

## Beliefs and attitudes about intimate partner violence against women in Spain

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### Abstract

**Background:** Some attitudes serve to justify violence against women, to blame women for the violence they experience, and to perpetuate levels of this violence. These attitudes often stem from traditional norms and beliefs which are important to identify. The purpose of this study is to compare beliefs about intimate partner violence against women (IPVAW) between two time points, examining the effect of the respondents—sex and previous academic-training. **Method:** Two opportunity samples of undergraduates took part in this study: 1,392 in 2006 (34.4% men and 65.6% women) and 730 in 2018 (36.3% men and 63.7% women). A four-factor model from the Inventory of Distorted Thoughts on Women and Violence (IPDMV) was used after assessing fit through CFA. **Results:** Significant differences between 2006 and 2018 in all factors were found using MANCOVA (covariable: age). Differences were also found by sex and previous academic-training, and effects of interaction in the first factor between these variables and the time point. **Conclusions:** The beliefs and distorted thoughts about women and violence fell between the two time points analysed, with less acceptance of these beliefs among women and people with prior IPVAW academic-training.

**Keywords:** Intimate partner violence against women, attitudes, beliefs, assessment.

### Resumen

**Creencias y actitudes sobre la violencia contra las mujeres en la pareja en España. Antecedentes:** algunas actitudes sirven para justificar la violencia contra las mujeres, culparlas por la violencia que experimentan, y perpetuar los niveles de esta violencia. Estas actitudes a menudo se derivan de normas y creencias tradicionales que es importante identificar. El objetivo de este estudio es comparar las creencias sobre violencia contra las mujeres en la pareja (IPVAW) entre dos momentos temporales, analizando el efecto del sexo y la formación académica previa. **Método:** se utilizan dos muestras de conveniencia: 1.392 estudiantes universitarios en 2006 (34,4% hombres y 65,6% mujeres) y 730 en 2018 (36,3% hombres y 63,7% mujeres). Se emplea un modelo de cuatro factores del Inventario de Pensamientos Distorsionados sobre la Mujer y la Violencia (IPDMV), tras evaluar el ajuste mediante AFC. **Resultados:** se obtienen, mediante MANCOVA (covariable: edad), diferencias significativas entre 2006 y 2018 en todos los factores. Se observan asimismo diferencias por sexo y formación académica previa, y efectos de interacción en el primer factor entre estas variables y el momento temporal. **Conclusiones:** las creencias y pensamientos distorsionados sobre la mujer y la violencia disminuyen entre los dos momentos analizados, y son menores en las mujeres y las personas con formación académica previa en IPVAW.

**Palabras clave:** violencia contra las mujeres en la pareja, actitudes, creencias, evaluación.

Intimate Partner Violence against Women (IPVAW) is the most frequent form of violence suffered by women today and is considered a social and public health problem of epidemic proportions (DeVries et al., 2013; FRA, 2015; Stockl et al., 2013). This violence is a complex phenomenon best understood by the widely used ecological models (e.g., Heise, 1998), which propose that IPVAW is the result of the complex interaction among individual, relationship, social, cultural and environmental factors (WHO, 2012). Despite this, most research about IPVAW has traditionally focused on individual factors, such as low levels of income or education, childhood experience of physical or sexual abuse, or the harmful use of alcohol (WHO, 2012; World Health Organization/London School of Hygiene and Tropical Medicine,

2010). However, researchers increasingly recognize the importance of community and societal risk factors, such as the unequal social, legal and economic status of women, the use of violence to resolve conflict, weak community sanctions against violence, or traditional gender norms and beliefs (Puente, Ubillós, Echeburúa, & Paez, 2016; WHO, 2012).

With regard to the norms, attitudes, and beliefs that support violence against women, previous research has shown three important implications related to IPVAW (Flood & Pease, 2009; Gracia, & Lila, 2015; Gracia & Tomás, 2014; Gracia, Rodríguez, & Lila, 2015; Heise & Kotsadam, 2015; Wang, 2016). Firstly, as previously mentioned, beliefs and attitudes have a causal relationship to the perpetration of violence against women: there is a consistent relationship between men's adherence to sexist, patriarchal and sexually hostile attitudes and their use of this violence (Capaldi, Knoble, Shortt, & Kim, 2012; Jewkes, Flood, & Lang, 2015; Puente et al., 2016). Secondly, women's responses to IPVAW (self-blame, reporting or not to the police, suffering negative psychological and emotional effects) are shaped by either their own beliefs and attitudes or those of others about this

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violence (Puente et al., 2016). Finally, beliefs, attitudes and social norms play a role in the responses to IPVAV adopted by family members, friends or professionals (Gracia, García, & Lila, 2014). In summary, prevailing attitudes in many societies serve to justify, tolerate or condone violence against women, often blaming women for the violence they experience, and contributing to perpetuate the levels of violence in these societies (Flood & Pease, 2009; Gracia et al., 2015). These attitudes often stem from traditional norms and beliefs that either view women as subordinate to men, or entitle men to use violence to control women (Heise & Kotsadam, 2015).

Given the importance of these beliefs and attitudes, it is indispensable to identify irrational beliefs and distorted thoughts not only among batterers, but among the general population as well. To this end, the availability of reliable and valid measures is essential for research and also for intervention purposes (Delgado, Estrada, & López, 2015; Villegas, González, Sánchez-García, Sánchez, & Galindo-Villardón, 2018). In the Spanish context, the most widely used tool to measure this issue in recent decades has been the Inventory of Distorted Thoughts about Women and Violence (IPDMV, in the Spanish acronym), an instrument designed by Echeburúa and Fernández-Montalvo (1997, 1998) for clinical purposes, as a part of a cognitive-behavioural programme for treating batterers. The IPDMV was originally a checklist of 29 binary items about irrational thoughts in the aggressor, 13 related to sexual roles and the inferiority of women (IPDM), and 16 related to the use of violence as an acceptable method of conflict resolution (IPDV). Each affirmative response scores 1 point, so that the score on IPDM ranges between 0 and 13 points, and the score on IPDV ranges between 0 and 16 points. The higher the score, the greater the number of distorted thoughts. Their authors do not provide additional information on the psychometric properties of this inventory.

The factorial structure of this scale was analysed by some authors with samples of different characteristics, obtaining different models, as may be seen in Table 1. In this context, a

preliminary purpose of this study was to analyse which factorial model structure is better for IPDMV.

Since its publication, the IPDMV in its original version has been used in numerous researches involving both general population and batterers (Echeburúa & Fernández-Montalvo, 1997, 1998), and using some of the factorial models previously described (especially the model by Ferrer et al., 2006). A list of these papers is included in Table 2.

In addition, since the initial publication of the IPDMV there have been numerous legislative and social changes in relation to IPVAV, both internationally and in Spain (Ferrer & Bosch, 2014; World Health Organization/London School of Hygiene and Tropical Medicine, 2010); and some studies carried out with this questionnaire have found differences in beliefs and attitudes about IPVAV among men and women (Ferrer et al., 2006; Ubillos et al., 2017) and among people who either had or had not received specific academic-training on IPVAV (Ferrer et al., 2006). In this context, the main purpose of this study was to compare results of two temporal moments and analyse the changes in beliefs about IPVAV in the last decade (2006-2018), and to compare results taking into account each respondent's sex and previous academic-training about IPVAV.

## Method

### Participants

Two opportunity samples of undergraduates participated in this research, 1,392 in 2006 (34.4% men, 65.6% women) and 730 in 2018 (36.3% men, 63.7% women). No differences were found in sex between the two samples ( $\chi^2(1) = 0.788; p = .375$ ). The 2006 sample ( $M = 23.00; SD = 4.57$ ) was significantly older than the 2018 sample ( $M = 21.07; SD = 4.04$ ) ( $t(2111) = 9.561; p < .001$ ). Related to the previous academic-training, 842 participants had studied

Table 1  
Factorial models obtained with the IPDMV

Authors	Sample	IPDMV version 29 items used	Results
Ferrer et al. (2006)	1,395 undergraduates	4-point response scale	Validation for general population 24-items Four factors: F1: Acceptability of traditional stereotypes, and misogyny (7-items, $\alpha = .881$ ) F2: Blaming of victims (8-items, $\alpha = .664$ ) F3: Use of violence as a strategy to solving problems (5-items, $\alpha = .703$ ) F4: Minimisation of IPVAV as a problem (4-items, $\alpha = .521$ )
Loinaz (2014a)	180 batterer men in prison	Two response options: True/false vs. 4-point scale	Validation for batterer population 24-items. The best option is the 4-point response scale Four factors: F1: Macho stereotypes (7-items, $\alpha = .658$ ) F2: Women's culpabilization (7-items, $\alpha = .692$ ) F3: Acceptance of violence (4-items, $\alpha = .631$ ) F4: Exoneration of the aggressor (6-items, $\alpha = .496$ )
Echeburúa et al. (2016)	241 batterer men 222 men from normative population	True/false response scale	Validation for men (batterer and non-batterer) population 21-items One factor ( $\alpha = .740$ )
Ubillos et al. (2017)	2,919 Basque-speakers secondary school students	Basque version 4-point response scale	Validation of a Basque version 21-items From a modified 4-factor model (based on Ferrer et al., 2006), they finally propose two factors: F1: Beliefs about women (6-items, $\alpha = .880$ ) F2: Beliefs about the use of violence and abuse against women (15-items, $\alpha = .780$ )

Table 2  
Research carried out in Spain applying the IPDMV

Authors	Sample	IPDMV version	Aim	
Ruiz & Expósito (2008a)	13 men imprisoned for IPVAV	Original <sup>a</sup>	Psychological intervention programs with batterers	
Ruiz & Expósito (2008b)	13 men imprisoned for IPVAV			
Echeburúa, Fernández-Montalvo, & Amor (2006)	52 men imprisoned for IPVAV			
Echeburúa & Fernández-Montalvo (2009)	148 men imprisoned for IPVAV			
Echeburúa, Sarasua, Zubizarreta, & de Corral (2009)	196 male batterers from a community setting			
Martínez & Pérez (2009)	62 men imprisoned for IPVAV			
Boira, López, Tomás, & Gaspar (2013)	46 men convicted of IPVAV 15 men from a control group		Profile/ typology of batterers	
Rodríguez-Espartal & López-Zafra (2013)	36 men imprisoned for IPVAV			
Fernández-Montalvo & Echeburúa (2005)	162 men imprisoned for IPVAV	Original <sup>a</sup>		
Boira & Tomás (2011)	62 paroled men convicted of IPVAV			
Fernández-Montalvo, Echaury, Martínez, & Azcárate (2011)	448 men who have sought help after committing IPVAV			
Fernández-Montalvo, Echaury, Martínez, & Azcárate (2012)	399 men in a treatment program for IPVAV			
Arrigoni, Jiménez, Navarro, & Mendoza (2013)	38 paroled men convicted of IPVAV			
Boira & Jodrá (2013)	661 men convicted of IPVAV in a community treatment program	Original <sup>a</sup>		
Loinaz, Echeburúa, & Torrubia (2010)	50 men convicted of IPVAV	Original <sup>a</sup> Adaptation <sup>b</sup>		
Loinaz, Ortiz, Sánchez, & Ferragut (2011)	50 men imprisoned for IPVAV	Adaptation <sup>b</sup>		
Loinaz (2014b)	100 men imprisoned for IPVAV		Distorted thoughts in the emergence and maintenance of IPVAV	
Llor, García, Ruiz, & Godoy (2016)	90 men convicted of IPVAV (50 serving a prison sentence, and 40 from a mandatory community intervention program)			
Torres & López-Zafra (2010)	135 men (45 imprisoned for IPVAV, 45 imprisoned for other crimes, 45 non-inmate men)	Adaptation <sup>b</sup>		
García, Sánchez-Meca, & Godoy (2013)	159 men convicted of IPVAV			
Guerrero, Moreno, Guerrero, & Cruz (2016)	129 men convicted of IPVAV	Original <sup>a</sup>		
Ferrer, Bosch, & Ramis (2008)	175 undergraduates of Psychology and Nursing	Adaptation <sup>b</sup>		
Ruiz, García, Llor, & Godoy (2015)	89 common delinquents 50 batterers	Adaptation <sup>b</sup>		
Arnosó, Ibabe, Arnosó, & Elgorriaga (2017)	251 adults living in Spain (28% native, 72% immigrants)	Adaptation <sup>b</sup>		
				Distorted thoughts and lack of attribution/responsibility in batterers
			Perception of future health professionals	
			Risk factors in common delinquents and batterers	
			Sexism, IPV, and cultural context	

<sup>a</sup> Original version: 29-items. True/false response scale. Two scales: IPDM and IPDV  
<sup>b</sup> Adaptation from Ferrer et al. (2006): 24-items/4-point response scale. Four factors

some topic related to IPVAV (27.9% in 2006, 62.3% in 2018) and the difference between the two samples was statistically significant ( $\chi^2(1) = 235.53; p < .001$ ). The predominant socioeconomic status was 64.2% middle class in both samples.

### Instruments

The participants completed the 29 items of the original IPDMV (Echeburúa & Fernández-Montalvo, 1997, 1998), using the four-point response scale proposed by Ferrer et al. (2006), where higher scores indicate a greater justification of abuse.

### Procedure

The students who agreed to participate in the investigation completed the consent form and the questionnaire in paper and

pencil format. The evaluation was carried out in compliance with current ethical standards, and the research was approved by the Bioethics Committee of the University.

### Data analysis

Mahalanobis' distance to check for multivariate outliers (MVOs) was used. The threshold value of .001 suggested by Tabachnick and Fidell (2007) was the probability estimate for outlier identification. No outliers were dropped out since the lowest probability was  $p = .004$ .

Various Confirmatory Factor Analyses (CFA) were carried out to test the fit of each of the different proposed models for IPDMV (see Table 1) and to select the best factorial model to compare 2006 and 2018 samples, after eliminating incomplete questionnaires ( $n = 1,211$ , and  $n = 624$ , respectively). The Unweighted Least Squares

(ULS) estimation method (McDonald, 1982) was used, since it does not require the observed variables to follow a determined distribution, which is recommended for categorical and ordinal variables, thus providing more accurate parameter estimates (Forero, Maydeu, & Gallardo, 2009; Morata, Holgado, Barbero, & Méndez, 2015). The fit of the model to data was analysed using multiple criteria: GFI > .90; AGFI > .85; NFI > .90; SRMR < .05 or between .05 and .08 described as acceptable (Anderson & Gerbig, 1984; Hu & Bentler, 1999; Schermelleh-Engel, Moosbrugger, & Müller, 2003). Two Parsimonious Fit Indices were used: PGFI and PNFI, generally accepted with .50, when other Goodness-of-Fit indices are all .90 (Muliak et al., 1989).

A Multivariate Analysis of Covariance (MANCOVA) was performed to examine the effect of the year of application, sex, and previous academic-training on the IPDMV scores. The age was added as covariate to control the influence that this variable may have on the IPDMV scores, since the Student t test showed statistically significant differences between sample ages in 2006 and 2018. The effect size was estimated using partial-eta-squared (Trigo & Martínez, 2016). The data were analysed with IBM SPSS and AMOS 23.

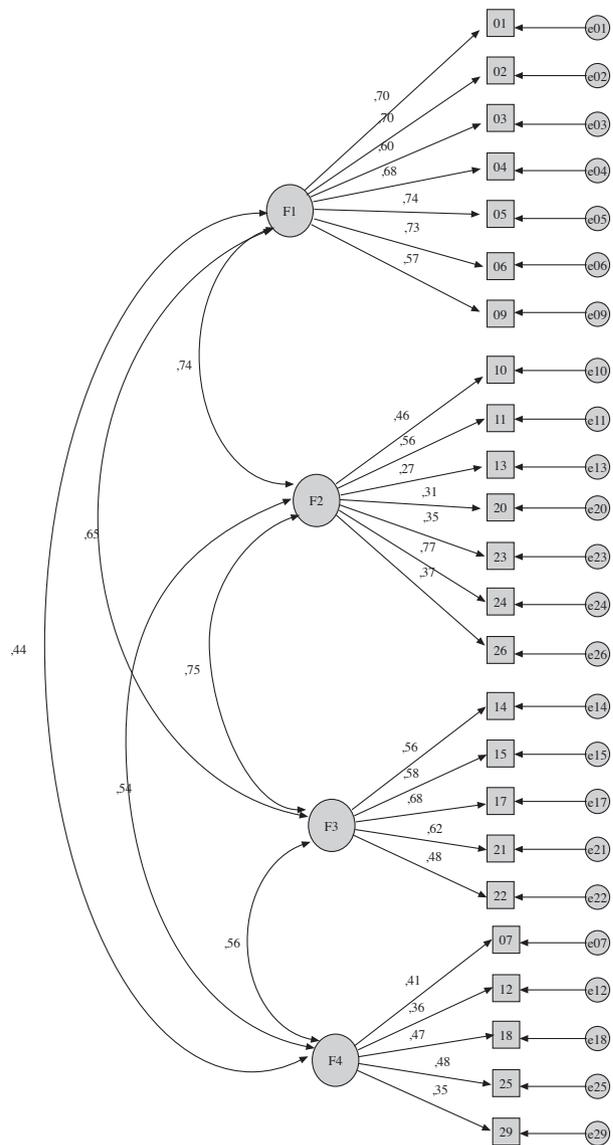
Results

Model selection for comparisons between samples

As shown in Table 3, the most satisfactory fit was obtained for the 4-factor model by Ubillos et al. (2017). However, according to the factors composition, Factor 4 of this model has two limitations: it is composed of only 3 items, when 5 or more items are desirable (Costelo & Osborne, 2005), and their internal consistency is very weak ( $\alpha = .25$ ). For this reason, we propose a new model, based on that obtained by Ferrer et al. (2006), where Factor 1 and Factor 4 contain the same items that are found in this model, and similarly to Loinaz (2014a), where item 16 is removed from Factor 2, and item 29 is added to Factor 4 (see Figure 1). As shown in Table 3, the fit of this new model is also very satisfactory, and the internal consistency for its factors (Factor 1:  $\alpha = .86$ ,  $\omega = .87$ ; Factor 2:  $\alpha = .62$ ,  $\omega = .66$ ; Factor 3:  $\alpha = .69$ ,  $\omega = .72$ ; Factor 4:  $\alpha = .53$ ,  $\omega = .57$ ) improves those of the weakest factors in the other four-factor solutions (Ferrer et al., 2006; Loinaz, 2014a; Ubillos et al., 2017). It can be noted that this fit is satisfactory both in 2006 sample and in 2018 sample (Factor 1:  $\alpha_{2006} = .88$  and  $\alpha_{2018} = .79$ ; Factor 2:  $\alpha_{2006} = .64$  and  $\alpha_{2018} = .57$ ; Factor 3:  $\alpha_{2006} = .70$  and  $\alpha_{2018} = .65$ ; Factor 4:  $\alpha_{2006} = .55$  and  $\alpha_{2018} = .49$ ). The item's discrimination index ranges between .208 and .534.

Prior to addressing the main objective of the present study, measurement and structural invariance (Byrne, 2008, 2009) of

the new model was analysed across the 2006 and 2018 samples. Following Byrne's approach, invariance testing was conducted in four increasingly restrictive steps. These results are displayed in Table 4.



**Figure 1.** New Model of 4 factors  
 F1: Inferiority of women compared to men; F2: Blaming female victims of abuse; F3: Violence as an appropriate problem-solving strategy; F4: Minimization of IPVAV as a problem and exoneration of the abuser

Table 3  
 Fit Indices of the factorial models IPDMV

Fit Indices	Ferrer et al. (2006) 4 Factors	Ubillos et al. (2017) 4 Factors	Loinaz (2014a) 4 Factors	Ubillos et al. (2017) 2 Factors	Echeburúa et al. (2016) 1 Factor	New Model 4 Factors
GFI	.975	.983	.972	.981	.962	.982
AGFI	.970	.979	.966	.976	.954	.978
SRMR	.063	.044	.068	.046	.094	.046
NFI	.916	.948	.923	.940	.872	.949
PGFI	.800	.779	.797	.798	.787	.805
PNFI	.816	.826	.823	.842	.785	.846

*Table 4*  
Measurement and structural invariance of the IPDMV across samples by year

Model	GFI	NFI	SRMR
1. Baseline-Configural model	.977	.937	.047
2. Equal factor loadings	.970	.917	.054
3. Equal factor variances and covariances	.967	.910	.062
4. Equal error variances	.960	.889	.055
4b. Equal error variances (partial invariance) <sup>a</sup>	.964	.900	.055

<sup>a</sup> Error variances for Items 13 (Factor 2), 21 (Factor 3) and 12 (Factor 4) not constrained

Once the acceptable fit of the hypothesized model across samples (*Baseline-Configural model*) was confirmed, the subsequently nested invariance models (which increasingly constrained factors loadings, factor variances and covariances, and error variances to be equal across groups), yielded acceptable fit indices. The only exception was the NFI at the error measurement level (.889). However, partial invariance was obtained by releasing error variance constraints for three items, so the equality of item reliability across samples could be at least partially assumed.

*Differences by application year, sex and previous academic-training in IPVAW*

MANCOVA introducing the covariate age was carried out. Pillai's trace test was statistically significant ( $F(4, 2070) = 4.017; p = .003; \eta^2 = .008$ ). The principal effects of the independent variables were also statistically significant: year of application ( $F(4, 2070) = 8.770; p < .001; \eta^2 = .017$ ), sex ( $F(4, 2070) = 66.218;$

*Table 5*  
Effects of year of application, sex, and previous academic-training

Factor	Year of application		Sex		Previous academic-training		
	2006	2018	Men	Women	No	Yes	
1	<i>M</i>	1.14	1.08	1.25	1.05	1.15	1.08
	( <i>SD</i> )	(0.32)	(0.24)	(0.44)	(0.14)	(0.34)	(0.22)
	$F(1, 2073)$	14.038		129.944		4.327	
	$p$	< .001		< .001		.038	
	$\eta^2$	.007		.059		.002	
2	<i>M</i>	1.58	1.52	1.73	1.46	1.59	1.50
	( <i>SD</i> )	(0.39)	(0.40)	(0.48)	(0.30)	(0.41)	(0.38)
	$F(1, 2073)$	13.202		165.949		1.065	
	$p$	< .001		< .001		.302	
	$\eta^2$	.006		.074		.001	
3	<i>M</i>	1.69	1.54	1.86	1.51	1.71	1.52
	( <i>SD</i> )	(0.51)	(0.51)	(0.59)	(0.42)	(0.52)	(0.48)
	$F(1, 2073)$	29.7852		188.416		8.2485	
	$p$	< .001		< .001		.004	
	$\eta^2$	.014		.083		.004	
4	<i>M</i>	2.20	2.07	2.26	2.09	2.23	2.04
	( <i>SD</i> )	(0.57)	(0.60)	(0.60)	(0.57)	(0.59)	(0.57)
	$F(1, 2073)$	9.047		29.944		17.167	
	$p$	.003		< .001		< .001	
	$\eta^2$	.004		.014		.008	

$p < .001; \eta^2 = .113$ ), and previous academic-training in IPVAW ( $F(4, 2070) = 5.602; p < .001; \eta^2 = .011$ ). The intersubject effect on each of the factors is shown in Table 5.

The scores go down from 2006 to 2018 for all the factors, and the effect size is larger for Factor 3 (see Figure 2). Regarding sex and academic-training, the scores for women are lower than those for men in all the factors, and having or not previous IPVAW academic-training results in statistically significant differences in Factor 1, Factor 3, and Factor 4.

Finally, it is important to highlight the statistically significant interaction effects observed in Factor 1 between year of application and sex ( $F(1, 2073) = 4.019; p = .045; \eta^2 = .002$ ), and between year of application and previous academic-training in IPVAW ( $F(1, 2073) = 5.606; p = .018; \eta^2 = .003$ ). As may be seen in Figure 3, the difference between the scores of men and women is larger in 2006 ( $F(1, 2073) = 94.673; p < .001; \eta^2 = .073$ ) than in 2018 ( $F(1, 2073) = 42.008; p < .001; \eta^2 = .052$ ), and the previous academic-training in IPVAW produces differences in 2006 ( $F(1, 2073) = 10.451; p = .001; \eta^2 = .011$ ), but not in 2018 ( $F(1, 2073) = 0.040; p = .841; \eta^2 = .004$ ).

Discussion

The first step of this study was to test different factorial model structures for the IPDMV, in order to select the best model for further comparisons. To this end, we carried out different analyses, applying previous models (Echeburúa et al., 2016; Ferrer et al., 2006; Loinaz, 2014a; Ubillos et al., 2017.) These analyses lead us to propose a new factorial structure based on the Ferrer et al. (2006) model and very similar to it in its structure and theoretical significance. These results are especially relevant if we take into account the fact that the Ferrer et al. (2006) factorial model has been used with batterers from 2010 until the present day, and it

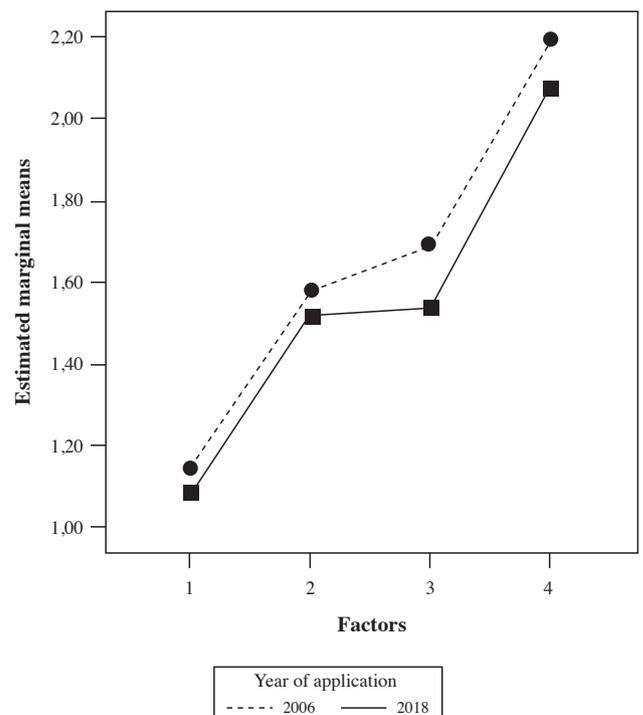
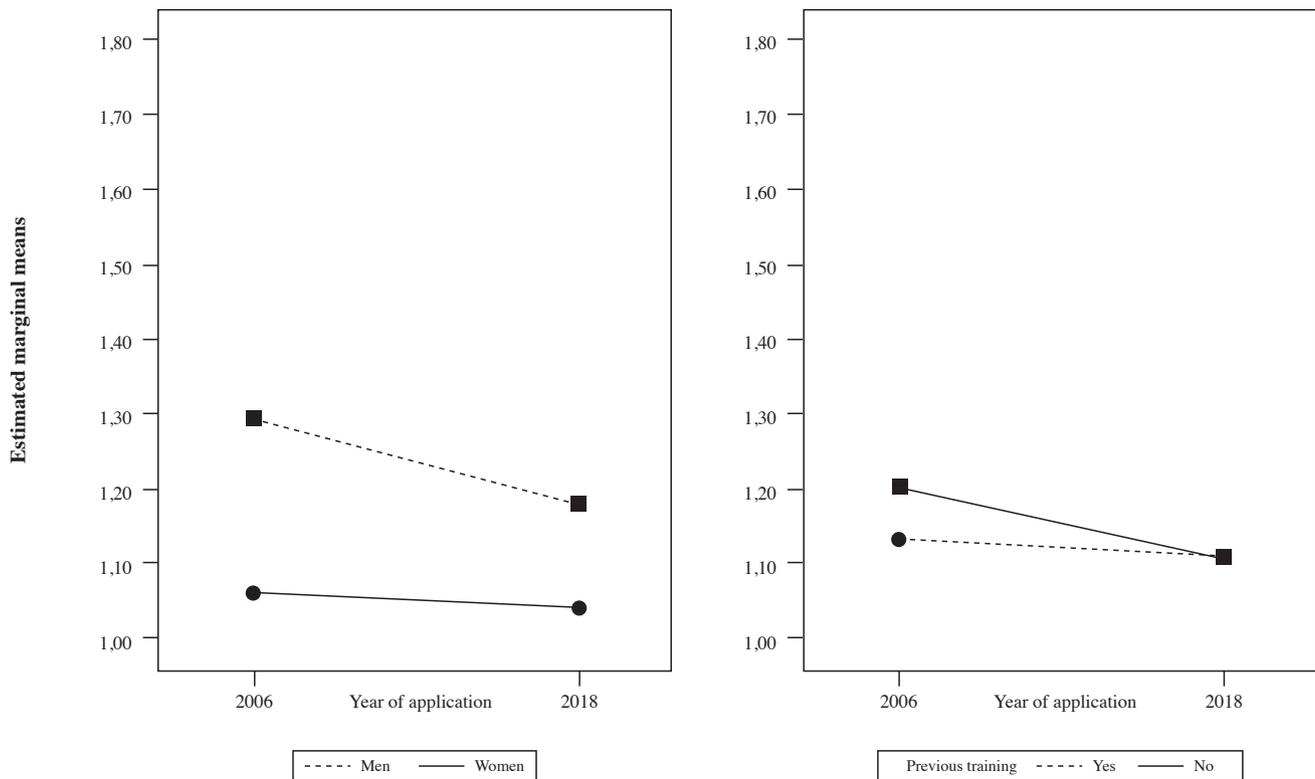


Figure 2. Factor scores 2006 and 2018



**Figure 3.** Statistically significant interaction effects in Factor 1 (Covariate: Age = 22.31)

has also been used in different studies with the general population. Consequently, it is encouraging that this adaptation of one of the most commonly used models (see Table 2) continues to be the best option for using this questionnaire.

But the IPDMV and the factorial structure obtained are not without limitations. In this regard, we can mention its well-known sensitiveness to social desirability, as with other explicit measures of beliefs and attitudes (e.g., Ferrer et al., 2006; Ubillos et al., 2017), and its low sensitivity to therapeutic change and capacity to discriminate between samples (Loinaz, 2014a). In fact, the internal consistency of some of the IPDMV factors is too low to be clinically useful, and is instead a better tool for basic research aims.

Beyond the concerns related to the structure and internal inconsistency of this instrument, the main objective of our paper was to compare the results obtained by applying IPDMV to two temporal moments, and account for each respondent's sex and previous academic-training. The results obtained show statistically significant differences. Thus, as demonstrated in previous studies (Ferrer et al., 2006; Flood & Pease, 2009; Gracia et al., 2015; Ubillos et al., 2017), women and people with prior IPVAV academic-training show fewer beliefs and distorted thoughts about women and violence. Moreover, it is interesting to note that the scores obtained in all the factors evaluated fell between the two temporal moments analysed (2006 and 2018). Therefore, it can be assumed that the awareness-raising measures adopted in Spain

(e.g., legislative changes, prevention campaigns, or academic-training programs) had an effect on previously held beliefs. As the results of the interaction show (see Figure 3), this decline has occurred especially among men in terms of their beliefs regarding the inferiority of women.

Although these results may be encouraging and point to the positive effect of the awareness-raising and prevention measures being implemented, it is important to remember that this study is not without limitations. Among them would be the fact that the sample is made up solely of university students, or that the measure used may be influenced by social desirability (Delgado et al., 2015; Ferrer et al., 2006; García-Vega, Rico, & Fernández, 2017; Loinaz, 2014a; Ubillos et al., 2017). Therefore, further research is needed to generalize our results to an increasingly large and heterogeneous population in order to understand the scope and evolution of these beliefs and thoughts about IPVAV, in parallel to recent developments in measurement invariance when the number of groups is large (e.g., Byrne & van de Vijver, 2017).

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## References

- Anderson, J. C., & Gerbig, D. W. (1984). The effect of sampling error on convergence, improper solutions, and goodness-of-fit indices for maximum likelihood confirmatory analysis. *Psychometrika*, *49*, 155-173. doi:10.1007/BF02294170
- Arnosó, A., Ibabe, I., Arnosó, M., & Elgorriaga, E. (2017). El sexismo como predictor de la violencia de pareja en un contexto multicultural [Sexism as predictor of intimate partner violence in a multicultural context]. *Anuario de Psicología Jurídica*, *27*, 9-20. doi:10.1016/j.apj.2017.02.001
- Arrigoni, F., Jiménez, J. L., Navarro, J. I., & Mendoza, P. (2013). Aplicación de un programa terapéutico en hombres violentos con la pareja [An applied therapeutic program for men convicted of gender violence]. *Anuario de Psicología Jurídica*, *23*, 3-9. doi:10.5093/aj2013a2
- Boira, S., & Jodrá, P. (2013). Tipología de hombres condenados por violencia de género en un contexto de intervención psicológica en la comunidad [Typology of men convicted of intimate partner violence in psychological treatment in a community setting]. *Revista Latinoamericana de Psicología*, *45*(2), 289-303. doi:10.14349/rfp.v45i2.806
- Boira, S., & Tomás, L. (2011). Características psicológicas y motivación para el cambio en hombres condenados por violencia contra la pareja [Psychological characteristics and motivation for change in men convicted of intimate partner violence]. *International Journal of Psychological Research*, *4*(2), 48-56.
- Boira, S., López, Y., Tomás, L., & Gaspar, A. R. (2013). Intervención psicológica en la comunidad en hombres condenados por violencia de género [Efficacy of different treatment modalities in men convicted of intimate partner violence]. *Anales de Psicología*, *29*(1), 19-28. doi:10.6018/analesps.29.1.130631
- Byrne, B. M. (2008). Testing for multigroup equivalence of a measuring instrument: A walk through the process. *Psychothema*, *20*(4), 872-882.
- Byrne, B. M. (2009). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). New York: Routledge.
- Byrne, B. M., & van de Vijver, F. J. R. (2017). The maximum likelihood alignment approach to testing for approximate measurement invariance: A paradigmatic cross-cultural application. *Psychothema*, *29*(4), 539-551. doi:10.7334/psicothema2017.178
- Capaldi, D. M., Knoble, N. B., Shortt, J. W., & Kim, H. K. (2012). A systematic review of risk factors for intimate partner violence. *Partner Abuse*, *3*(2), 231-280. doi:10.1891/1946-6560.3.2.231
- Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation*, *10*(7), 1-9.
- Delgado, C., Estrada, B., & López, J. A. (2015). Gender and cultural effects on perception of psychological violence in the partner. *Psychothema*, *27*(4), 381-387. doi:10.7334/psicothema2015.54
- Devries, K. M., Mak, J. Y. T., García-Moreno, C., Petzold, M., Child, J. C., Felder, G., Lim, S., Bacchus, L. J., Engell, R. E., Rosenfeld, L., Pallito, C., Vos, T., Abrahams, N., & Watts, C. H. (2013). The global prevalence of intimate partner violence against women. *Science*, *340*, 1527-1528. doi:10.1126/science.1240937
- Echeburúa, E., & Fernández-Montalvo, J. (1997). Tratamiento cognitivo-conductual de hombres violentos en el hogar: un estudio piloto [Cognitive-behavioral treatment of violent men in the home: A pilot study]. *Análisis y Modificación de Conducta*, *23*(89), 355-384.
- Echeburúa, E., & Fernández-Montalvo, J. (1998). Hombres maltratadores. Aspectos teóricos [Batterer men. Theoretical aspects]. In E. Echeburúa & P. Corral (Eds.), *Manual de violencia familiar* (pp. 73-90). Madrid: Siglo XXI.
- Echeburúa, E., & Fernández-Montalvo, J. (2009). Evaluación de un programa de tratamiento en prisión de hombres condenados por violencia grave contra la pareja [Evaluation of a prison treatment programme for men convicted of serious violence against partners]. *International Journal of Clinical and Health Psychology*, *9*(1), 5-20.
- Echeburúa, E., Amor, P. J., Sarasua, B., Zubizarreta, I., & Holgado-Tello, F. P. (2016). Inventario de Pensamientos Distorsionados sobre la Mujer y el Uso de la Violencia Revisado (IPDMUV-R): propiedades psicométricas [Inventory of Distorted Thoughts about Women and the Use of Violence-Revised (IPDMUV-R): Psychometric properties]. *Anales de Psicología*, *32*(3), 837-846. doi:10.6018/analesps.32.3.231901
- Echeburúa, E., Fernández-Montalvo, J., & Amor, P. J. (2006). Psychological treatment of men convicted of gender violence. A pilot study in Spanish prisons. *International Journal of Offender Therapy and Comparative Criminology*, *50*(1), 57-70. doi:10.1177/0306624X05277662
- Echeburúa, E., Sarasua, B., Zubizarreta, I., & de Corral, P. (2009). Evaluación de la eficacia de un tratamiento cognitivo-conductual para hombres violentos contra la pareja en un marco comunitario: una experiencia de 10 años (1997-2007) [Evaluation of the efficacy of a cognitive-behavioral treatment for men violent against their partner in a community setting: An experience of 10 years (1997-2007)]. *International Journal of Clinical and Health Psychology*, *9*(2), 199-217.
- Fernández-Montalvo, J., & Echeburúa, E. (2005). Hombres condenados por violencia grave contra la pareja: un estudio psicopatológico [Men convicted of serious violence against partners: A psychopathological study]. *Análisis y Modificación de Conducta*, *31*(138), 451-475.
- Fernández-Montalvo, J., Echeburúa, J. A., Martínez, M., & Azcárate, J. M. (2012). Batterer men in prison and in court-referred treatment programmes: What is the difference? *Spanish Journal of Psychology*, *15*, 315-322. doi:10.5209/rev\_2012.v15.n1.37338
- Fernández-Montalvo, J., Echeburúa, J. A., Martínez, M., & Azcárate, J. M. (2011). Violencia de género e inmigración: perfil diferencial de hombres maltratadores nacionales e inmigrantes [Gender violence and immigration: Differential profile of national and immigrant batterers]. *Psicología Conductual/Behavioral Psychology*, *19*(2), 439-452.
- Ferrer, V. A., & Bosch, E. (2014). Gender violence as a social problem in Spain: Attitudes and acceptability. *Sex Roles*, *70*(11-12), 506-521. doi:10.1007/s11199-013-0322-z
- Ferrer, V. A., Bosch, E., & Ramis, C. (2008). La formación de los/as profesionales de la salud para afrontar la violencia contra las mujeres en la pareja [How to train health professionals to deal with intimate partner violence against women]. *Clínica y Salud*, *19*(1), 59-81.
- Ferrer, V. A., Bosch, E., Ramis, C., Torres, G., & Navarro, C. (2006). La violencia contra las mujeres en la pareja: creencias y actitudes en estudiantes universitarios [Violence against women in relationships: Beliefs and attitudes in university students]. *Psychothema*, *18*(3), 359-366.
- Flood, M., & Pease, B. (2009). Factors influencing attitudes to violence against women. *Trauma, Violence & Abuse*, *10*, 125-142. doi:10.1177/1524838009334131
- Forero, C. G., Maydeu, A., & Gallardo, D. (2009). Factor analysis with ordinal indicators: A Monte Carlo study comparing DWLS and ULS estimation. *Structural Equation Modeling A Multidisciplinary Journal*, *14*(4), 625-641. doi:10.1080/10705510903203573
- FRA (European Union Agency for Fundamental Rights) (2015). *Violence against women: An EU-wide survey. Main results*. Luxembourg: Publications Office of the European Union.
- García, J. G., Sánchez-Meca, J., & Godoy, C. (2013). Distorsiones cognitivas respecto a la violencia de género en presos [Cognitive distortions regarding gender-based violence in prisoners]. In F. Expósito, I. Valor-Segura, M. Vilarinho & A. Palmer (Eds.), *Psicología jurídica aplicada a los problemas sociales* (pp. 89-96). Santiago de Compostela: Sociedad Española de Psicología Jurídica y Forense.
- García-Vega, E., Rico, R., & Fernández, P. (2017). Sex, gender roles and sexual attitudes in university students. *Psychothema*, *29*(2), 178-183. doi:10.7334/psicothema2015.338
- Gracia, E., & Lila, M. (2015). *Attitudes towards violence against women in the EU*. Luxembourg: Publications Office of the European Union.
- Gracia, E., & Tomás, J. M. (2014). Correlates of victim-blaming attitudes regarding partner violence against women among the Spanish general population. *Violence Against Women*, *20*(1) 26-41. doi:10.1177/1077801213520577
- Gracia, E., García, F., & Lila, M. (2014). Male police officers' law enforcement preferences in cases of intimate partner violence versus non-intimate interpersonal violence: Do sexist attitudes and empathy matter? *Criminal Justice and Behavior*, *41*(10), 1195-1213. doi:10.1177/0093854814541655

- Gracia, E., Rodríguez, C. M., & Lila, M. (2015). Preliminary evaluation of an analogue procedure to assess acceptability of intimate partner violence against women: The Partner Violence Acceptability Movie Task. *Frontiers in Psychology, 6*, 1567. doi:10.3389/fpsyg.2015.01567
- Guerrero, M., Moreno, J. M., Guerrero, E., & Cruz, B. (2016). Pensamientos distorsionados y atribución de responsabilidad en condenados por violencia de género [Distorted thoughts and attribution of responsibility among convicts for gender violence]. *Behavioral Psychology/Psicología Conductual, 24*(2), 207-220.
- Heise, L. L. (1998). Violence against women: An integrated, ecological framework. *Violence Against Women, 4*(3), 262-90. doi:10.1177/1077801298004003002
- Heise, L. L., & Kotsadam, A. (2015). Cross-national and multilevel correlates of partner violence: An analysis of data from population-based surveys. *Lancet Global Health, 3*, e332-340. doi:10.1016/S2214-109X(15)00013-3
- Hu, L., & Bentler, P. M. (1999). Cut-off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55. doi:10.1080/10705519909540118
- Jewkes, R., Flood, M., & Lang, J. (2015). From work with men and boys to changes of social norms and reduction of inequities in gender relations: A conceptual shift in prevention of violence against women and girls. *The Lancet, 385*(9977), 1580-1589. doi:10.1016/S0140-6736(14)61683-4
- Llor, B., García, J. J., Ruiz, J. A., & Godoy, C. (2016). Profile of partner aggressors as a function of risk of recidivism. *International Journal of Clinical & Health Psychology, 16*(1), 39-46. doi:10.1016/j.ijchp.2015.05.004
- Loinaz, I. (2014a). Distorsiones cognitivas en agresores de pareja: análisis de una herramienta de evaluación [Cognitive distortions among partner-violent men: Analyzing an assessment tool]. *Terapia Psicológica, 32*(1), 5-17. doi:10.4067/S0718-48082014000100001
- Loinaz, I. (2014b). Typologies, risk and recidivism in partner-violent men with the B-SAFER: A pilot study. *Psychology, Crime & Law, 20*(2), 183-198. doi:10.1080/1068316X.2013.770854
- Loinaz, I., Echeburúa, E., & Torrubia, R. (2010). Tipología de agresores contra la pareja en prisión [Typology of aggressors against the intimate partner in prison]. *Psicothema, 22*(1), 106-111.
- Loinaz, I., Ortiz, M., Sánchez, L. M., & Ferragut, M. (2011). Clasificación multiaxial de agresores de pareja en centros penitenciarios [Multi-axial classification of partner aggressors in prisons]. *International Journal of Clinical & Health Psychology, 11*(2), 249-268.
- Martínez, M., & Pérez, M. (2009). Evaluación de un programa de tratamiento con maltratadores encarcelados [Evaluation of a treatment program with incarcerated batterers]. *Boletín Criminológico, 115*, 1-4.
- Mc Donald, R. P. (1982). Linear versus nonlinear models in item response theory. *Applied Psychological Measurement, 6*, 379-396. doi:10.1177/014662168200600402
- Morata, M. A., Holgado, F. P., Barbero, I., & Méndez, G. (2015). Análisis factorial confirmatorio. Recomendaciones sobre mínimos cuadrados no ponderados en función del error tipo I, de ji cuadrado y RMSEA [Confirmatory factor analysis. Recommendations for unweighted least squares method related to Chi-Square and RMSEA]. *Acción Psicológica, 12*(1), 79-90. doi:10.5944/ap.12.1.14362
- Muliak, S. A., James, L. R., Van Alstine, J., Bennett, N., Lind, S., & Stilwell, C. D. (1989). Evaluation of goodness-of-fit indices for structural equation models. *Psychological Bulletin, 5*(3), 430-455.
- Puente, A., Ubillos, S., Echeburúa, E., & Paez, D. (2016). Risk factors associated with the violence against women in couples: A review of meta-analysis and recent studies. *Anales de Psicología, 32*(1), 295-306. doi:10.6018/analesps.32.1.189161
- Rodríguez-Espartal, N., & López-Zafra, E. (2013). Programa emocional para presos por violencia de género (PREMOVIGE): eficacia en variables cognitivas y conductuales [Emotional program for inmates imprisoned for gender violence (PREMOVIGE): Effectiveness in cognitive and behavioral variables]. *Psychosocial Intervention, 22*(2), 115-124. doi:10.5093/in2013a14
- Ruiz, J. A., García, J. L., Llor, B., & Godoy, C. (2015). Risk factors for intimate partner violence in prison inmates. *The European Journal of Psychology Applied to Legal Context, 7*(1), 41-49. doi:10.1016/j.ejpal.2014.11.003
- Ruiz, S., & Expósito, F. (2008a). Intervención específica con internos condenados por delito de violencia de género [Specific intervention with inmates convicted of gender-based violence]. In F. J. Rodríguez, C. Bringas, F. Fariña, R. Arce & A. Bernardo (Eds.), *Psicología jurídica. Entorno judicial y delincuencia* (pp. 389-397). Oviedo: Ediciones de la Universidad de Oviedo.
- Ruiz, S., & Expósito, F. (2008b). Intervención con hombres en suspensión condicional de condena por violencia de género [Intervention with paroled men convicted for couple violence]. *Anuario de Psicología Jurídica, 18*, 81-89.
- Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online, 8*(2), 23-74.
- Stockl, H., Devries, K., Rotstein, A., Abrahams, N., Campbell, J., Watts, C., & García-Moreno, C. (2013). The global prevalence of intimate partner homicide: A systematic review. *The Lancet, 382*, 859-865. doi:10.1016/S0140-6736(13)61030-2
- Suárez-Álvarez, J., Pedrosa, I., Lozano, L. M., García-Cueto, E., Cuesta, M., & Muñiz, J. (2018). Using reversed items in Likert scales: A questionable practice. *Psicothema, 30*(2), 149-158. doi:10.7334/psicothema2018.33
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics* (5th Ed.). Boston: Pearson.
- Torres, E., & López-Zafra, E. (2010). Diferencias en cultura del honor, inteligencia emocional y pensamientos distorsionados sobre las mujeres en reclusos y no reclusos [Differences in culture of honor, emotional intelligence and distorted thoughts about women in inmates and non-prisoners]. *Boletín de Psicología, 100*, 71-88.
- Trigo, M. E., & Martínez, R. J. (2016). Generalized ETA square for multiple comparisons on between-groups designs. *Psicothema, 28*(3), 340-345. doi:10.7334/psicothema2015.124
- Ubillos, S., Goiburu, E., Puente, A., Pizarro, J. P., & Echeburúa, E. (2017). Assessment of distorted thoughts about women and violence of Basque-speaking secondary school students. *Revista de Psicodidáctica, 22*(1), 1-8. doi:10.1387/RevPsicodidact.16124
- Villegas, G., González, N., Sánchez-García, A. B., Sánchez, M., & Galindo-Villardón, M. P. (2018). Seven methods to determine the dimensionality of tests: Application to the General Self-Efficacy Scale in twenty-six countries. *Psicothema, 30*(4), 442-448. doi:10.7334/psicothema2018.113
- Wang, L. (2016). Factors influencing attitude toward intimate partner violence. *Aggression and Violent Behavior, 29*, 72-78. doi:10.1016/j.avb.2016.06.005
- WHO (World Health Organization) (2012). *Understanding and addressing violence against women: Overview* (WHO/RHR/12.35). Retrieved from: [http://apps.who.int/iris/bitstream/handle/10665/77433/WHO\\_RHR\\_12.35\\_eng.pdf?sequence=1](http://apps.who.int/iris/bitstream/handle/10665/77433/WHO_RHR_12.35_eng.pdf?sequence=1)
- World Health Organization/London School of Hygiene and Tropical Medicine (2010). *Preventing intimate partner and sexual violence against women: Taking action and generating evidence*. Geneva: World Health Organization.