

Screening Tool for Psychological Intimate Partner Violence: Portuguese Validation of the Psychological Maltreatment of Women Inventory

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Background/Objective: The Psychological Maltreatment of Women Inventory—Short Form (PMWI-SF) is a well-established and brief instrument for assessing psychological intimate partner violence (IPV). In the absence of a specific tool to assess psychological IPV in Portuguese women, this study sought to confirm the factor structure of the Portuguese PMWI-SF and analyze its psychometric properties. **Method:** Five hundred and six women filled out the e-survey including the assessment of IPV (Revised Conflict Tactics Scales, Psychological Abuse Survey, and PMWI-SF) and psychopathology through the Brief Symptom Inventory. Sociodemographic characteristics, construct validity, and internal consistency were analyzed, and a cutoff for the PMWI-SF was established. **Results:** Confirmatory factor analysis for the 2-factor structure (emotional/verbal abuse and domination/isolation) showed an excellent fit for the last 6 months and across the life span. Factors possessed good internal consistency ($\alpha \geq .70$) and test–retest reliability ($r \geq .90$). Pearson’s correlation analysis revealed the PMWI factors were positively correlated with proximal variables. PMWI-SF scores demonstrated excellent differentiation between women with and without psychological IPV (area under the curve [AUC] = .948; confidence interval or CI [.93, .97]). The PMWI-SF cutoff score that provided the optimal balance was 32 (sensitivity = 83.8%; specificity = 91.7%). **Conclusions:** The PMWI-SF is a valid and reliable instrument for assessing the experience of psychological IPV in Portuguese women.

Keywords: psychological intimate partner violence; Psychological Maltreatment of Women Inventory (PMWI); screening tool

Psychological intimate partner violence (IPV) is the most prevalent form of partner abuse in cross-cultural studies (Garcia-Moreno, Jansen, Ellsberg, Heise, & Watts, 2006) and is defined by O’Leary (2015), including acts of criticism or verbal aggression and acts of isolation and domination of a partner. For this study, we explored psychological IPV experienced by women with a male partner (Moreno-Manso,

Blázquez-Alonso, García-Baamonde, Guerrero-Barona, & Pozueco-Romero, 2014). The consequences of prolonged IPV include complex posttraumatic stress disorder (Keeley et al., 2016), anxiety and mood disorders (Dillon, Hussain, Loxton, & Rahman, 2013; Vázquez, Torres, & Otero, 2012), and decline of self-esteem and self-identity (Matheson et al., 2015).

Concerning screening tools, the instruments tend to differ in the types of psychological items measured because of a lack of consensus on a definition for psychological IPV. Inconsistencies in definitions among researchers have repercussions in the disparity of prevalence rates and the lack of agreement concerning what measures to use. According to Follingstad (2007), psychological IPV refers to behaviors that cross some threshold of severity and result in a certain degree of effect on the victim. To our knowledge, the levels of psychological abusive acts that distinguish between normative conflict in nonabusive relationships and severely psychologically abusive relationships, as well as whether one can adequately make these discriminations through cut-scores, remain to be established.

Ureña, Romera, Casas, Viejo, and Ortega-Ruiz (2015) mentioned that psychological IPV was less researched than physical or sexual violence because it can be less objective and more difficult to evaluate than other types of violence. Psychological IPV often precedes and progresses to physical IPV (O'Leary, 2015), and has been considered to be a risk factor for physical aggression (Capaldi, Knoble, Shortt, & Kim, 2012). Therefore, the early signs of verbal aggression may provide the context for further violence. In a Portuguese sample aged between 13 and 29 years (Machado, Caridade, & Martins, 2010), psychological IPV was reported by 19.5% of the participants ($n = 514$), and no gender differences were found in the rates of victimization. These findings are, to some extent, higher than those found in Portuguese married couples (Machado, Gonçalves, Matos, & Dias, 2007) and suggest that IPV may constitute a serious concern among the Portuguese young adult population (Machado et al., 2010). In this context, a validated measure for identification of psychological IPV is necessary, not only for reducing its chronic consequences and providing adequate treatment but also for preventing its progression to physical IPV.

In Portugal, IPV is measured as a single overarching construct among researchers, and only general scales are used to measure physical, sexual, and psychological IPV, resulting in losses in accuracy and a limited coverage of behaviors specific to psychological IPV (Carney & Barner, 2012). To sum up, it is crucial to validate a screening tool to measure psychological IPV comprehensively, given the lack of a suitable measure for Portuguese women. The national attempt to measure psychological IPV was the Revised Conflict Tactics Scales (CTS2; Alexandra & Figueiredo, 2006). This questionnaire assessed all dimensions of IPV, including psychological, physical, and sexual items. Despite being widely used, it is criticized for its generality, limited coverage of psychological items, lack of comprehensiveness, and absence of control/dominance items (Tolman, 1999). Until now, no instruments were available to specifically measure the psychological dimension of IPV in Portugal because the psychometric properties of these tools were not tested. In fact, tools for assess psychological IPV alone are preferable for validation among a Portuguese population, given their inclusion of a more extensive scope of psychological IPV acts. After pondering the strengths and limitations of several assessment tools (Thompson, Basile, Hertz, & Sitterle, 2006), including the Subtle and Overt Psychological Abuse Scale (Jones, Davidson, Bogat, Levendosky, & von Eye, 2005) and the Multidimensional Measure of Emotional Abuse (Murphy &

Cascardi, 1999; Murphy & Hoover, 1999), we chose the Psychological Maltreatment of Women Inventory (PMWI; Tolman, 1989) for Portuguese validation of the participant's exposure to psychological IPV. The PMWI was designed to provide a brief, but reliable and valid, measure and is well known as a comprehensive instrument in the field of psychological IPV.

To evaluate the PMWI, we used the Portuguese version of the CTS2 (Alexandra & Figueiredo, 2006) and we had translated into Portuguese the Psychological Abuse Survey, a checklist which specifically addresses psychological IPV (PAS; Reed & Enright, 2006; an adaptation from Follingstad & Dehart, 2000; Follingstad, Rutledge, Berg, Hause, & Polek, 1990; Sackett & Saunders, 1999). The PAS was selected to integrate the screening protocol because it determines a cutoff point from which psychological IPV can be considered persistent in a relationship.

The validation of a comprehensive and systematic tool for psychological IPV in this culturally specific context is a step toward the pursuit of the following goals: (a) providing a means for early identification of the perpetrative behaviors that can be targeted for intervention; (b) increasing public awareness and funding for prevention campaigns; (c) preventing the progression to other forms of IPV; (d) informing intervention programs about methods for the reduction of symptoms and the enhancement of global functioning; (e) improving the knowledge related to etiology, prevalence rates, risk factors, and consequences; (f) facilitating cross-country comparative studies with the same assessment tool; and (g) allocating resources and appropriate support in health care settings (Collett & Bennett, 2015; O'Doherty et al., 2013).

The initial study of the PMWI (Tolman, 1989) was administered to 207 battered women recruited from a domestic violence program and 407 men who batter. The main purpose was to assess the nonphysically abusive behaviors exhibited by male offenders and to develop a measure for psychological IPV. Based on 58 items, an exploratory factor analysis revealed two factors: dominance/isolation and emotional/verbal abuse (Tolman, 1989). Later, the inventory was validated (Tolman, 1999), and a 14-item short version was developed, maintaining the two-factor structure. The PMWI is a well-established tool for measuring psychological IPV in a simple and easy way, representing a comprehensive scope of psychological IPV items (PMWI; Tolman, 1989, 1999). This screening tool shows good psychometric properties and is translated into several languages, facilitating the cross-country comparison of results. However, Tolman (1999) noted that

a comparison of psychologically maltreated nonbattered women with women who have not been psychologically maltreated would provide stronger evidence of criterion validity . . . further research is necessary to determine what levels of psychological maltreatment distinguish abusive and non-abusive relationships. (p. 33)

Our study is the first to answer the preceding questions. Specifically, we are interested in comparing the responses of nonvictims with victims of psychological IPV, without self-report of physical or sexual IPV, and to determine serious levels of psychological IPV victimization through the validation of a specific instrument to evaluate psychological IPV in Portugal. The main goal was to confirm the factor structure of the Portuguese version of the Psychological Maltreatment of Women Inventory—Short Form (PMWI-SF) and analyze its psychometric properties, both for psychological IPV in the last 6 months, and history of psychological IPV across the life span. A secondary goal was to establish an optimal cutoff point and to determine whether the PMWI-SF is able to screen for serious levels of psychological IPV.

METHOD

Participants and Data Collection Methods

Five hundred and six female college students completed the e-survey. The age of respondents ranged between 18 and 55 years old, with an average age of 24 years. University-based samples are typically within the high-risk group of those younger than 25 years old, where the first manifestations of psychological IPV occur and gain expression (Carney & Barner, 2012). Thus, we employ a student sample to maximize the probability of screening for psychological IPV, in the absence of other forms of IPV, which are generally detected later in marriage or cohabitation. We have conducted the analysis with and without the *outliers*, defined as “the participants who fell outside the young adult range.” The conclusions of statistical analyses did not change when these data points were removed from the data set because there were few such cases. For this reason, we decided to maintain the answers of these participants.

Table 1 shows the sociodemographic data. Women who were older than the age of 18 years, had been in intimate partner relationships, and spoke Portuguese were included in the study. If a participant had not been in an intimate relationship within the last 6 months and/or across life span, she was instructed to select “not applicable,” and the response was not considered in the analysis. Participants agreed to respond after having been briefed about the voluntary nature and the aims of the study. We shared the following information with participants at the beginning of the e-survey: To ensure that we started with a clear conceptual basis, a brief definition of intimate relationship was provided (“An intimate relationship can be defined as an interpersonal bond developed in the context of dating, marriage, or cohabitation.”). Then, we informed participants about the general goal of the e-survey. We intentionally avoided referring to the topics “abuse,” “violence,” or “maltreatment” because we understand that they could precondition the responses, prevent spontaneous answers, and introduce bias (“In this study, we are interested in exploring some aspects of intimate relationships in college students. Please respond honestly according to your own experiences.”). The privacy of responses was also guaranteed (“Your responses will remain anonymous and the results will be kept confidential.”).

Following the approval of the Ethics Committee at the University of Porto, the invitation to participate in the study was sent by interactive e-mail to all students ($N = 31,352$) enrolled in the three levels of education (bachelors, masters, and PhD) at a public Portuguese University, in the 2014/2015 academic year. According to the official records, 54% of these students were females ($n = 16,930$). Considering the undelivered emails rejected by the server (11%), a response rate of approximately 9% was obtained. To ensure confidentiality and anonymity, an identity code was provided to participants. Informed consent was obtained.

The e-survey maximizes the number of potential respondents and consists in a structured questionnaire, which can be completed in less than 15 min, with items from all instruments combined. We chose this method because the target participants’ use computers and the Internet on a daily basis, allowing time and cost savings. The method also allows an improvement in the levels of accuracy in data collection, through the automatic recording of participants’ responses in the e-survey platform, and the possibility of downloading an Excel-compatible file. As an additional benefit of using electronic surveys regarding IPV, we could refer to the privacy it provides, which may have been helpful in reducing social desirability bias, as revealed by the study of Follingstad and Rogers (2014).

For the test–retest part of the study, we sent a new invitation 2 weeks later. Test–retest reliability was assessed for 50 of these women, and the same participant identification code was required to create paired cases.

TABLE 1. Sociodemographic Data for Total Sample ($N = 506$), Absence of Any Kind of Intimate Partner Violence (IPV; $n = 268$; Non-Abused), and Presence of Psychological IPV, Without Physical or Sexual IPV ($n = 120$; Abused)

	Total Sample $N = 506$	Non-Abused $n = 268$	Abused $n = 120$
<i>M (SD)</i>			
Age (years)	23.47 (5.37)	23.89 (4.76)	23.78 (5.03)
Relationship duration (years)	4.3 (2.2)	3.8 (1.8)	4.4 (2.1)
<i>n (%)</i>			
Marital status			
In a relationship	341 (67.4)	162 (60.4)	86 (71.7)
Single	122 (24.0)	78 (29.1)	24 (20.0)
Married/cohabitating	40 (8.0)	28 (10.5)	10 (8.3)
Divorced/separated	2 (0.4)	0 (0)	0 (0)
Widowed	1 (0.2)	0 (0)	0 (0)
Academic level			
Bachelor	222 (43.9)	118 (44.0)	49 (40.8)
Master	250 (49.4)	142 (52.9)	62 (51.7)
PhD	34 (6.7)	8 (3.1)	9 (7.5)
Employment situation			
Student	408 (80.6)	201 (75)	99 (82.5)
Student worker	98 (19.4)	67 (25)	21 (17.5)
IPV history (CTS2)			
1.	268 (53.0)	268 (100)	0 (0)
2.	120 (23.7)	0 (0)	120 (100)
3.	118 (23.3)	0 (0)	0 (0)

Note. 1 = absence of IPV; 2 = psychological IPV without physical and/or sexual IPV; 3 = psychological IPV with at least one item of physical and/or sexual IPV. CTS2 = Revised Conflict Tactics Scale.

Procedure

Back-Translation. The PMWI-SF was first translated into Portuguese from English and then back-translated by two independent bilingual investigators, to maximize the conceptual equivalence. Misconceptions were clarified until a first version was approved by the research team. After that, cognitive debriefing was carried out with 14 women and small adjustments were made, resulting in a final version.

Instruments

Psychological Maltreatment of Women Inventory—Short Version. Fourteen items of the PMWI-SF (Tolman, 1999) inquired about psychologically abusive actions that women may or may not have experienced within an intimate relationship. The 14 inventory items can be consulted in Table 2. The items were divided into two dimensions: Emotional/Verbal (Items 1–4; 12–14) and Domination/Isolation (Items 5–11), with response options on a 5-point Likert scale, ranging from *never* (1) to *very often* (5), for the last 6 months and across the life span, with higher scores indicating more psychologically abusive experiences.

Revised Conflict Tactics Scales. The IPV-related questions were collected from three subscales (Psychological Aggression, Physical Assault, and Sexual Coercion). Women responded with reference to the number of occurrences during the last year, on an 8-point Likert scale. Higher scores indicated higher frequency of abusive acts in the preceding year. The CTS2 (Straus, Hamby, Boney-McCoy, & Sugarman, 1996; Portuguese version by Alexandra & Figueiredo, 2006) estimates the prevalence, chronicity, and severity of the different forms of IPV. The Cronbach's alpha for this study was .97, taking into account all the items from the three subscales. The results from the validation study demonstrate that the Portuguese version of the CTS2 scales demonstrated good psychometric properties (Alexandra & Figueiredo, 2006), including applicability to Portuguese college samples (Fonseca, 2016).

Psychological Abuse Survey. The Psychological Abuse Survey (PAS; Reed & Enright, 2006; an adaptation from Follingstad & Dehart, 2000; Follingstad et al., 1990; Sackett &

TABLE 2. Items of the Psychological Maltreatment of Women Inventory—Short Form

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1. My partner called me names.
 2. My partner swore at me.
 3. My partner yelled and screamed at me.
 4. My partner treated me like an inferior.
 5. My partner monitored my time and made me account for my whereabouts.
 6. My partner used our money or made important financial decisions without talking to me about it.
 7. My partner was jealous or suspicious of my friends.
 8. My partner accused me of having an affair.
 9. My partner interfered in my relationships with other family members.
 10. My partner tried to keep me from doing things to help myself.
 11. My partner restricted my use of the telephone.
 12. My partner told me my feelings were irrational or crazy.
 13. My partner blamed me for his problems.
 14. My partner tried to make me feel crazy.
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Note. Items are grouped into two subscales. The 7-item Emotional/Verbal subscale consists of Items 1–4 and 12–14. The 7-item Dominance/Isolation subscale consists of Items 5–11.

Saunders, 1999) assessed the experience of psychological IPV during women's lifetimes. The 16 items covered eight abusive categories (criticizing behavior, ridiculing of traits, jealous control, purposeful ignoring, threats of abandonment, threats of harm, threats to damage personal property, and fear of abuse). The frequency was measured by a Likert scale, ranging from 1 (*never*) to 8 (*daily*). Total scores of 41 or above are considered a serious pattern of psychological IPV based on clinical expertise (Dutton & Painter, 1993; Reed & Enright, 2006; Sackett & Saunders, 1999). The existence of a threshold for a high level of psychological IPV provided valuable information for the statistical determination of a cutoff for the PMWI. The original version of the PAS intends to create a checklist of symptoms based on a theoretical structure informed by clinical practice, and no information about psychometric properties is available for the original version (Reed & Enright, 2006). We translated the checklist into Portuguese for the first time and found good internal consistency with the current audience (Cronbach's $\alpha = .925$).

Brief Symptom Inventory. The Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983; Portuguese version by Canavarro, 1999) is a 53-item self-report inventory, using a 5-point Likert scale (0 = *not at all* to 4 = *extremely*), in which participants rate the occurrence of each psychological symptom in the past week, with higher scores indicating a higher degree of psychopathology. The Global Severity Index (GSI) captures the intensity of psychological distress. The psychometric characteristics of the Portuguese version allow for the application of the BSI with safety, functioning as a good indicator of psychopathological symptoms given its good indexes of validity and reliability (Canavarro, 1999). The BSI dimensions and indexes in college samples (Fonseca, 2016) do not differ significantly from the data referring to the original validation study in Portuguese samples (Canavarro, 1999). The Cronbach's alpha for this study was .98.

Data Analysis

IBM SPSS Version 21 was used to analyze the data, except for CFA, which was executed using AMOS. The sociodemographic characteristics were reported by descriptive statistics. The psychometric characteristics of the PMWI-SF for the last 6 months, and across the life span, were investigated through construct validity (CFA, known-groups method, and convergent validity analysis) and test-retest consistency. The theoretical model proposed by Tolman (1999) was tested through CFA considering the two-factor model (Emotional/Verbal and Domination/Isolation). Model fit was assessed with χ^2 statistics, comparative fit index (CFI), and root mean square error of approximation (RMSEA). Model fit is considered good when the chi-square value divided by the degrees of freedom (CMIN/DF) is below 5, the CFI is $\geq .90$, and the RMSEA is near or below .06 with the upper limit at or below .08 (Hu & Bentler, 1999). Pearson's correlation was executed to test convergent validity, which is sustained if PMWI-SF factors were found to be correlated with other measures of psychological IPV. The magnitude of correlations was considered small ($\leq .30$), moderate (.30-.50), or large ($\geq .50$). Known-groups technique was conducted to discriminate between the group of women known to have a history of psychological IPV, in the absence of physical or sexual IPV, and nonabused women. Internal consistency was evaluated using Cronbach's alpha coefficient. Last, we conducted receiver operating characteristic (ROC) curve analyses to assess the accuracy and predictive value for the version across the life span of the PMWI-SF, to identify a cutoff score capable of discriminating between women with a history of psychological IPV and nonabused women.

RESULTS

Pilot Version

Fourteen native Portuguese-speaking women, who were in psychotherapy after psychological IPV, in the absence of physical or sexual IPV, completed the inventory. The average time of response was 3 min ($SD = 2$ min). Cognitive debriefing was conducted with participants to confirm the comprehensibility of the pilot Portuguese version. Items were evaluated as simple and objective in detecting psychological IPV, and the target group considered the length of the inventory to be adequate.

Validation of the Portuguese Psychological Maltreatment of Women Inventory—Short Form

Sample. Five hundred and six women answered the e-survey, and no missing data were detected because submission was only possible after answering all of the questions. No floor or ceiling effects were observed.

Construct Validity. CFA for the PMWI-SF, in the last 6 months and across the life span, was performed following the Hu and Bentler (1999) criteria for the CFI and RMSEA. Based on the original PMWI-SF study design (Tolman, 1999), the first model tested a two-factor solution for the last 6 months (Figure 1) in which items were divided into two intercorrelated dimensions (Emotional/Verbal [EV] and Domination/Isolation [DI]). The second model (Figure 2) sought to verify whether the same factor structure was maintained for history of psychological IPV across the life span. Correlated errors for pairs of items of the same dimension were allowed in the final model. Indices for the original two-factor model of the PMWI for the last 6 months, $\chi^2_{66} = 235.315$; $p < .01$; CFI = .942; RMSEA = .077;

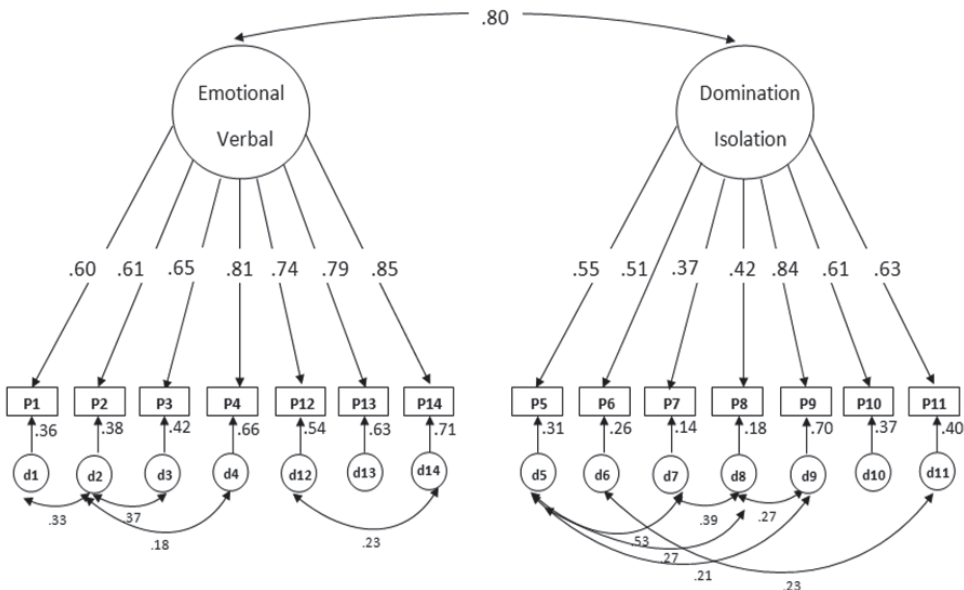


Figure 1. Standardized regression weights of factor loadings in Model 1 for Psychological Maltreatment of Women Inventory—Short Form last 6 months.

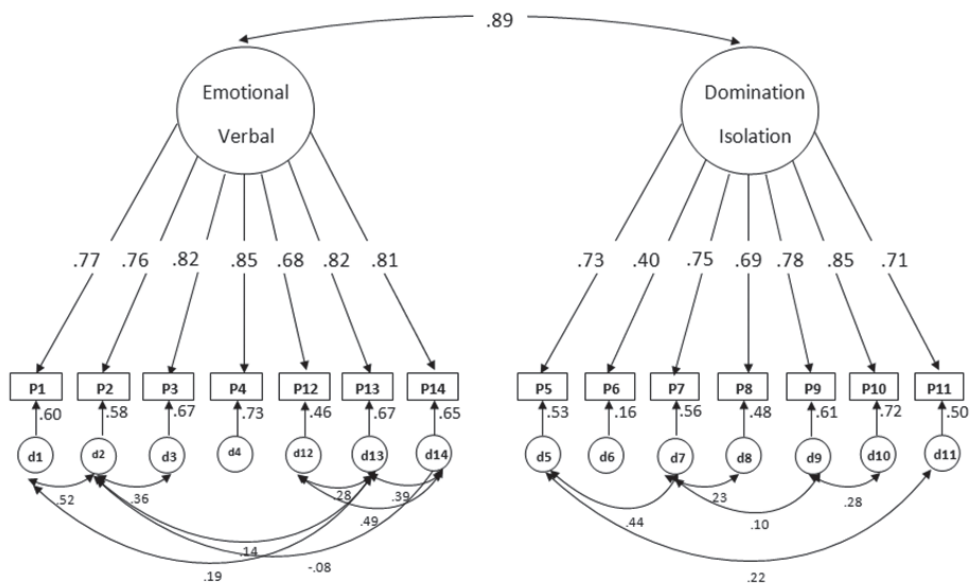


Figure 2. Standardized regression weights of factor loadings in Model 2 for Psychological Maltreatment of Women Inventory—Short Form across life span.

90% confidence interval (CI) [.067, .088], fit the criteria indexes of CMIN/DF less than 5, CFI > .90, and RMSEA < .08. The CFA for the PMWI across the life span also presented a good model fit, with CFI = .970 and RMSEA = .072 (90% CI [.061, .082]) and CMIN/DF less than 5 ($\chi^2_{63} = 211.973; p < .01$). Both models were supported by the data, with good fit indexes indicating that the original structure fit the Portuguese sample well. Standardized factor loadings for both models are shown in Table 3. All item loadings were statistically significant ($p < .05$) and with loading values > .40.

Convergent Validity. Pearson correlation coefficients were performed to analyze convergence between the PMWI-SF scores (for 6 months and across the life span) and related instruments (CTS2 subscale of Psychological Aggression and PAS) and psychological symptoms (GSI). All correlations were moderate to strong (Table 4), except for psychological symptoms, with low to moderate correlations.

Known-Groups Validity. According to Arias and Pape (1999), it is difficult to recruit a sample of women who are known to experience only psychological IPV. Tolman (1999) also reflects about the barriers to validate a measure of psychological IPV based on a known-groups method assuming that there is no “gold standard” for determining whether someone is experiencing psychological IPV other than their subjective global report: “Even some women who report frequent and pervasive acts of maltreatment do not necessarily label themselves as psychologically maltreated” (Tolman, 1999, pp. 33–34) or label their partners as psychologically abusive (Follingstad & Rogers, 2014). To overcome these challenges, we conducted an interrater reliability analysis using the Kappa statistic and evaluated the agreement rate to determine the consistency among two categorical variables: the self-reported psychological IPV items and the direct question, “Have you been psychologically maltreated by an intimate partner?” The interrater reliability was found to be kappa = .61 ($p < .001$), indicating substantial agreement (Cohen, 1960), with an 84% score.

TABLE 3. Item Loadings, Means, Standard Deviations, and Sensitivity for Two-Factor Model

	Factor	Last 6 Months				Across Life Span			
		λ	M	SD	Range	λ	M	SD	Range
PMWI 1	EV	.602	1.24	0.64	1–5	.775	1.64	1.08	1–5
PMWI 2	EV	.615	1.35	0.71	1–5	.761	1.77	1.12	1–5
PMWI 3	EV	.646	1.69	0.91	1–5	.821	2.17	1.23	1–5
PMWI 4	EV	.809	1.33	0.82	1–5	.852	1.94	1.30	1–5
PMWI 12	EV	.735	1.32	0.81	1–5	.681	1.75	1.21	1–5
PMWI 13	EV	.793	1.26	0.74	1–5	.818	1.84	1.29	1–5
PMWI 14	EV	.845	1.27	0.78	1–5	.805	1.79	1.27	1–5
PMWI 5	DI	.554	1.57	0.97	1–5	.729	2.16	1.35	1–5
PMWI 6	DI	.512	1.10	0.47	1–5	.398	1.19	0.66	1–5
PMWI 7	DI	.375	1.87	1.07	1–5	.745	2.58	1.36	1–5
PMWI 8	DI	.425	1.15	0.55	1–5	.691	1.66	1.16	1–5
PMWI 9	DI	.837	1.16	0.54	1–5	.779	1.61	1.15	1–5
PMWI 10	DI	.605	1.18	0.62	1–5	.847	1.78	1.27	1–5
PMWI 11	DI	.635	1.06	0.38	1–5	.705	1.37	0.90	1–5

Note. PMWI = Psychological Maltreatment of Women Inventory; EV = Emotional/Verbal; DI = Domination/Isolation.

TABLE 4. Convergent Validity Between the Psychological Maltreatment of Women Inventory Dimensions, Psychological Abuse Survey, Revised Conflict Tactics Scale Psychological Aggression, and Global Severity Index for the Last 6 Months and Across Lifespan

	PAS	CTS2	GSI
PMWI_DI_6M	.302**	.334**	.192**
PMWI_EV_6M	.376**	.476**	.282**
PMWI_6M Total	.383**	.462**	.271**
PMWI_DI_AL	.795**	.610**	.500**
PMWI_EV_AL	.846**	.671**	.535**
PMWI_AL Total	.871**	.681**	.549**

Note. PAS = Psychological Abuse Survey; CTS2 = Revised Conflict Tactics Scale; GSI = Global Severity Index; PMWI = Psychological Maltreatment of Women Inventory; DI = Domination/Isolation; 6M = 6 months; EV = Emotional/Verbal; AL = across life span.

** $p < .001$.

To determine that the participants who had experienced psychological IPV had only experienced psychological IPV, we created composite measures from the CTS2: absence of any kind of self-reported IPV ($n = 268$), self-reported psychological IPV without physical and/or sexual IPV ($n = 120$), and self-reported psychological IPV with at least one item of physical and/or sexual IPV ($n = 118$). After that, two subgroups of women were compared using multivariate analyses of variance, based on those composite measures of CTS: presence of psychological IPV, without physical or sexual IPV ($n = 120$), and absence of any kind of IPV ($n = 268$). The multivariate analyses indicates differences between groups on EV and DI subscales; for the last 6 months, Wilks's $\Lambda = .97$, $F(2, 385) = 5.81$, $p = .003$; and across the life span, Wilks's $\Lambda = .49$, $F(2,376) = 195.18$, $p < .001$. Univariate analyses showed that, for each subscale (EV and DI), the scores are significantly highest among psychologically abused women and lowest among those in nonabusive relationships for both periods, during the last 6 months and across the life span.

Internal Consistency and Test–Retest Reliability. The internal consistency of the Portuguese PMWI-SF indicated that the version can be used reliably for Portuguese women. The Cronbach's alpha for the entire scale for 6 months was .942, whereas the EV and DI subscales were .902 and .865, respectively. For the PMWI-SF across the life span, the entire scale was .888, whereas the EV and DI subscales were .934 and .886, respectively. The test–retest reliability was evaluated by administering the scales twice to a subgroup of 50 participants after a 2-week interval. Using the interclass correlation coefficient (ICC), the entire scale showed excellent stability across the two administrations 2 weeks apart, both for the last 6 months (ICC = .997) and across the life span (ICC = .998).

Criterion Validity. Last, we were interested in identifying a cutoff score for the PMWI across the life span, to assess the accuracy and predictive value of the inventory in differentiating women identified with, and without, a history of serious psychological IPV. The average score of PMWI across the life span was 25 points. To determine the extent to which PMWI-SF scores can accurately identify the PAS cutoff, established as ≥ 41 by Reed and Enright (2006), we conducted ROC curve analyses, which examine the association between sensitivity and specificity to derive an area under the curve (AUC), indicating the extent to which a measure distinguishes between positive and negative cases. The ROC curve is displayed in Figure 3. PMWI scores demonstrated excellent differentiation between women with, and without, psychological IPV. The AUC of PMWI-SF across the life span was .948 (95% CI = [.926, .970]). In the present sample, the PMWI cutoff score that provided the optimal balance was 32 (sensitivity: 83.8%; specificity: 91.7%), indicating that the inventory can be used to discriminate abused and nonabused women, with minimum error.

DISCUSSION

This study was a response to the lack of agreement on standard measures for psychological IPV, and the threshold from which acts can be considered psychologically harmful (World Health Organization, 2013). Therefore, this was the first study to analyze the psychometric properties of a tool for psychological IPV among Portuguese women and propose an average score of the PMWI-SF across the life span (25 points) and a cutoff for severe levels of psychological IPV (32 points). We went further than the original version by adding CFA,

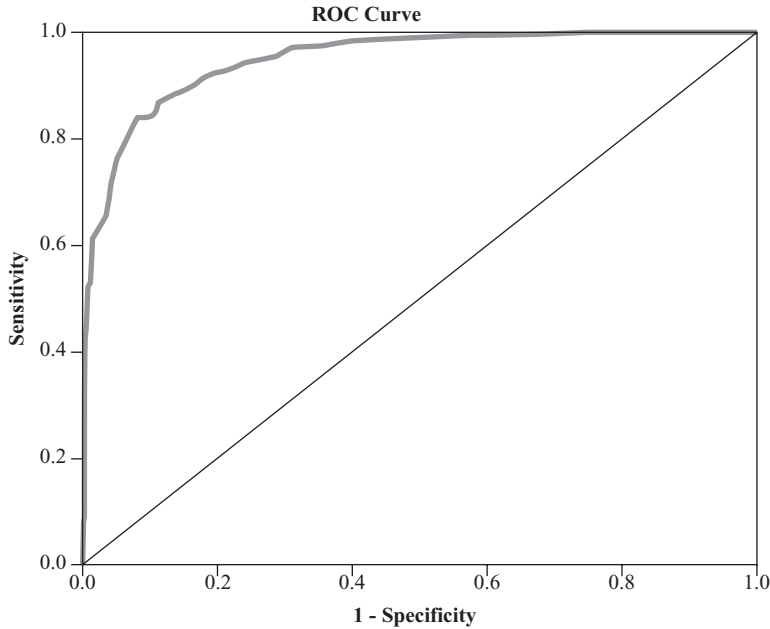


Figure 3. Receiver operating characteristic (ROC) curve graph and area under the curve for the performance of the Psychological Maltreatment of Women Inventory—Short Form across life span for detecting history of psychological intimate partner violence.

which provides an appropriate statistical framework to (a) assess the validity and reliability of each item; (b) examine factor loadings; (c) test the correlations among the factors; (d) advance an index of their connectivity; and (e) choose a good-fitting model, rather than only providing a global assessment. In addition, we were interested in the screening of psychological IPV, in the absence of physical or sexual IPV, not only in the last 6 months, as in the original version (Tolman, 1999) but also across the life span, to detect the long lasting consequences on mental health (Lacey, McPherson, Samuel, Sears, & Head, 2013). As a result, stronger correlations were found between the PWMI-SF across the life span and psychological symptoms (GSI), where the costs of extended IPV are more visible than in the last 6 months.

For clinical and legal purposes, the establishment of a mean score for psychological IPV, and the determination of a cut-score, which can distinguish the line between non-abusive and abusive relationships, provides the opportunity for providers and therapists to detect signs of psychological IPV among couples, to better prevent and intervene in those cases. From the intervention point of view, the differentiation between behaviors reported in the last 6 months versus lifetime experiences allows for detection of the impact of recent versus long-standing exposure and a serious pattern of psychological IPV (Follingstad & Rogers, 2014), as well as their cumulative effect on mental health, self-esteem, and overall functioning, by adapting protocols based on a comprehensive assessment.

Moreover, it helps to support decisions in official reports and courts. Although causal relations cannot be established through the interpretation of the scores, the tool provides the opportunity to screen for lifetime psychological IPV versus psychological IPV in the last 6 months, and, thus, guide clinical decisions, helping in the conceptualization of the

roots of symptoms and informing the determination of clinical diagnostics and treatment choices. In addition, it can guide scientific research, providing the possibility of establishing criteria to justify statistical decisions, such as the mean range of psychologically abusive behaviors and the definition of a threshold which divides healthy and unhealthy intimate relationships.

With the Portuguese validation of this comprehensive instrument for psychological IPV, we are a step closer to the pursuit of the goals set out in the introduction. Specifically, the foundations for increased conceptual and empirical knowledge about the phenomenon are established, and we hope to contribute to the application of this tool in the areas of prevention, intervention, public awareness, comparison of parallel studies, and allocation of resources and funding (Collett & Bennett, 2015; O'Doherty et al., 2013).

This study supported prior research findings (Fernández-Fuertes & Fuertes, 2010; Ureña et al., 2015) that psychological IPV is a less documented form of violence that defines many relationships, in which IPV occurs before marriage or cohabitation. As a result, assessment and intervention regarding psychological IPV may prevent the escalation to physical IPV and persistent forms of violence (O'Leary, 2015).

Our goals, with the validation of the PMWI-SF, were to provide a screening tool for prevention and detection of psychological IPV and thereby help young adults to recognize and be aware of psychologically abusive behaviors (Ayala et al., 2014).

Further research may include other sources of information, incorporating a more representative sample, and a longitudinal study to detect changes over time and to test for the potential presence of an emerging pathway of psychological IPV, in the early stages of dating. Moreover, further investigation should include men's assessment, giving visibility to the phenomenon of men's victimization and deconstructing the patriarchal paradigm of men as exclusively perpetrators and women as exclusively victims. The determination of whether or not psychological IPV is bidirectional in nature, the exploration of potential gender differences in reactions and self-perceptions of harm, and the identification of specific patterns or clusters of psychological IPV (Follingstad & Rogers, 2014) are also needed. An important limitation to this study is the self-report nature of the data, which only allows the assessment of individual perceptions based on the recall of past experiences, rather than accessing totally accurate information (Follingstad & Rogers, 2014).

In conclusion, the PMWI-SF revealed good psychometric properties, both for detecting psychological IPV in the last 6 months and across the life span, being an effective and brief tool for screening Portuguese women. It should be used in clinical and research settings to detect early signs of psychological IPV, allowing a cross-country comparison of data and improving decision making in cases of potentially abusive relationships.

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