

Treatment efficacy on the cognitive competence of convicted intimate partner violence offenders

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Título: Eficacia del tratamiento en la competencia cognitiva en sentenciados por violencia de género.

Resumen: La evaluación de la eficacia del tratamiento de maltratadores en los Registros Oficiales o los Informes de las parejas no es válida, al tiempo que las intervenciones eficaces se dirigen a dotarlos de competencia cognitiva y conductual. Por ello diseñamos un estudio de campo para medir los efectos de la intervención en la competencia cognitiva. Un total de 100 condenados por violencia de género que completaron un programa penitenciario de tratamiento en la comunidad fueron evaluados pre- y post-tratamiento en la competencia cognitiva, esto es, auto-concepto, inteligencia emocional, atribución de responsabilidad, destrezas cognitivas para el afrontamiento de eventos estresantes en pareja, expresión y control de la ira, y creencias irracionales y pensamientos distorsionados. Los resultados mostraron un efecto significativo del tratamiento en la adquisición de las destrezas cognitivas. Sucintamente, el tratamiento potenció el auto-concepto general el 18.2% y las dimensiones internas del auto-concepto auto-satisfacción el 33.5% y comportamiento el 25.6%; y la claridad para discriminar las emociones el 31.8%. Además, el tratamiento incrementó la asunción interna de responsabilidad el 31.8%; el control de la ira el 19.1%; y el uso de estrategias adaptativas para el afrontamiento de eventos estresantes en pareja entre el 48.9% y el 61.3%. Finalmente, el tratamiento redujo el uso de estrategias desadaptativas entre el 25.6% y el 35.1%; y las creencias irracionales y pensamientos distorsionados relacionados con el uso de la violencia, rol de género y dependencia emocional, en el 78.2%, 48.2% y 63.6%, respectivamente. No obstante, no todos los maltratadores se beneficiaron del tratamiento.

Palabras clave: Maltratador; Intervención en la comunidad; Competencia cognitiva; Evaluación de programas; Destrezas cognitivas.

Abstract: The evaluation of the efficacy of treatment of batterers in Official or Couple Records is not valid, whilst the efficient interventions are focused on the empowerment of cognitive and behavioural competence. A field study for measuring the effects of the treatment on the cognitive competence was designed. A total of 100 batterers who had completed a community penitentiary intervention programme, were assessed pre- and post-treatment in cognitive competence i.e., self-concept, emotional intelligence, attribution of responsibility, cognitive skills to cope intimate-partner-related stressful events, expression and control of anger, and irrational beliefs and distorted thoughts. The results showed a significant effect of the treatment in the acquisition of cognitive competence skills. Succinctly, treatment empowered the general self-concept in 18.2%, and the internal dimensions of self-concept self-satisfaction in 33.5% and behaviour in 25.6%; and clarity to discriminate among moods in 31.8%. Moreover, treatment increased the assumption of internal responsibility in 31.8%; anger control in 19.1%; and the use of adaptive strategies to cope intimate-partner-related stressful events between 48.9% and 61.3%. Finally, treatment involved a fall in the use of maladaptive strategies to cope intimate-partner-related stressful events between 25.6% and 35.1%; and in the irrational beliefs and distorted thoughts related with the use of violence, in 78.2%, 48.2% y 63.6%, for use of violence, gender roles and emotional dependence, respectively. Nonetheless, not all the batterers benefited from treatment.

Keywords: Batterer; Community intervention; Cognitive competence; Programme evaluation; Cognitive skills.

Introduction

Since the 1974 doctrine heralding *Nothing works* in the rehabilitation of criminal offenders in Martinson's meta-analytical review that found no positive intervention effects, substantial progress has been made in the treatment of criminal offenders. These have been underpinned by models of additive and accumulative deficits, needs or weakness aimed at identifying specific deficiencies of each delinquent to design a bespoke treatment program targeting the rehabilitation of the criminal offender's deficits, needs or weaknesses (Arce, Arias, Novo, & Fariña, 2020; Carbajosa, Catalá-Miñaña, Lila, & Gracia, 2017; Gannon, Olver, Mallion, & James, 2019; Redondo, Sánchez-Meca, & Garrido, 2002). Psychosocial treatment has been the primary intervention type, particularly cognitive-behavioural treatment programs, which has proven to be the most effective intervention program for general delinquency (Gannon et al., 2019; Redondo et al.,

2002), and for specific crime typologies such as sexual (Schmucker & Lösel, 2015), and IPV offenders (Arce et al., 2020). Interventions are grounded on a multimodal intervention models focusing on cognition and behaviour that can be modified or eradicated (dynamic factors). Thus, successful interventions should target cognitive and behavioural competence to address specific needs of each offender (Romero-Martínez, Lila, Martínez, Pedrón-Rico, & Moya-Albiol, 2016). These needs have been classified by Bonta and Andrews (2017) according to criminogenic (e.g., antisocial cognitions), having a direct incidence on recidivism, and non-criminogenic needs (e.g., self-esteem), having no direct incidence on the recidivism rate, only the former being the target of intervention programs. Nevertheless, claims that non-criminogenic needs are related to recidivism have been substantiated, and a deficiency in these needs is characteristic of the delinquent population (Basanta, Fariña, & Arce 2018; Lila, Martín-Fernández, Gracia, López-Ossorio, & González, 2019; Maruna, 2004). Thus, deficiencies in non-criminogenic needs act as facilitators of recidivism, and should be targeted as protective factors (Basanta et al., 2018; Romero-Martínez, Lila, Gracia, & Moya-Albiol, 2019), ensuring interventions

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address the specific needs of each offender (Lila, Gracia, & Catalá-Miñana, 2018).

Convicted IPV offenders are among the prison population with the worst prognosis in rehabilitation and social reintegration. These offenders are driven by internal, stable, and global cognitions, known as toxic cognitions that are highly refractory to intervention (Maruna, 2004). Thus, in terms of recidivism, treatment of batterers is among the least efficacy (Arce et al., 2020; Arias, Arce, & Vilariño, 2013; Babcock, Green, & Robie, 2004) as IPV offenders are not susceptible to spontaneous retraction (Martín, Padrón, & Redondo, 2019). Moreover, the efficacy of interventions according to Official Records (ORs) ranged from 5% (Babcock et al., 2004) to 20% (Arias et al., 2013), whereas as in Couple Reports (CRs) it was null (Arce et al., 2020). The efficacy of interventions on recidivism measured in ORs was invalid as it artificially increased the efficacy of the interventions. Furthermore, measures of efficacy derived from CRs are unreliable and invalid as not all couples cooperate with evaluations, which are contaminated by the tendency of current couples to conceal or trivialize victimization (Lila, Oliver, Catalá-Miñana, Galiana, & Gracia, 2014), as do IPV offenders (Weber, Taylor, Cantos, Amado, & O'Leary, 2019). Regardless, the fundamental aim of treatment is to address the needs of IPV offenders by intervening in their cognition and behaviour. Thus, cognition should be the target of the interventions.

The most recurrent cognitive needs in delinquency in general, and IPV in particular are as follows: poor coping skills in dealing with intimate-partner-related stressful events (Arce & Fariña, 2010); refusing to accept responsibility for IPV (Martín-Fernández et al., 2018); low self-concept, mainly cognitive that aggravates vulnerability (Arce, Fariña, & Novo, 2014); cognitive deficiencies in managing and regulating emotions in a mutual relationship (Fernández-Suárez, Pérez, Herrero, Juarros-Basterretxea, & Rodríguez-Díaz, 2018); anger management (Loinaz, Marzabal, & Andrés-Pueyo, 2018), and cognitive distortions regarding gender (Brazão, Rijo, Salvador, & Pinto-Gouveia, 2017; Ramiro-Sánchez, Ramiro, Bermúdez, & Buela-Casal, 2018).

Bearing this context in mind, a field study was performed to assess the effects of community IPV offender rehabilitation programs designed to identify and address the dynamic cognitive needs of IPV offenders (cognitions), that are modifiable, and the primary purpose of treatment.

Method

Participants

A total of 100 IPV first-offenders serving community orders, age range 23 to 66 years ($M = 38.83$, $SD = 9.97$), participated in the study. The nationality of most offenders was Spanish (94%). As for academic status, 70% had primary, 24% secondary, and 6% university education. In terms of occupation, 70% were employed, 19% unemployed, and the

remainder in other contingencies such as retirement, sick leave, etc. All of the participants completed the Programa Galicia de Reeducción para Maltratadores de Género [Galician Programme for the Treatment and Re-Education of Convicted Gender Aggressors] (Arce & Fariña, 2006, 2010; Arce, Fariña, Vázquez, Novo, & Seijo, 2015a, 2015b) in compliance with their community sentence.

Procedure and design

The IPV offenders were remitted by the courts to the Galicia Gender Offenders Reeduction Program in compliance with community sentences. Prior to intervention, all IPV offenders were informed of the treatment and signed their voluntary participation. IPV offenders refusing to participate in the 2 to 5-year program were remitted back to the courts to be incarcerated (under 2 years). After signing the pledge to participate, individual needs analysis was undertaken (pre-intervention evaluation), to design an intervention program adjusted to the specific needs of each participant, and to follow-up implementation by reevaluating the effects of the intervention (post-intervention evaluation). The instruments were applied by experienced and trained psychologists of the program in individual sessions.

The Galician Re-Education Programme for Male Intimate-Partner Violent Offenders

The Galician Re-Education Programme for Male Intimate-Partner Violence Offenders (Arce & Fariña, 2006, 2010), a community intervention program, based on a multimodal approach i.e., targeted to cognitions and behaviours, assumes batterers have cognitive needs which should be the target of rehabilitation. Complementarily, the intervention programme is fitted to the specific needs of each batterer. The most distinctive feature of the rehabilitation programme was the control of programme compliance and the offender's progress. The contents of the programme were in accordance with the current Spanish legislation i.e., the programme begins with offenders being informed of the regulations and their obligations; the offenders acceptance and signing of the rehabilitation programme; assessment of the offender's needs and deficits in order to adjust programme implementation; followed by the admission of the facts and accepting responsibility, which is the first step towards rehabilitation of all offenders. Moreover, the programme included a gender equality perspective. The remaining contents were adjusted and sequenced to the specific needs of each batterer (for a full review of contents see Arce et al., 2015a, 2015b). Each phase of the intervention programme was administered in two sessions: one-to-one sessions for cognitive interventions, and group sessions for rehearsing non-violent behaviour. Progress of a session to the next was only after the acquisition of the skills was verified in all the group members.

Measurement instruments

Cognitive self-concept was evaluated using the Tennessee Self-Concept Scale—Second Edition [TSCS-2] (Fitts & Warren 1996) consisting of 90 items that are responded on a 5-point Likert-type scale. A general measure of the self-concept and three internal (i.e., cognitive) measures (Identity, Self-Satisfaction and Behaviour) were taken. A *back translation* procedure was followed to translate the scale to Spanish that was reliable for the sample of offenders (Arce et al., 2014) in the General Self-Concept ($\alpha = .87$), Identity ($\alpha = .81$), Self-Satisfaction ($\alpha = .79$) and Behaviour ($\alpha = .82$).

The Spanish modified version of the Trait Meta-Mood Scale [TMMS] (Fernández-Berrocal, Extremera, & Ramos, 2004) was administered to evaluate emotional intelligence. The scale measures three dimensions underpinning emotional intelligence: Attention (perceived ability to attend to moods and emotions), Clarity (perceived ability to discriminate among moods), and Repair (perceived ability to regulate moods). Test-retest (4 weeks) correlation obtained was of .60 for Attention, .70 for Clarity, and .83 for Repair.

As for measuring the attributional styles, the Spanish translation of the Rotter Locus of Management Scale was employed (Ferrando, Demestre, Anguiano-Carrasco, & Chico, 2008). High scores ascribe attribution to an external locus of control (e.g., destiny, luck) or beyond their control, whereas low scores are indicative of internal locus of control where the expected outcomes are product of their own behaviour and personal characteristics. The adapted version is of proven reliability ($\alpha = .72$) and validity.

As for the measure of coping skills, the Spanish adaptation of the Coping Responses Inventory Adult Form [CRI-A] was applied (Kirchner, Forns, Muñoz, & Pereda, 2008). Respondents were required to answer 48 items on how they coped with intimate-partner-related stressful events on a 4-point scale (from *not at all* to *fairly often*). The instrument assesses eight different types of coping responses to stressful life circumstances: Logical analysis (for males: $\alpha = .55$), Positive reappraisal ($\alpha = .64$), Seeking guidance and support ($\alpha = .52$), Problem solving ($\alpha = .70$), Cognitive avoidance ($\alpha = .58$), Acceptance or resignation ($\alpha = .61$), Seeking alternative rewards ($\alpha = .59$), and Emotional discharge ($\alpha = .60$).

Anger management was assessed with the Anger Expression Index (AEI) of the Spanish adaptation of the Staxi-2 (Miguel-Tobal, Casado, Cano-Vindel, & Spielberger, 2001). This index is an overall measure of total anger expression: high scores indicate expressions of anger (aggressive thoughts, language, and behaviour), whilst low scores indicate anger management. The stability (test-retest) of this index has been reported to be .70 with an internal consistency (Cronbach's alpha) of .64.

Gender related cognitive distortions were evaluated with the Cuestionario de Creencias Irracionales y Pensamientos Distorsionados [Irrational Beliefs and Distorted Thoughts Questionnaire] (Arce & Fariña, 2005). The questionnaire, that is answered on a five-point Likert scale (from *totally disa-*

gree to *totally agree*), is structured in three dimensions: 1) use of violence ($\alpha = .86$); 2) gender roles (i.e., the role of women in the couple and in other areas of life) ($\alpha = .82$); and 3) emotional dependence (dominant emotional dependence) ($\alpha = .74$). The global reliability for the scale was .92.

Data analysis

A quasi-experimental design was used to compare the means of repeated-measures t-tests, ANOVAS, and MANOVAS for two conditions (pre-treatment evaluation vs. post-treatment evaluation). In the multivariate F , if the assumption of sphericity was violated, the Greenhouse-Geisser correction was used as it is robust to the violation of this assumption (no contingency occurred in any of the comparisons). As the effect sizes of the multivariate tests were estimated as η_p^2 or d , and the magnitude was interpreted in terms of the probability of superiority of the effect size in relation to all possible (PS_{ES}; Monteiro, Vázquez, Seijo, & Arce, 2018). The quantification of treatment effects was obtained using the BESD (Redondo, Fariña, Seijo, Novo, & Arce, 2019).

The analysis of the differences in means was insufficient and had to be complemented with case studies. Thus, to determine the minimum treatment effects, the lower limit 90% of the distribution of the sample was calculated, so that 95% past the limit (clinical significance); and from 1-U3 to calculate the percentage of post-treatment offenders failing to reach the mean of the pre-treatment distribution (Redondo et al., 2019).

Ethical Considerations

The data was stored and processed in accordance with the Spanish Data Protection Law (Ley Orgánica 3/2018, de 5 de diciembre, de Protección de Datos Personales y Garantía de los Derechos Digitales) and guaranteeing the rights of convicted provided by the Spanish General Penitentiary Law (Ley Orgánica 1/1979, de 26 de septiembre, General Penitenciaria).

Results

Self-Concept

The results showed a significant improvement, $t(99) = 3.61$, $p < .001$, in General Self-Concept for the treatment factor ($M_{pre} = 358.95$ vs. $M_{post} = 372.13$). The effect size, $d = 0.37$, of treatment was above 20.5% of all possible that reinforce self-concept (PS_{SE} = .205). The development of Self-Concept was quantified as a result of the intervention in 18.2% ($r = .182$). However, 35.6% of treated offenders failed to reach the average pre-treatment distribution (1-U3 = .356) and the lower limit of the distribution of 302.19 (LL 90% CI = 302.19). In other words, almost 36% of treated offenders

failed to sufficiently benefit from the intervention, and there was considerable margin for improvement.

Moreover, cognitive components of self-concept were mediated by the treatment factor (pre- vs. post-treatment), $F(3, 97) = 4.30, p < .01, 1-\beta = .853$, explaining 11.7%, $\eta_p^2 = .117$, of the variance, an effect size higher than 69.5% of all possible ($PS_{ES} = .695$). The univariate effects (see Table 1) showed a significant improvement in Self-Satisfaction and Behaviour. This indicated a recovery of Self-Satisfaction of

33.5% ($r = .335$), and Behaviour of 25.6% ($r = .256$). However, 23.9% (1-U3 = .239) and 29.8% (1-U3 = .298) of participants failed to reach the average pre-treatment distribution in self-satisfaction behaviour, respectively; and the lower limit of the distribution was 94.17 (LL 90% CI = 94.17), and 95.95 (LL 90% CI = 95.95). In other words, the intervention was not sufficiently beneficial for around 24% to 30% of those treated, while for most the improvement was significant and substantial.

Table 1. Univariate Effects on Self-Concept for the Treatment Factor. Within-subjects Effects.

Variable	<i>F</i>	<i>p</i>	<i>d</i>	1- β	M_{pre}	M_{post}	1-U3	LL 90% CI
Identity	3.13	.080	0.36	.418	124.40	126.47	-----	-----
Self-Satisfaction	12.50	.001	0.71	.938	115.84	121.44	.239	94.17
Behavior	7.04	.009	0.53	.748	118.75	122.67	.298	95.95

Note. *df*(1, 99); M_{pre} : pre-intervention mean; M_{post} : post-intervention mean; -----non significant effect; LL 90% CI: Lower Limit of the 90% Confidence Interval.

Emotional intelligence

The results of the MANOVA showed a significant multivariate effect for the treatment factor (pre- vs. post-treatment) in emotional intelligence, $F(3, 97) = 4.35, p < .01, 1-\beta = .857$, with treatment explaining 11.8% of the variance, $\eta_p^2 = .118$, an effect larger than 69.9% of all possible effects ($PS_{ES} = .699$).

The results of the univariate effects (see Table 2) revealed IPV offenders increased competence in the Clarity dimension following treatment. An effect higher than 36.2%

was observed in all of the interventions with positive effects, accounting for a 31.8% increase ($r = .318$). Though no significant treatment effect was observed in the Attention dimension, the effect size was from small to moderate, with a notable improvement in perceived ability to attend to moods and emotions of 15.8% ($r = .158$). In any case, the pre-treatment average for the Attention competence ranged from 22 to 32. No treatment effect was found in the Repair dimension. Nonetheless, the offender population under treatment was in the region of normality in this dimension of pre-treatment (26 to 35).

Table 2. Univariate Effects on the Emotional Intelligence for the Treatment Factor. Within-subjects Effects.

Variable	<i>F</i>	<i>p</i>	<i>d</i>	1- β	M_{pre}	M_{post}	1-U3	LL 90% CI
Clarity	11.43	.001	0.67	.92	30.22	32.69	.252	20.00
Attention	2.52	.116	0.32	.35	28.49	29.62	-----	-----
Repair	0.01	.953	0.00	.05	26.47	26.44	-----	-----

Note. *df*(1, 99); M_{pre} : pre-intervention mean; M_{post} : post-intervention mean; -----non significant effect; LL 90% CI: Lower Limit of the 90% Confidence Interval.

Locus of control

The results of the treatment effect on attributive processes showed a significant effect, $t(99) = 6.19, p < .001$, with a correction towards an acceptance of internal responsibility ($M_{pre} = 8.36$ vs. $M_{post} = 6.14$). The effect size of treatment, $d = 0.67$, was greater than 36.2% of possible effects that corrected towards attributing to internal responsibility ($PS_{ES} = .362$). The tendency to attribute an internal locus of control increased 31.8% ($r = .318$) after the intervention. However, 25.2% of treated IPV offenders failed to reach the average pre-treatment distribution (1-U3 = .252) and the lower limit of the distribution was 302.19 (in this measure it was the upper limit as the measure was the inverse; UL 90% CI = 302.19). That is, the intervention was not sufficiently beneficial for nearly 36%, with a significant margin for improvement.

Cognitive skills for coping with intimate-partner-related stressful events

A MANOVA was performed on the impact of the treatment factor on coping strategies, the results found a significant multivariate effect, $F(8, 92) = 13.72, p < .001, 1-\beta = 1.00$, explaining 54.4% of the variance, $\eta_p^2 = .544$, an effect larger than 93.8% of all possible effects ($PS_{ES} = .938$).

The results of the univariate effects (see Table 3) revealed significant and positive effects (an increase in the use of the strategies) of treatment on 'Logical analysis', 'Positive reappraisal', 'Seeking guidance and support', 'Problem solving', and 'Seeking alternative rewards' strategies. In contrast, treatment had significant negative effects on 'Cognitive avoidance', and 'Acceptance or resignation' strategies. Succinctly, post-treatment IPV offenders increased their cognitive-approach response by applying coping strategies in intimate-partner-related stressful events: 'Logical analysis' (cognitive attempts to understand and prepare mentally for a stressor and its consequences) of 48.9% ($r = .489$), and

'Positive reappraisal' (cognitive attempts to construe and restructure a problem in a positive way while still accepting the reality of the situation) of 50.5% ($r = .505$), with a reduction in 'Cognitive-avoidance' (cognitive attempts to avoid thinking realistically about a problem) of 25.6% ($r = .256$), and 'Acceptance or resignation' (cognitive attempts to react to the problem by accepting it) of 35.1% ($r = .351$).

Moreover, treatment increased behavioural coping responses for IPV events by 55.9% ($r = .559$), 61.3% ($r = .613$), and 54.5% ($r = .545$) for 'Seeking guidance and sup-

port' (behavioural attempts to seek information, guidance, or support), 'Problem solving' (behavioural attempts to take action to deal directly with the problem), and 'Seeking alternative rewards' (behavioural attempts to get involved in substitute activities and create new sources of satisfaction), respectively.

The intervention was ineffective in a small percentage of treated offenders (see 1-U3 in Table 3), that is, the margin for improvement of treatment was small.

Table 3. Univariate Effects on Coping Responses to an Intimate-Partner-Related Stressful Event for the Treatment Factor. Within-subjects Effects.

Variable	<i>F</i>	<i>p</i>	<i>D</i>	1-β	<i>M</i> _{pre}	<i>M</i> _{post}	1-U3	LL 90% CI
Logical analysis	32.79	.000	1.15	1.00	7.81	10.62	.126	2.68
Positive reappraisal	33.99	.000	1.17	1.00	9.45	12.69	.121	2.32
Seeking guidance and support	44.92	.000	1.35	1.00	6.71	9.48	.089	2.15
Problem solving	59.73	.000	1.55	1.00	9.71	13.57	.061	5.65
Cognitive avoidance	6.98	.010	-0.53	.744	8.84	7.49	.298	15.79+
Acceptance or resignation	14.10	.000	-0.75	.961	7.99	6.18	.227	13.00+
Seeking alternative rewards	41.79	.000	1.30	1.00	7.33	10.70	.097	2.86
Emotional discharge	0.70	.406	-0.17	.131	5.12	4.82	-----	-----

Note. *df*(1, 99); *M*_{pre}: pre-intervention mean; *M*_{post}: post-intervention mean; -----non significant effect; LL 90% CI : Lower Limit of the 90% Confidence Interval; +Upper Limit of the 90% Confidence Interval (inversely measured variable).

Anger expression and management

The results of treatment effects on the Anger Expression Index (AEI) revealed treatment significantly empowered, $t(99) = 3.73$, $p < .001$, anger management ($M_{pre} = 36.3$ vs. $M_{post} = 33.1$). The effect size of treatment, $d = 0.39$, was higher than 21.3% of all possible ($PS_{ES} = .213$) improving post-intervention anger management with a 19.1% ($r = .191$). However, 34.9% post-treatment IPV offenders failed to reach the pre-treatment distribution average (1-U3 = .349) and the lower limit of the distribution was 302.19 (in this measure it was the upper limit as the measure was the inverse; UL 90% CI = 16.99). In other words, almost 35% of treated offenders did not benefit sufficiently from the intervention with a significant margin for improvement.

Irrational beliefs and distorted thoughts

The results of the MANOVA showed a significant multivariate effect for the treatment factor (pre- vs. post-

treatment), $F(3, 97) = 54.42$, $p < .01$, $1-\beta = 1.0$, with treatment explaining 62.7%, $\eta_p^2 = .627$, of the variance, an effect larger than 79.2% of all possible effects ($PS_{ES} = .792$).

The univariate effects (see Table 4) found a significant reduction in cognitive distortions in relation to the 'Use of violence', 'Gender roles', and 'Emotional dependence'. In short, distorted attitudes and beliefs declined for violence 78.2% ($r = .782$); gender roles 48.2% ($r = .482$); and emotional dependency 63.6% ($r = .636$). The magnitude of the effect was greater than 92.3% of all possible ($PS_{ES} = .923$); 56.5% for gender roles ($PS_{ES} = .565$); and 75.8% for emotional dependency ($PS_{ES} = .758$). The intervention was ineffective for a small percentage of treated offenders (see 1-U3 in Table 4), but the margin for improvement of treatment was very high (by comparison of the Upper Limit of the Confidence Interval in Table 4 with the pre-intervention mean).

Table 4. Univariate Effects on the Irrational Beliefs and Distorted Thoughts for the Treatment Factor. Within-subjects Effects.

Variable	<i>F</i>	<i>p</i>	<i>D</i>	1-β	<i>M</i> _{pre}	<i>M</i> _{post}	1-U3	UL 90%CI
Use of Violence	156.36	.000	2.51	1.00	20.35	9.26	.006	21.96
Gender role	29.73	.000	1.10	1.00	9.75	5.44	.136	13.75
Emotional Dependence	67.10	.000	1.65	1.00	13.56	7.18	.050	15.65

Note. *df*(1, 99); *M*_{pre}: pre-intervention mean; *M*_{post}: post-intervention mean; UL 90% CI: Upper Limit of the 90% Confidence Interval.

Discussion

Prior to discussing the results, several limitations of this study should be borne in mind. First, the results are not generalizable to other treatments as they are constrained to a specific intervention program (the context effect). Second,

the psychologists applying treatments influence the magnitude of the results, so variability was due this factor (Gannon et al., 2019). Third, the specific limitations of the measurement instruments employed (lack of reliability and/or validity), indicate that part of the variance may be due to the measurement instrument and not the measure itself (Pod-

sakoff, MacKenzie, Lee, & Podsakoff, 2003). Fourth, the response of this population is biased in an attempt to either conceal negative characteristics (Arce, Fariña, Seijo, & Novo, 2015), or to adopt positive ones, particularly in cognitive distortions (Fariña, Redondo, Seijo, Novo, & Arce, 2017). Fifth, though the treatment program included techniques for generalizing acquired skills and strategies for coping with real-life IPV context, this transference was not evaluated. Taking into account these limitations, the results revealed the following:

- a) Treatment modified the cognition of IPV offenders by developing cognitive competence (in turn social competence) for coping with intimate-partner-related stressful events.
- b) In general, the effects on self-concept were significant and of a large magnitude with a large margin for improvement.
- c) Treatment contributed to an overall reinforcement of self-concept, which is a good predictor of resistance to recidivism (Finkenauer et al., 2015). Moreover, treatment reinforced the cognitive aspects of Self-Satisfaction (how I feel about myself) and Behaviour (what I do or how I act), but not Identity (what I am).
- d) As for the management and control of emotions, treatment improved competence in understanding and discriminating between emotions, but not attention to emotions and repairing emotions, though these were within pre-treatment normality region. That is, treatment developed cognitive competence in calculating the probability of exercising violent behaviour (Brackett, Rivers, & Salovey, 2011).
- e) Moreover, treatment empowered anger management, and had a combined effect with effective management of anger generating emotions on reducing IPV (Foran & O'Leary, 2008).
- f) Likewise, treatment corrected attribution of responsibility towards internal attribution (Martín-Fernández, Gracia y Lila, 2018; Martín-Fernández, Gracia, Marco et al., 2018). Self-attribution of responsibility in IPV is crucial for treatment to be effective in preventing recidivisms (Carbajosa, Catalá-Miñana, Lila, Gracia, & Boira, 2017).
- g) The improvement in coping strategies for intimate-partner-related stressful events was the highest possible (the effect was greater than 92% of all possible). Furthermore, in line with the classification of Arce, Seijo, Fariña, & Mohamed-Mohand (2010) of the functionality of skills and strategies for coping with stressful events, treatment promoted the employment of adaptive strategies fostering prosocial behaviour (logical analysis, positive re-evaluation, search of guidance and support, problem-solving, and the search for alternative activities); and stifled maladaptive strategies motivating violent behaviour (cognitive evasion, acceptance, or resignation).
- h) Moreover, treatment had considerably large effects, larger than 79.2% of all possible effects, on the management of cognitive distortions. Thus, offenders were left without any attitudinal and cognitive rationale for IPV. That is, violence towards a partner (mostly women) would involve cognitive contradictions owing to the lack of cognitive support for the use of violence.
- i) Finally, the combined effects of cognitive competence in the management and control of emotions, and of anger management skills and strategies for coping with intimate-partner-related stressful events (mainly involving violence against women) may not be additive, but multiplicative, or exponential.

Nevertheless, the margin for improvement of treatment failure was considerable in general self-concept, self-satisfaction, behaviour, attributional processes, clarity in emotional perception, and anger management, given that around one-fourth to a third of post-treated offenders did not benefit sufficiently from the intervention (failed to reach the pre-intervention distribution average). But, the margin for failure in the management of cognitive distortions and the acquisition of adaptive skills reducing the use of maladaptive strategies was almost negligible (.05).

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