Psicothema

Obsessive Compulsive Inventory-Child Version (OCI-CV) in a Spanish community sample of children and adolescents

Ana I. Rosa-Alcázar[1], Beatriz Ruiz-García[2], Marina Iniesta-Sepúlveda[3], José A. López-Pina[1],
Ángel Rosa-Alcázar[1] and José L. Parada-Navas[1]
[1] Universidad de Murcia, [2] Hospital Morales Meseguer and [3] Universidad Católica San Antonio

Abstract

Background: There is a growing interest in designing instruments to assess obsessive-compulsive symptoms in children. The Obsessive-Compulsive Inventory-Child Version (OCI-CV) has showed to be a valid in the evaluation of OCD in clinical and nonclinical populations. The main goal in this study was to analyze factor structure and psychometric properties of the OCI-CV in a community Spanish sample. **Method:** Data were collected from 914 children/adolescents with a mean age of 13.01 (SD = 1.96; Males = 51.3%). Exploratory factor analysis was carried out in order to study the internal structure of the OCI-CV Spanish version. Further, internal consistency, test-retest reliability, and convergent and discriminant validity of the total score and the factors obtained were examined. Finally, age and gender differences were also explored. **Results:** Exploratory factor analysis yielded a similar structure to the original OCI-CV with the following six factors: Washing/Checking, Obsession, Ordering, Doubting, Neutralizing, and Hoarding. The internal consistency was strong for the total score, but moderate for the subscales. The Spanish version of the OCI-CV showed evidences of test-retest reliability and convergent and discriminant validity. **Conclusion:** The Spanish version of the OCI-CV is an instrument with adequate psychometric properties to assess obsessions and compulsions in Spanish children/adolescents.

Keywords: Obsessive-compulsive disorder, OCI-CV, structural validation, children.

Resumen

El Inventario Obsesivo Compulsivo-Versión niños (OCI-CV) en una muestra comunitaria de niños y adolescentes españoles. **Antecedentes:** existe un creciente interés en el diseño de instrumentos que evalúen los síntomas obsesivo-compulsivos en niños. El Inventario Obsesivo Compulsivo-Versión para Niños (OCI-CV) ha demostrado ser válido para evaluar estos síntomas en población clínica y no clínica. El objetivo de este estudio fue analizar la estructura factorial y las propiedades psicométricas del OCI-CV en población española comunitaria. **Método:** se recogieron datos de 914 niños/adolescentes con una edad media de 13,01 años (DT = 1.96; 51.3% varones). Se realizó un análisis factorial exploratorio. Posteriormente se examinó la consistencia interna, la fiabilidad test-retest y la validez convergente y divergente de la puntuación total del instrumento y de los factores obtenidos. Finalmente, se comprobó la existencia de diferencias en función del sexo y la edad de los participantes. **Resultados:** los resultados mostraron una estructura similar a la del OCI-CV original, compuesta por los siguientes factores: Lavado/Comprobación, Obsesión, Orden, Duda, Neutralización y Acumulación. La consistencia interna fue buena para la puntuación total, aunque moderada para las diferentes subescalas. La versión en castellano del OCI-CV mostró evidencias de fiabilidad test-retest y validez convergente y discriminante. **Conclusiones:** OCI-CV es una herramienta con adecuadas propiedades psicométricas para la valoración de obsesiones y compulsiones en niños/adolescentes españoles.

Palabras clave: trastorno obsesivo-compulsivo, OCI-CV, validación estructural, niños.

Obsessive-compulsive disorder (OCD) is characterized by the presence of obsessions and compulsions (American Psychiatric Association, 2013). Consequences of the disorder are often extremely severe, causing significant disability and interfering with one's daily routine. In addition, OCD is often comorbid with other psychological disorders, therefore increasing the degree of discomfort and complicating its assessment and treatment (Peris et al., 2010).

Prevalence rates of the disorder, according to the *Diagnostic and Statistical Manual of Mental Disorders 5th edition* (DSM-V; American Psychiatric Association, 2013), are around 1-4%. Bloch et al. (2009) reported that 40% of OCD cases in childhood continue into adulthood. Despite the prevalence and consequences of pediatric OCD, there is often a long delay between onset of OCD and its diagnosis in children. Advances in psychological and pharmacological interventions suggest that early detection and treatment can improve the prognosis of this disorder (Barrett, Farrell, Pina, Peris, & Piacentini, 2008). Many youths with OCD do not receive an adequate intervention for their disorder, perhaps as a result of inadequate assessment. In practice, for the assessment of OCD children and adolescents, it is recommended that children are routinely screened for the presence of obsessive-compulsive

symptoms (American Academy of Child and Adolescent Psychiatry [AACAP], 2012).

The standard of clinician-administered measures to assess pediatric OCD is the Children's Yale-Brown Obsessive-Compulsive Scale (CY-BOCS; Scahill et al., 1997). However, given the costs in time for the administration of clinician-rated measures in research and clinical practice, several OCD self-report measures have been developed, such as the Children's Florida Obsessive-Compulsive Inventory (C-FOCI; Storch et al., 2009), or the Leyton Obsessional Inventory Child-Version (LOI-CV; Berg, Whitaker, Davies, Flament, & Rapoport, 1988).

Recently, Foa et al. (2010) have developed the Obsessive Compulsive Inventory-Child Version (OCI-CV). Based on the 42-item adult version, this is a shorter self-report instrument (21 items) for children and adolescents between 7 and 17 years old. The OCI-CV showed excellent psychometric properties in a clinical sample of 109 OCD children/adolescents. Exploratory factor analysis of the child version yielded a six-factor solution (Doubt/Checking, Obsessions, Hoarding, Washing, Ordering, and Neutralizing), showing good internal consistency with $\alpha \geq$ .81 for the total score and for the subscales. Test-retest reliability coefficients were .77 for the total scale, and ranging from .68 to .89 for the subscales. Correlations between OCI-CV and the standard measures of pediatric OCD, such as CY-BOCS and NIMH Global Obsessive-Compulsive Scale, were statistically significant and moderate. Jones et al. (2012) performed a confirmatory factor analysis on a sample of 96 OCD children and adolescents, obtaining the same six-factor model. Internal consistency was adequate for the overall scale (α = .85) and for five of the subscales (α = .79-.87) but poor for the neutralizing subscale (α = .50).

There is a lack of psychometric studies on the OCI-CV. Additionally, it is essential that adaptations of OCI-CV that are used with different populations to avoid generalizations based on race, ethnicity, and culture (Huey & Polo, 2008), and to contribute to the dissemination of evidence-based assessment procedures. Thus, a number of objectives are considered in this instrumental research: (a) to analyze the structural validity of OCI-CV in a large community Spanish sample, (b) to carry out a descriptive analysis of the OCI-CV, (c) to assess the internal consistency and test-retest reliability of total score and subscales, (d) to explore the existence of age and gender differences, and (e) to study the convergent and discriminant validity of the OCI-CV.

Method

Participants

The sample included 914 children/adolescents from public schools in Spain, aged between 8 and 18 years old, who were recruited as part of a larger school screening for OCD. Exclusion criteria were current/recent psychiatric illness or learning difficulties. The mean age was 13.01 years (*SD* = 1.96). The percentage of males was 51.3%; there were nonsignificant statistical differences in gender and age distribution, $\chi^2(10)$ = 14.104, *p* = .168. The entire sample was from urban areas. There was no ceiling or floor effect because only 1% of sample obtained a total score of 0, and only 0.1% obtained a total score of 34. Missing data were replaced by the mean score of the remaining items within the same subscale.

Instruments

Inventario Obsesivo-Compulsivo Versión para Niños (*Obsessive Compulsive Inventory-Child Version; OCI-CV*). The OCI-CV (Foa et al., 2010) is a 21-item self-report instrument. Items are scored on a 3-point Likert scale. It was designed to evaluate OCD in children between 7 and 17 years old. The total score ranges from 0 to 42 points. A more detailed description, of characteristics and psychometric properties of the OCI-CV, is provided above.

Inventario Obsesivo de Leyton Versión Breve para Niños *(Short Leyton Obsessional Inventory-Child Version, LOI-CV)*. The Short LOI-CV (Bamber, Tamplin, Park, Kyte, & Goodyer, 2002) is a self-administered scale used to assess obsessive-compulsive symptoms present over the past 2 weeks in pediatric populations. In the current study, the 11 items included in the Short LOI-CV were rated according to a 4-point Likert scale. The total score ranges from 0 to 33. This instrument showed good internal consistency with alpha coefficient of .86 for total score and from .73 to .75 for subscales. Adequate specificity (70%) and sensitivity (78%) were also reported.

Inventario Obsesivo-Compulsivo de Maudsley (*Maudsley Obsessional-Compulsive Inventory, MOCI*). The MOCI (Hodgson & Rachman, 1977) is a self-report scale used for evaluation of obsessive-compulsive symptoms in both clinical and community populations. It contains 30 items with dichotomous response. The MOCI was developed to assess OCD in adults, but it was included in this study because of its good psychometric properties when applied to people from 12 to 19 years old (Fonseca-Pedrero, Paíno, & Lemos-Giráldez, 2007). The internal consistency was good for each subscale extracted from factor analysis: checking (α = .87), cleanliness (α = .87), and slowness (α = .87).

Inventario de Depresión para Niños (*The Children's Depression Inventory, CDI*).The CDI (Kovacs, 1992) is one of the most commonly used instruments for identification of depressive symptoms in children and adolescents from 7 to 15 years old. The 27 items of CDI were grouped into two subscales: *dysphoria* and *self-esteem*. This instrument has shown good psychometric properties (Finch, Saylor, Edwards, & McIntosh, 1987).

Cuestionario de Ansiedad de Separación para niños, CASI-N *(Separation Anxiety Questionnaire for Children)*. The CASI-N (Méndez, Orgilés, Espada, García, & González, 2008) is a self-report scale to assess separation anxiety disorder in children between 6 and 11 years old. It contains 26 items that are answered according to a 5-point Likert scale. CASI-N is composed by three subscales: *Distress about separation*, *Concerns about separation*, and *Tranquility*, and it showed good psychometric properties with high internal consistency (α = .83), and excellent test-retest reliability (*r* = .98).

Procedure

After obtaining consent from the author of the OCI-CV, Edna Foa, the items were translated using the method of inverse translation (Muñiz, Elosua, & Hambleton, 2013). Each item was translated into Spanish by two independent Spanish bilingual psychologists. The two translations were compared and discussed until a consensual version was obtained. This Spanish version was translated back to English by two independent English bilingual psychologists. Finally the inverse translation version was compared with the original version, examining incongruences in

the meaning of the items and making the pertinent modifications.

This final Spanish version was tested in a pilot study including 20 children from 8 to 17 years old (M = 9.5, SD = 1.6) with the objective of correcting any misunderstood items. The word *collect* (*coleccionar*) was replaced by *save* (*guardar*) because in Spanish *collect* refers to saving related objects, excluding the concept of collecting random or unrelated objects.

The researchers provided information to Headmasters of public schools, regarding the objectives and procedures involved in the current study. Six schools in Murcia and four in Castilla La-Mancha emitted a positive response. After obtaining informed consent from the parents, the 914 participants completed the questionnaires individually during class-time. Data were collected in presence of one of the authors (BR).

Data analysis

Given that Foa et al. (2010) reported a six-factor model to explain the structural validity of OCI-CV resulting from an exploratory factor analysis (EFA), it was decided to replicate the factor structure with an EFA but varying the method and the rules to obtain factors. EFA was performed in MPLUS software (v. 5.2) (Muthén & Muthén, 1998-2007) using robust mean- and variance-adjusted weighted least squares estimation (WLSMV; Holgado, Chacón, Barberá, & Vila, 2010). Several factor solutions from 1 to 6 factors were extracted and rotated with Geomin method. To test the fit of the factor solutions obtained the X^2 test were examined (a significant test indicates inadequate fit). In addition the following goodness-of-fit statistics were also revised: the Comparative Fit Index (CFI), the Tucker-Lewis fit Index (TLI), the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMR). An acceptable fit was considered when values were ≥ .95 for the CFI and for the TLI, and for the RMSEA and SRMR ≤ .05 (Brown, 2006).

Descriptive statistics were computed for all variables employed in this study with SPSS (v. 19.0). To test internal consistency, Cronbach's alpha coefficients were computed for the OCI-CV total scale and for each subscale. Test-retest reliability was analyzed through Pearson's correlation in a period of two weeks. To assess convergent and discriminant validity Pearson's correlations among OCI-CV and other OCD (MOCI, LOI-CV), anxiety (CASI) and depression (CDI) measures were examined. Finally, a MANOVA was computed to explore the existence of potential age and gender differences in total scores of the OCI-CV and subscales.

Results

Structural validity

Table 1 shows the results of the EFA conducted on the 21 items of the Spanish version of OCI-CV. Several solutions from 1 to 6 factors were tested. The Chi-square statistic was highly significant for all solutions, as expected with such a large sample. For unidimensional and bidimensional solutions, CFI and TLI did not reach the cut score for acceptable fit, and RMSEA and SRMR statistics exceeded the cut-off point for acceptable fit. The solutions composed by 3 and 4 factors did not show and adequate fit according to TLI, RMSEA and SRMR in the first solution, and according to SRMR in the second solution. Despite the 5-factor solution showed an adequate fit, the more explanatory solution was

composed by six factors. This 6-factor solution was acceptable according to the CFI (.995), and good according the values of the TLI (.989), the RMSEA (.027) and the SRMR (.025).

The six-factor solution included the following domains: Washing/Checking, Obsession, Ordering, Doubting, Neutralizing, and Hoarding; but the items were grouped in a different way than in the original OCI-CV (Table 2). In this sense, items on Washing and Checking loaded into the same factor, and items on Doubting were grouped in only one factor. With the exception of the item 18 (.37) in obsession subscale, all items had factor loadings greater than .40 into the corresponding symptom domain.

Correlations among subscales were all statistically significant (p<.01) and ranged from .20 to .44. Furthermore, these subscales assessed different but related obsessive-compulsive responses (see Table 3).

Descriptive statistics

The means and the standard deviations for total score and for the factors obtained can be seen in Table 4.

Internal consistency

Analysis of the internal consistency revealed that it was strong for the total score (α = .83) and acceptable for the Obsession subscale (α = .74). Nevertheless it was moderate for the rest of the subscales (Washing/Checking = .65, Ordering = .67, Neutralizing= .67, Doubting = .62 and Hoarding = .43).

Test-retest reliability

The test-retest coefficient was calculated from a random sample (n = 189) collected after two weeks. There were no significant statistically differences with respect to either symptom measures or demographic characteristics with the total sample. Test-retest reliability coefficients were high for the OCI-CV total score (r = .82) and moderate for Washing/Checking (r = .75), Ordering (r = .79), Neutralizing (r = .76), Doubting (r = .70), and Hoarding (r = .70) subscales. The difference between them was not statistically significant.

Age and gender differences

Potential age and gender differences in obsessive-compulsive symptom severity were also examined. The MANOVA conducted showed significant differences related to the gender (Wilks Lambda = .96, $F(1, 905) = 2.23$, p<.01), specifically in Neutralizing factor ($F = 4.34$, p<.05), being the highest mean for males. The

	Table 1					
	Results of exploratory factor analysis of the OCI-CV					
Factor solution	**X² (df)**	**p**	**CFI**	**TLI**	**RMSEA**	**SRMR**
1	2119.262(189)	.000	.842	.825	.106	.101
2	1103.896(169)	.000	.924	.905	.078	.074
3	657.990(150)	.000	.959	.942	.061	.057
4	437.478(132)	.000	.975	.960	.050	.046
5	246.871(115)	.000	.989	.980	.035	.032
6	163.822(99)	.000	.995	.989	.027	.025

Table 2
Geomin rotated loadings Structure Matrix of OCI-CV Scores of Spanish Community Sample

Brief description of items (Items in Spanish)	Factors					
	Washing/Checking	Doubting	Obsession	Neutralizing	Ordering	Hoarding
21. Lavo mis manos más de lo que lo hacen otros niños [Wash more than others]	**.759**	-.062	-.025	.006	.044	-.024
2. Siento como si debiera lavar y limpiar las cosas una y otra vez [Compulsive washing]	**.646**	.115	-.045	.112	.058	-.034
4. Compruebo las cosas una y otra vez. Por ejemplo, si llevo todo en la mochila del colegio [Checking things]	**.525**	.025	.053	-.163	-.056	.196
15. Compruebo muchas veces si las puertas y ventanas están cerradas [Checking doors, windows]	**.500**	.100	.003	.097	-.007	.105
10. Me preocupa mucho que las cosas estén limpias [Worry about cleanliness]	**.410**	.011	.059	-.040	.284	-.134
5. Después de hacer las cosas no estoy seguro si las hice o no [Doubting if did things]	-.005	**.656**	-.010	-.026	-.048	.059
13. Incluso después de haberlas hecho, todavía me preocupo de no haber terminado las cosas [Worry didn't finish things]	.222	**.620**	.069	-.017	-.053	.002
9. Voy retrasado en mis estudios porque repito las cosas una y otra vez [Repeating]	.010	**.499**	-.024	.185	.198	-.187
20. Incluso cuando hago algo con mucho cuidado, dudo si lo he hecho bien [Doubting if did something "right"]	.186	**.425**	.030	.032	.047	.092
11. Me molestan mis malos pensamientos [Upset by bad thoughts]	.004	-.038	**.923**	-.030	-.007	-.012
14. Me molestan los malos pensamientos que surgen en mi cabeza aunque yo no quiera [Upset by intrusive bad thoughts]	.018	.019	**.895**	.071	-.020	-.019
1. Pienso sobre cosas malas y no puedo parar [Can't stop bad thoughts]	-.139	.028	**.445**	-.008	.052	.034
18. Si un mal pensamiento viene a mi cabeza necesito hacer o decir ciertas cosas varias veces [Saying things in response to bad thoughts]	.112	.233	**.370**	.078	.064	.073
6. Necesito contar números mientras hago las cosas [Counting]	-.028	-.026	.027	**.812**	.039	.161
12. Tengo que decir algunos números una y otra vez [Repeating numbers]	.260	.065	.050	**.765**	-.039	.002
17. Me molesta si la gente cambia mi manera de ordenar las cosas [Upset if people move things order]	-.026	.205	.034	-.180	**.725**	.007
8. Me molesta que mis cosas no estén en el orden correcto [Upset if things not in]	.244	-.055	-.007	.037	**.599**	.013
19. Necesito que las cosas estén siempre de la misma manera [Need things certain way]	.275	.002	-.015	.069	**.534**	.099
7. Guardo cosas que realmente no necesito [Collect things don't need]	.056	.068	-.014	.087	.028	**.497**
3. Tengo la habitación llena de cosas que me encuentro [Collect stuff that gets in way]	-.161	.163	-.020	.079	.006	**.473**
16. No tiro las cosas porque temo que las pueda necesitar más tarde [Difficulty discarding]	.280	-.017	.080	-.111	.092	**.407**

Table 3
Pearson's correlations among OCI-CV and measures of OCD, depression and anxiety

Measures	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. OCI-CV Total	1.00																	
2. Washing/Checking	.74**	1.00																
3. Doubting	.70**	.39**	1.00															
4. Obsessions	.69**	.32**	.39**	1.00														
5. Neutralizing	.45**	.24**	.30**	.25	1.00													
6. Ordering	.67**	.44**	.32**	.30**	.20	1.00												
7. Hoarding	.57**	.26**	.33**	.29**	.20**	.28**	1.00											
8. Short LOI-CV	.32**	.28**	.24**	.16**	.23**	.20**	.14**	1.00										
9. Compulsions	.21**	.18**	.16**	.06	.19**	.19**	.08*	.69**	1.00									
10. Obsessions	.24**	.16**	.21**	.19**	.14**	.10**	.13**	.74**	.29**	1.00								
11. Cleanliness	.22**	.27**	.11**	.10**	.16**	.12**	.10*	.71**	.19**	.37**	1.00							
12. MOCI	.49**	.40**	.36**	.34**	.34**	.24**	.22**	.45**	.09*	.46**	.46**	1.00						
13. Checking	.44**	.38**	.34**	.27**	.34**	.21**	.17**	.42**	.14**	.43**	.37**	.84**	1.00					
14. Cleaning	.34**	.31**	.21**	.24**	.24**	.16**	.14**	.36**	.13**	.35**	.30**	.78**	.56**	1.00				
15. Slowness	.44**	.26**	.33**	.38**	.29**	.22**	.22**	.36**	.13**	.35**	.30**	.78**	.56**	.54**	1.00			
16. Doubting	.38**	.27**	.33**	.28**	.24**	.18**	.19**	.32**	.01	.40**	.32**	.80**	.58**	.48**	.53**	1.00		
17. CDI	.44**	.17**	.43**	.43**	.32**	.18**	.24**	.32**	.28**	.32**	.10*	.42**	.34**	.40**	.40**	.41**	1.00	
18. CASI	.53**	.47**	.32**	.35**	.36**	.31**	.24**	.42**	.33**	.34**	.29**	.53**	.48**	.44**	.40**	.32**	.27**	1.00

** p<.01; * p<.05

Table 4
Means and standard deviations for total score and subscales of the OCI-CV

	N	Mean	SD
Washing	914	3.10	2.16
Doubting	914	2.13	1.64
Obsession	914	2.39	2.01
Neutralizing	914	.32	.72
Ordering	914	2.20	1.68
Hoarding	914	1.90	1.35
Total	914	11.34	6.09

Age of participants also was significantly related to the obsessive-compulsive symptoms (Wilks Lambda = .96, $F (1, 905) = 5.82$, $p<.05$), finding these differences in Washing ($F = 21.40$, $p<.001$), Obsession ($F = 17.61$, $p<.001$), Neutralizing ($F = 8.31$, p<.01), and Hoarding ($F = 6.921$, p<.01) factors. In this sense, participants from 9- to 11-years-old showed higher scores than participants from 12- to 17-years-old. Concerning the interaction gender × age, significant differences were found in Doubting ($F = 4.74$, $p<.05$), and Hoarding ($F = 5.53$, $p<.01$) factors. All effect sizes were poor for the OCI-CV total score for age (η^2 partial = .037), gender (η^2 partial = .014) and the interaction (η^2 partial = .012). Similar results were obtained in each of the factors detected in the scale.

Convergent and discriminant validity

Table 3 shows Pearson's correlations among OCI-CV and the others measures used in this study. Almost all associations were statistically significant. Concerning the convergent validity the OCI-CV total score showed significant ($p<.01$) and moderate statistically relationship with total score of the OCD measures Short LOI-CV ($r = .32$) and MOCI ($r = .49$), showing significant association from weak to moderate with their subscales. Overall the OCI-CV subscales were more related with the corresponding subscales in the criterion measure than with subscales for different domains of the OCD. Washing/Checking subscale showed the strongest associations with Cleanliness subscale of the Short LOI-CV ($r = .27$) and with Checking ($r = .38$) and Cleaning ($r = .31$) subscales of the MOCI. Doubting subscale showed the strongest associations with the Obsessions subscale of the Short LOI-CV ($r = .21$) and with Checking ($r = .34$), Slowness ($r = .33$) and Doubting ($r = .33$) subscales of the MOCI. Obsessions subscale showed the strongest associations with Obsessions ($r = .19$) subscale of the Short LOI-CV and with Slowness ($r = .38$) subscale of the MOCI. Neutralizing subscale showed the strongest associations with Compulsions ($r = .19$) subscale of the Short LOI-CV and with Checking ($r = .34$) subscale of the MOCI. Ordering subscale showed the strongest associations with Compulsions ($r = .19$) subscale of the Short LOI-CV and with Checking ($r = .21$) and Slowness ($r = .22$) subscales of the MOCI. Finally, Hoarding subscale showed a weak relationship with subscales of the Short LOI-CV and the MOCI, being the strongest association with Slowness subscale of the MOCI ($r = .22$). Concerning the discriminant validity, the OCI-CV total score showed a significant strong correlation with CDI for depression ($r = .44$). Correlations with the separation anxiety measure were significant for both OCI-CV total score ($r = .53$) and subscales ($r = .24-.47$).

Discussion

The main objective of the present study was to adapt and validate the OCI-CV by applying it to a community sample of Spanish children and adolescents between 8 and 18 years old. The first specific goal was to examine the structural validity of the OCI-CV in Spanish non-clinical sample. The CFA conducted in the current study revealed a six-factor model, which was similar to the found by Foa et al. (2010). While the Obsession, Ordering and Hoarding factors included the same items than those in the original version; items of the Checking subscale were grouped with Washing items instead of with items of Doubting factor. This fact could mean that in the Spanish version compulsive behaviors such as Checking and Washing were grouped, on the contrary to the original version where the Doubting domain was related to the need to check things. The Neutralizing factor was also different since item 9 was not included. These differences may be reflecting the nature of the community sample used in this study. However, the ability of OCI-CV to reflect the multidimensionality of OCD is maintained in the Spanish version.

The second specific goal was to conduct a descriptive analysis of the measures used in the current study. As expected, in non-clinical samples, positive bias was shown by the distribution of all variables, with high frequencies and percentages in the range of low scores. Concerning obsessive-compulsive symptoms the highest means were for Washing, Obsession and Ordering subscales of OCI-CV.

The third goal was to assess the internal consistency and test-retest reliability of the OCI-CV. As in the previous studies, internal consistency was high for the total score and for the obsession subscale (Foa et al., 2010; Jones et al., 2012). Although internal consistency for the rest of the subscales was nearly acceptable, the internal consistency of the hoarding subscale was poor ($\alpha = .43$). The test-retest reliability coefficients were as good as the reported by Foa et al. (2010), showing the stability of the measure across the applications.

The fourth goal was to examine the relationship between obsessive-compulsive symptoms and the gender and age of participants. In this sense, there were differences in the Neutralizing subscale related to the gender. Overall younger participants (from 9 to 11 years) obtained higher means in OCI-CV total score and subscales than older (from 12 to 17 years). Foa et al. (2010) found in OCD sample, higher scores for adolescents in OCI-CV total score and doubt/checking subscale. It should be noted that the comparison between studies is hampered by the different nature of the samples (clinical vs. community).

The last goal was to test the convergent and discriminant validity. Concerning correlations among OCI-CV total score and other OCD self-reports measures, these were high with the MOCI total score and moderate with LOI-CV total score, being both statistically significant. Additionally the OCI-CV subscales exhibited higher correlations with subscales of similar domains of the MOCI and LOI-CV than with unrelated domains. Furthermore the OCI-CV showed convergent validity. On the contrary, evidence concerning discriminant validity was not found since correlations with CDI and CASI were strong and significant. These results were similar to those found in previous studies (Foa et al., 2010; Jones et al., 2012). The results in this study showed that the OCI-CV have good psychometric properties to screen obsessive-compulsive symptoms in non-clinical Spanish sample. Regarding

clinical practice it should be noted that the OCI-CV is a brief tool, which allows simple screening and detection of obsessive-compulsive symptoms. Furthermore, the OCI-CV would be useful implementation of the first recommendation for practice noted in AACAP (2012), whereby the assessment procedure of children and adolescents should include being screened routinely for the presence of obsessions and compulsions.

However, these data should be interpreted considering certain limitations present in this study. Firstly, these results can only be applied to a Spanish community population of children and adolescents and not to a clinical population or to people from other cultures or ethnic groups. Secondly, it is necessary to consider the potential response error that may occur in any instrument; that is, adolescents, and especially children, may underestimate or overestimate their real perception of the obsessions and/ or compulsions when completing a self-report, which could be also influenced by social desirability. Another limitation concerning the generalization of these results is that this is only possible for populations with the same characteristics as the participants in this study. In addition, an instrument with which to assess social desirability should be included, since this variable could cause a bias in the results. Finally, only two item loadings were significant in the Neutralizing factor. Regarding to future research in this area some issues would be: (1) testing the OCI-CV in Spanish clinical samples, (2) examining the relationship with diagnostic tests, (3) establishing correlations with measures obtained from external observers of interpersonal functioning, and (4) analyzing the convergent validity of the OCI-CV Spanish version with the CY-BOCS, since it is the gold-standard of assessment in this field.

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