

Psychometric Properties of the Padua Inventory in an Iranian Sample

Nasim Seyedsalehi¹, Rohany Nasir¹, Wan Shahrazad Wan Sulaiman¹, Ashkan Seyedsalehi² & Sadaf Seyedsalehi²

¹ School of Psychology and Human Development, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Malaysia

² Shiraz University of Medical Sciences, Shiraz, Iran

Correspondence: Nasim Seyedsalehi, School of Psychology and Human Development, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia, Malaysia. E-mail: nasimseyedsalehi@gmail.com

Received: November 7, 2015 Accepted: December 2, 2015 Online Published: January 12, 2016

doi:10.5539/ass.v12n2p52

URL: <http://dx.doi.org/10.5539/ass.v12n2p52>

Abstract

To test the validity and reliability of Padua Inventory (PI) on an Iranian population in Shiraz city Iran, this research has been conducted. In the current study, items of PI following translation into Persian were carried out. Along the way, a sample consisting of two groups of subjects as follows: patients with obsessive-compulsive disorder (OCD) who were referred to mental health centers located in Shiraz (n = 100), and healthy individuals (n = 100) who were randomly selected employees of mental health centers, located in Shiraz city. The results of exploratory factor analysis (EFA) and Cronbach's alpha showed a good level of the reliability and confirmed PI factorial structure that was consistent with previous studies. The results showed a significant statistical difference between OCD patients and control participants regarding PI scores with patients showing higher scores to provide evidence of construct validity of PI as an instrument.

Keywords: Obsessive-Compulsive Disorder (OCD), the Padua Inventory (PI), factor analysis

1. Introduction

Obsessive-compulsive disorder (OCD) is a chronic and debilitating condition that affects almost 3% of adults (Boysan et al., 2015; Ruscio et al., 2010). The American Psychiatric Association (APA) in the DSM-IV-TR (American Psychiatric Association, 2000) classified obsessions as persistent thoughts, images, or ideas that are intrusive and inappropriate; whereas, compulsions are described as behaviors that are often repeated or behavior that individuals are forced to perform in response to obsessions. OCD is a highly disabling and distressing disorder and it is one of the leading causes of disability worldwide. This disorder has been shown to be equally prevalent among both men and women, and causes significant and pervasive impairment in multiple domains such as at home, work, and in relationships (Kessler et al., 2005; Ruscio et al., 2010; Williams et al., 2015). OCD can be reliably diagnosed through structured clinical interviews such as the structured Clinical Interview for DSM-IV Axis I Disorders – SCID (Emmelkamp et al., 1999), the Dimensional Yale-Brown Obsessive-Compulsive Scale (DY-BOCS) (Rosario-Campos et al., 2006), and the Dimensional Obsessive Compulsive Scale (DOCS) (Richter et al., 1994). The approach of structured clinical assessment has confirmed the diagnosis of OCD on one hand, and helped test-takers to have a better understanding of the items of PI on the other hand.

Furthermore, psychometric instruments are usually required to make the diagnosis of mental disorders in an easier way as Grabill et al. (2008) mentioned in their study. It seems that these assessment tools would assist OCD-affected patients better (Boysan et al., 2015).

There are various self-reporting instruments that measure heterogeneous clinical features of OCD. Translations for the majority of these instruments into other languages are available, and they have been validated. The Maudsley Obsessional Compulsive Inventory (MOCI) (Hodgson et al., 1977) and Obsessive-Compulsive Inventory-Revised (OCI-R) (Foa et al., 2002) are examples of the aforementioned instruments widely used for clinical and research purposes related with OCD.

Padua Inventory, developed by (Sanavio, 1988), is a 60-item questionnaire developed to make researchers able to investigate obsessive and compulsive problems. Each item of PI is scored on a 0–4 point scale, which is in line with the intensity of the disorder; (0) indicates there is no disturbing behavior, while (4) is interpreted as a very disturbing behavior. PI is a unique self-reporting scale that involves strong obsessional dimensions as

opposed to compulsive dimensions (Sanavio, 1988; Sternberger et al., 1990). In addition, Freeston et al., (1994) indicated that PI has proved to be very useful in determining the type and severity of OCD.

According to PI used in this research, OCD has been categorized into 4 subscales as follows: (1) without control over mental activities; (2) checking behaviors; (3) contamination; and (4) urges and worries of losing control over motor activities (Sanavio, 1988; Steketee, 2011; Steketee et al., 1994). These categories are also supported by other researchers (Mataix-Cols et al., 2002; Sternberger et al., 1990; Wakabayashi et al., 2007; Zhong et al., 2011).

Furthermore, the PI contains items that assess unpleasant thoughts, debilitating doubts, constant checking and cleaning behaviors, and also some other items that are related to inappropriate, repetitive thinking about unimportant things as a danger, recurrent disturbing images, and other symptoms (Sanavio, 1988; Sternberger et al., 1990).

Many studies have discovered that PI total scale and its subscales possess a high level of internal consistency (Cronbach's coefficients > 0.80) with the exception for the subscale of urges and worries, in which PI indicates considerable variation. Correlations of PI total score with the Maudsley Obsessive-Compulsive Inventory and the Leyton Obsessional Inventory (LOI) were revealed at a range of 0.65–0.75. There was a lower consistency in the correlations between the subscales of PI and other OCD inventories (Sanavio, 1988; Sternberger et al., 1990; Van Oppen, 1992).

Sanavio (1988) indicated that PI can differentiate between OCD patients and neurotic patients. In addition, obtaining a high score on PI could diagnoses not only OCD, but also a higher level of depression and general anxiety disorder (Burns et al., 1996). That is why, nowadays, global mental health-care systems get increasingly more interested in employing PI as a popular self-reporting instrument, to evaluate OCD among clinical and non-clinical cases (Overduin et al., 2012).

On the contrary, the concurrent validity of this scale is problematic to certain extent (Sanavio, 1988). There are yet insufficient evidences to confirm the validity of PI in diagnosing OCD (Burns et al., 1996; Freeston et al., 1994).

Furthermore, PI measures worry as well as obsession, whereas the experience of worry is not only limited to OCD patients, but also evident in other disorders such as anxiety, depression, and phobias. This is especially true for two obsessional subscales. The results show that some questions of PI measure non-specific elements of OCD (such as worry), and therefore are not able to differentiate anxious and depression from OCD (Burns et al., 1996; Freeston et al., 1994).

Researchers conducted in several countries have confirmed the reliability and validity of PI. e.g. Italy (Sanavio, 1988), Australia (Hafner et al., 1990), North America (Sternberger et al., 1990), Netherlands (Van Oppen, 1992; Van Oppen et al., 1993), Spain (Chappa, 1998; Ibanez et al., 2002; Mataix-Cols et al., 2002), Britain (Macdonald et al., 1999), Japan (Wakabayashi et al., 2007), Korea (Lim et al., 2008), and China (Zhong et al., 2011). However, there have been only a few studies done on PI in Iran, such as the one conducted by Goodarzi et al. (2005).

These cross-cultural studies on measuring the severity of obsession have identified and described some influential cultural factors that define the concept of obsession differently in each population and the variances that lead to a better understanding of what the cultural influences are. As such, it was believed that research on PI in the context of Iranian society is beneficial and provides an international approach to the study of obsessive-compulsive phenomena among an Iranian population.

The aims of this particular study are as follows: (a) to confirm the internal consistency and test-retest reliability of the Persian version of PI; (b) to investigate how the Persian version of PI is structured factorially; and (c) to explore the validity of the Persian version of PI by testing whether there are noticeable differences between OCD patients and control group. These were explored in the current study on two dissimilar samples.

2. Method

2.1 Sampling Procedure

In this study, the OCD patients (according to the DSM-IV-R diagnostic criteria) were selected from a few public and private medical centers in Shiraz. The sampling method to choose the patients was the simple random sampling technique. The study excluded the patients on psychoactive drugs during the four week period prior to the test. The members of the control group, on the other hand, were picked from the employees of the medical centers from which the patients had been chosen. The available sampling method was the technique to select the

employees (control group). The sample size of each group was n=100 (100 OCD patients as the experimental group; and 100 healthy individuals as a control group) made up of 50 men and 50 women.

2.2 Research Instrument

A translated version -English to Persian- of the Padua Inventory, established by Rajabi (2007), was applied as the research instrument in this study, which assessed the OCD symptoms in the following four dimensions: (1) pollution and dirt; (2) inspection; (3) controlling the irregularities in mental activities; and (4) concerns regarding lack of personal behavior control. This questionnaire has 60 grading elements that evaluate the severity of the obsessions and compulsions. In other words, grading score system of this questionnaire could help test-takers to rate their answers on a five-level index (0 = never, 1 = to some degree, 3 = often, 4 = extremely). The total score of this questionnaire is obtained by summation the answers of all 60 elements where the minimum and maximum of the overall scores is from 0–240. This means the higher score indicates a higher rate of obsession-compulsion disorder.

2.3 Participants' Demographic Characteristics

In this research, demographic factors are some specific features based on which collecting and evaluating individuals in a defined population are moderated. Table 1 presents the demographic features of the OCD participants and control group. Demographic factors which were considered in this study are included age, gender, marital status, and level of education.

One of the demographic factors in this research was the age based on which the participants were divided into four groups as following: a) less than 25 years old, b) 25 to 35 years old, c) 35 to 45 years old, and d) 45 years old above. Gender was another demographic factor which was categorized into male and female. Third factor was marital status that categorized participants into three groups as following: a) single, b) married, and c) divorced. And finally the last one was educational level based on which all participants in this study were divided into five following categories: a) those with less than a high school diploma (the individuals who have not completed 12 years of school education), b) Those with high school diploma (the individuals who have completed 12 years of school education), c) those with Associate's degree (2 years of college degree), d) those with bachelor's degree (4 years of college degree), and finally e) Those with Postgraduate degree (Master's degree and/or Ph.D.). Of course, it should be noted that the used educational grading in this research has been according to the education system in Iran.

As can be seen from the Table 1, in OCD group and control group, the proportion of males and females is equally distributed. Moreover, based on the Table, the majority of OCD patients (N = 43, 43%) are without high school diploma, while most control participants (N = 47, 47%) had at least bachelor degree. In addition, as can be observed from Table 1, most of OCD patients and control participants were in the range of 25-35 years old, (N=54, 54%) and (N=51, 51%), respectively. Further, as the Table reveals the majority of the OCD patients and control participants were single (N=56, 56%) and (N=61, 61%), respectively.

Table 1. Demographic characteristics of the OCD and controls participants

		OCD Patients (n=100) (n=?)		Controls (n=100)	
		Frequency	Percentage	Frequency	Percentage
Gender	Male	50	50%	50	50%
	Female	50	50%	50	50%
Level of Education	Less than high school diploma	43	43%	0	0%
	high school diploma	12	12%	0	0%
	Associate's Degree	18	18%	35	35%
	Bachelor's Degree	20	20%	47	47%
	Postgraduate degree	7	7%	18	18%
Education Age	Less than 25 years old	16	16%	18	18%
	25-35 years old	54	54%	51	51%
	35-45 years old	18	18%	21	21%
	45 years old above	12	12%	10	10%
Marital Status	Single	56	56%	61	61%
	Married	24	24%	18	18%
	Divorced	20	20%	22	22%

3. Data Analysis

3.1 Correlation Analysis

The Pearson correlation coefficient was applied to analyze the relation between each item and total score of PI. The results show significant statistical relationships between all items and total PI scores, which indicate homogeneity of the items. However, six items (5, 23, 37, 49, 54, and 56) were not significantly correlated with the total score ($P > 0.05$) Hence, these items were removed and the analysis proceeded with 54 items only.

Table 2. Pearson correlation matrix of the research variables

	(5)	(23)	(37)	(49)	(54)	(56)
(5)	1					
(23)	.31	1				
(37)	.45	.22	1			
(49)	.26	.18	.17	1		
(54)	.34	.39	.54	.72	1	
(56)	.14	.26	.38	.41	0.45	1

3.2 Factor Analysis

An appropriate statistical technique was exploratory factor analysis using principle components on the basis of varimax rotation, which was implemented to determine the dimensions of the PI. The good rules of thumb helped to investigate the items with factor loadings greater than 0.4 which are considered as the items that form factors (Hair et al., 1998). Based on the results, these six factors have number of eigenvalues, greater than 1, which amount to 11.34, 5.63, 4.89, 3.11, 2.77, and 2.47, respectively. Moreover, measures of sampling adequacy (MSA) were used to assess whether sample size was adequate for factor analysis. According to Hair et al. (1998) if the MSA is greater than 0.50, then the output of factor analysis is valid. In this study the value of KMO is 0.76 and revealed the sample size was adequate for factor analysis.

Table 2 presents the factor loading for all items of PI. Table 2 shows that 14 items are loaded on the first factor to explain 20.62% of the total variation and is labeled “dirt and pollution”. A total of 10 items are loaded on this factor, which replicated the same items in previous studies (Beşiroğlu et al., 2005; Goodarzi et al., 2005; Kyrios et al., 1996; Sanavio, 1988; Sternberger et al., 1990). Our findings have also included four additional items (30, 31, 45, and 59) that were not loaded in the aforementioned studies.

The second factor termed “Inspection” is constructed by 12 items that explain a 10.24% for total variance. The loaded items (18, 20, 22, 24, and 25) are compatible with Sanavio (1988). Moreover, loaded items (18, 24, 25, 30, 31, and 42) are in accordance with items loaded by Kyrios et al. (1996). Further, loaded items (18, 20, 22, 24, and 25) confirm the findings reported by Sternberger et al. (1990). In addition, loaded items (15, 18, 20, 22, 24, 25, 30, 31; and 15, 18, 20, 22, 24, 30, 42, respectively) were consistent with the findings of Goodarzi et al. (2005) and Williams et al. (2005). The current study also found two additional loaded items (32, 11) that were not loaded in the aforementioned studies.

The third factor named “Mental doubt and control” was constructed by 14 items to explain a total variance of 7.73%. In this factor, the loaded items (26, 27, 28, 29, 30, 34, and 35) were compatible with Sanavio (1988). Furthermore, loaded items (25, 35, 39, 40, and 41) were in accordance with item loadings in Kyrios et al. (1996). Moreover, loaded items (13, 26, 27, 28, 29, and 35) were consistent with the loaded items from Sternberger et al. (1990). In addition, loaded items (13, 18, 26, 27, 28, 29, 30, 35, 39; and 26, 27, 28, 29, 30, 34, 35, 39, respectively) were also consistent with previous studies (Goodarzi et al., 2005; Williams et al., 2005). In addition, item number 19 confirmed that it was loaded under mental doubt and control (Beşiroğlu et al., 2005).

The fourth factor labeled “Fear of shock” is constructed with 11 items that explain a 5.67% total variance. The loaded item number 46 was compatible with Sanavio (1988). Moreover, loaded items (46, 50, and 52) were in accordance with items loading in the study by Kyrios et al. (1996). Furthermore, loaded items (Van Balkom et al. 1998 50, and 52) were consistent with the findings reported by Williams et al. (2005). Additionally, loaded items (46, 50) were in accordance with Goodarzi et al. (2005). Our findings also indicate seven additional loaded items (11, 15, 16, 33, 36, 45, and 51) that were not loaded in the previous studies.

Varimax rotated matrix of the factors and factor loadings for the Padua Inventory among OCD patients and control participants are presented in Table 3.

Table 3. Varimax rotated matrix of the factors and factor loadings for the Padua Inventory among OCD patients and control participants

Factor	Item	Loading
Dirt and pollution (Percentage of Variance Explained = 20.62; Eigen value = 11.34)	2. I think that even slight contact with bodily secretions (perspiration, saliva, urine, etc.) may result in contamination of my clothing or even cause me harm.	0.75
	3. I am very reluctant to touch anything that strangers or certain people have touched.	0.56
	4. I am very reluctant to be in contact with garbage or anything dirty.	0.66
	6. I try not to use public telephones for fear of contagion and disease.	0.50
	7. I wash my hands more frequently and for longer than I need to.	0.76
	8. I at times wash or clean myself simply because I think I may be dirty or have been exposed to contamination.	0.75
	9. On touching something which I think is contaminated I rush to wash or clean myself.	0.69
	10. If any animal comes into contact with me I feel dirty and hurry to wash myself or to change my clothes.	0.78
	14. I feel obligated to stick to a routine order when I dress, undress and wash myself.	0.41
	30. My reason for being occasionally late is due to the fact that I keep on repeating certain actions more often than required.	0.44
	31. I harbor doubts and invent problems pertaining to most of the things I do.	0.43
	32. I become obsessed when I start to think of certain things.	0.45
	59. On hearing of a suicide or a criminal act, I get upset for quite a while and find too hard to stop thinking about it.	0.61
	60. I invent pointless concerns regarding germs and diseases.	0.62
Inspection (Percentage of Variance Explained = 10.24; Eigen value = 5.63)	11. When I start having doubts and worries I am unable to rest until I have discussed them with someone who can give me reassurance.	0.50
	15. Prior to sleeping I feel compelled to perform certain actions in a particular sequence.	0.52
	18. I have to repeatedly do things before I believe they are properly done.	0.42
	20. I repeatedly check and recheck gas and water taps and light switches even after I have turned them off.	0.73
	22. I repeatedly check and recheck forms, documents, checks, etc. closely to assure myself I have filled them out correctly.	0.83
	24. When handling money I count and recount it many times.	0.75
	25. I repeatedly and carefully check and recheck letters prior to posting them.	0.71
	30. My reason for being occasionally late is due to the fact that I keep on repeating certain actions more often than required.	0.45
	31. I harbor doubts and invent problems pertaining to most of the things I do.	0.51
	32. I become obsessed when I start to think of certain things.	0.50
42. When reading, I get the impression I have missed something significant and need to revisit and reread the particular passage two or three times.	0.45	
44. When I feel doubtful about something I have to think about it from various angles and cannot stop until that is done.	0.56	

Mental doubt and control (Percentage of Variance Explained = 7.08; Eigen value = 4.89)	13. I have a tendency to request patients to repeat the same things to me many times consecutively, despite the fact that I understood what they said the first time around.	0.56
	15. Prior to sleeping I feel compelled to perform certain actions in a particular sequence.	0.53
	19. I have a tendency to repeatedly check things more often than required.	0.47
	24. When handling money I count and recount it many times.	0.77
	26. I find it difficult to make decisions, even about unimportant matters.	0.77
	27. Sometimes I am not sure I have done things that in fact I know I have done.	0.70
	28. I have the impression that I will never be able to explain things clearly, especially when talking about important matters that involve me.	0.78
	29. Despite having done something carefully, I continue to have the feeling that I have not done it satisfactorily or I have not completed it.	0.73
	30. My reason for being occasionally late is due to the fact that I keep on repeating certain actions more often than required.	0.49
	34. Obscene or dirty words come into my mind and I am unable to eliminate them from my mind.	0.54
	35. My brain very frequently seem to wander and it is a problem for me to pay attention to what is going on around me.	0.50
	39. For no reason I am now and then concerned for a long time about some self-inflicted hurt or have some disease.	0.45
	40. Now and then and for no reason I begin counting objects.	0.47
41. I have the feeling I must remember numbers of absolutely no importance.	0.53	
Fear of shock (Percentage of Variance Explained = 5.67; Eigen value = 3.11)	11. When I start having doubts and worries I am unable to rest until I have discussed them with someone who can give me reassurance.	0.50
	15. Prior to sleeping I feel compelled to perform certain actions in a particular sequence.	0.55
	16. Prior to going to sleep I feel a need to hang up or fold my clothes in a particular way.	0.56
	33. I have unpleasant thoughts against my will and am unable to eliminate them.	0.46
	34. Obscene or dirty words come into my mind and I am unable to eliminate them from my mind.	0.56
	35. My brain very frequently seem to wander and it is a problem for me to pay attention to what is going on around me.	0.51
	36. I imagine disastrous consequences because I have been absentminded or made small mistakes.	0.61
	45. In certain situations I am afraid of losing my self-control and doing embarrassing things.	0.66
	46. When I look down from a high point like a bridge or a very high window, I feel an impulse to launch myself into space.	0.57
	50. I am excited by the sight of weapons which triggers violent thoughts in my mind.	0.56
51. It is upsetting and worrying for me to see knives, daggers and other pointed items.	0.43	

3.3 Reliability

Among the various ways that reliability can be obtained, Cronbach's alpha is the most commonly used technique

for testing the reliability of the scales (Sekaran, 2003). Cronbach's alpha ranges in value from 0 to 1, especially greater than 0.7, can indicate a high correlation and acceptable reliability of a measurement instrument (Nunnally et al., 1994). Table 4 shows the alpha values for all four factors in terms of groups and gender which are greater than 0.70. It means that these items show a high level of reliability in the construction of the factors.

Table 4. Cronbach's alpha of the Padua Inventory

		Factor			
		Dirt and pollution	Inspection	Mental doubt and control	Fear of shock
Controls	Male (n=50)	0.81	0.85	0.91	0.89
	Female (n=50)	0.85	0.79	0.90	0.82
OCD patients	Male (n=50)	0.78	0.92	0.83	0.88
	Female (n=50)	0.89	0.79	0.88	0.78

3.4 Group Differences

Independent samples t-test is used to examine the statistical differences among the groups per gender. Table 5 presents the aforementioned results. As can be seen, table 5 indicates that none of the OCD patients group ($t=0.41$, $p>0.05$) and the control group ($t=0.63$, $p>0.05$) had significant statistical differences in PI score in terms of gender, respectively. However, Table 5 shows that there is a significant difference between OCD patients and control group ($t = 21.05$, $p < 0.01$). The results show the mean of PI among OCD patients is 109.88 (SD = 22.11) while the mean for control participants is 39.16 (SD = 23.58). Consequently, it can be concluded that patients obtained a higher score in PI in comparison with control participants, which indicates that PI is valid for discriminating the two sample groups.

Table 5. Independent sample t-test for PI score of the groups in terms of gender

		N	Mean	SE	SD	t	Sig
OCD Patients	Men	42	110.9	2.96	19.21	0.41	0.680
	Women	45	108.93	3.68	24.69		
Control Participants	Men	51	40.62	4.12	29.43	0.63	0.528
	Women	49	37.63	2.21	15.50		
All Participants	OCD Patients	87	109.88	2.37	22.11	21.05	0.000
	Control Participants	100	39.16	2.35	23.58		

4. Discussion

This research assessed the validity and reliability of the Persian version of PI for the clinical and non-clinical samples in Shiraz City, Iran. The findings of this research showed good reliability among OCD patients and control individuals. These results are consistent with the findings of previous studies (Beşiroğlu et al., 2005; Goodarzi et al., 2005; Kyrios et al., 1996; Macdonald et al., 1999; Sanavio, 1988; Sternberger et al., 1990; Van Oppen, 1992).

Furthermore, the results of exploratory factor analysis (EFA) revealed that PI was a multidimensional instrument for measuring OCD that was constructed by four factors. The four content categories were as follows: 1. Dirtiness; 2. Inspecting behaviors; 3. Mental doubt and control; and 4. Fear from shock. The first factor labeled dirtiness was in accordance with several previous studies (Beşiroğlu et al., 2005; Goodarzi et al., 2005; Kyrios et al., 1996; Sanavio, 1988; Sternberger et al., 1990). The second factor, called inspecting behavior, was compatible with Goodarzi et al. (2005), Sternberger and Burns (1990), and Williams et al. (2005). The third factor was named mental doubt and control and was also consistent with previous findings (Beşiroğlu et al., 2005; Goodarzi et al., 2005; Kyrios et al., 1996; Sanavio, 1988; Sternberger et al., 1990; Williams et al., 2005). In addition, the fourth factor was called fear from shock and was similar to Goodarzi et al. (2005), Kyrios et al. (1996), Sanavio (1988), Sternberger and Burns (1990), and Williams et al. (2005).

The results also showed significant difference between OCD patients and control participants regarding OCD scores, with OCD patients scoring higher than control participants. These findings are consistent with previous studies (Kyrios et al., 1996; Sanavio, 1988; Sternberger et al., 1990; Williams et al., 2005).

Accordingly, PI is a useful measure for differentiating OCD patients from control participants in the Iranian population. The validity and reliability of PI in the current study is satisfactory, but there is still a need for more research to be done on the factorial structure and reliability of OCD in larger sample groups for clinical and control subjects.

In conclusion, the data provided in this research was collected from mental health care centers in Shiraz city, Iran. There is a possibility of dissimilar results that may be obtained from subjects originating from other cities in Iran, i.e. not Shiraz.

References

- American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders*. Dsm-Iv-Tr. American Psychiatric Publishing, Inc.
- Beşiroğlu, L., Ağargün, M. Y., Boysan, M., Eryonucu, B., Güleç, M., & Selvi, Y. (2005). The Assessment of Obsessive-Compulsive Symptoms: The Reliability and Validity of the Padua Inventory in a Turkish Population. *Türk Psikiyatri Derg*, 16, 179-189.
- Boysan, M., Gulec, M., Devenci, E., & Barut, Y. (2015). Diagnostic Performance of the Turkish Version of the Vancouver Obsessional Compulsive Inventory (Voci) Versus Padua Inventory-Revised (Pi-R): A Validation Study. *Bulletin of Clinical Psychopharmacology*, 25(1), 44-56. <http://dx.doi.org/10.5455/bcp.20141103123307>
- Burns, G. L., Keortge, S. G., Formea, G. M., & Sternberger, L. G. (1996). Revision of the Padua Inventory of Obsessive Compulsive Disorder Symptoms: Distinctions between Worry, Obsessions, and Compulsions. *Behaviour Research and Therapy*, 34(2), 163-173. [http://dx.doi.org/10.1016/0005-7967\(95\)00035-6](http://dx.doi.org/10.1016/0005-7967(95)00035-6)
- Chappa, H. J. (1998). *El Inventario De Obsesividad De Padua: Datos Psicométricos Y Normativos De La Versión En Español*. Revista Argentina de Clínica Psicológica, Portuguese (Brazil).
- Emmelkamp, P., Kraaijkamp, H., & Van Den Hout, M. (1999). Assessment of Obsessive-Compulsive Disorder. *Behavior Modification*, 23(2), 269-279. <http://dx.doi.org/10.1177/0145445599232005>
- Foa, E. B., Huppert, J. D., Leiberg, S., Langner, R., Kichic, R., Hajcak, G., & Salkovskis, P. M. (2002). The Obsessive-Compulsive Inventory: Development and Validation of a Short Version. *Psychological assessment*, 14(4), 485. <http://dx.doi.org/10.1037/1040-3590.14.4.485>
- Freeston, M. H., Ladouceur, R., Rhéaume, J., Letarte, H., Gagnon, F., & Thibodeau, N. (1994). Self-Report of Obsessions and Worry. *Behaviour Research and Therapy*, 32(1), 29-36. [http://dx.doi.org/10.1016/0005-7967\(94\)90081-7](http://dx.doi.org/10.1016/0005-7967(94)90081-7)
- Goodarzi, M. A., & Firoozabadi, A. (2005). Reliability and Validity of the Padua Inventory in an Iranian Population. *Behaviour Research and Therapy*. <http://dx.doi.org/10.1016/j.brat.2003.11.004>
- Grabill, K., Merlo, L., Duke, D., Harford, K. L., Keeley, M. L., Geffken, G. R., & Storch, E. A. (2008). Assessment of Obsessive-Compulsive Disorder: A Review. *Journal of anxiety disorders*, 22(1), 1-17. <http://dx.doi.org/10.1016/j.janxdis.2007.01.012>
- Hafner, R. J., & Miller, R. J. (1990). Obsessive-Compulsive Disorder: An Exploration of Some Unresolved Clinical Issues. *Australian and New Zealand Journal of Psychiatry*, 24(4), 480-485. <http://dx.doi.org/10.3109/00048679009062903>
- Hair, J. F., Anderson, R. E., Tatham, R. L., & William, C. B. (1998). *Multivariate Data Analysis*. Upper Saddle River, NJ: Prentice Hall.
- Hodgson, R. J., & Rachman, S. (1977). Obsessional-Compulsive Complaints. *Behaviour Research and Therapy*, 15(5), 389-395. [http://dx.doi.org/10.1016/0005-7967\(77\)90042-0](http://dx.doi.org/10.1016/0005-7967(77)90042-0)
- Ibanez, I., Olmedo, E., Penate, W., & Gonzalez, M. (2002). Obsessions and Compulsions: Structure of the Padua Inventory. *International Journal of Clinical and Health Psychology*, 2(2), 263-288.
- Kessler, R. C., Chiu, W. T., Demler, O., & Walters, E. E. (2005). Prevalence, Severity, and Comorbidity of 12-Month Dsm-Iv Disorders in the National Comorbidity Survey Replication. *Archives of general Psychiatry*, 62(6), 617-627. <http://dx.doi.org/10.1001/archpsyc.62.6.617>

- Kyrios, M., Bhar, S., & Wade, D. (1996). The Assessment of Obsessive-Compulsive Phenomena: Psychometric and Normative Data on the Padua Inventory from an Australian Non-Clinical Student Sample. *Behaviour Research and Therapy*, 34(1), 85-95. [http://dx.doi.org/10.1016/0005-7967\(95\)00039-Z](http://dx.doi.org/10.1016/0005-7967(95)00039-Z)
- Lim, J. S., Kim, S. J., Jeon, W. T., Cha, K. R., Park, J. H., & Kim, C. H. (2008). Reliability and Validity of the Korean Version of Obsessive-Compulsive Inventory-Revised in a Non-Clinical Sample. *Yonsei medical journal*, 49(6), 909-916. <http://dx.doi.org/10.3349/ymj.2008.49.6.909>
- Macdonald, A. M., & De Silva, P. (1999). The Assessment of Obsessionality Using the Padua Inventory: Its Validity in a British Non-Clinical Sample. *Personality and Individual Differences*, 27(6), 1027-1046. [http://dx.doi.org/10.1016/S0191-8869\(99\)00036-7](http://dx.doi.org/10.1016/S0191-8869(99)00036-7)
- Mataix-Cols, D., Sánchez-Turet, M., & Vallejo, J. (2002). A Spanish Version of the Padua Inventory: Factor Structure and Psychometric Properties. *Behavioural and Cognitive Psychotherapy*, 30(1), 25-36. <http://dx.doi.org/10.1017/S1352465802001042>
- Nunnally, J. C., & Bernstein, I. (1994). The Assessment of Reliability. *Psychometric theory*, 3, 248-292.
- Overduin, M. K., & Furnham, A. (2012). Assessing Obsessive-Compulsive Disorder (Ocd): A Review of Self-Report Measures. *Journal of Obsessive-Compulsive and Related Disorders*, 1(4), 312-324. <http://dx.doi.org/10.1016/j.jocrd.2012.08.001>
- Richter, M. A., Cox, B. J., & Direnfeld, D. M. (1994). A Comparison of Three Assessment Instruments for Obsessive-Compulsive Symptoms. *Journal of behavior therapy and experimental psychiatry*, 25(2), 143-147. [http://dx.doi.org/10.1016/0005-7916\(94\)90007-8](http://dx.doi.org/10.1016/0005-7916(94)90007-8)
- Rosario-Campos, M., Miguel, E., Quatrano, S., Chacon, P., Ferrao, Y., Findley, D., Katsoyich, L., Scahill, L., King, R., & Woody, S. (2006). The Dimensional Yale-Brown Obsessive-Compulsive Scale (Dy-Bocs): An Instrument for Assessing Obsessive-Compulsive Symptom Dimensions. *Molecular psychiatry*, 11(5), 495-504. <http://dx.doi.org/10.1038/sj.mp.4001798>
- Ruscio, A., Stein, D., Chiu, W., & Kessler, R. (2010). The Epidemiology of Obsessive-Compulsive Disorder in the National Comorbidity Survey Replication. *Molecular Psychiatry*, 15(1), 53-63. <http://dx.doi.org/10.1038/mp.2008.94>
- Sanavio, E. (1988). Obsessions and Compulsions: The Padua Inventory. *Behaviour Research and Therapy*, 26(2), 169-177. [http://dx.doi.org/10.1016/0005-7967\(88\)90116-7](http://dx.doi.org/10.1016/0005-7967(88)90116-7)
- Sekaran, U. (2003). *Research Methods for Business*. Hoboken, NJ: John Wiley & Sons.
- Steketee, G. (2011). *The Oxford Handbook of Obsessive Compulsive and Spectrum Disorders*. Oxford University Press, USA. <http://dx.doi.org/10.1093/oxfordhb/9780195376210.001.0001>
- Steketee, G., & Frost, R. O. (1994). Measurement of Risk-Taking in Obsessive-Compulsive Disorder. *Behavioural and Cognitive Psychotherapy*, 22(4), 287-298. <http://dx.doi.org/10.1017/S1352465800013175>
- Sternberger, L. G., & Burns, G. L. (1990). Maudsley Obsessional-Compulsive Inventory: Obsessions and Compulsions in a Nonclinical Sample. *Behaviour Research and Therapy*, 28(4), 337-340. [http://dx.doi.org/10.1016/0005-7967\(90\)90086-X](http://dx.doi.org/10.1016/0005-7967(90)90086-X)
- Van Balkom, A. J. L. M., De Haan, E., Van Oppen, P., Spinhoven, P., Hoogduin, K. a. L., & Van Dyck, R. (1998). Cognitive and Behavioral Therapies Alone Versus in Combination with Fluvoxamine in the Treatment of Obsessive Compulsive Disorder. *Journal of Nervous and Mental Disease*, 186(8), 492-499. <http://dx.doi.org/10.1097/00005053-199808000-00007>
- Van Oppen, P. (1992). Obsessions and Compulsions: Dimensional Structure, Reliability, Convergent and Divergent Validity of the Padua Inventory. *Behaviour Research and Therapy*, 30(6), 631-637. [http://dx.doi.org/10.1016/0005-7967\(92\)90008-5](http://dx.doi.org/10.1016/0005-7967(92)90008-5)
- Van Oppen, P., Hoekstra, R., & Emmelkamp, P. (1993). *The Assessment of Obsessive-Compulsive Disorder: A Psychometric Evaluation among Clinical Groups*. European Congress of Behavior and Cognitive Therapy, London, hlm.
- Wakabayashi, A., & Aobayashi, T. (2007). Psychometric Properties of the Padua Inventory in a Sample of Japanese University Students. *Personality and Individual Differences*, 43(5), 1113-1123. <http://dx.doi.org/10.1016/j.paid.2007.03.004>
- Williams, M. T., Turkheimer, E., Schmidt, K. M., & Oltmanns, T. F. (2005). Ethnic Identification Biases

Responses to the Padua Inventory for Obsessive-Compulsive Disorder. *Assessment*, 12(2), 174-185. <http://dx.doi.org/10.1177/1073191105275620>

Williams, M. T., Wetterneck, C. T., & Sawyer, B. (2015). Assessment of Obsessive Compulsive Disorder with African Americans. Dlm. (pnyt.). *Guide to Psychological Assessment with African Americans, hlm.* 145-161. Springer. http://dx.doi.org/10.1007/978-1-4939-1004-5_10

Zhong, J., Wang, C., Liu, J., Qin, M., Tan, J., & Yi, C. (2011). Psychometric Properties of the Padua Inventory in Chinese College Samples 1, 2. *Psychological Reports*, 109(6), 803-818. <http://dx.doi.org/10.2466/02.03.09.15.PR0.109.6.803-818>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).