, and Fendel (2025) suggests, mindfulness- and acceptance-based therapies (MABPs), such as ACT and MBCT, are effective treatments in OCD and other symptoms related to it, e.g., anxiety and depression (Bürkle, Schmidt, & Fendel, 2025). Recent studies have indicated that OCD can be characterized by a great risk of suicide. Reports have been mixed with respect to suicide attempts by individuals with OCD with variation of 6-51.7 and average of 14.2 (Ujjwal, Sanjita, & Kumar, 2024). OCD assessment scales include Yale-Brown Obsessive-Compulsive Scale, Obsessive-Compulsive Inventory (OCI and OCI-R), Florida Obsessive-Compulsive Inventory (FOCI), and Dimensional Obsessive-Compulsive Scale (DOCS). But these scales are constructed on the basis of English language and 38-percent of Pakistani population is illiterate or unable to read and understand the above-mentioned scales. The rising demand is the requirement to possess culturally and linguistically sensitive OCD scales that may be employed to diagnose and treat the illiterate population suitably.

Rationale

According to cross-cultural psychology, the tests that are developed in a particular culture may not ensure that they are going to work in the same way in a different culture. It is because people of different cultures have their traditions, customs and social rules that can make them be responsive to the question. Maqsood et al. (2012) suggested that the measurement tools implemented in the Western world should be subject to some form of examination before they can be applied to other cultures to determine that they are in fact suitable. Similarly, Poortinga and Flies (as cited in Ali & Zeb, 2023) have suggested that application of a test across cultures is possible only when the ability or trait that a scale measures is defined by the same concept in

both cultures, when the behaviors related to the ability are structured in a comparable way, and when the interpretation of the test scores can be made in a comparable fashion in two cultural settings.

Our decision to create our own OCD scale was informed by the fact that most of the tools that were available were formulated in English. This poses a problem to the first language Urdu speakers. To deal with this issue, we worked out an OCD scale in Urdu so that the language was not an issue and the cultural differences could be defeated. The locally acceptable scale enhanced its reliability and validity to the local people. Dependable Urdu OCD scale will equally encourage increased local research of the obsessive-compulsive disorder and other mental health disorders. This will help the psychologists, teachers and the researchers in obtaining the right information and disseminating viable knowledge to the rest of the world on a Pakistani standpoint.

Objective

1. This research was aimed at developing and establishing a culturally and linguistically appropriate scale to assess obsessive-compulsive disorder, and
2. To establish the reliability and validity of the newly developed OCD scale

Method

Sample

The sample of the current study (N=300) was selected through convenience sampling method. The sample consisted of 122 individuals suffering from OCD whereas, 178 were having no psychiatric diagnosis. The sample comprised of 171 males and 129 females. The survey was physically administered to a total of 284 participants. While 16 subjects participated online via WhatsApp. The age range of the sample was between 12 to 70 years (M= 21.91; SD=10.37).

Instrument

The initial draft of OCD scale consisted of 70 items based on the most reported symptoms of OCD which were based on DSM V-TR criteria. The response format of the scale was Likert with five response choices scored between 1 to 5. Some statements were based on obsessions while others on compulsions. Compulsions included cleaning, counting and checking rituals.

Procedure

The study was conducted in two phases. The first phase comprised of item generation of OCD scales based on deductive approach of item writing resulting in 70 statements measuring OCD. These items were given to the expert in psychometrics who suggested a change in the wordings of few items and discarded 20 items from the scale. After the qualitative analysis of the scale, in phase two it was subjected to statistical scrutiny through experimental try out. The scale was administered to 300 individuals of which 122 were diagnosed OCD patients and 178 were normals. Data collection for the clinical arm of the study was conducted at a specialized psychiatric facility characterized by a high volume of patients seeking treatment for Obsessive-Compulsive Disorder (OCD). The clinical sample comprised N = 88 participants, all of whom had a confirmed primary diagnosis of OCD. A second, non-clinical sample was recruited from a private educational institution, yielding N = 212 respondents. This cohort consisted of both faculty and students who engaged in a face-to-face survey administration.

The demographic composition of this group was as follows:

- **Faculty:** Represented by a gender-diverse group of educators.
- **Students:** Comprised a predominantly male population.

Upon analysis of individual psychometric items, a subgroup of n = 34 individuals, including both students and teachers of both genders, exhibited responses consistent with symptomatic OCD.

The remaining $n = 178$ participants within this cohort were classified as neurotypical or "normal" controls for the purpose of comparative analysis.

The sample was assured about the confidentiality of their data and their right to withdraw from the data at any point of research. They were asked to provide their genuine responses as to facilitate the development of a psychometrically sound scale measuring OCD. After the completion of the form, the participants were thanked for their contribution in the research.

Result

Table 1

Demographic Characteristics of the Sample

Variable	N	%
Gender		
Males	171	57
Females	129	43
Status		
OCD	122	40.5
Non-OCD	178	59.5

Table 2

Item Total Correlations of OCD Scale (Items=50; N=300)

Item No	r	Item No	r	Item No	r	Item No	r	Item No	r
1	.10	11	.50	21	.45	31	.58	41	.40
2	.34	12	.47	22	.48	32	.45	42	.52
3	.30	13	.46	23	.46	33	.46	43	.47
4	.30	14	.54	24	.53	34	.54	44	.52
5	.47	15	.37	25	.37	35	.56	45	.54
6	.51	16	.45	26	.34	36	.55	46	.43
7	.46	17	.48	27	.48	37	.40	47	.53
8	.27	18	.20	28	.21	38	.51	48	.61
9	.34	19	.46	29	.35	39	.51	49	.45
10	.32	20	.23	30	.52	40	.58	50	.42

Table 2 show that item number 1, 8, 18, 20, and 28 have loading less than .30 cut off for item retention, hence they are deleted from the scale. The readings show that all the items are consistently measuring the same construct proving the validity of the scale. Likewise the reliability of 50 items was .929 which shows high internal consistency.

Table 3

Item Total Correlations of OCD Scale (Items=45; N=300)

Item No	r	Item No	r	Item No	r	Item No	r	Item No	r
2	.30	13	.47	25	.36	36	.56	46	.54
3	.30	14	.55	26	.36	37	.42	47	.61
4	.30	15	.38	27	.48	38	.52	48	.46
5	.48	16	.44	29	.33	39	.52	49	.41
6	.52	17	.48	30	.53	40	.40	50	.42
7	.47	19	.47	31	.59	41	.52		
9	.34	21	.45	32	.46	42	.47		
10	.33	22	.50	33	.47	43	.53		
11	.49	23	.46	34	.53	44	.53		
12	.45	24	.54	35	.56	45	.41		

Table 3 shows that all items successfully loaded on OCD scale that is above .30 cut off required. The readings show that all the items are consistently measuring the same construct proving the validity of the scale. Likewise, the reliability of 45 items was .931 which shows high internal consistency.

Table 4

Descriptive Statistics and Coefficient Alpha of OCD Scale

Scales	No of Items	Mean	SD	Range		Alpha Coefficient
<i>OCD Scale</i>	45	132.43	29.95	69	215	.93

Note. OCD=Obsessive-Compulsive Disorder

Table 4 show the psychometric properties of the scale with 69 as minimum score and 215 as maximum. The mean of the scale is 132.43 and high internal consistency is reflected with coefficient alpha of .931.

Table 5

T test comparison between normal and OCD sample on OCD Scale

Variables	OCD		Normal		t (204)	P	Cohen's d
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
<i>EIS</i>	107.69	19.05	149.74	23.30	-14.198	.001	1.97

Note: M = Mean, SD = Standard Deviation, *p* = level of significance, EIS = Emotional Intelligence Scales

Table 5 shows differences on OCD scale between normal and OCD sample, the calculated value of *t* indicates a significant difference (*t* (204) =14.19, *p*<.001) where OCD sample has scored significantly high (*M*=107.69) than normal population on OCD scale (*M*=149.74) proving construct validity of the scale through contrasted group method approach.

Discussion

The present study aimed to develop an Urdu scale measuring the severity of OCD. The study was conducted in two phases, i.e., development of the items and then establishment of their psychometric features. Initially an item pool of 70 statements measuring OCD features were developed. An expert of the field inspected the items for any language, relevance or content inconsistency resulting in the deletion of 20 statements. The remaining items were put to the quantitative analysis. The scale was administered on 122 individuals suffering from OCD whereas 178 were normals. The initial analysis of item-total correlations showed five items (item 1, 8, 18, 20, & 28) as scoring less than .30 hence deleted from the scale. The remaining 45 statements were again put to item-total correlation check, this time all the items successfully got loaded on the scale. It shows that OCD scale is a homogeneous measure of OCD symptoms proving the construct validity of the scale. Scores on OCD scale were also compared between normal and OCD sample which showed that OCD sample outscored the normal population with a large effect size of 1.97. This result also indicate that the newly developed OCD scale is a valid measure of OCD symptoms as the normal population scored significantly low on the scale. Alpha reliability of the final draft is .931 which is above the suggested cutoff point (*r*=.70) manifesting high internal consistency.

Limitations and suggestions

The present study achieved its target by establishing the sound psychometric properties of the scale but due to the difficulty in accessing literate population suffering from OCD, a small sample was gathered. Table 5 has proven that OCD sample scored significantly high than normals on the scale but due to incomplete forms the comparison took place between further less respondents from OCD sample. Likewise, due to a limited sample size especially of OCD population

exploratory factor analysis was not performed. Although the scale measured both obsessions and compulsions of cleaning, checking and counting rituals, the subscales could not have been devised. It is suggested that future studies employ a large and diverse sample with advanced statistics determining the factor structure of the scale.

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Appendix

اس سوالنامے میں کل 50 سوالات ہیں۔ ہر سوال کو غور سے پڑھیں اور جو پہلا جواب آپ کے ذہن میں آئے اس کے مطابق جواب دیجیے۔ اس سوالنامے میں کوئی صحیح یا غلط جواب نہیں آپ کا جواب ہی آپ کی رائے کا اظہار کرے گا۔ سوال پڑھنے کے بعد سوچیے کہ آپ کے متعلق صحیح ہے کہ نہیں جس جواب سے آپ متفق ہوں اس پر صحیح (/) کا نشان لگائیں۔

بالکل درست درست پتہ نہیں غلط بالکل غلط

نمبر سوالات شمار

1	میں آلودگی کے خوف سے چیزوں کو چھونے سے گریز کرتا / کرتی ہوں۔				
2	اگر چیزیں اپنی جگہ پر ترتیب سے پڑی نہ ہوں تو مجھے بہت الجھن ہوتی ہے۔				
3	جراثیم کے خوف سے میں چیزوں کو کسی رومال (نشو) سے پکڑ کر اٹھاتا / اٹھاتی ہوں۔				
4	میرے ذہن میں بار بار نا پسندیدہ خیالات آتے ہیں۔				
5	میں ایک ہی وقت میں کئی بار صابن سے اپنے ہاتھ دھوتا / دھوتی ہوں۔				
6	میں نہاتے ہوئے بہت زیادہ وقت لیتا لیتی ہوں۔				
7	میں ہاتھ سے گرمی ہوئی چیزوں کو دوبارہ استعمال کرنے سے گریز کرتا / کرتی ہوں۔				
8	ناچاہتے ہوئے بھی میرے ذہن میں جنسی خیالات آتے رہتے ہیں۔				
9	چیزوں کی ذرا سی بے ترتیبی سے میں جھنجھلاہٹ کا شکار ہو جاتا / جاتی ہوں۔				
10	جنسی خیالات کی وجہ سے مجھے اپنا آپ گنہگار لگتا ہے۔				
11	میں اکثر اپنے ارد گرد پڑی چیزوں کو گننا شروع کر دیتا دیتی ہوں۔				
12	مجھے اندیشہ رہتا ہے کہ ابھی کچھ غلط ہو جائے گا۔				
13	صحیح طریقے وضو کرنے کے بعد بھی میں مسلم دین مطمئن نہیں ہوتا / ہوتی ہوں۔				
14	جنسی خیالات مجھے پریشان کر دیتے ہیں۔				
15	میں اپنے گھر کے دروازوں کی کنڈیاں سے بار بار چیک کرتا کرتی ہوں۔				
16	میں بیسوں کو بار بار گنتی / گنتا ہوں				
17	مجھے مختلف الفاظ / اعداد بار بار دہرانے کی عادت ہے۔				
18	نماز میں مجھے اکثر غلط خیالات آتے رہتے ہیں۔				
19	چیزوں کو بار بار گننے سے مجھے سکون ملتا ہے۔				

20	میں دن میں کئی بار ایک ہی واقعہ کو بار بار سوچتا رہتا / سوچتی رہتی ہوں۔				
21	میری چیزیں کوئی غلط جگہ پر رکھ دے تو مجھے بہت غصہ آتا ہے۔				
22	دوسروں کو سمجھاتے ہوئے میں ایک ہی بات بار بار دہراتا رہتا ہوں۔				
23	روزمرہ کے معمولی کاموں کو سرانجام دینے کے لیے بھی میں بہت زیادہ سوچتا رہتا سوچتی رہتی ہوں				
24	مجھے ڈر رہتا ہے کہ میرے رشتے دار کسی مصیبت کا شکار نہ ہو جائیں۔				
25	مجھے ہر کام دہرانے کی عادت ہے۔				

نمبر سوالات بالکل درست درست پتہ نہیں غلط بالکل غلط

26	مجھے بار بار الفاظ دہرانے کی عادت ہے۔				
27	ناچاہتے ہوئے بھی میرے ذہن میں برے برے خیالات آتے ہیں۔				
28	ہند سے بار بار دہرانے سے مجھے اطمینان محسوس ہوتا ہے۔				
29	چیزوں کی ذرا سی بے ترتیبی مجھے پریشان کر دیتی ہے۔				
30	میں بار بار دروازے چیک کرتا کرتی ہوں کہ وہ صحیح طرح سے بند ہیں یا نہیں۔				
31	میں ان سوچوں سے بیزار ہوں جو ناچاہتے ہوئے بھی میرے ذہن میں بار بار آ جاتی ہے۔				
32	میرے لیے اپنی پریشانی سے نکلنا آسان نہیں۔				
33	معمولی معمولی واقعے مجھے بہت پریشان کرتے ہیں۔				
34	مجھے اپنے روزمرہ کے کاموں پہ شک رہتا ہے کہ میں ان کو صحیح طریقے سے انجام دے پائی ہوں یا نہیں۔				
35	دوسرے لوگوں کا میری چیزوں کو ہاتھ لگانا مجھے پسند نہیں۔				
36	مجھے بار بار ہاتھ دھونے کی عادت ہے۔				
37	جراثیم کے ڈرے میں چیزوں کو ہاتھ نہیں لگاتا مر لگاتی۔				
38	میں نہانے میں بہت زیادہ وقت لگاتا رہتا ہوں۔				
39	میں ایک ہی کام کو کئی بار دہراتا رہتا ہوں۔				
40	میں گھر سے باہر بھی چیزوں کو ترتیب میں دیکھنا چاہتا چاہتی ہوں۔				
41	میں لیٹنے کے بعد دروازے کھڑکیاں چیک کرنے کے لیے دوبارہ اٹھ جاتا رہتا ہوں				
42	میں ایک ہی بات بار بار سوچتا سوچتی ہوں۔				
43	میں خط بھیجنے سے پہلے بار بار پتہ چیک کرتی کرتا ہوں کہ پتہ ٹھیک لکھا ہے یا نہیں۔				
44	میں کپڑوں کو الماری میں بار بار ترتیب دیتا / دیتی ہوں۔				
45	خریداری کے وقت میں بار بار پیسے گنا / گنتی ہوں۔				

Note: This scale is allowed to be used for academic purposes with proper citation and reference of this work.