



Cross Cultural Adaptation and Psychometric Validation of the Obsessive-Compulsive Inventory-Revised (OCI-R) into Bangla

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Abstract

Background: Obsessive Compulsive Disorder (OCD) is a chronic, disabling illness that imparts significant burden on the affected individual. Obsessive-Compulsive Inventory-Revised (OCI-R) is one of the most used scales across the globe, capable of screening, severity assessment, and evaluation of treatment outcome.

Objective: To adapt and validate the Obsessive-Compulsive Inventory-Revised (OCI-R) scale into Bangla

Methods: This was a cross-sectional validation study conducted at the Department of Psychiatry, Sylhet MAG Osmani Medical College Hospital, Sylhet, during the period of March 2022 to February 2024. The study population was OCD patients attending OPD and OCD clinic aged 18 years and above, and apparently healthy controls who were attendants of the patients, doctors, medical and nursing students. The OCI-R was adapted into Bangla with proper procedure. Forward and backward translation were followed by pilot testing and validation assessment.

Results: Internal consistency, measured by Cronbach's alpha found was 0.93. Construct validity assessed by principal axis factoring with varimax rotation revealed six factor structures. A good convergent validity assessed by total OCI-R score with total ($r=0.805$; $p<0.05$) and sub-scale of Y-BOCS score ($r=0.786, 0.817$; $p<0.05$) and satisfactory discriminant validity ($r=0.235$, $p<0.05$) assessed by correlating between OCI-R total score with depression subscale of DASS-21 Bangla were revealed. A cut-off point of 21 in OCI-R could predict clinical diagnosis of OCD with 89.2% sensitivity and 91.8% specificity and the accuracy measured by area under the Receiver Operating Characteristic (ROC) curve was 0.97 ($p<0.001$).

Conclusions: OCI-R Bangla version is a valid, reliable and culturally appropriate instrument for use in clinical contexts and future research for OCD.

Keywords: OCI-R; Validation; Reliability; Bangla adaptation; Psychometric properties; Cultural adaptation.

Introduction

Obsessive-compulsive disorder (OCD) is a chronic psychiatric disorder. It is the 4th most common psychiatric disorder [1]. OCD is characterized by repeated unwanted thoughts (obsessions) and repetitive covert or overt acts (compulsions) which elicit significant degree of distress to the sufferer.

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Obsession is defined as an unwanted, intrusive thought, doubt, image, or urge that repeatedly enters the mind. The individual often regards the intrusions as illogical and exaggerated and tries to resist them. Compulsions are repetitive behaviors or mental acts that an individual feels driven to perform in response to an obsession or according to rules that must be applied rigidly. These cause significant time consumption and individuals' recognition at some point these to be excessive or unreasonable yet being unable to resist adds to the distress [2]. So, it is no wonder that, OCD is associated with significant functional impairment and poor quality of life including lower subjective well-being, decreased educational attainment and work productivity [3-6]. Epidemiological studies revealed prevalence of OCD varied from 1.5 to 3.5% [7, 8]. Typically, OCD starts early in life and has a long duration; the mean age of onset is 19.5 years [9]. In Bangladesh obsessions regarding dirt and contamination were seen to predominate in both early- and late-onset obsessive-compulsive disorder, followed by religious and sexual obsession [10]. A study in Germany revealed that only 28% of outpatients diagnosed with OCD by the study team had received the correct diagnosis during a previous visit to their psychiatric practice [11]. Moreover, there is a tendency for OCD patients to conceal their symptoms, not seek timely professional help; the duration of untreated OCD remains one of the highest among serious mental disorders [12]. Frequent reluctance to seek help, having a high level of internalized stigma resulted in longer duration of untreated illness which caused higher disability in work, family, social life, poorer response to Selective serotonin Reuptake Inhibitors (SSRIs), and poor treatment adherence [13-15]. Many years might pass until individuals receive adequate treatment and the average duration of untreated illness has been estimated to range from 10 to 17 years [16, 17]. Since under-recognition presents a problem for timely allocation to adequate treatment, routinely using screening questions during any mental state examination in specialized and general health care settings can be a good way to find out hidden cases of OCD. There are many self-report questionnaires developed and used in clinical practice and research fields to sufficiently cover the heterogeneous nature of obsessive-compulsive symptoms in OCD [18]. Several of those self-report measures are the Maudsley Obsessive Compulsive Inventory (MOCI) [19], Padua Inventory (PI) [20], and Dimensional Obsessive-Compulsive Scale (DOCS) [21]. The MOCI, neither internally consistent nor being factorially distinct, and not suitable for measuring changes with treatment, PI being too long yet not being comprehensive, DOCS suitability is limited to a treatment planning context due to providing little detail regarding the content of an obsessive-compulsive symptoms [22, 23] are some of the limitations. Obsessive-Compulsive Inventory-Revised (OCI-R) which is a shortened version of the Obsessive-Compulsive Inventory [24] has several improvements over its predecessor such as reduced

overlapping across subscales, simplified scoring of the subscales, and elimination of the redundant frequency scale [25]. Moreover, it is a more comprehensive measurement of OCD compared to other scales as well as gives an indication to severity, making it a prime candidate for recommending as a first-line screening tool [26]. Obsessive-Compulsive Inventory-Revised (OCI-R) contains 18 items. Participants indicate their level of distress associated with each of the common OCD symptoms on a 5-point Likert scale ranging from 0 (not at all) to 4 (very much), resulting in a total score that ranges between 0 and 72. The OCI-R is comprised of 6 factors representing the following symptom domains: checking, ordering, neutralizing, washing, obsessing, and hoarding. Each factor is comprised of 3 items (possible range = 0-12). It takes about 5 minutes to complete and has excellent psychometric properties [25]. OCI-R retained excellent psychometric properties in clinical, non-clinical as well as in community samples [27-32] making it a flexible tool to be used in a variety of contexts. OCI-R had been validated in German [33], Japanese [34], Italian [35], Polish [36], European Portuguese [37], Greek [32, 38], Spanish [39], French [40], Chinese [41], Korean [42], Turkish [43], Brazilian Portuguese [44], Persian [45], Norwegian [46] and Icelandic [47]. Study of [48] highlighted variation in OCI-R total and subscale scores across different cultures. This is a testament to the fact that when a scale is to be used in a different language and culture, cross-cultural adaptation following rigorous procedure is a must [49-52]. Considering wider applicability and comprehensibility of the scale, the Bangla version of Obsessive-Compulsive Inventory- Revised (OCI-R) will help clinicians to identify OCD patients in various setups, assess various symptom subtypes and ultimately ensure thorough assessment. The purpose of this study was to create a translated and culturally adapted version of the OCI-R in Bangla.

Methodology

It was a cross-sectional validation study. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2013. All procedures involving human patients were approved by the Ethical Committee of Sylhet MAG Osmani Medical College (Memo No/SOMC/2022/90). Data was collected from the outpatient department and OCD clinic of Sylhet M.A.G Osmani Medical College. The study was conducted over the duration from 1st March 2022 to 29th February 2024. Participants were OCD patients aged 18 or above attending the psychiatry OPD and OCD clinic of SOMCH. Age and sex matched controls were selected from the attendance of patients, doctors, medical and nursing students. Informed written consent was obtained from all the participants. Those who couldn't participate in the study because of physical illness or another mental

illness, diagnosed cases of major depressive disorder comorbid with OCD were excluded from the study. The sample size was calculated based on the item and sample ratio. A total of 100 respondents and an equal number of age and sex matched apparently healthy individuals were also included for better results. The purposive sampling method was used. Research instruments consisted of a pre-designed semi-structured questionnaire for socio-demographic and other relevant information, the Obsessive-Compulsive Inventory-Revised (OCI-R) scale, Bangla Version of the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), Bangla version of the Depression Anxiety Stress Scale-21 (DASS- 21). OCI-R was translated into Bangla by two persons having competency on both Bangla and English. Two translators and a language specialist synthesized two translations into one translation. It was translated back to the original English version by two persons having competency on both Bangla and English. Four psychiatrists, a language specialist along with all four translators, gave their opinions regarding the questionnaire, reaching a consensus eliminating discrepancies and producing a pre-final version. The pre-final version was checked for comprehension, and a field test of the new questionnaire was applied to 30 people. Semi-structured questionnaire for sociodemographic and related variables, adapted OCI-R Bangla was administered to patients suffering from OCD. A healthy population was taken from medical and nursing students, doctors, nurses, hospital staff and attendants of other patients. DASS-21 depression subscale and Y-BOCS Bangla version were applied in the first week. After one week, in next visit OCI-R Bangla was applied to OCD patients for second time. Data analysis was performed by Statistical Package for Social Science (SPSS), version-25.0

Results

100 OCD patients and 100 apparently healthy control enrolled into this study. In both groups majority participants were male (62%). The mean age in years ($\pm SD$) in OCD patient group was $24.93(\pm 5.092)$ while in control group it was $24.70(\pm 2.876)$. Most of the participants in both groups had education levels of graduate and above (48% in OCD group and 83% in control group). Similarly, majority of participants of both groups were unmarried (70% in OCD group and 69% in control group) and residents of urban area (70% in OCD group and 87% in control group). The mean score of individual items in OCD patients ranged from 1.05 to 3.48 with standard deviation between 0.77 to 1.61. In the control group mean score ranged from 0.18 to 1.04, with a standard deviation between 0.43 to 1.04. The highest score was $3.48(\pm 0.77)$ for item 6, "I find it difficult to control my own thoughts". The lowest score was $1.05(\pm 1.35)$ for item 16 "I feel that there are good and bad numbers". In comparison of OCI-R items and total score with the control group, it was found that all scores in the OCD group were significantly high which was statistically significant ($p < 0.001$).

Table 1: Internal Consistency of OCI-R Bangla

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha based on standardized items	N of items
0.938	0.936	18

Table 1 shows the internal consistency of OCI-R Bangla. The Cronbach's Alpha (α) value reached an excellent value (0.93). Moreover, all items showed moderate to strong (0.46-0.75) item-total correlation. Lowest item-total correlation was noted in Item 1,7,13 (Hoarding subscale), while the strongest was between Item 5,11,17 (washing subscale) & Item 6,12,18(obsessing subscale). Deleting any item wouldn't significantly increase the Cronbach alpha (α)value; so, all items were retained in the scale. Test-retest reliability was. 0.981 with a 95% confidence interval. Face validity and content validity were systematically assessed and maintained during the development of the research instrument and at the time of the interview by the interview response. Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of Sphericity were applied to assess the fitness of the data for factor analysis. Kaiser-Meyer-Olkin Measure of Sampling adequacy was 0.780, and Bartlett's Test of Sphericity was statistically significant; hence sample size was considered adequate for factor analysis.

Table 2: Communalities between items of OCI-R Bangla

Communalities	Initial	Extraction
Item 1	0.875	0.906
Item 2	0.84	0.834
Item 3	0.883	0.912
Item 4	0.829	0.857
Item 5	0.896	0.904
Item 6	0.62	0.744
Item 7	0.875	0.905
Item 8	0.917	0.981
Item 9	0.892	0.929
Item 10	0.87	0.895
Item 11	0.874	0.898
Item 12	0.579	0.671
Item 13	0.848	0.878
Item 14	0.877	0.88
Item 15	0.849	0.872
Item 16	0.882	0.913
Item 17	0.918	0.949
Item 18	0.582	0.657

Table 2 shows communalities of OCI-R Bangla between the items before and after extraction. It was extracted by Exploratory Factor Analysis (EFA) of the principal axis factoring. It was a minimum of 0.657, and no item needed to be dropped. Construct assessed by principal axis factoring of OCI-R Bangla and revealed factors that had eigenvalue >1 . Eigenvalues of Component-1,2,3,4,5,6 were 5.751, 3.120, 2.448, 2.059, 1.727, and 1.281, respectively. These six components explained 91% of the variance. Subsequent eigenvalues were below 1, signifying six factors of the scale.

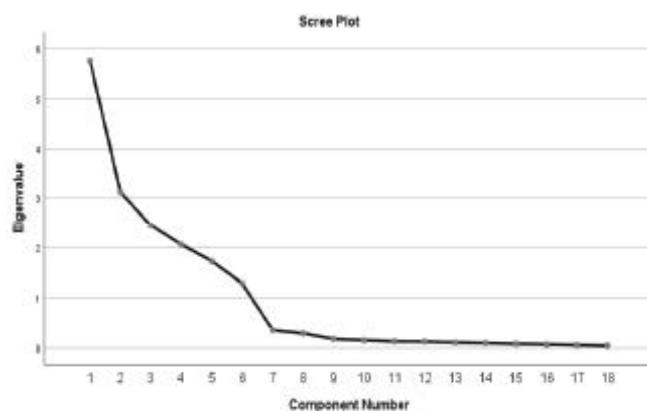


Figure 1: Extracted factors of OCI-R Bangla based on Scree plot

Figure 1 revealed the scree plot of OCI-R Bangla which signified the number of factors in the construct. Here the figure revealed six factors in the construct. Varimax rotated component matrix of OCI-R Bangla revealed 3 items (Item 9, Item 15, Item 3) were found to load the first factor, 3 items (Item 17, Item 5, Item 11) loaded the second, the third (Item 1, Item 13, Item 7), the fourth (Item 8, Item 14, Item 2), the fifth (Item 4, Item 16, Item 10) and the sixth (Item 18, Item 6, Item 12) factors respectively. The lowest factor load of any item was 0.866, indicating that each item had a good correlation with the factor it loaded. There was no cross-loading.

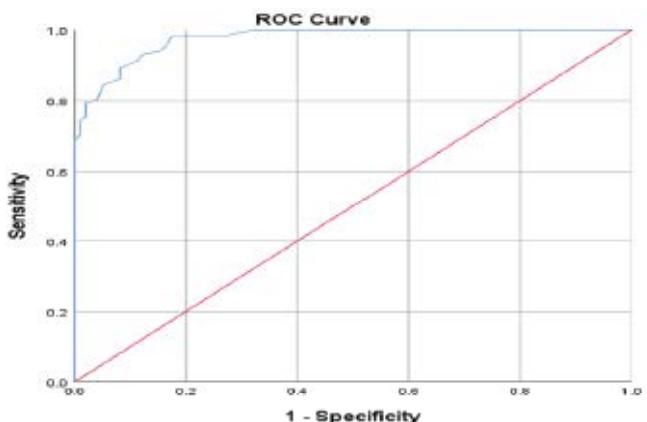


Figure 2: ROC curve for overall scores of OCI-R Bangla in the study population

Figure 2 revealed the ROC curve for the overall scores of OCI-R Bangla in the study population. Area under curve (AUC) was 0.97 which was statistically significant ($p<0.001$). So OCI-R Bangla showed excellent capacity to discriminate OCD patients from healthy controls.

Table 3 summarizes the operating characteristic curve (ROC) extraction, providing sensitivity, specificity, positive predictive value, negative predictive value and corresponding Youden index of OCI-R Bangla at different cut points. It showed good results with 89.2% sensitivity, 91.8% specificity as well as positive predictive value (91%), negative predictive value (89%), and Youden index 0.81 at 21 cut-off point.

Table 4 showed the correlation of OCI-R Bangla with Y-BOCS Bangla total score, obsession and compulsion subscale of Y-BOCS and depression subscale of DASS-21. The correlation coefficient of OCI-R and Y-BOCS was 0.805 ($p<0.05$), the obsession subscale was 0.786 ($p<0.05$) and the compulsion subscale was 0.817 ($p<0.05$). The correlation coefficient of OCI-R and DASS-21 depression subscale was 0.235 ($p<0.05$). It showed a weak positive correlation between these two scales indicative of good discriminant validity.

Table 3: Operating characteristics of OCI-R Bangla for different cut-off points

Cut-off Score	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	Youden index
14	99	71	77	98	0.7
15	98	73	78	97	0.72
16	98	82	84	97	0.8
17	95	83	85	94	0.79
18	94	84	85	93	0.79
19	93	87	87	92	0.8
20	91	89	89	91	0.8
21	89	92	91	89	0.81
22	86	92	91	86	0.78
23	84	95	94	85	0.79
24	80	96	95	82	0.76
25	79	98	97	82	0.77
26	75	98	97	79	0.74

Table 4: Convergence and Discriminant validity of OCI-R Bangla

	OCI-R Bangla total score	Y-BOCS total score	Y-BOCS obsession subscale score	Y-BOCS compulsion subscale score	DASS-21 depression score
r	1	.805*	.786*	.817*	.235*
Significance		<0.05	<0.05	<0.05	<0.05

*Correlation was significant at the 0.05 level (2-tailed); r, Pearson's correlation coefficient

Discussion

The present study sought to explore whether the OCI-R Bangla is a reliable and valid measure to assess OCD in the context of Bangladeshi culture. To use an instrument in a different country and another language, cross cultural adaptation is needed along with translation [50]. To address cross-cultural healthcare research, a user-friendly framework with seven crucial steps to modify and validate instruments or scales has been devised [52]. In this study, a standard such framework was maintained. Majority of the study participants in both groups were male (62%). Similar data were reported in a Korean validation study (62.3%) [42]. Female predominance was noted in a study of Iceland (61%) [47]. Considering high stigma [14] towards OCD and it being a major barrier to health-seeking behavior in OCD patients [53] it's no surprise that majority participants were male in this study. Mean age of the patients was 24.93 (± 5.092). A similar age group was selected in the French validation study (24.86 ± 3.85) [40]. Considering the mean age of OCD being 19 years and onset after 30 years is rare [54], this one enrolled representative age group of samples. Most of the patients in both groups had an education level of graduation and above. In the Turkish validation study, the majority were university students [43]. Social and cultural stigma and low mental health literacy have negatively influenced the mental healthcare-seeking behavior among people in Bangladesh [55-57]. So, it's no coincidence that the majority of the patients are highly educated (48%). The majority of the patients and controls are from urban areas; most likely due to the treatment setup being in an urban area and educational institutions being nearby. There was a significant difference in the comparison of the OCI-R items mean score and total score between the patient and control group. Such a significant difference has been replicated in other studies as well [27, 25, 28, 47]. Mean score of OCI-R in the patient group was 37.28 (± 13.83). A similar finding (37.32 ± 11.50) was reported by [43]. Internal consistency of OCI-R Bangla was excellent. The finding of this study corresponded to other studies that reported good to excellent internal consistency [37, 25, 13, 40]. Item total correlation ranged from (0.461-0.756), the highest for the washing and obsessing subscale and lowest for the hoarding subscale. Such significant correlation was also reported in the original validation study (Foa et al., 2002) and in other validation studies [46, 45, 36]. In this study, the lowest correlation was found for the hoarding subscale, similar to

that of [38] and [48]. It was suggestive that hoarding might not be a fully representative feature of OCD [58]. These data are in congruence with the clinical practice, as the Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) considered hoarding as a distinct disorder from OCD. The good test-retest reliability of this study was replicated in the original validation study [25] as well as the validation study of Japanese [34], Persian [45], and Chinese [41]. Exploratory factor analysis (EFA) was conducted by the principal axis factoring extraction method with varimax rotation to detect the number of factors and corresponding rotation. Principal axis factoring is one of the most used and recommended methods as it is more stable, reliable, and provides best accurate results irrespective of data distribution [59, 60]. Factor analysis of OCI-R Bangla identified six factors with eigenvalues of more than one. Moreover, the rotated component matrix of OCI-R Bangla revealed three items being a single component. This finding was similar to the findings of [25, 30, and 28] who described a six-factor solution with high loading on the factor they belonged to with very low or no cross-loading. Good convergent validity with Y-BOCS was also reported in other studies [25, 41, 43, 37] as well. A weak positive correlation with the depression subscale was a testament of the burden of depressive symptoms of OCD patients. Overall, this scale showed good divergent validity as was shown by other studies [61, 45, 33, 38]. ROC curve showed an area under the curve being 0.97($p < 0.001$), which indicated an excellent differentiating property of the scale. Similar property was shown by [25] and [33]. A cut-off point 21 which yielded optimum sensitivity and specificity similar to the original English [25] and Korean [48] versions.

Conclusions

The Bangla version of OCI-R replicated and extended previous findings of the original scale in a different cultural context. Hopefully, this validated Bangla version of the OCI-R will be widely used in clinical settings, will help future epidemiological research and will facilitate early detection, self-monitoring of treatment response; thus, ensuring comprehensive treatment services for OCD patients in Bangladesh.

Strengths and Limitations

In this study, an equal number of samples from diseased and non-diseased individuals from similar demographic and related profile was drawn; ensuring proper standardization.

The research employed a thorough validation process, ensuring validity and reliability. Convergence validity was assessed with Y-BOCS which is presumed to be gold standard in OCD assessment. Moreover, unlike many other validation studies, this study looked to set a cut-score for OCI-R using multiple statistical techniques ensuring reliability and validity of its findings. While this study had many strengths, it also had some limitations too. This study was performed in a tertiary hospital of the north-eastern region of Bangladesh; better results could have been achieved if it were done at multiple sites and multiple levels of care to include all existing linguistic variability in the country. Patients with major depressive disorder were not included in this study. A larger sample pool with heterogeneous disorders could create heterogeneity in findings.

Recommendations

Recent short (OCI-12) and ultra-short versions (OCI-4) of OCI-R, which are showing promise, were developed by dropping items from the existing OCI-R scale. These scales are yet to undergo extensive evaluation like their predecessors. Future researchers can look to utilize this Bangla version of OCI-R for item reduction and psychometric validation of these scales into Bangla, comparing it to the original Bangla one. Moreover, larger studies involving multi-center and more heterogeneous patients and further psychometric studies evaluating the findings of this study will help to strengthen the validity of this study.

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Conflict of Interest

All authors declare no conflicts of interest related to this manuscript.

Author Contributions

Dr. Imdadul Magfur: Conceptualization; Methodology; Investigation; Data Curation; Formal Analysis; Writing – Original Draft; Writing – Review & Editing.

Dr. RKS Royle: Supervision; Methodology; Writing – Review & Editing.

Dr. Ahmed Riad Chowdhury: Supervision; Validation; Writing – Review & Editing.

Prof. Susmita Roy: Validation; Methodology; Writing – Review & Editing.

Dr. Rezwana Habiba: Investigation; Data Curation; Writing – Review & Editing.

Dr. ASM Redwan: Formal Analysis; Validation; Writing – Review & Editing.

Dr. Md. Mahmudul Hasan: Data Curation; Investigation; Visualization; Writing – Review & Editing.

Ethics Approval

Approved by the Ethical committee of Sylhet MAG Osmani Medical college (Memo No/SOMC/2022/90)

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Appendix: OCI-R (Bangla Version)

OCI-R

নিচের বিবৃতিগুলো মানুষের প্রাত্যহিক জীবনের নানা অভিজ্ঞতার কথা বর্ণনা করে। প্রতি ১ মাসে আপনাকে যা কষ্ট দিয়েছে বা বিরত করেছে, এমন যে সংখ্যাটি দিয়ে সবচেয়ে ভালো বোঝায় তা গোল টিকিত করুন।

০ = একেবারেই না
১ = সামান্য
২ = মোটামুটি

৩ = বেশি
৪ = খুব বেশী

১. ফেলে দেয়া যায় এরকম অনেক জিনিসপত্রই আমি জমিয়ে রাখি।	০ ১ ২ ৩ ৪
২. আমি জিনিসপত্র প্রয়োজনের চেয়ে অতিরিক্ত যাচাই বাছাই করি।	০ ১ ২ ৩ ৪
৩. জিনিসপত্র ঠিকভাবে গুছানো না থাকলে আমি বিচলিত হই।	০ ১ ২ ৩ ৪
৪. গুনে গুনে কাজ করতে আমি বাধ্য হই।	০ ১ ২ ৩ ৪
৫. অপরিচিত কিংবা বিশেষ কারো স্পর্শ করা জিনিসপত্র	০ ১ ২ ৩ ৪
ধরা আমার জন্য কষ্টকর।	
৬. নিজের চিত্তাগুলোকে নিয়ন্ত্রণ করা আমার জন্য কষ্টকর।	০ ১ ২ ৩ ৪
৭. অপ্রয়োজনীয় জিনিসপত্র আমি সংগ্রহ করে রাখি।	০ ১ ২ ৩ ৪
৮. আমি বারবার দরজা, জানালা, ড্রয়ার ইত্যাদি পরীক্ষা করি।	০ ১ ২ ৩ ৪
৯. আমার গুছিয়ে রাখা জিনিসপত্র কেউ পরিবর্তন করলে আমার অস্পষ্টি লাগে।	০ ১ ২ ৩ ৪
১০. আমার মনে হয় নির্দিষ্ট কিছু সংখ্যা আমাকে পুনরাবৃত্তি করতে হবে।	০ ১ ২ ৩ ৪
১১. শুধুমাত্র অপরিচ্ছন্ন হয়েছি ভেবে মাঝে মাঝেই নিজেকে ধূতে	০ ১ ২ ৩ ৪
অথবা পরিষ্কার করতে হয়।	
১২. ইচ্ছার বিরুদ্ধে মনে আসা অস্পষ্টিকর চিন্তার জন্য আমার খারাপ লাগে।	০ ১ ২ ৩ ৪
১৩. পরে কাজে লাগতে পারে এই ভয়ে আমি কোনো জিনিসপত্র	০ ১ ২ ৩ ৪
ফেলে দেয়া থেকে বিরত থাকি।	
১৪. বক্স করার পরও আমি বারবার গ্যাস, পানির কল ও বিদ্যুতের সুইচ পরীক্ষা করি।	০ ১ ২ ৩ ৪
১৫. আমি চাই আমার জিনিসপত্র একটি নির্দিষ্ট নিয়মে গোছানো থাকুক।	০ ১ ২ ৩ ৪
১৬. আমার মনে হয় সংখ্যার মধ্যেও ভালো-মন্দ আছে।	০ ১ ২ ৩ ৪
১৭. প্রয়োজনের তুলনায় বার বার ও বেশি সময় নিয়ে আমি হাত ধুই।	০ ১ ২ ৩ ৪
১৮. কিছু কিছু বাজে চিন্তা প্রায়ই আমার মাথায় চলে আসে,	০ ১ ২ ৩ ৪
যা থেকে মুক্তি পাওয়া কঠিন হয়ে পড়ে।	