

# Workaholism in Brazil: Measurement and individual differences

## Adicción al trabajo en Brasil: medición y diferencias individuales

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### Resumen

Esta investigación tiene por objetivo medir y evaluar las diferencias individuales en una muestra brasileña en relación a la adicción al trabajo, dada su repercusión en la competitividad de las empresas. Se aplicó el WART 15-PBV a una muestra de 153 directivos de empresas ubicadas en Brasil, 82 mujeres (53,6%) y 71 hombres (46,4%), con un rango de edad entre los 20 y los 69 años y un valor medio de 41 ( $SD = 9,06$ ). Se analiza la estructura factorial del cuestionario, su consistencia interna y convergente (a partir de la Dutch Work Addiction Scale - DUWAS), la validez de criterio (con el Cuestionario General de Salud - GHQ) y las diferencias individuales de género. El cuestionario WART15-PBV presenta buenas propiedades psicométricas y de validez convergente y de criterio. Las mujeres y los hombres difieren en la dimensión *Deterioro de la comunicación / auto-absorción*. Esta dimensión únicamente tiene un efecto directo en la percepción de salud de los hombres, mientras que la dimensión *Tendencias compulsivas* tiene un efecto directo en ambos géneros. Los resultados sugieren la escala WART15-PBV es una medida válida y fiable de la adicción al trabajo que orienta la intervención atendiendo a las diferencias individuales de los trabajadores, en aras de mejorar su salud y su vida profesional y personal y fomentando, a su vez, unas condiciones adecuadas en el lugar de trabajo.

**Palabras clave:** Adicción al trabajo; Work Addiction Risk Scale (WART); Dutch Work Addiction Scale (DUWAS); Salud; Género.

### Abstract

The aim of this research is the measurement and assessment of individual differences of workaholism in Brazil, an important issue which affects the competitiveness of companies. The WART 15-PBV was applied to a sample of 153 managers from companies located in Brazil, 82 (53.6%) women and 71 (46.4%) men. Ages ranged from 20 to 69 years with an average value of 41 ( $SD=9.06$ ). We analyzed, on one hand, the factor structure of the questionnaire, its internal consistency and convergent (with the Dutch Work Addiction Scale - DUWAS) and criterion validity (with General Health Questionnaire - GHQ). On the other hand, we analyzed individual gender differences on workaholism. WART15-PBV has good psychometric properties, and evidence for convergent and criterion validity. Females and males differed on *Impaired Communication / Self-Absorption* dimension. This dimension has a direct effect only on men's health perception, while *Compulsive tendencies* dimension has a direct effect for both genders. The findings suggest the WART15-PBV is a valid measure of workaholism that would contribute to the workers' health and their professional and personal life, in order to encourage adequate conditions in the workplace taking into account workers' individual differences.

**Key words:** Workaholism; Work Addiction Risk Scale (WART); Dutch Work Addiction Scale (DUWAS); Health; Gender.

Recibido: Julio 2014; Aceptado: Octubre 2014

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The term workaholism has been widely described and public press references are becoming more common. Even though there is no scientific consensus on its definition. Nonetheless, we can differentiate those definitions emphasizing the positive (Machlowitz, 1980) or the negative sides (Del Líbano, Llorens, Salanova, & Schaufeli, 2010; Killinger, 1991; Oates, 1971; Schaeff & Fassel, 1988; Ying-Wen, & Chen-Ming, 2009) of workaholism. On the negative side, and similar to other addictions (Sánchez-Carbonell, Beranuy, Castellana, Chamarro, & Oberst, 2008), workaholism is seen, by Piotrowski and Vodanovich (2006), as progressive in nature with increasingly out of control behaviors and negative impacts on workaholics physical and psychological health and well-being (Buelens & Poelmans, 2004; Fassel, 1990; Mc-Millan & O'Driscoll, 2004; Schaufeli, Taris, & Bakker, 2006; Vodanovich, Piotrowski, & Wallace, 2007), finally leading to burnout (Schaufeli et al., 2008) or even death (Robinson, 2000).

Following Robinson (1989) and Schaufeli et al. (2006) the current research focused on workaholism as a negative construct, defining it as an addiction. From this point of view, workaholism is "a progressive, potentially fatal disorder, characterized by self-imposed demands, compulsive overworking, inability to regulate work habits and an over-indulgence in work to the exclusion of most other life activities" (Robinson, 1989, p.81).

Traditionally, as Carbonell (2014) points out, the DSM has been reluctant to include behavioral addictions. This trend is beginning to overcome in the DSM-5 (American Psychiatric Association, 2013) that includes Non-substance related disorders in Axis I. Meanwhile, the new version of ICD-11 (scheduled for 2015) includes behavioral addictions in Impulse control disorders, that "are characterized by the repeated failure to resist an impulse, drive, or urge to perform an act that is rewarding to the person, at least in the short-term, despite longer-term harm either to the individual or to others" (WHO, 2014).

Workaholism could be considered Non substance-related disorders (DSM-5) or Impulse Control disorders (ICD-11) if the negative effects on health and the context of the individual could be empirically demonstrated (Carbonell, 2014; Petry and O'Brien, 2013).

Related to differential diagnostic, few empirical studies have attempted to analyze individual differences on workaholism (Aziz & Cunningham, 2008). Nonetheless, the stronger difference pointed out by the authors is based on gender, men being those more likely to be workaholics (Burgess, Burke, & Oberklaid, 2006; Killinger, 1991; Oates, 1971). The reason that could explain this gender difference is associated with work-life balance (Clark, 2000; Kirchmeyer, 2000; Marks & MacDermid, 1996). The authors suggested that "a greater involvement within a parental role over a work role tendered to decrease the amount of hours worked per week

for both, men and women" (Aziz & Cunningham, 2008, p. 556). Burke (1999), and recently Burgess et al. (2006), Russo and Waters (2006), and Burke, Mathiesen, and Pallesen (2006a) found no significant gender differences.

Different authors have developed measures of workaholism (Fassel 1990; Killinger 1991; Machlowitz 1990) but the majority was not based on a clear definition of the construct nor do they provide psychometric information on the measure and their validity. The first scientific attempt to create a measure of workaholism was the development of the WorkBAT (Spence & Robbins, 1992), but its factor structure remains controversial (Andreassen, Hetland, & Pallesen, 2014).

The most important instruments developed under the negative perspective of workaholism are the Work Addiction Risk Test (WART) (Robinson, 1999) and the Dutch Work Addiction Scale (DUWAS) (Schaufeli et al., 2006).

The WART, developed by Robinson (1999), was based on a definition of workaholism as the overindulgence in and preoccupation with work, often to the exclusion and detriment of the workaholic's health, intimate relationships, and participation in child rearing. Flowers and Robinson (2002) suggested that only 15 of the 25 original items were the most important for discriminating between workaholic and control group, and they concluded that "further research using only the 15 items and a different sample is needed to examine the effectiveness of the modified sub-scales" (Flowers & Robinson, 2002, p.525), developing WART15.

The WART has been administered to undergraduate students, workaholics anonymous members, psychotherapists, adult students, and workers (Robinson, 1999; Robinson & Phillips, 1995; Robinson & Post, 1995). The instrument has been translated, validated and applied to Dutch (Taris, Schaufeli, & Verhoeven, 2005), Norwegian (Andreassen et al., 2014), Polish (Bartczak & Ogińska-Bulik, 2012) and Italian (Vilella et al, 2011) samples.

The Dutch Work Addiction Scale (DUWAS) (Schaufeli et al., 2006), is based on WART and WorkBAT. It is focus on workaholism as a negative construct, and an irresistible inner drive to work, and a combination of Working Excessively (WkE) and Working Compulsively (WkC).

The DUWAS is widely used throughout the work addiction literature and has been validated in Dutch and Japanese (Schaufeli, Shimazu, & Taris, 2009), Portuguese of Brazil (Carlotto & Miralles, 2010), Italian (Molino, Ghislieri, & Colombo, 2012), Norwegian (Andreassen et al., 2014) and Spanish (Del Líbano et al., 2010).

The main objectives of the present paper are, on one hand, to adapt and validate the Portuguese of Brazil version (WART15-PBV) of the Work Addiction Risk Scale (WART), developed by Robinson (1999) and, on the other hand, to assess individual differences based on gender on workaholism. Evidence of the cross-cultural generalizability of previous findings on workaholism is important, as no less

than 75 percent of the research on workaholism employed US samples (McMillan, O'Driscoll, Marsh, & Brady, 2001). Consequently, we consider, like Taris et al. (2005, p.38) that "workaholism runs the risk of becoming culturally biased".

In our study, the DUWAS was selected as an alternative measure of workaholism for comparison with the WART because of its widespread use throughout the work addiction literature and for having a similar concept and a translation to Portuguese. Additionally, this study is an assessment of individual differences of workaholism in Brazil.

## Method

### Participants

The sample for this study (Table 1) was a non-probabilistic, convenience and snowball sample of 153 Brazilian managers from companies located in Brazil, mainly from services (31.4%) and industry (21.6%) sector.

Among them 82 (53.6%) were women and 71 (46.4%) were men. Ages ranged from 20 to 69 years with an average value of 41 ( $SD=9.06$ ). The majority of the subjects (58.8%) was married and they had children (58.2%). Regarding to the educational level, 66.7% declared they had post-graduation studies, followed by 30.5% with university degrees.

Related to job, 36.6% declared that they worked 45 hours or more per week and 21.6% between 40 - 45 hours. The subjects had been working for an average of 8.86 years in their present company ( $SD=8.28$ ).

Table 1  
Participants Description

Variable	Category	n [%]
Gender	Men	71 [46.4]
	Women	82 [53.6%]
Marital status	Married	90 [58.8%]
	Single	45 [29.4%]
	Divorced	14 [9.2%]
Children	Yes	89 [58.2%]
	No	64 [41.8%]
Educational level	Post-graduation studies	102 [66.7%]
	University degrees	51 [30.5%]
Sector of activity	Services	48 [31.4%]
	Industry	33 [21.6%]
	Commercial	15 [9.8%]
	Education	14 [9.2%]
	Administration	7 [4.6%]
	Other	36 [23.5%]
Work relationship	Fix	139 [90.8%]
	Temporary	6 [3.9%]
	Partner	8 [5.2%]
Working hours per week	Less than 40	64 [41.8%]
	40-45h	33 [21.6%]
	More than 45	56 [36.6%]

### Design

The current research consists of two cross-sectional design studies. The first examines the psychometric properties of the WART15-PBV, its factorial structure, internal consistency, and convergent and criterion validity. The second analyzes individual differences based on gender.

**Psychometric properties of the WART15-PBV:** To analyze WART15-PBV's factor structure confirmatory factor analysis (CFA) was performed using EQS for Windows 6.1 version. Factorial coefficients, error variances and the covariances between the factors were estimated using Elliptical Least Square Solution (ELS) due to the fact that the observed variables presented distributions with non-symmetrical curve and non-normal multivariate distribution. Internal consistency was measured using Cronbach's  $\alpha$ . Convergent validity was tested using correlational analysis between WART15-PBV and DUWAS. Finally, criterion validity was tested examining correlations between the WART15-PBV and health perception indicators (GHQ-12).

**Individual differences:** First of all, we analyzed differences on personal and situational demographic variables (Age, Marital status, Children, Work relationship, Contract, Schedule, Extra hours). Secondly, we analyzed gender differences on addiction levels. Finally, differential effects on health perceptions based on gender were explored. Depending on the variables' scale, t-tests or chi-square tests were used. SPSS 21 was used.

### Materials

Workaholism was analyzed using the Work Addiction Risk Scale, adapted by the authors to the Portuguese of Brazil version (WART-PBV), and the Portuguese of Brazil version of the Dutch Work Addiction Scale (DUWAS) (Carlotto & Miralles, 2010). Health related criteria were analyzed using the Portuguese of Brazil version of the General Health Questionnaire (Questionário de Saúde Geral, QSG-12) (Borges & Argolo, 2002; Sarriera, Schwarcz, & Câmara, 1996).

**Work Addiction Risk Scale – Portuguese of Brazil version (WART15-PBV).** WART15-PBV has three dimensions: *Compulsive Tendencies* (9 items), *Control* (4 items) and *Impaired Communication / Self-Absorption* (2 items) (Flowers & Robinson, 2002). The scoring of the items consisted of a 4-point Likert scale ranging from 1 = *Never true* to 4 = *Always true*. The English version of the WART with 25 items showed good psychometric characteristics ( $\alpha = .90$ ) and WART15 was able to discriminate between workaholic group and control group (Flowers & Robinson, 2002).

**Dutch Work Addiction Scale - Portuguese of Brazil version (DUWAS).** The Portuguese of Brazil version of the Dutch Work Addiction Scale (DUWAS) developed by Carlotto and Miralles (2010) includes two sub-scales: Working Excessively (WkE, 10 items) and Working Compulsively (WkC, 7 items). The scoring of the items was composed of a 4-point Likert scale ranging from 1 = *Almost never* to 4 = *Almost always*.

Cronbach's  $\alpha$  was for WkE = .79 and WkC = .74 (Carlotto & Miralles, 2010). These results are similar to those obtained

in the study developed by Schaufeli et al. (2006) (WkE = .80 and WkC = .86), Schaufeli et al. (2009) (WkE = .80 and WkC = .86), Molino et al. (2012) (WkE = .74), and Del Líbano et al. (2010) (WkE = .85 and WkC = .79).

**General Health Questionnaire - Portuguese of Brazil version (GHQ-12).** The Portuguese of Brazil short version of the General Health Questionnaire (GHQ-12), developed by Goldberg (1972) was adapted by Borges and Argolo (2002), and we used it as one-dimensional.

Participants were asked to indicate how often they experienced symptoms that reflected psychological tension according to a Likert type scale with scores ranging from 1 = *More than usual* to 5 = *Much less than usual*. This scale was reliable in Hughes and Parkes' (2007) investigation with Cronbach's  $\alpha$  of .90, Borges and Argolo (2002) with  $\alpha = .88$ , and Sarriera et al. (1996) with  $\alpha = .80$ .

**Procedure**

A double-translation process was carried out from the WART15 (Flowers & Robinson, 2002) to create the WART15-PBV following the Test Translation and Adaptation Guidelines of the International Test Commission (International Test Commission ITC, 2010).

Participants were reached through direct contact or by electronic invitation, filling out the instruments on paper or on the electronic form. Being currently in the position of manager or executive was an absolute condition to be part of the sample.

**Results**

**Psychometric properties of the WART15-PBV**

The descriptive statistics, correlations between the instruments used, and internal consistencies ( $\alpha$ ) are displayed in Table 2.

Given that type I error increases with sample size, it was decided to use the root mean squares residual (RMR), standardized root mean square residual (SRMR), goodness-of-fit

index (GFI), adjusted goodness-of-fit index (AGFI) and the comparative fit index (CFI) (Bentler & Bonnet, 1980; Browne & Cudeck, 1993) as fit indicators.

The general results of confirmatory factor analysis show an acceptable goodness of fit to the theoretical model ( $RMR = .051$ ;  $SRMR = .079$ ;  $GFI = .948$ ;  $AGFI = .929$ ;  $CFI = .99$ ).  $SRMR$  is greater than the ideal cut-off of .05 (Byrne, 2006). However, some authors indicate that values less than .08 indicate reasonable error of approximation (Bentler & Bonnet, 1980).

Another step in the model fit is the analysis of the individual parameter estimates (Schumacker & Lomax, 2004). In a general sense, the regression coefficients estimated were positive, high and significant ( $p < .05$ ), which shows a high correlation between the observable variables and the factors as postulated by the proposed model (Table 3). All coefficients of determination are significant, except for the results obtained in items W5, W19 and W22, with poor coefficient of determination ( $r^2_{W5} = .131$ ;  $r^2_{W19} = .158$ ;  $r^2_{W22} = .129$ ).

The  $\alpha$  for the total WART15-PBV was .83. WART15-PBV sub-dimensions also show good levels of internal consistency (Table 2). Item-total correlations range between .271 and .605, being items W5, W19 and W22 those with the lowest correlations with their scales (*Compulsive tendencies* for W5 and W19 and *Control* for W22) (.38, .32 and .26 respectively).

A strong and direct correlation between the WART15-PBV and the DUWAS was found ( $r = .898$ ;  $p < .001$ ). Correlations between DUWAS and WART15-PBV sub-dimensions can be seen in Table 2. All correlations are positive and significant ( $p < .001$ ).

Finally, workaholism was predicted to correlate with general health perception (Buelens & Poelmans, 2004; Fassel, 1990; McMillan & O'Driscoll, 2004; Schaufeli et al., 2006; Vodanovich et al., 2007), as measured by the GHQ-12. The WART15-PBV has a correlation of .285 ( $p < .001$ ) with health perception indicators. Correlations between GHQ-12 and WART15-PBV sub-dimensions ranged from .162 to .278 (*Compulsive tendencies*: .278,  $p < .001$ ; *Control*: .163,  $p = .046$ ; *Impaired communication / Self-absorption*: .214,  $p = .008$ ).

Table 2  
Minimum, Maximum, Mean, SDs, Internal Consistency (Cronbach's  $\alpha$  on the Diagonal), and Correlations of Variables (n = 153)

Scale	Min	Max	Mean	SD	1	2	3	4	5	6	7	
1.WART15-PBV	1.20	3.40	2.27	.43	.83							
2.DUWAS	1.24	3.47	2.17	.46	.898***	.86						
3.WART15-C.Tendencies	1.22	3.56	2.35	.48	.937***	.879***	.79					
4.WART15-Control	1.25	3.50	2.22	.49	.713***	.579***	.488***	.54				
5.WART15-l. com./ Self-abs.	1.00	3.50	1.997	.71	.662***	.565***	.496***	.338***	.68			
6.DUWAS- WKE	1.30	3.50	2.26	.44	.910***	.912***	.933***	.525***	.527***	.74		
7.DUWAS-WkC	1.00	3.86	2.04	.60	.715***	.902***	.654***	.526***	.499***	.646***	.81	
8.GHQ-12	1.17	3.50	2.21	.48	.285***	.321***	.278***	.163*	.214**	.29***	.292***	.82

\*p<.05; \*\*p<.01; \*\*\* p<.001

Table 3  
 Estimation of Each Free Parameter, Measurement Error and Coefficient of Determination

Dimension	Item	Estimation	$\epsilon_i$	R <sup>2</sup>
Compulsive tendencies	W3. Parece que estou com pressa e numa corrida contra o relógio	.581	.814	.337
	W5. Geralmente estou ocupado. Tenho muitos assuntos sob meu controle	.362	.932	.131
	W6. Quando me dou conta estou fazendo duas ou três coisas ao mesmo tempo, como comer, tomar notas ou falar ao telefone	.491	.871	.241
	W7. Eu me comprometo demais, assumindo mais atividades do que aquelas que consigo realizar	.630	.777	.397
	W8. Sinto-me culpado quando não estou trabalhando em alguma coisa	.560	.829	.313
	W15. Muitas vezes me dou conta de que estou trabalhando mesmo depois que meus companheiros já pararam de trabalhar	.638	.770	.407
	W18. Quando estou trabalhando coloco-me sob pressão impondo-me prazos para as coisas que tenho que fazer	.480	.877	.230
	W19. É difícil relaxar quando não estou trabalhando	.397	.918	.158
	W20. Dedico mais tempo ao trabalho do que estar com meus amigos, ter hobbies ou fazer atividades de lazer	.590	.807	.349
Control	W11. As coisas parecem não andarem rápido ou serem feitas de forma rápida o suficiente para mim	.498	.867	.248
	W16. Eu fico irritado quando as pessoas não alcançam meus padrões de perfeição	.492	.870	.243
	W17. Eu fico incomodado quando estou em situações onde não posso estar no controle	.621	.783	.386
	W22. Eu fico chateado comigo mesmo por cometer até mesmo o menor engano	.359	.933	.129
Impaired comm. / Self-absorption	W23. Eu dedico mais pensamento, tempo e energia ao trabalho do que às minhas relações com amigos e pessoas que amo	.946	.326	.894
	W24. Eu esqueço, ignoro ou não dou muita importância para aniversários, reuniões sociais, comemorações ou feriados	.542	.840	.294

Note:  $\epsilon_i$  = Measurement Error; R<sup>2</sup> = Coefficient of determination

### Individual differences

Gender differences were found in Marital status ( $\chi^2 = 12.94$ ;  $p = .002$ ), Years in company ( $t = 2.15$ ;  $p = .033$ ), Work hours ( $\chi^2 = 16.71$ ;  $p = .001$ ) and Extra hours ( $\chi^2 = 9.69$ ;  $p = .046$ ). The majority of men were married (75.7%) while 40.5% and 46.8% of women were single and married respectively. Small differences were also found on divorced ratios (5.7% for men and 12.7% for women).

Related to the average of years in company, men had an average on 10.4 years while women had 7.5 years. Finally, 52.1% of men indicated working more than 45h per week while only 23.2% of women did so. Consequently, 43.7% of men worked extra hours every or almost every day while only 20.7% of women did so.

Analyzing addiction levels by gender, only in *Impaired communication / Self-absorption* dimension significant differences were found. Women had significant lower levels on this dimension ( $t = 3.47$ ;  $p = .001$ ; *Cohen's d* = .56). No differences

between men and women were found on WART15-PBV general scale, *Compulsive tendencies* and *Control*.

Then, we explored the differential effect of addiction levels by gender on general health perceptions. There were no differences ( $t = -.21$ ;  $p = .904$ ; *Cohen's d* = -.02) on general health perceptions means between men (mean = 2.2) and women (mean = 2.21). In both groups, men ( $r_{xy} = .37$ ;  $p = .002$ ) and women ( $r_{xy} = .22$ ;  $p = .049$ ), GHQ significantly correlated with WART15-PBV. GHQ correlated with *Compulsive tendencies* ( $r_{xy} = .35$ ;  $p = .003$ ) and *Impaired communication / Self-absorption* ( $r_{xy} = .30$ ;  $p = .012$ ) for men while for women scarcely correlated with *Compulsive tendencies* ( $r_{xy} = .21$ ;  $p = .049$ ).

Finally, we split the sample into two groups by median, those with higher and lower punctuations in WART15-PBV. There were no significant differences on GHQ for women with low and high levels. However, there existed differences between high and low groups by men ( $t = -2.71$ ;  $p = .008$ ; *Cohen's d* = -.6).

## Discussion

This study provides evidence of structure, internal consistency, convergent validity, and criterion validity for WART15-PBV. Only three exceptions, with poor coefficient of determination, could be found. Results for W19 are coincident with Andreassen et al. (2014). For items W5 and W22 we could hypothesize a cultural effect on results. Item W5 includes a saying, which is difficult to translate in the same sense in Portuguese. Item W22 connotes the excellence performance concept, which could not have the same interpretation in different cultural settings.

Furthermore, results regarding criterion validity show that it is positively related to relevant health criterion variables. This fact suggests understanding that constituting a healthy relationship with work also enables the general health perception of the worker. Lower levels of health and psychological well-being have a negative impact on their lives, functioning at work, as well as on the people around them (Buelens & Poelmans, 2004; Fassel, 1990; McMillan & O'Driscoll, 2004; Schaufeli et al., 2006; Vodanovich et al., 2007).

Related to individual differences, and similarly to Nelson (2000) who also used a managerial sample, we found demographic differences between female and male respondents. Females were more likely to be single and worked fewer hours and fewer extra-hours per week than males. Nelson (2000) associated these differences to more time devoted to family and home responsibilities for women. These results agree with Wharton and Blair-Loy (2002), whom pointed out that "employed women in the industrialized world continue to bear more responsibility for family and children than do their male counterparts" (p. 53).

In relation to WART15-PBV, females and males differed on *Impaired communication / Self-absorption*. Males scored higher on putting more energy into one's work than into relationships with others. It should be noted that this dimension, along with *Compulsive tendencies*, was hypothesized as corresponding to the negative aspects of workaholism, while the *Control* subdimension corresponds to the positive aspects (Mirza, 2012). This could be showing that

for women, increased time investment in either work or family reduced time invested in the other role. However, for men, increased time invested in work reduced time invested in family, but increased time investment in family did not affect time invested in work (Rothbard & Edwards, 2003, p. 669).

The negative dimensions (Mirza, 2012) have an effect on health perception for men, while for women this effect is seen only very moderately in *Compulsive tendencies*.

Identifying the level of workaholism can be useful for an organization to recognize needs and implement policies that reconcile professional and personal life (Burke et al., 2006; Ng et al., 2007). Understanding this kind of relation to work leads to benefits between companies and employees.

Employees who are better able to balance the demands on their time are more satisfied and content. This in turns leads

to real benefits for the employer in terms of productivity gains, lowered turnover rate, a stronger team spirit, and loyalty to the employer. Operationally, a lower turnover rate leads to reduction in new employee training costs, as well as the more elusive costs associated with informal training that existing employees provide to new team members (Joshi et al., 2002, p.13).

From the intervention point of view, gender differences should be taken into account. Although we found no differences in addiction levels of men and women (Burgess et al, 2006, Burke, 1999, Nelson, 2000; Russo & Waters, 2006), there are differences on *Impaired communication / Self-absorption*, which is also the one that has more to do with a worse health perception in the case of men. This marks differential intervention guide for men and women.

Finally, although the *Control* dimension is part of the construct of addiction, it has not found a clear relationship between it and the perception of health. This finding would have an effect from the point of view of the intervention, which should focus on *Compulsive tendencies*, for both genders, and on *Impaired communication / Self-absorption* for men.

From the clinical point of view, the present study is an attempt to consider workaholism as a mental disorder that could be included in DSM or ICD classifications because, as shown by our results, it "causes clinically significant distress or impairment in social, occupational, or other important areas of functioning" (DSM-5, 2013, p. 21).

In this sense, the added value of the present study is the presentation of a valid and reliable instrument for the clinical assessment of workaholism diagnostic criteria.

The main limitations of our study are related to sample size and common method variance. Sample size could be the basis of failure to obtain differences between genders. Future research will explore gender differences with larger samples. Common method variance might be a second limitation. However, some authors indicate that this influence is not as high as expected (Siemsen, Roth, & Oliveira, 2010). Nevertheless, future research may lend further credence to these conclusions by linking regulatory fit to outcomes using different methods.

Other important topic to consider for future research is that cross-cultural studies are expected to be increasingly their importance, as global business interaction becomes the norm. In this field cultural differences have a great importance in understanding the kind of attachment to work. Therefore, "one of the challenges of global organizations is to develop awareness of cultural variations concerning workaholism and to respect cultural diversity" (Snir & Arpaz, 2006, p.386) for the purpose of increasing the productivity and welfare of the labor force (Shimazu & Schaufeli, 2009) within and between countries.

In sum, this study contributes to increase the richness of research in the field of workaholism. It is important to draw attention to the theme of health and workaholism or

other forms of unhealthy attachment to work. Developing measures and versions in different languages and applying them to different cultures, as it is the purpose of this study, opens the way for new research on the subject in economies as large as Brazil. This study provided evidence for the validation of one of the leading scientific measure and operationalization of the construct of workaholism by investigating its psychometric properties. Additionally, it provides guidelines to encourage adequate conditions in the workplace taking into account workers' individual differences.

### Conflict of interest

None declared.

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