Validity and reliability of the Spanish version of Yale-Brown obsessive-compulsive rating scale for children and adolescents

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Estudio de validez y confiabilidad de la versión en español de la escala Yale-Brown del trastorno obsesivo compulsvo para niños y adolescentes

Summary

Introduction. *The Children Yale-Brown Obsessive-Compulsive Scale (CY-BOCS) constitutes a very good instrument for the evaluation of obsesive-compulsive disorder (OCD) symptoms, by a clinical interview administered to the patient and parent, that includes the summary score of the clinician.*

Objective. *We are proposing a Spanish version of the instrument, which is rated during a brief clinical interview to the parents and the patients. We are presenting data on reliability and validity using two out-patient samples.*

Methods. *After the translation to Spanish, a back translation and adaptation to Spanish of the CY-BOCS, twenty eight out-patients (75 % male) with a mean age of 12.1 (± 2.7) from two clinical settings on Mexico City were evaluated. Reliability was evaluated by computing the internal consistency (Cronbach's α) on all interviews. To assess interrater agreement, the interviews were videotaped and scored by three independent raters and all of them included both the child and the parent interview. The CY-BOCS total scored was correlated with the K-SADS-PL diagnosis.*

Results. *The CY-BOCS total score for all subjects was 16.5 ± 9.8. Cronbach's α coefficient was 0.87; Pearson correlation of total CY-BOCS score with the K-SADS-PL diagnosis was 0.60 ($p \leq 0.05$). The intraclass correlations coefficients for the parents, youngsters and clinician were 0.96, 0.94 and 0.92, respectively.*

Conclusions: The Spanish version of the CY-BOCS is a reliable and valid instrument, useful for both clinicians and researchers in child and adolescent OCD assessment.

Key words: *Yale-Brown scale. Obsessive-compulsive disorder. Children. Adolescents.*

Resumen

Introducción. *La escala Yale-Brown para niños y adolescentes constituye un instrumento adecuado para evaluar la severidad del trastorno obsesivo-compulsivo (TOC) mediante una entrevista clínica aplicada al paciente y su padre que incluye la calificación sumaria del clínico.*

Objetivo. *Determinar la validez y confiabilidad de la versión en español de la escala Yale-Brown para TOC en niños y adolescentes.*

Métodos. *Se realizó la traducción al español, retraducción al inglés y adaptación de la escala. Se evaluaron 28 pacientes (75 % hombres) con edad promedio de 12,1 (± 2,7) años que acudieron a dos instituciones públicas de atención psiquiátrica de México. Se obtuvieron el coeficiente alfa de Cronbach y la correlación con el diagnóstico de TOC obtenido mediante la entrevista diagnóstica* Schedule for Affective Disorders and Schizophrenia for School-Age Children Present and Lifetime version *(K-SADS-PL). Para la evaluación de la confiabilidad interevaluador las entrevistas se videograbaron y calificaron por tres evaluadores independientes. Se obtuvieron los coeficientes de correlación intraclase de las calificaciones dadas por los pacientes, los padres y los sumarios clínicos.*

Resultados. *La puntuación total del CY-BOCS para la muestra fue 16,5 ± 9,8. Se obtuvo un coeficiente alfa de Cronbach de 0.87; la correlación con el diagnóstico de acuerdo al K-SADS-PL fue de 0,60 ($p \leq 0,05$). Los coeficientes de correlación intraclase para las calificaciones de acuerdo a los reportes de los pacientes, sus padres y la calificación asignada por el clínico fueron de 0,96, 0,94 y 0,92, respectivamente.*

Conclusiones. *La versión en español de la escala Yale-Brown es un instrumento válido y confiable, útil para la evaluación de pacientes pediátricos con TOC.*

Palabras clave: *Escala Yale-Brown. Trastorno obsesivo compulsivo. Niños. Adolescentes.*

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INTRODUCTION

Obsessive compulsive disorder (OCD) is characterized by the presence of ideas or intrusive and undesired images that cause anxiety (obsessions) and by repeated behaviors that are performed to decrease the anxiety

produced by obsessions or to prevent damage (compulsions). To perform the diagnosis, the DSM-IV criteria require that the obsessions and compulsions are present for more than one hour a day or interfere with the daily functioning of the individual[1].

The prevalence of this disease over the lifetime is 2% to 3% and the annual prevalence is found at between 1.5% and 2.1%. Although OCD generally begins in adolescence or at the beginning of the adult age, 30% to 50% of the cases of adults report an onset of their symptoms during childhood[2]. There are few studies on frequency and clinical characteristics of the disorder in Spanish speaking populations. In 1997, Nicolini et al. reported a 2.3% prevalence in the adult clinical population in our setting[3].

The results of epidemiological studies in pediatric population show a prevalence of 2% to 3.5%, suggesting that this disease is more common than had been previously thought[4-6].

OCD presents diagnostic stability over the lifetime, longitudinal studies have shown that 54% of the children with OCD will continue with obsessions and compulsions 2 to 7 years after the diagnosis is made[7]. The clinical characteristics of the disorder in children are similar to those of the adult, except for a lower frequency of obsessions in the pediatric age. This may be due to the cognitive immaturity presented by the children that does not permit them to recognize their obsessions as recurrent ideas and that cause them malaise, or because their content causes fear in them. Thus, the disorder in small children is often observable by the parents, who may describe the rituals that their children perform and often make them participate in[8]. The OCD symptoms apparently evolve over time or development of the children, and the type of obsession and compulsions often change over time[9].

The exact and reliable measurement of the severity of the obsessive compulsive symptoms in children and adolescents must overcome several obstacles, among them their secret character due to the fact that they produce fear, guilt or shame and the cognitive difficulty of the children to recognize the excessive nature of their concerns and habits or to distinguish between the malaise associated to intrusive thoughts and the emergency to perform rituals. These difficulties create the need to count on the report of the parent and patient in order to have a more complete description of the symptoms[10].

Once the OCD diagnosis is made, it is important to use instruments that quantify the severity of the suffer-ing and make it possible to assess the response to treatment and the changes in the symptoms over time. These instruments are also useful to facilitate the recognition of the symptoms and their changes to the parents and patient.

There are several severity scales for the OCD, such as the Leyton obsession inventory[11], that has been used for the assessment of children and adults[12-14] and the Maudsley obsessive compulsive inventory[15-17]. These scales largely depend on self-evaluation and only examine some types of obsessions and compulsions[18]. Another available instrument is the obsessive compulsive disorder scale of the national institutes of mental health of the United States[19], that is used to perform a global assessment according to the clinician's criterion[18].

Introduction of the Yale-Brown for obsessive-compulsive scale (Y-BOCS)[20,21] meant an advance in the assessment of the OCD severity[22]. A considerable number of studies have verified its validity, reliability and sensitivity to the change in severity of the symptoms on the scale[20-22], both in its original English version as well as in the version translated to Spanish in our country[23].

The version of this scale for children and adolescents (CY-BOCS) was studied by Scahill et al.[24], also showing adequate validity and reliability and has been used in the clinical practice and in investigation[25-28]. This scale is a modified version of the version for adults[20,21]. It consists in a semistructured interview of 10 items that are made up of five main sections: *1)* instructions; *2)* list of obsessions; *3)* severity of the obsessions; *4)* list of compulsions, and *5)* severity of the compulsions. The obsessions and compulsions lists describe the most common symptoms, documenting their presence in the present and in the past. The severity of the obsessions and compulsions is scored on the basis of six items that ask about the time used by the symptoms, interference of the symptoms with the subject's activities, stress associated to the symptoms, resistance and degree of control on them. Each one of these items is scored on a scale from 0 to 4, where zero is equal to absent and 4 to the most severe symptoms. The total scale score can be from 0 to 40 points. It is recommended that the scale be applied to the patient and his parent, who should be interviewed separately. In spite of the fact that the CY-BOCS scale has been used in several countries[29-32], there is no validated Spanish version of this instrument. The purpose of this study was to perform the process of validation and assess the reliability of the version in Spanish of the Yale-Brown obsessive compulsive disorder scale in children and adolescents.

METHOD

Description of the sample

The sample was made up of patients of both genders, whose ages ranged from 8 to 16 years, from the out-patient clinic of two pediatric mental health institutions (HJJN and INP) who were evaluated over 18 months. The patients and their parents gave their consent to be interviewed. Those patients with psychotic symptoms or mania at the time of assessment or who were not capable of understanding the interview questions were excluded from the study.

Diagnostic instruments

The K-SADS-PL is a semistructured diagnostic interview for the clinical population of 8 to 18 years. It has

several sections: the first investigates the demographic data and background of the patients and the second is made up of a screening that contains exploratory questions for 46 diagnostic categories, the third is a list of supplements to be filled out, the fourth includes five diagnostic supplements and the last assesses the patient's functioning level at the time of the interview and in the past. Through an interview of the patient and his parents, diagnoses can be made according to the DSM-III-R and DSM-IV criteria present at the moment or during the lifetime. This interview includes exploratory questions in the screening, as well as a supplement to determine the diagnosis of obsessive compulsive disorder[33]. There is a version of this instrument in spanish[34].

Procedure

Translation and adaptation of the instrument to Spanish by the clinicians expert in child psychopathology were performed. Prior to the inclusion of patients for the validation study, the version of the scale obtained was applied and scored by the raters in a pilot study in which 80 % interrater agreement for the scoring of severity was achieved. For the validation study, a previously trained clinician administered the introductory interview, the screening section and the obsessive-compulsive disorder supplement of the K-SADS-PL to determine if the patient fulfilled the DSM-IV diagnostic criteria for obsessive compulsive disorder and to determine the validity of the external construct. For the reliability study, the interviews to the patients and their parents were filmed and were scored by two more raters, obtaining the scores from three independent raters. The scores obtained according to the report of the parent and child were considered. Since the inconsistency between the informers often makes it necessary to use clinical opinion, it was decided to include a summary section in which the clinician scored the severity of the symptoms according to his perspective after interviewing the patients and their parents.

Statistical analysis

Descriptive (frequencies, percentages and averages) and comparative (Student's t test) statistics were used to analyze the demographic and clinical characteristics of the sample.

The internal consistence of the instrument was assessed with Cronbach's alpha coefficient in all the interviews. The validity of the external criteria was estimated through the correlation of the CY-BOCS scale scores with the diagnosis of the K-SADS-PL. Obsession and compulsion subscales as well as the total scores of the scale according to the scoring of the patients, parents and clinicians were analyzed with the intraclass correlation coefficients[35]. The statistical significance level was established at $p \leq 0.05$.

RESULTS

A total of 28 children and adolescents (75 % men), whose average age was 12.1 ± 0.71 years, were assessed. Eighty four scores were obtained for the reliability analysis. The total score of the scale for the sample was 16.5 ± 9.8. No significant differences were found in the scale score between men and women or between children (less than 13 years) and adolescents, although it was observed that the parents of the males scored the symptoms of their children with a higher score in comparison to the parents of the women (10.25 ± 2.49 frente a 6.8 ± 2.78; $t = 2.5$; 13.5 gl; $p = 0.03$).

Figure 1 shows the frequency of the different types of obsessions and compulsions according to the reports of the parents and children.

Cronbach's alpha reliability coefficient indicated an internal consistency for the 10 items of the scale of 0.87. Pearson's correlation of the total scoring of the CY-BOCS scale with the diagnosis according to the K-SADS-PL interview was 0.60 ($p \leq 0.05$).

Table 1 indicates the scoring average and interval for the obsession and compulsion subscales given by each rater in the scoring obtained according to the parents, patients and best estimation of the clinician.

DISCUSSION

This study aimed to assess the interrater validity and reliability of the version in Spanish of the CY-BOCS scale. The scale design as a semistructured interview made it possible for the clinician to adapt the questions to facilitate their understanding by the patients and their parents.

The demographic characteristics of this sample were similar to those of the validation study of the scale in English; on the contrary to this sample, complete interviews of the parents and children were obtained in all the subjects.

The disparity between the frequencies of obsessions and compulsions reported by parents and children coincides with the previous reports[24], although it was reduced in the patients with greater scores on the scale and the older patients. This may be due to the secret character of the obsessions, since the children fear their content and do not communicate their symptoms to their parents and to the difficulty of the small children to identify their compulsions as excessive acts, these only being identified by the parents[36].

Although the difference in frequency and severity by gender observed in the scoring of the parents supports previous reports on the greater frequency of the disorder beginning in childhood in males[37,38], the scores obtained according to the impression of the patients and the clinicians do not reproduce this finding. This could be due to differences in the up-bringing patterns given by the culture, where it is expected that the girls and adolescents are neat and more careful with objects, so that the parents

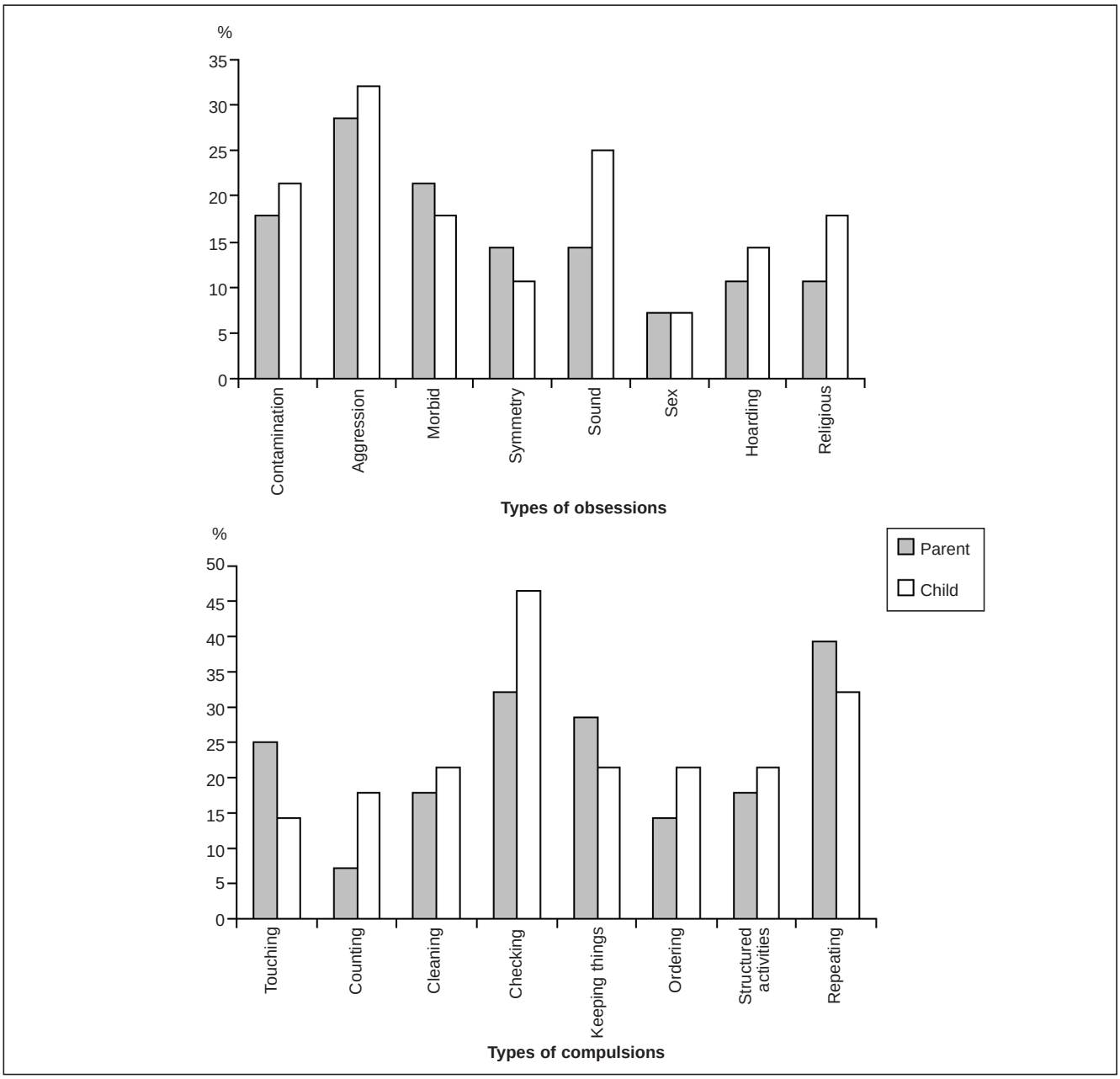

Figure 1. The upper panel shows the frequency (in percentage) with which the parents and children report obsessive ideas, the lower panel shows the frequency of the different compulsions reported by parents and children.

would not detect the irrational or excessive character of order and cleanliness compulsions so easily. This stresses the importance of having the scores of the patient and the clinician for an adequate assessment.

In a similar way to its version in English[24], the validity and reliability indicators of the Spanish version of this instrument are satisfactory. The total score of the scale correlated with the diagnosis obtained by means of the K-SADS-PL interview, since the patients with OCD diagnosis obtained higher scores on the CY-BOCS scale; later studies will be able to calculate a diagnostic cut-off for this instrument. In addition, the use of anxiety and depression scales would be useful to corroborate the diverging validity of this instrument.

Cronbach's alpha coefficient value was the same as that obtained in the validation of the original version of the scale in English, reflecting homogeneity of the scores of each item with the total score of the instrument[39].

In a similar way to the version in Spanish for adults[23] and to the results obtained in the reliability study of the version in English, the intraclass correlation coefficients showed excellent interrater reliability.

TABLE 1. Average (± standard deviation) of scores given by each rater in the interview to the parent, child and the clinical summary and value of the intraclass correlation coefficient for each score

	Obsessions (SD)	*Compulsions (SD)*	*Total (SD)*	*ICC (IC 95%)*
Scores of the parents				
Rater 1	5.83 (5.86)	9 (6.45)	14.39 (10.22)	
Rater 2	6.68 (5.94)	9.55 (6.38)	16.36 (10.63)	
Rater 3	6.52 (5.68)	9.37 (5.83)	15.36 (10.32)	0.96 (0.91-0.98)
Scores of the children				
Rater 1	6.3 (5.31)	6.22 (4.7)	12.52 (8.45)	
Rater 2	6.5 (5.4)	6.09 (4.65)	12.59 (8.21)	
Rater 3	6.08 (5.02)	6.3 (5.36)	11.59 (9.16)	0.94 (0.87-0.97)
Scores of the clinician				
Rater 1	8.17 (5.11)	8.39 (5.77)	16.57 (9.82)	
Rater 2	7.05 (5.23)	8.91 (6.28)	15.95 (8.3)	
Rater 3	7.38 (5.43)	9.13 (5.68)	16 (10.49)	0.92 (0.82-0.97)

It is important to consider that the indicators of validity and reliability of the scale were obtained from the scores of both informers and the clinician, which suggests the usefulness of the summary for the evaluation of the severity of the symptoms. In conclusion, the Spanish version of the CY-BOCS scale constitutes a valid and reliable instrument, that is useful both for the clinicians as well as investigators in the evaluation of the severity of the OCD beginning in childhood and adolescence.

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