

Validation study of the Turkish version of the Yale–Brown Obsessive Compulsive Scale for heavy drinking in a group of male patients

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Abstract

*Psychometric properties of Turkish version of the Yale Brown Obsessive Compulsive Scale for heavy drinking (YBOCS-hd) were examined in alcohol-dependent male patients. Factor structure, internal consistency and discriminant validity of the YBOCS-hd were analysed in a sample of 117 male patients diagnosed with alcohol dependence. To study its convergent validity, the YBOCS-hd was correlated with the Addiction Severity Index in 34 of the patients. A test–retest reliability study was performed on the data from 34 patients. Correlation between the YBOCS-hd total score and the ASI Alcohol Use score was moderate ($r = 0.51$). One factor explained 50.2% of the variance. The YBOCS-hd was able to discriminate the groups abstinent for less than 1 month and a second group with at least 1 month of abstinence. Test–retest correlation was high ($r = 0.81$, $ICC = 0.81$). The Turkish version of the YBOCS-hd proved to be a reliable and valid instrument measuring craving in alcohol-dependent male individuals. [Ilhan IO, Demirbas H, Dogan YB. Validation study of the Turkish version of the Yale–Brown Obsessive Compulsive Scale for heavy drinking in a group of male patients. *Drug Alcohol Rev* 2006;25:357–360]*

Key words: alcohol dependence, craving, scale.

Introduction

Despite the lack of a theoretical consensus on the definition of craving [1], this concept has been widely accepted in the definition of alcohol dependence syndrome [2]. The *International Classification of Diseases* version 10 (ICD-10) [3] also covers craving as one of the phenomena constituting alcohol dependence. Moreover, studies on biological aspects of addiction are being carried out mainly on human and animal models of craving [4–7].

Craving has been analysed as an analogue of obsession and compulsion both phenomenologically [2] and biologically [8]. Edwards *et al.* [2] described craving under the heading ‘subjective awareness of compulsion to drink’. This analogy enables the objective measurement of craving. Modell *et al.* [9] modified the Yale–Brown Obsessive Compulsive Scale and developed the Yale–Brown Obsessive Compulsive Scale for heavy drinking [YBOCS-hd] to measure craving in alcohol-dependent individuals. Lastly, Anton *et al.* [10] developed the Obsessive Compulsive Drinking Scale (OCDS) based on the YBOCS-hd. This

has been developed as a self-rating scale, and four new items were added to the original 10 items. As further studies have been conducted on psychometric properties of this scale, it has been shown that the OCDS was a reliable craving scale [10] with a high level of construct validity [11] and discriminant validity [12].

The YBOCS-hd self-rating form is a 10-item scale and each item rating ranges from 0 to 4. The first half of the scale (items 1–5) forms the obsessive subscale and the second half (items 6–10) forms the compulsive subscale.

This study was conducted with the aim of having a craving scale with an already proven validity in several cultures [13–16], thus providing an instrument in the Turkish language to be used in studies on craving and treatment of addiction. The original self-rating form of the YBOCS-hd was examined in the present study.

Methods

Translation

The YBOCS-hd self-rating form was first translated into Turkish by a family physician and a clinical

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psychologist experienced in the field of alcoholism. After consensus was reached on a common draft, a third person (a psychiatrist experienced in alcoholism treatment) back-translated the draft into English. As a next step both the original form and the back-translated English form were compared with each other and the final Turkish draft of the scale was formed under the supervision of an expert in the field of addiction (the third author).

Subjects

The Turkish form of the YBOCS-hd was administered to 117 consecutively admitted male patients. All the patients had applied willingly for treatment to give up drinking alcohol. The first author conducted the diagnostic interview of the patients and all of them were diagnosed with alcohol dependence according to the ICD-10 criteria. Eighty-two (70.1%) of the patients were in-patients, and 29.9% of the sample were being followed-up as out-patients. Patients with comorbid substance abuse were excluded from the study. None of the patients was in the detoxification period. All of them were free from any psychotropic medicine and sober at the time of assessment. The mean age (\pm standard deviation) of the participants was 45.3 (\pm 8.6). With regard to educational level, 0.9% of the patients were elementary school graduates, 5.1% were secondary school graduates, 54.7% were high school graduates and 39.3% were university graduates.

Procedure and statistical analysis

Factor structure of the Turkish form of the YBOCS-hd was analysed as the first method of testing the validity of the scale. To test the convergent validity of the scale the Addiction Severity Index (ASI)—drug/alcohol use subscale (27 items) was applied. The ASI, which was developed by McLellan *et al.* [17], is a clinical interview scale comprising a total of 140 items. The scale was developed originally for determination of the medical, occupational, legal, familial and psychiatric complications of alcohol or substance abuse and to evaluate the need for treatment or counselling. This scale reflects the severity and significance of each problem area as reported subjectively, both for the last 30 days and for life-time. Additionally, interviewer rates with the ASI severity of problem area from 0 to 9. Higher scores with the ASI signify a greater need for treatment or counselling. The validity and reliability study of the Turkish version of the ASI was carried out by Demirbas *et al.* [18]. The ASI alcohol/drug use subscale was applied to 34 patients from the whole sample and the last 30-day scores were taken using Pearson's correlation analysis. These 34 patients comprised two groups of consecutive admissions: the first 22 patients admitted during the first

2 months of the study period, and the last 12 consecutive admissions added during the last 2 months of the study. These 34 patients did not differ in age ($t=0.703$, $p=0.484$) and educational level ($\chi^2=0.325$, $p=0.559$) from the remainder of the sample.

Furthermore, patients were grouped according to abstinence period: patients who were abstinent for not more than 1 month formed the first group, and those who were abstinent for 1 month or more formed the second group; the YBOCS-hd scores of these two groups were compared using Student's *t*-test. The rationale for using 1 month as the division time was to obtain similar numbers of subjects in each abstinence group.

The internal consistency of the Turkish version of the YBOCS-hd self-rating form was tested by estimating Cronbach's alpha values of the whole scale. Test-retest reliability analysis of the scale was performed with an interval of 4 days, using the data from the 34 cases with intraclass and one-tailed Pearson's correlation analyses.

Results

The mean duration of abstinence from alcohol was 4.8 (\pm 13.0) months. Patients consumed a daily average of 18.5 (\pm 11.4) drinks before the abstinence period (one drink = approximately 15 grams of pure ethanol). The mean YBOCS-hd total score of the total sample was 20.4 (\pm 8.4). This score is close to those found in the studies by Modell *et al.* [9] and Anton *et al.* [10] in alcohol-dependent samples (22.3 ± 7.7 and 22.5 ± 7.5 , respectively) and those found in an Italian sample (20.4 ± 9.0) [16] and a Korean sample (19.9 ± 9.6) [15]. Only the first-mentioned study was conducted with the original YBOCS-hd; the the others were conducted using the OCDS. [Although scoring methods of the two scales differ (there are alternative questions for several items in the OCDS), both of them are scored on 10 items and the possible maximum and minimum scores are the same.]

With regard to internal consistency of the YBOCS-hd, Cronbach's alpha coefficient for the whole scale was estimated as 0.89. Internal consistency for the originally described obsessive and compulsive subscales were not examined, as all the items were loaded onto a single factor in principal component analysis.

Although the original YBOCS-hd was developed as comprising the obsessive subscale (items 1–5) and the compulsive subscale (items 6–10), this composition was not the result of factor analysis [9]. Our factor analysis of the YBOCS-hd indicated that one factor contained all the YBOCS-hd items and explained 50.24% of the variance. The results of factor analysis of the Turkish form of the YBOCS-hd are given in Table 1.

Correlation between the YBOCS-hd and the ASI alcohol use subscale was tested on 34 patients. The correlation coefficient was moderate but significant ($r = 0.512, p = 0.001$), according to Pearson’s correlation analysis.

Seventy-four (63.3%) patients were abstinent for less than 1 month, while the remaining 43 (36.7%) were abstinent for 1 month or more. Table 2 shows that mean age and educational level of the two groups did not differ significantly. The YBOCS-hd scores discriminated between the two abstinence groups significantly.

The test–retest reliability study was performed on 34 patients with an interval of 4 days. Test–retest correlation was high according to Pearson’s one-tailed correlation analysis ($r = 0.81$), and the intraclass correlation coefficient was 0.81 (confidence interval: 0.65–0.90).

Discussion

The YBOCS-hd is the only craving scale in the Turkish language with proven validity and reliability, depending on the data presented. The OCDS, a modified version of the YBOCS-hd, has already been validated in the West [13,16,19] and in two Far East [14,15]

countries. Thus, in universal terms, craving definition gains more meaning.

The results of the present study indicate that the YBOCS-hd has been translated successfully into the Turkish language. Cronbach’s alpha analysis showed good reliability for the Turkish version of the YBOCS-hd comparable with the original version [12]. The test–retest reliability of the YBOCS-hd has been proved in the present study.

In the present study, one factor contained all the YBOCS-hd items and explained 50.24% of the total variance. The Italian version of the OCDS showed that the three-factor structure of the scale explained 67% of the variance; the first factor explained 49.86% of the variance [16]. Similarly, in one study the YBOCS-hd was applied to mild-to-moderately dependent alcohol abusers, and factor analysis suggested the presence of a single general factor containing most of the YBOCS-hd [12]. Taken together, these results suggest that the factor structure of the YBOCS-hd does not necessarily measure drinking-related obsessions and compulsions separately, as claimed originally [9]. Instead, it can be suggested that the obsessive–compulsive dimension of craving in alcohol dependence has to be taken as a single phenomenon and can be measured by either the YBOCS or the OCDS; however, other dimensions of craving require further clarification.

The validity of the Turkish form of the YBOCS-hd is supported further by significant correlation ($r = 0.51$) between the scale and the ASI-alcohol use subscore. Similarly, Anton *et al.* [11] found the total OCDS score and the ASI-alcohol use composite score correlation coefficient to be 0.48. The accumulated data suggest that either YBOCS-hd [9,12] or OCDS scores increase in relationship to the severity of alcohol dependence [19,20].

Discriminant validity of the YBOCS-hd was found to be high when the group of patients abstinent for not more than 1 month was compared with the second group abstinent from alcohol for at least 1 month. The OCDS was able to discriminate the alcohol-drinking out-patient group from the abstaining out-patient group [11,14]. The relationship between the abstinence

Table 1. Component matrix of the Turkish form of the YBOCS-hd*

YBOCS-hd items	Factor 1
YBOCS-hd 1	0.767
YBOCS-hd 2	0.649
YBOCS-hd 3	0.819
YBOCS-hd 4	0.651
YBOCS-hd 5	0.836
YBOCS-hd 6	0.558
YBOCS-hd 7	0.674
YBOCS-hd 8	0.786
YBOCS-hd 9	0.631
YBOCS-hd 10	0.662

*Extraction method: principal component analysis.

Table 2. Comparison of patients abstinent for less than 1 month and the group abstinent for at least 1 month

	Group 1 (abstinence < 1 month) <i>n</i> = 64 (mean ± SD)	Group 2 (abstinence ≥ 1 month) <i>n</i> = 43 (mean ± SD)	<i>t</i>	<i>p</i>
Age (years)	45.2 ± 8.5	45.4 ± 8.9	−0.088	ns
Daily alcohol consumption (drinking units)	18.5 ± 10.4	18.6 ± 12.9	−0.037	ns
YBOCS-hd score	21.9 ± 8.2	18.2 ± 8.5	2.241	0.027

ns: Not significant.

and obsessive–compulsive aspects of craving requires further clarification of whether craving, as assessed with either the YBOCS-hd or the OCDS, predicts outcome in alcohol dependence [11] or not [12]. However, without doubt the YBOCS-hd can measure one really fundamental aspect of alcohol dependence. Moreover, Modell *et al.* [9] claimed that the discriminant power found for the YBOCS-hd exceeded that published for the Cut-down, Annoyed, Guilt, Eye-opener (CAGE) scale and the Michigan Alcoholism Screening Test when they compared their findings with the literature.

One question about the YBOCS-hd put forward by Federoff *et al.* [12] and Potgieter *et al.* [20] remains to be answered. Federoff *et al.* [12] suggested that the presence of item 6 was problematic, as it measured heavy drinking rather than compulsion to drink heavily, and Potgieter *et al.* [20] mentioned replacing items of drinking with items of intention to drink. Furthermore, this item on the recent quantity and frequency of drinking may be misleading in studies on the pharmacotherapy of alcohol craving. Anton *et al.* [21], in their placebo-controlled trial with naltrexone and cognitive behavioural therapy in alcoholism, retested their results after removing the OCDS items on quantity and frequency of drinking with the same consideration. Further studies with the YBOCS-hd would clarify this topic.

A major limitation of the test–retest study was the small sample size; the same was true for correlational analysis with the ASI. The test–retest reliability and convergent validity of the scale could be confirmed with further studies.

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