



Validation of a reduced Spanish version of the Index of Spouse Abuse¹

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ABSTRACT. With the purpose of examining the reliability and validity of the Spanish version of the Index of Spouse Abuse (ISA), this scale was applied to 813 Peruvian women, along with the Double Standard Scale, the Rape Supportive Attitude Scale, and the Symptom Checklist-90 Revised (SLC-90-R). Participants were distributed into three different samples: women in the general population ($n = 300$), women who had not reported abuse ($n = 300$) and women who had reported abuse ($n = 213$). After testing seven different factor structures of the ISA through confirmatory factor analysis, this instrumental study proposes a 19-item abbreviated version clustered into two subscales (*Nonphysical abuse and Physical abuse*) with excellent indices of internal consistency reliability (.93 and .89, respectively). Scores on both subscales showed significant positive correlations with the double standard scale, rape supportive attitudes, and psychopathological dimensions of the SCL90-R. Likewise, scores on the ISA showed that women with a lower educational level and less skilled jobs are subject to more partner abuse. Cut-off point scores for detecting both physical and nonphysical partner abuse are proposed.

KEYWORDS. Index of Spouse Abuse. Partner violence. Reliability. Validity. Instrumental study.

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RESUMEN. Con el objetivo de examinar la fiabilidad y validez de la versión en español del *Index of Spouse Abuse* (ISA), se aplicó éste, junto a la *Double Standard Scale*, la *Rape Supportive Attitude Scale* y el Cuestionario de 90 Síntomas SCL-90-R, a 813 mujeres peruanas distribuidas en tres muestras diferentes: población general ($n = 300$), mujeres que no habían denunciado abuso ($n = 300$) y mujeres que habían denunciado abuso ($n = 213$). Después de poner a prueba mediante análisis factorial confirmatorio siete estructuras factoriales distintas del ISA, este estudio instrumental propone una versión reducida de 19 ítems agrupados en dos subescalas (*Abuso no físico* y *Abuso físico*), que obtienen excelentes coeficientes de fiabilidad de consistencia interna (0,93 y 0,89, respectivamente). La puntuación de ambas subescalas correlaciona en sentido positivo con doble moral sexual, actitud favorable hacia la violación y las dimensiones psicopatológicas del SCL-90-R. Asimismo, las puntuaciones en el ISA ponen de manifiesto que las mujeres con menor nivel cultural y ocupaciones laborales menos cualificadas sufren más abuso dentro de la pareja. Se proponen puntos de corte en las puntuaciones para detectar tanto el abuso no físico, como el físico en el contexto de las relaciones de pareja.

PALABRAS CLAVE. Index of Spouse Abuse. Violencia de pareja. Fiabilidad. Validez. Estudio instrumental.

The Index of Spouse Abuse (ISA; Hudson and McIntosh, 1981) is one of the self-report scales that has been used the most over the last few decades to assess partner abuse. It has been applied in many countries, such as Germany (Nyberg, Hartman, Stieglitz, and Riecher-Rossler, 2008), Brazil (Sierra, Costa, and Santos-Iglesias, in press), Canada (Fry and Barker, 2002), China (Tang, 1998), El Salvador (Sierra, Ortega, Santos, and Gutiérrez, 2007; Sierra, Santos-Iglesias, and Gutiérrez-Quintanilla, 2010), Spain (Cáceres, 2002; Cáceres and Cáceres, 2006; Plazaola-Castaño, Ruiz-Pérez, Escriba-Aguir, Jiménez-Martín, and Hernández-Torres, 2009; Torres *et al.*, 2010), the United States (Chen, Rovi, Vega, Jacobs, and Johnson, 2005; Paranjape, Heron, and Kaslow, 2006), Japan (Kataoka, Yaju, Eto, and Horiuchi, 2005), and Mexico (Castro, García, Ruiz, and Peek-Asa, 2006). The ISA has been used to assess the intensity of partner abuse suffered by women in the general population (Plazaola *et al.*, 2009; Sierra *et al.*, 2007, 2010; Sierra, Ortega, Gutiérrez-Quintanilla, Bermúdez, and Buéla-Casal, 2009) but also in specific groups such as incarcerated women (Eliason, Taylor, and Arndt, 2005) or pregnant women (Kataoka *et al.*, 2005; McFarlane *et al.*, 1998). It has also been used on various occasions to validate other partner abuse self-report scales (Castro *et al.*, 2006; Chen *et al.*, 2005; Ernst, Weiss, Cham, Hall, and Nick, 2004; Nyberg *et al.*, 2008; Weiss, Ernst, Cham, and Nick, 2003).

Despite the frequent use of the ISA, it is striking that the validations and psychometric studies performed in various cultural contexts and with different types of samples have not shown a solid and consistent factor structure. In the original study, an exploratory factor analysis (EFA) performed by Hudson and McIntosh (1981) on a sample of 398 students isolated two factors: *Physical abuse* (11 items: 3, 4, 7, 13, 17, 22, 23, 24, 27, 28, and 30) and *Nonphysical abuse* (19 items: 1, 2, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16, 18, 19, 20, 21, 25, 26, and 29). The internal consistency reliability of these subscales was .90 and .91, respectively. The factor structure found in the original study has not been replicated in any subsequent studies. In fact, a new EFA of the ISA performed by Campbell, Campbell, King, Parker, and Ryan (1994) on a sample of 504 African-American women showed a three-factor structure explaining 62% of the variance: *Nonphysical abuse* (17 items: 1, 2, 3, 5, 8, 9, 10, 11, 12, 14, 15, 22, 25, 26, 27, 28, and 29), *Controlling behaviors* (6 items: 6, 16, 18, 19, 20, and 21), and *Physical abuse* (7 items: 4, 7, 13, 17, 23, 24, and 30). The most significant feature of this new structure was that the four items that originally fell within the physical abuse scale moved to the nonphysical abuse scale and six items of the original nonphysical abuse scale formed the new factor, which clustered items referring to extreme control and isolation of the victim. Later, a confirmatory factor analysis (CFA) performed by Tang (1998) revealed that the original structure of the ISA proposed by Hudson and McIntosh did not show good fit in a sample of 370 students. In the same study, a subsequent exploratory factor analysis eliminating the items with the poorest psychometric qualities led to a reduced version of 19 items clustered into two factors that showed good fit with CFA: *Nonphysical abuse* (12 items: 1, 2, 5, 10, 12, 14, 19, 22, 25, 26, 28, and 29; $\alpha = .91$) and *Physical abuse* (7 items: 4, 7, 13, 17, 21, 24, and 30; $\alpha = .79$). Cook, Conrad, Bender, and Kaslow (2003) criticized the lack of conceptual clarity of the dimensions nonphysical abuse and physical abuse included in the ISA and tested three theoretical models in a sample of 583 African-American women with CFA: the two-factor original structure of Hudson and McIntosh (1981), the three-factor structure of Campbell et al. (1994), and another three-factor structure (*Nonphysical abuse*, *Physical abuse*, and *Controlling behaviors*) after eliminating eight items (4 and 21, because they did not represent the complexity of sexual abuse, and 3, 16, 17, 18, 19 and 24, because of their low factor loadings). The third model showed the best fit, thus leading to the following item distribution: *Nonphy-*

sical abuse (11 items: 1, 8, 9, 11, 13, 14, 15, 22, 26, 27, and 29), *Controlling behaviors* (7 items: 2, 5, 6, 10, 12, 20, and 25), and *Physical abuse* (4 items: 7, 23, 28, and 30). More recently, Sierra *et al.* (in press) tested the four structural models described (Hudson and McIntosh, Campbell *et al.*, Tang, and Cook *et al.*) in a sample of 800 women from Northeastern Brazil using CFA. The two-factor structure proposed by Tang (1991) (RMSEA = .021) showed the best fit.

Only recently has there been an interest in analyzing the factor structure of the Spanish version of the Index of Spouse Abuse. Sierra *et al.* (2007) performed an exploratory factor analysis of the ISA on a sample of 300 Salvadorian women in the general population. The analysis isolated the two original factors and explained 62.87% of the total variance. However, eight items changed dimensions compared to the original proposal by Hudson and McIntosh (1981) and were therefore eliminated, leading to a reduced version of 22 items clustered into the factors: *Nonphysical abuse* (14 items: 2, 5, 6, 8, 10, 11, 12, 14, 16, 19, 20, 21, and 25; $\alpha = .95$) and *Physical abuse* (8 items: 3, 7, 13, 17, 23, 24, 27, and 28; $\alpha = .88$). More recently, Plazaola-Castaño *et al.* (2009) performed an EFA on a sample of 390 Spanish women attending health centers and isolated the two original factors. They found changes in four items, whose location changed compared to the original proposal. The structure resulting from this study was the following: *Nonphysical abuse* (22 items: 1, 2, 3, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16, 17, 19, 20, 21, 23, 26, 27, 28, and 29; $\alpha = .94$) and *Physical abuse* (8 items: 4, 7, 13, 18, 22, 24, 25, and 30; $\alpha = .85$). Torres *et al.* (2010) showed poor fit of the original structure by Hudson and McIntosh (1981) in a sample of Spanish women (223 non-victims of abuse and 182 victims of abuse). They performed an EFA that proposed a two-dimensional structure of the scale with the following item distribution: *Nonphysical abuse* (23 items: 1, 2, 4, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16, 18, 19, 20, 21, 22, 25, 26, 27, 28, and 29; $\alpha = .98$) and *Physical abuse* (7 items: 3, 7, 13, 17, 23, 24, and 30; $\alpha = .88$). Finally, Sierra, Santos-Iglesias *et al.* (2010) used CFA to test the factor structure models of Hudson and McIntosh (1981), Campbell *et al.* (1994), Tang (1998), Cook *et al.* (2003), and Sierra *et al.* (2007) on a sample of 600 Salvadorian women. Similarly to the study with Brazilian women (Sierra *et al.*, in press), they concluded that the 19-item two-dimensional structure proposed by Tang showed the best fit (RMSEA = .029).

In short, studies differ in the factor structure of the ISA, its number of items and their ascription to the various dimensions found. One of the possible reasons for the lack of robustness of the structure is the diversity and heterogeneity of the samples used in the various validations, since they have been composed of female university students (Hudson and McIntosh, 1981; Tang, 1998), women from the general population (Plazaola-Castaño *et al.*, 2009; Sierra *et al.*, 2007, 2010; Sierra *et al.*, in press), and abused women (Torres *et al.*, 2010). Considering this diversity of results, it may be necessary to adapt the ISA to specific populations, as proposed by Torres *et al.* (2010).

In women, the experience of partner abuse is usually associated to a significant decline in mental health (Diez Ulla *et al.*, 2009; Ellsberg, Jansen, Heise, Watts, and Garcia-Moreno, 2008; Fletcher, 2010; Ludermir, Schraiber, D'Oliveira, França-Junior, and Jansen, 2008; Santos-Iglesias and Sierra, 2009; Walton-Moos, Manganello, Frye, and Campbell, 2005), a decline in self-esteem (Amor, Echeburúa, Corral, Zubizarreta, and Sarasua, 2002; Matud, 2004; Santos-Iglesias and Sierra, 2010; Sierra, Ortega *et al.*, 2007; Valor-Segura, Expósito, and Moya, 2009), and occasionally to serious psychopathological disorders such as post-traumatic stress disorder (Coker, Weston, Creson, Justice, and Blakeney, 2005; Sarasua, Zubizarreta, Echeburúa, and Corral, 2007; Scott-Tilley, Milton, and Sandel, 2010), depression (Amor *et al.*, 2002; Kelly, 2010; Sarasua *et al.*, 2007), or anxiety disorders (Loxton, Schofield, and Hussain, 2006). Moreover, previous studies have shown that the intensity of partner abuse suffered by women correlates positively with male chauvinist attitudes and rape supportive attitudes (Sierra *et al.*, 2009), and the sexual double standard can explain the physical and nonphysical abuse endured (Sierra, Santos-Iglesias *et al.*, 2010).

The experience of sexual abuse has been related to various sociodemographic variables, such as educational level and occupation. In fact, low educational level and joblessness or having an unpaid job have been associated to the experience of abuse (Amor *et al.*, 2002; Amor, Echeburúa, and Loinaz, 2009; Boy and Kulczycki, 2008; Echeburúa, Fernández-Montalvo, and Corral, 2008; Sierra *et al.*, 2009). However, it should be noted that such variables were not considered as relevant risk factors of victimization in the meta-analysis performed by Stith, Smith, Penn, Ward, and Tritt (2004).

Therefore, considering the disparity of results regarding the factor structure of the ISA, the purpose of the present instrumental study (Carretero-

Dios and Pérez, 2007; Montero and León, 2007) was to use confirmatory factor analysis to test the seven factor structures described above: three structures with 30 items clustered into two factors (Hudson and McIntosh, 1981; Plazaola-Castaño *et al.*, 2009; Torres *et al.*, 2010), one structure with 30 items distributed into three factors (Campbell *et al.*, 1994), one structure with 22 items clustered into three factors (Cook *et al.*, 2003), one structure with 22 items distributed into two factors (Sierra *et al.*, 2007), and one structure with 19 items distributed into two factors (Tang, 1998). After finding the structure with the best fit, the aim was to analyze the items and the internal consistency reliability. Another goal was to obtain evidence of the validity of the measures. On the basis of the previous studies mentioned above, the first hypothesis was that the ISA scores would correlate positively with the psychopathological dimensions assessed with the Symptom Checklist-90-R (SCL-90-R), with the sexual double standard and with rape supportive attitude. The second hypothesis was that women with the lowest educational level and unskilled jobs would score higher on the ISA. An additional objective was to propose cut-off scores to detect the presence of partner abuse.

Method

Participants

Convenience non-probability sampling was used to select 813 Peruvian women from the Province of Cuzco (Peru) distributed into three different samples. The first sample was composed of 300 women in the general population aged between 18 and 57 years (mean = 31.50; $SD = 8.20$). The second sample was composed of 300 women aged between 19 and 64 years (mean = 30.41; $SD = 7.96$) who had never reported partner abuse. The third sample was composed of 213 women aged between 18 and 63 years (mean = 35.28; $SD = 10.14$) who had reported their partner for abuse. Table 1 shows the sociodemographic features of the total sample and the three subsamples, revealing differences in age ($F_{2, 810} = 20.77$; $p < .001$), type of relationship ($\chi^2_4 = 39.55$; $N = 807$; $p < .001$), educational level ($\chi^2_4 = 119.70$; $N = 807$; $p < .001$), and occupation ($\chi^2_6 = 162.78$; $N = 809$; $p < .001$). Women who reported abuse were older than those in the other groups; most of them lived with their partner (76.10%), very few had higher education (18.80%) and most of them were homemakers (60.60%).

TABLE 1. Sociodemographic features of the women.

	<i>Total sample</i>	<i>Women in the general population</i>	<i>Women who did not report abuse</i>	<i>Women who reported abuse</i>
	<i>N (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>
Type of relationship				
Living with partner	241 (29.90)	87 (29.60)	117 (39)	37 (17.40)
Not living with partner	499 (61.40)	170 (57.80)	167 (55.70)	162 (76.10)
Separated or in process	67 (8.30)	37 (12.60)	16 (5.30)	14 (6.60)
Educational level				
Primary Education	149 (18.30)	44 (14.7)	36 (12)	69 (32.40)
Secondary Education	254 (31.20)	66 (22)	84 (28)	104 (48.80)
Higher Education	410 (50.40)	190 (63.30)	180 (60)	40 (18.80)
Occupation				
Student	142 (17.60)	73 (24.70)	34 (11.30)	35 (16.40)
Homemaker	253 (31.30)	69 (23.30)	55 (18.30)	129 (60.6)
Job not requiring higher education	166 (20.50)	56 (18.90)	75 (25)	35 (16.40)
Job requiring higher education	248 (30.70)	98 (33.10)	136 (45.30)	14 (6.60)

Instruments

- Sociodemographic questionnaire collecting information on the socio-demographic features of the women assessed.
- Index of Spouse Abuse (ISA; Hudson and McIntosh, 1981). The 30-item Spanish version published by Cáceres (2002) was used. It assesses the frequency of behaviors reflecting partner abuse (nonphysical abuse and physical abuse). Items are responded on a Likert scale from 1 (*never*) to 5 (*most of the time*). Its psychometric properties are described in the introduction of the present paper.
- Double Standard Scale (DSS; Caron, Davis, Halteman, and Stickle, 1993). The Peruvian version developed by Sierra, Monge, Santos-Iglesias, Rodríguez, and Aparicio (2010) was used. It is composed of 9 items that are responded on a 5-point Likert scale from 1 (*totally disagree*) to 5 (*totally agree*) and assess the degree of acceptance of the traditional sexual double standard. Its internal consistency reliability is .79, a similar value to that found in the present sample.
- Rape Supportive Attitude Scale (RSAS; Lottes, 1991). The Peruvian version developed by Sierra, Monge *et al.* (2010) was used. It is composed of 20 items that are responded on a 5-point Likert scale from 1 (*highly agree*) to 5 (*highly disagree*). It assesses attitudes supporting men's use of violence against women in the context of sexual relations. Its internal consistency reliability is .87; in the present sample, a Cronbach's alpha coefficient of .88 was obtained.

- Symptom Checklist-90-R (SCL-90-R; Derogatis, 2002). It includes 90 symptoms whose pain intensity is rated on a scale from 0 (*total lack of discomfort related to the symptom*) to 4 (*maximum discomfort*) and provides nine symptomatic dimensions of psychopathology and three global indices of discomfort. As regards reliability, its internal consistency ranges between .81 and .90 and one week test-retest reliability ranges between .78 and .90. In the present study, the nine symptomatic dimensions and the Global Severity Index (GSI) were taken into account. Internal consistency reliability coefficients obtained for the different dimensions in this study sample were the following: *Somatization* ($\alpha = .89$), *Obsessive-Compulsive* ($\alpha = .88$), *Interpersonal Sensitivity* ($\alpha = .87$), *Depression* ($\alpha = .91$), *Anxiety* ($\alpha = .89$), *Hostility* ($\alpha = .84$), *Phobic Anxiety* ($\alpha = .86$), *Paranoia Ideation* ($\alpha = .82$), and *Psychoticism* ($\alpha = .90$).

Procedure

The sample was recruited in the Province of Cuzco (Peru) for nine months individually or through women's associations and support centers they attended. Women who had reported abuse were recruited in public institutions that deal with cases of family violence, mainly the prosecutor's office in charge of family issues. Participants were assessed individually or in small groups by three specially trained examiners. They all received the same instructions to take part in the study and perform the various trials. Participation was voluntary and participants were ensured that their answers would be anonymous and confidential. Verbal informed consent was obtained from all participants before starting the trials.

Data analysis

Confirmatory factor analysis (CFA) was performed with LISREL 8.51 software (Jöreskog and Sörbom, 2001). A maximum likelihood estimation method was used due to the large sample size (Batista Foguet and Coenders, 2000). Several indices (Tanaka, 1993) were used to assess the fit of the models proposed: the chi-square (χ^2), the chi-square/degrees of freedom ratio (χ^2/df), the Goodness of Fit Index, (GFI), the Adjusted Goodness of Fit Index (AGFI), the Non-Normed Fit Index (NNFI) by Tucker and Lewis (1973), and the Root Mean Square Error of Approximation (RMSEA). Values lower than 2 in the χ^2/df ratio (Kline, 1998), greater than or equal to .85

in the GFI and AGFI (Jöreskog and Sörbom, 1993), or equal to or greater than .90 in the NNFI (Brown and Cudeck, 1993) are considered to be indicators of good fit. In the RMSEA, values between .05 and .08 are considered to show good fit. After confirming the structure of the scale, the psychometric properties of its items were analyzed, as well as their internal consistency reliability (Cronbach's alpha). Convergent validity tests were also obtained by correlating the scores of the ISA with those of the DSS, RSAS, and SCL-90-R. The differences in abuse depending on educational level and occupation were analyzed with a one-factor ANOVA. The validity of the ISA to detect abuse was analyzed using women who had reported abuse as cases and women who had not reported abuse as controls. The receiver operating characteristics (ROC) curve was obtained, and the area below the curve was calculated with a 95% confidence interval. Optimal cut-off points were determined to separate cases from controls. Sensitivity and specificity were calculated with 95% confidence intervals, using the Wilson method without continuity correction (Newcombe, 1998).

Results

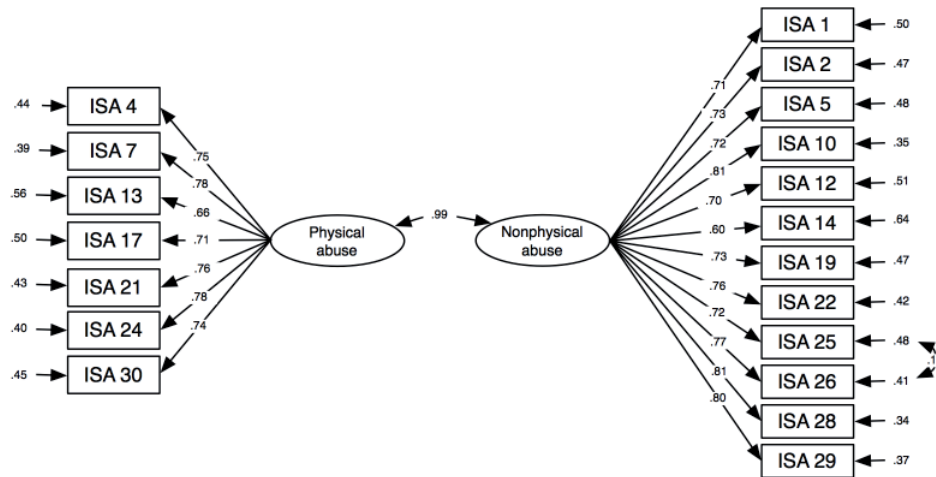
Confirmatory factor analysis (CFA)

Table 2 shows the fit indices of the CFA. The model composed of 19 items clustered into two oblique factors (Tang, 1998) showed the best fit. Fit is considered good despite the fact that some indicators are below acceptable levels, given that the RMSEA is the best indicator of global fit (Marsh, Balla, and Hau, 1996). Modification indices suggested a relationship between item 25 [*Está siempre dando órdenes* (My partner orders me around)] and 26 [*Me dice cosas que no se pueden aguantar* (My partner has no respect for me feelings)] (see Figure 1).

TABLE 2. Overall fit indices for the different factor models proposed.

Model	χ^2	df	χ^2/df	GFI	AGFI	NNFI	RMSEA
Two-factor oblique (30 items) ^a	573.73***	404	1.41	.68	.63	.79	.024
Three-factor oblique (30 items) ^b	546.72***	402	1.35	.69	.64	.80	.023
Two-factor oblique (19 items) ^c	177.49 <i>n.s.</i>	150	1.18	.80	.75	.85	.016
Three-factor oblique (22 items) ^d	339.63***	206	1.64	.75	.69	.83	.022
Two-factor oblique (22 items) ^e	280.71***	208	1.34	.75	.70	.82	.022
Two-factor oblique (30 items) ^f	578.48***	404	1.43	.67	.63	.79	.025
Two-factor oblique (30 items) ^g	542.74***	376	1.44	.68	.63	.79	.025

Notes. *n.s.*: $p > .05$, *** $p < .001$; ^astructural model by Hudson and McIntosh (1981); ^bstructural model by Campbell *et al.* (1994); ^cstructural model by Tang (1998); ^dstructural model by Cook *et al.* (2003); ^estructural model by Sierra *et al.* (2007); ^fstructural model by Plazaola-Castaño *et al.* (2009); ^gstructural model by Torres *et al.* (2010).

**FIGURE 1.** Path diagram of the factor structure of the Index of Spouse Abuse according to Tang's model (1998).

Reliability

Table 3 shows the psychometric properties of the items of the subscales *Nonphysical abuse* and *Physical abuse*. The *Nonphysical abuse* scale had an internal consistency reliability (Cronbach's alpha coefficient) equal to .93. All response means were below the theoretical midpoint (2) and standard deviations were greater than one in all cases. Corrected item-total correlations were greater than .30 (Nunnally and Bernstein, 1995). The lowest of such correlations was .55 (item 14). Moreover, each response option was chosen at least once in all items. The *Physical abuse* scale had an internal consistency reliability equal to .89. Similarly to the *Nonphysical abuse* sca-

le, the means were below the theoretical midpoint and standard deviations were greater than one. Corrected item-total correlations were greater than .30. The lowest of such correlations was .65 (item 13). Likewise, all the response options were chosen at least once in all items.

TABLE 3. Mean (*M*), standard deviations (*SD*), corrected item-scale correlations (*r*), and Cronbach's alpha if item (α) of the subscales *Nonphysical abuse* and *Physical abuse* is eliminated.

<i>Subscale/items</i>	<i>M</i>	<i>SD</i>	<i>r</i>	α
<i>Nonphysical abuse</i>				
1. <i>Me humilla</i> (My partner belittles me)	1.33	1.29	.67	.92
2. <i>Me exige que obedezca a sus caprichos</i> (My partner demands obedience to his whims)	1.44	1.25	.70	.92
5. <i>Se enfada mucho si no hago lo que quiere cuando él quiere</i> (My partner becomes very upset if dinner, housework or laundry is not done when he thinks it should be)	1.59	1.33	.68	.92
10. <i>Se cree que soy su esclava</i> (My partner acts like I am his personal servant)	1.17	1.36	.77	.92
12. <i>Se enfada mucho si me muestro en desacuerdo con sus puntos de vista</i> (My partner becomes very angry if I disagree with his point of view)	1.38	1.34	.69	.92
14. <i>No me presta dinero</i> (My partner is stingy in giving me enough money to run our home)	1.27	1.39	.55	.93
19. <i>No es amable conmigo</i> (My partner is not a kind person)	1.48	1.35	.67	.92
22. <i>Me grita continuamente</i> (My partner screams and yells at me)	1.46	1.38	.71	.92
25. <i>Está siempre dando órdenes</i> (My partner orders me around)	1.55	1.40	.72	.92
26. <i>Me dice cosas que no se pueden aguantar</i> (My partner has no respect for my feelings)	1.50	1.37	.75	.92
28. <i>Le tengo miedo</i> (My partner frightens me)	1.31	1.40	.73	.92
29. <i>Me trata como si fuera basura</i> (My partner treats me like a dunce)	1.19	1.41	.74	.92
<i>Physical abuse</i>				
4. <i>Me fuerza a hacer actos sexuales que no me gustan</i> (My partner makes me perform sex acts that I do not enjoy or like)	1.18	1.33	.70	.87
7. <i>Me golpea o araña</i> (My partner punches me with his fists)	1.12	1.30	.73	.87
13. <i>Me amenaza con un arma o cuchillo</i> (My partner threatens me with a weapon)	.83	1.21	.65	.88
17. <i>Me ha llegado a golpear tan fuerte que llegué a necesitar asistencia médica</i> (My partner beats me so badly that I must seek medical help)	1.06	1.33	.70	.87
21. <i>Me exige relaciones sexuales, aunque esté cansada</i> (My partner demands sex whether I want it or not)	1.33	1.36	.69	.88
24. <i>Se vuelve agresivo cuando bebe</i> (My partner becomes abusive when he drinks)	1.34	1.40	.68	.88
30. <i>Actúa como si fuera a matarme</i> (My partner acts like he would like to kill me)	1.15	1.42	.70	.87

Convergent validity

Convergent validity tests showed statistically significant positive correlations between the scales *Nonphysical abuse* and *Physical abuse* and the DSS, RSAS, the global score of the SCL-90-R (GSI), and its various subscales (see Table 4).

TABLE 4. Pearson's correlations between the scores of the ISA, DSS, RSAS, and SCL-90-R.

<i>Scales/Subscales</i>	<i>Nonphysical abuse</i>	<i>Physical abuse</i>
DSS	.44***	.39***
RSAS	.53***	.47***
SCL-90-R GSI	.76***	.78***
SCL-90-R Somatization	.64***	.64***
SCL-90-R Obsessive-Compulsive	.66***	.67***
SCL-90-R Interpersonal Sensitivity	.68***	.71***
SCL-90-R Depression	.69***	.69***
SCL-90-R Anxiety	.71***	.75***
SCL-90-R Hostility	.66***	.67***
SCL-90-R Phobic Anxiety	.69***	.75***
SCL-90-R Paranoid Ideation	.70***	.70***
SCL-90-R Psychoticism	.69***	.74***

*** $p < .001$

Differences in abuse depending on educational level and occupation

The ANOVA showed differences in nonphysical abuse depending on educational level ($F_{2, 723} = 75.20$; $p < .001$) and occupation ($F_{3, 719} = 46.20$; $p < .001$) (see Table 5). According to the Scheffe test, women with higher education suffer less nonphysical abuse than those with only primary education ($p < .001$) or secondary education ($p < .001$). Homemakers are more abused than students ($p < .001$), women with unskilled jobs working outside the home ($p < .01$), and women with skilled jobs ($p < .001$); the latter report less abuse than students ($p < .001$) and women with unskilled jobs ($p < .001$).

As regards physical abuse, differences were also found depending on educational level ($F_{2, 725} = 92.94$; $p < .001$) and occupation ($F_{3, 720} = 44.76$; $p < .001$) (see Table 5). Women with higher education suffer less physical abuse than those with only primary education ($p < .001$) or secondary education ($p < .001$); homemakers suffer more physical abuse than students ($p < .001$), women with unskilled jobs ($p < .001$), and women with skilled jobs ($p < .001$); the latter report less abuse than students ($p < .001$) and women with unskilled jobs ($p < .001$).

TABLE 5. Differences in nonphysical and physical abuse depending on educational level and occupation.

<i>Variables</i>		<i>M</i>	<i>SD</i>	<i>F</i>
Nonphysical abuse				
Educational level	Primary Education (<i>n</i> = 102)	23.82	11.26	75.20***
	Secondary Education (<i>n</i> = 234)	20.86	11.83	
	Higher Education (<i>n</i> = 390)	11.75	10.69	
Occupation	Student (<i>n</i> = 130)	16.07	12.34	46.20***
	Homemaker (<i>n</i> = 205)	22.65	11.52	
	Unskilled worker (<i>n</i> = 150)	18.02	12.34	
	Skilled worker (<i>n</i> = 238)	10.23	9.44	
Physical abuse				
Educational level	Primary Education (<i>n</i> = 105)	12.61	7.06	92.94***
	Secondary Education (<i>n</i> = 229)	10.75	7.37	
	Higher Education (<i>n</i> = 394)	4.83	5.80	
Occupation	Student (<i>n</i> = 128)	7.96	7.63	44.76***
	Homemaker (<i>n</i> = 204)	11.65	7.41	
	Unskilled worker (<i>n</i> = 148)	8.37	7.27	
	Skilled worker (<i>n</i> = 244)	4.30	5.03	

*** $p < .001$

Cut-off points to identify partner abuse

ROC curves were calculated to establish cut-off points in both subscales of the ISA considering the sample of women who had never reported abuse (controls) and women who had reported abuse (cases). The area below the curve was .92 (95% CI: .90-.95) in the *Nonphysical abuse* subscale and .93 (95% CI: .91-.95) in the *Physical abuse* subscale, which indicates good validity to detect both types of abuse. For nonphysical abuse, the optimal cut-off

point is 13 ($N = 189$ cases *vs.* $N = 291$ controls), with a sensitivity of 98.90% (95% CI 96.20-99.70) and a specificity of 72.20% (95% CI 66.80-77). For physical abuse, the optimal cut-off point is 8 ($N = 190$ cases *vs.* $N = 297$ controls), with a sensitivity of 87.40% (95% CI 81.9-91.4) and a specificity of 82.50% (95% CI 77.80-86.40).

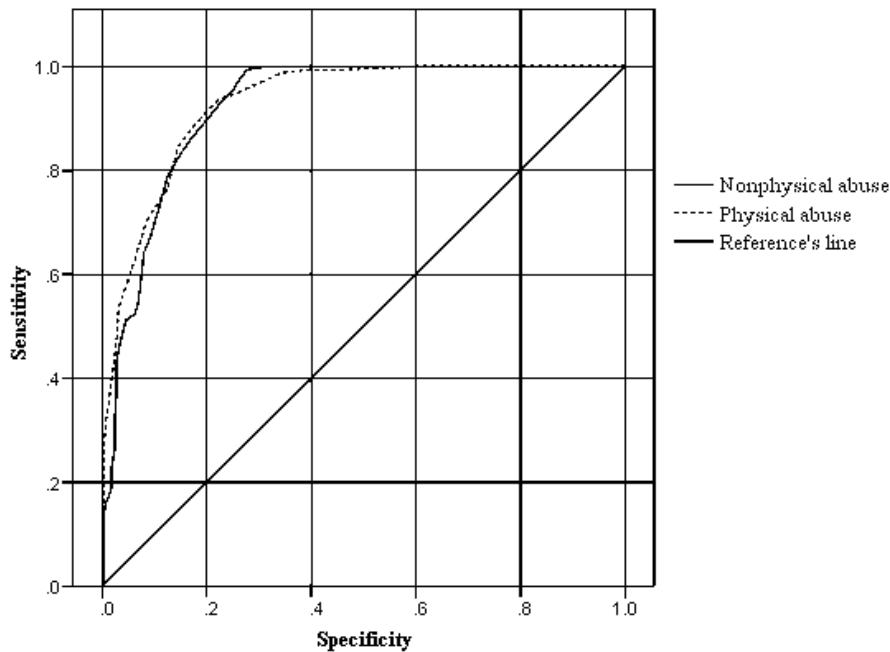


FIGURE 2. Receiver operating characteristic (ROC) curves of nonphysical abuse and physical abuse.

Discussion

The various psychometric studies exploring the factor structure of the ISA do not agree on the number of factors and their item distribution. For this reason, the present study used confirmatory factor analysis to test seven factor structures proposed in the previous literature: three structures with 30 items distributed into two factors (Hudson and McIntosh, 1981; Plazaola-Castaño *et al.*, 2009; Torres *et al.*, 2010), one with 30 items clustered into three factors (Campbell *et al.*, 1994), one with 22 items clustered into three factors (Cook *et al.*, 2003), one with 22 items clustered into two factors (Sierra *et al.*, 2007), and one with 19 items clustered into two subscales (*Nonphy-*

sical abuse: 12 items; and *Physical abuse*: 7 items) obtained the best fit, with an excellent internal consistency reliability (Cronbach's alpha) in both dimensions: .93 and .89, respectively. Such values are above those shown in the original study by Tang (1998). Characteristic features of nonphysical abuse such as humiliation, demands, anger, lack of kindness or yelling are reflected in items such as *Se cree que soy su esclava* (My partner acts like I am his personal servant) or *Me dice cosas que no se pueden aguantar* (My partner has no respect for my feelings). The dimension of physical abuse clusters items that refer to the use of force, beating, threats or unwanted sexual intercourse, such as *Me golpea o araña* (My partner punches me with his fists) or *Me fuerza a hacer actos sexuales que no me gustan* (My partner makes me perform sex acts that I do not enjoy or like).

This reduced two-dimensional version of the ISA, originally proposed by Tang (1998) in a study performed with Chinese women, also shows a better fit than other factor structures in Salvadorian women (Sierra, Santos-Iglesias *et al.*, 2010) and Brazilian women (Sierra *et al.*, in press). This, combined to its good fit in the Peruvian women of this study, clearly reflects its consistency across several cultures. The reliability of both subscales was also high, both in Salvadorian and Brazilian samples. This is very important, given that the studies carried out to date suggested that the factor structure of the ISA depended on the sample used, which led to considering the need to adapt it to specific populations (Torres *et al.*, 2010).

The validity indicators obtained for the measures of this reduced version of the ISA were satisfactory. As expected, both subscales *Nonphysical abuse* and *Physical abuse* showed moderated positive correlations with the sexual double standard and rape supportive attitude, which are both considered male chauvinist sexual attitudes (Sierra, Rojas, Ortega, and Martín Ortiz, 2007). This shows that the presence of these attitudes is associated with the experience of partner abuse, as had already been proven in previous studies (Sierra *et al.*, in press; Sierra, Santos-Iglesias *et al.*, 2010). This highlights the need for programs aimed at preventing and treating partner violence to influence this kind of sexual attitudes, since they can represent a risk factor for women (Echeburúa and Fernández-Montalvo, 2009; Echeburúa, Sarasua, Zubizarreta, and de Corral, 2009; Ortega, Sánchez, Ortega-Rivera, Nocentini, and Menesini, 2010; Sierra, Santos-Iglesias *et al.*, 2010). Moreover, both types of abuse showed high correlations with the various psychopathological dimensions of the SCL-90-R, which confirms the hypothesis of

the study. The mental health of women abused by their partners is known to suffer a very significant decline (Diez Ulla *et al.*, 2009; Ellsberg *et al.*, 2008; Fletcher, 2010; Ludermir *et al.*, 2008; Walton-Moos *et al.*, 2005). The results obtained in the present study suggest that abused women experience a high level of anxiety and have a depressive emotional status, paranoid thoughts, difficulties in their interpersonal relations, and somatic complaints.

Educational level and occupation are variables that have been associated to the experience of partner abuse (Amor *et al.*, 2002; Boy and Kulczcki, 2008; Echeburúa *et al.*, 2008; Echeburúa, Sarasua, Zubizarreta, Amor, and de Corral, 2010; Echeburúa *et al.*, 2009; Sierra *et al.*, in press). Consequently, the present study hypothesized that women with a low educational level and unskilled occupations would score higher in nonphysical abuse and physical abuse. As expected, results show that women with higher education and/or jobs that require this type of studies suffer less abuse than the rest of women, and that homemakers experience the highest level of abuse.

Finally, cut-off points were established for both subscales in order to detect the presence of physical and nonphysical partner abuse. Scores of 13 in nonphysical abuse and 8 in physical abuse as cut-off points reach optimal values of sensitivity and specificity. A comparison between these values and those proposed by Tang (1998) shows that scores are similar in physical abuse. Yet, Tang proposes a much higher score in nonphysical abuse (25). This may be due to the small size of the samples of Chinese women (31 abused women and 41 non-abused women) used in Tang's study; another possibility is that the scores of the Peruvian women in the present study may be influenced by social desirability. However, even if this were true, both subscales would be affected, not only the nonphysical scale.

In summary, it can be stated that this reduced Spanish version of the ISA (see Appendix) is valid and reliable and has shown consistency and reliability in samples from different cultures. The cut-off points set as 13 and 8 will make it possible to detect the existence of nonphysical and physical partner abuse, respectively. Therefore, this self-report scale is easy to apply and will be useful in both research and clinical practice.

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APPENDIX. Reduced Spanish version of the Index of Spouse Abuse
(Hudson and McIntosh, 1981).

MI PAREJA...	<i>Nunca</i>	<i>Raramente</i>	<i>Ocasionalmente</i>	<i>Con frecuencia</i>	<i>Casi siempre</i>
1. Me humilla (NP)	0	1	2	3	4
2. Me exige que obedezca a sus caprichos (NP)	0	1	2	3	4
3. Me fuerza a hacer actos sexuales que no me gustan (P)	0	1	2	3	4
4. Se enfada mucho si no hago lo que quiere cuando él quiere (NP)	0	1	2	3	4
5. Me golpea o araña (P)	0	1	2	3	4
6. Cree que soy su esclava (NP)	0	1	2	3	4
7. Se enfada mucho si me muestro en desacuerdo con sus puntos de vista (NP)	0	1	2	3	4
8. Me amenaza con un arma o cuchillo (P)	0	1	2	3	4
9. No me presta dinero (NP)	0	1	2	3	4
10. Me ha llegado a golpear tan fuerte que llegué a necesitar asistencia médica (P)	0	1	2	3	4
11. No es amable conmigo (NP)	0	1	2	3	4
12. Me exige relaciones sexuales, aunque esté cansada (P)	0	1	2	3	4
13. Me grita continuamente (NP)	0	1	2	3	4
14. Se vuelve agresivo cuando bebe (P)	0	1	2	3	4
15. Está siempre dando órdenes (NP)	0	1	2	3	4
16. Me dice cosas que no se pueden aguantar (NP)	0	1	2	3	4
17. Le tengo miedo (NP)	0	1	2	3	4
18. Me trata como si fuera basura (NP)	0	1	2	3	4
19. Actúa como si fuera a matarme (P)	0	1	2	3	4

Note. NP: Nonphysical abuse; P: physical abuse.