

Identifying Key Predictors of Recidivism among Offenders Attending a Batterer Intervention Program: A Survival Analysis

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ARTICLE INFO

Article history:

Received 25 February 2019

Accepted 23 May 2019

Keywords:

Intimate partner violence
Offenders
Batterer intervention programs
Recidivism
Predictors

Palabras clave:

Violencia de pareja contra la mujer
Agresores
Programas de intervención con agresores de pareja
Reincidencia
Predictores

ABSTRACT

Strategies to reduce intimate partner violence against women (IPVAW) can be targeted at different levels. Batterer intervention programs (BIPs) are among the main treatment approaches for IPVAW offenders. The most common outcome used in the evaluation of BIP effectiveness is recidivism. Efforts to increase BIP effectiveness in reducing recidivism should focus on key predictive variables of this outcome. The aim of this study was to identify key predictors of official recidivism from a large set of variables drawn from a sample of IPVAW offenders court-mandated to a community-based BIP ($N = 393$), with a follow-up period of between 0 and 69 months. To this end, a survival analysis was conducted using four sets of variables: individual-level, relational- and contextual-level, violence-related, and intervention process-related variables. To include all variables in the analysis simultaneously, a Cox regression model was estimated with the adaptive least absolute shrinkage and selection operator (ALASSO). From a pool of eighty-nine variables, six were selected as key predictors of recidivism: dropout, risk of future violence against non-partners, family violence exposure, immigrant status, accumulation of stressful life events, and trait anger. The area under the receiving operator characteristic (ROC) curve was .808, indicating good prediction of the model. The key predictors of recidivism found in this study should be considered by professionals and researchers in the BIP field to improve their evaluation and intervention strategies. Practical implications for future research are also discussed.

Los predictores clave de la reincidencia en participantes en un programa de intervención para agresores de pareja: un análisis de supervivencia

RESUMEN

Las estrategias para reducir la violencia contra la mujer en las relaciones de pareja pueden dirigirse a diferentes objetivos. Los programas de intervención para agresores de pareja son uno de los principales acercamientos para su tratamiento. El resultado más utilizado para la evaluación de la efectividad de estos programas es la reincidencia. Los esfuerzos para incrementar la efectividad de los programas de intervención para agresores de pareja en reducir la reincidencia deberían centrarse en las variables predictoras clave de este resultado. El objetivo de este estudio fue identificar los predictores clave de la reincidencia oficial a partir de un amplio conjunto de variables obtenidas a partir de una muestra de hombres participando por mandato judicial en un programa de intervención para agresores de pareja ($N = 393$), con un periodo de seguimiento de entre 0 y 69 meses. Con este objetivo, se realizó un análisis de supervivencia utilizando cuatro conjuntos de variables: variables individuales, variables relacionales y contextuales, variables relativas a la violencia y variables relativas al proceso de intervención. Para incluir simultáneamente todas las variables en el análisis, se estimó un modelo de regresión de Cox utilizando ALASSO (*adaptive least absolute shrinkage and selection operator*). De un conjunto de ochenta y nueve variables, seis fueron seleccionadas como predictores clave: abandono del programa, riesgo de violencia futura contra otras personas, exposición a violencia familiar, estatus de inmigrante, acumulación de eventos vitales estresantes e ira rasgo. El área bajo la curva ROC (*receiving operator characteristic*) fue .808, indicando una buena predicción del modelo. Los predictores clave de la reincidencia identificados en este estudio deberían ser considerados por los profesionales e investigadores en el ámbito de la intervención con agresores de pareja para mejorar sus estrategias de evaluación e intervención. Asimismo, se discuten las implicaciones prácticas para futuras investigaciones.

Cite this article as: Lila, M., Martín-Fernández, M., Gracia, E., López-Ossorio, J. J., & González, J. L. (2019). Identifying key predictors of recidivism among offenders attending a batterer intervention program: A survival analysis. *Psychosocial Intervention*, 28, 157-167. <https://doi.org/10.5093/pi2019a19>

Funding: This research was supported by the Spanish Ministry for Health, Consumer Affairs and Social Welfare's National Drug Plan (PND2018/021) and the University of Valencia (UV-INV-AE18-779244). Manuel Martín-Fernández was supported by the FPI program of the Spanish Ministry of Economy and Competitiveness (BES-2015-075576).

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Intimate partner violence against women (IPVAW) is a social and public health problem worldwide (Devries et al., 2013; García-Moreno, Jansen, Ellsberg, Heise, & Watts, 2006; Stöckl et al., 2013). A World Health Organization (2013) study estimated that 30% of women around the world had suffered physical and/or sexual violence from their partners or ex-partners at some point in their lives. The physical, psychological, and social consequences of this type of violence on women victims, their families, and the wider community have been widely acknowledged (Campbell, 2002; Craparo, Gori, Petruccioli, Cannella, & Simonelli, 2014; Ellsberg, Jansen, Heise, Watts, & García-Moreno, 2008; Guedes, Bott, García-Moreno, & Colombini, 2016; Vilariño, Amado, Vázquez, & Arce, 2018). Thus, IPVAW is a major concern among researchers, professionals, and public administrations, who increasingly call for more effective strategies to prevent it and reduce its prevalence (Ellsberg et al., 2015; García-Moreno et al., 2015; Heise, 2011).

Strategies to reduce IPVAW can be targeted at different levels, including treatment for abusers (World Health Organization, 2002). Batterer intervention programs (BIPs) are among the main treatment approaches for IPVAW offenders (Cannon, Hamel, Buttell, & Ferreira, 2016; Voith, Logan-Greene, Strodthoff, & Bender, 2018). In many countries, men with an intimate partner violence-related conviction are court-mandated to a BIP (Cannon et al., 2016; Hamilton, Koehler, & Lösel, 2013; Mackay, Gibson, Lam, & Beecham, 2015). These programs aim to change men's attitudes, cognitions, and behaviors related to IPVAW (Babcock, Graham, Canady, & Ross, 2011; Pence & Paymar, 1993; Wexler, 2000), and share the broad aim of reducing offender recidivism (Babcock, Green, & Robie, 2004; Bowen, 2011; Eckhardt et al., 2013). Thus, recidivism is the most common outcome used in the evaluation of BIP effectiveness (Bowen, 2011; Scott, 2004).

To date, a substantial number of studies and meta-analyses have assessed BIP effectiveness in reducing recidivism (e.g., Arias, Arce, & Vilariño, 2013; Babcock et al., 2004; Eckhardt et al., 2013; Feder & Wilson, 2005; Nessel et al., 2019; Smedslund, Dalsbø, Steiro, Winsvold, & Clench-Aas, 2011). However, most of these studies concluded that more evidence is needed to support the effectiveness of BIPs in reducing recidivism rates. Therefore, there is a wide agreement among scholars in this research field on the need to improve BIPs in order to increase their effectiveness (Babcock et al., 2016; Levesque, Ciavatta, Castle, Prochaska, & Prochaska, 2012; Lila, Gracia, & Catalá-Miñana, 2018; Murphy & Ting, 2010). One strategy to improve BIP effectiveness would be to properly identify and target the key variables associated with IPVAW offender recidivism.

Research has analyzed a wide number of variables associated with IPVAW offender recidivism that can be organized at different levels of analysis (Cattaneo & Goodman, 2005). For example, at the individual level, variables related to IPVAW offender recidivism include age (i.e., being younger; Fitzgerald & Graham, 2016; Wooldredge & Thistlethwaite, 2002), race/ethnicity (Fitzgerald & Graham, 2016; Kingsnorth, 2006; Mears, Carlson, Holden, & Harris, 2001), low educational level (Wooldredge & Thistlethwaite, 2002), history of abuse as a child (Lauch, Hart, & Bresler, 2017), alcohol and drug misuse and abuse (Cattaneo & Goodman, 2003; Romero-Martínez, Lila, Gracia, & Moya-Albiol, 2019), antisocial and borderline psychological disorders (Carbajosa, Catalá-Miñana, Lila, & Gracia, 2017; Holtzworth-Munroe, Meehan, Herron, Rehman, & Stuart, 2003; Llor-Esteban, García-Jiménez, Ruiz-Hernández, & Godoy-Fernández, 2016; Thijssen & de Ruiter, 2010), anger problems (Farzan-Kashani & Murphy, 2017), and pro-IPVAW attitudes (Hanson & Wallace-Capretta, 2004; Llor-Esteban et al., 2016). Variables related to recidivism at the relational and contextual levels include remaining with the same partner (Capaldi, Shortt, & Crosby, 2003), accumulation of stressful life events (López-Ossorio, González-Álvarez, Buquerín, García, & Buela-Casal, 2017), low social support (Lodewijks, de Ruiter, & Doreleijers, 2010), living in disadvantaged areas (Fitzgerald & Graham, 2016), and unemployment (Feder & Dugan, 2002). Other variables

related to recidivism include legal variables such as any prior arrest, previous criminal history, IPVAW arrest or jail sentence (Collins, Bouffard, & Wilkes, 2019; Davis, Smith, & Nickles, 1998; Fitzgerald & Graham, 2016; Kingsnorth, 2006), high risk of recidivism assessed by therapists (Goodman, Dutton, & Bennett, 2000), and treatment dropout (Gondolf, 2000; Lauch et al., 2017; Romero-Martínez et al., 2019; Stoops, Bennett, & Vincent, 2010).

Although this body of literature offers relevant information on the variables associated with IPVAW offender recidivism, however, primary research seldom uses a multifactorial approach that simultaneously includes multiple variables at different levels in the same research design to assess more accurately their predictive value in the context of a wider set of variables.

The Present Study

Efforts to increase BIP effectiveness in reducing recidivism should focus on key predictive variables of this outcome. To this end, in the present study we analyze the association between recidivism and a large set of variables drawn from a sample of IPVAW offenders court-mandated to a community-based BIP. Key predictors of recidivism will be identified from four sets of variables included in this study: (1) individual-level variables (i.e., socio-demographic variables, substance abuse, family violence exposure, personality and psychological adjustment, empathy, anger, anxiety, impulsivity, self-esteem, sexism, attitudes towards violence, and attributions of responsibility); (2) relational- and contextual-level variables (i.e., community social support, intimate support, accumulation of stressful life events, perceived social rejection); (3) violence-related variables (i.e., risk of future violence assessed by BIP staff, presence of physical violence in judicial sentence, and length of sentence); and (4) intervention process-related variables (i.e., dropout, intervention dose, homework activities, motivation to change, and stage of change).

To identify the best predictors of recidivism among these variables, a Cox regression (Cox, 1972) will be used. Cox regression is a type of survival analysis that takes into account not only the association between predictor variables and the probability of an event occurring (recidivism), but also the time elapsed before the event. Given the large number of predictive variables and the moderate size of the sample, we will address this issue using the adaptive least absolute shrinkage and selection operator (ALASSO). This is a penalized regression method that has an important advantage: it meets the oracle property, ensuring high prediction accuracy and selection of the most relevant predictive variables. Thus, the coefficients of the best predictors are automatically selected and estimated in a single step, and model overfitting is avoided (Zhang & Lu, 2007; Zou, 2006). To the best of our knowledge, this is the first time that this methodological approach has been used to identify key predictors of recidivism among IPVAW offenders attending BIPs.

Method

Sample

The study sample comprised 393 IPVAW male offenders sentenced to less than two years in prison ($M = 10.08$ months, $SD = 7.05$), without previous criminal records, and court-mandated to a community-based BIP in Spain. Participants were between the ages of 18 and 81 ($M = 40.32$, $SD = 11.60$); 8.90% of the sample had college degrees ($n = 35$), 34.86% had finished high school ($n = 137$), 50.89% had completed elementary studies ($n = 200$), and 5.34% had no schooling ($n = 21$); 23.66% of the sample were married or in a relationship ($n = 93$), 38.17% were single ($n = 150$), and 37.14% were divorced ($n = 146$); 74.55% were Spanish ($n = 293$), and 26.45% were

Table 1. Predictor Variables Included in the Model, Measures Description, and Descriptive Statistics (N = 393) (continued)

Category	Predictor variable	Measure description, Omega, Means (SD) or %
<i>Individual variables</i>		
Socio-demographic	Age	Years
	Marital status	1: married; 2: single; 3: divorced
Substance abuse	Immigrant status	1: Yes (immigrant); 2: No (native)
	Work status	1: Yes (employed); 2: No (unemployed)
	Annual household income	1 ≤ €1,800; 2: €1,800–€3,600; 3: €3,600–€6,000; 4: €6,000–€12,000; 5: €12,000–€18,000; 6: €18,000–€24,000; 7: €24,000–€30,000; 8: €30,000–€36,000; 9: €36,000–€60,000; 10: €60,000–€90,000; 11: €90,000–€120,000; 12 ≥ €120,000.
	Educational level	1: no schooling; 2: elementary studies; 3: high school; 4: college degree
Family violence exposure	Hazardous and harmful alcohol consumption	<i>Alcohol Use Disorders Identification Test</i> (AUDIT; Babor & Grant, 1989; Spanish version by Contel Guillaumon, Gual Solé, & Farran Colom, 1999). 10 items. Response scale; 0: never, 4: daily or almost daily. Two indicators: total score and cutoff score (≥8). $\omega_{total} = 81.81$ ($M = 0.18$, $SD = 0.39$).
	Alcoholism problems	<i>CAGE Questionnaire</i> (Mayfield, McLeod, & Hall, 1974). 4 items. Response scale; 1: Yes; 2: Not. $\omega_{total} = 81.76$ ($M = 7.28$, $SD = 1.15$).
	Alcohol dependence	<i>Alcohol Dependence scale of the Millon Clinical Multiaxial Inventory-III</i> (MCMI-III; Millon, 2007; Spanish version by Cardenal & Sánchez, 2007) ($M = 46.26$, $SD = 28.00$).
	Drug dependence	<i>Drug Dependence scale of the Millon Clinical Multiaxial Inventory-III</i> (MCMI-III; Millon, 2007; Spanish version by Cardenal & Sánchez, 2007) ($M = 45.03$, $SD = 25.15$).
Clinical symptomatology	Family violence exposure and/or victimization during childhood and/or adolescence.	Item 6 of the <i>Spousal Assault Risk Assessment Guide</i> (SARA; Kropp, Hart, Webster, & Eaves, 1999; Spanish version by Andrés Pueyo, López, & Álvarez, 2008). Response scale; 0: no presence, 1: possibly present, 2: present ($M = 0.39$, $SD = 0.69$).
	<i>Symptom dimensions:</i> Somatization, Obsessive-compulsive, Interpersonal sensitivity, Depression, Anxiety, Hostility, Phobic anxiety, Paranoid ideation, Psychoticism, Global severity index, Positive Symptom distress index, and Positive symptom total.	<i>The Symptom Checklist-90-Revised</i> (SCL-90-R; Derogatis, 1977; Spanish version by De las Cuevas et al., 1991). 90 items. Response scale; 0: never, 4: almost always. Somatization ($M = 1.38$, $SD = 3.42$), Obsessive-compulsive ($M = 0.57$, $SD = 0.57$), Interpersonal sensitivity ($M = 0.44$, $SD = 0.59$), Depression ($M = 0.68$, $SD = 1.32$), Anxiety ($M = 0.39$, $SD = 0.48$), Hostility ($M = 0.19$, $SD = 0.32$), Phobic anxiety ($M = 0.26$, $SD = 0.88$), Paranoid ideation ($M = 0.62$, $SD = 0.68$), Psychoticism ($M = 0.27$, $SD = 0.43$), Global severity index ($M = 0.42$, $SD = 0.38$), Positive Symptom distress index ($M = 22.02$, $SD = 15.65$), Positive symptom total ($M = 1.59$, $SD = 0.75$).
Empathy	<i>Personality disorders:</i> Schizoid, Avoidant, Depressive, Dependent, Histrionic, Narcissistic, Antisocial, Aggressive, Compulsive, Passive-Aggressive, Self-defeating. <i>Severe personality disorders:</i> Schizotypal, Borderline and Paranoid. <i>Clinical syndromes:</i> Anxiety, Somatoform, Bipolar, Dysthymia, Post-traumatic stress disorder. <i>Severe Syndromes:</i> Thought disorder, Major depression, Delusional disorder.	<i>Millon Clinical Multiaxial Inventory-III</i> (MCMI-III; Millon, 2007; Spanish version by Cardenal & Sánchez, 2007). 175 items. Response scale: 1: True; 2: False. Schizoid ($M = 40.59$, $SD = 22.36$), Avoidant ($M = 31.95$, $SD = 22.77$), Depressive ($M = 29.92$, $SD = 24.51$), Dependent ($M = 35.46$, $SD = 21.20$), Histrionic ($M = 49.07$, $SD = 17.67$), Narcissistic ($M = 68.43$, $SD = 16.01$), Antisocial ($M = 42.88$, $SD = 23.30$), Aggressive ($M = 37.78$, $SD = 23.55$), Compulsive ($M = 64.02$, $SD = 21.23$), Passive-aggressive ($M = 37.72$, $SD = 23.34$), Self-defeating ($M = 28.08$, $SD = 22.97$), Schizotypal ($M = 29.70$, $SD = 26.16$), Borderline ($M = 32.23$, $SD = 24.05$), Paranoid ($M = 43.78$, $SD = 28.54$), Anxiety ($M = 45.61$, $SD = 34.23$), Somatoform ($M = 28.85$, $SD = 25.77$), Bipolar ($M = 50.08$, $SD = 23.84$), Dysthymia ($M = 26.71$, $SD = 42.60$), Post-traumatic stress disorder ($M = 30.68$, $SD = 27.02$), Thought disorder ($M = 31.51$, $SD = 27.98$), Major depression ($M = 27.14$, $SD = 27.50$), Delusional disorder ($M = 45.74$, $SD = 31.99$).
	Perspective taking, Fantasy, Emotional empathic concern, and Personal distress.	<i>Interpersonal Reactivity Index</i> (IRI; Davis, 1983; Spanish version by Mestre, Frías, & Samper, 2004). 28 items. Response scale; 1: doesn't describe me at all, 5: describes me very well. $\omega_{total} = .85$. Perspective taking ($M = 23.24$, $SD = 5.11$), Fantasy ($M = 17.21$, $SD = 4.75$), Emotional empathic concern ($M = 24.96$, $SD = 4.55$) and Personal distress ($M = 14.30$, $SD = 4.64$).
Attribution of responsibility	Responsibility attributed to the legal context; Responsibility attributed to the victim; Responsibility attributed to the offender's personal context.	<i>Intimate Partner Violence Responsibility Attribution Scale</i> (IPVRAS; Lila, Oliver, Catalá-Miñana, Galiana, & Gracia, 2014). 12 items. Response scale; 1: strongly disagree; 5: strongly agree. $\omega_{total} = .83$. Legal context ($M = 16.91$, $SD = 5.23$), Victim ($M = 8.84$, $SD = 3.43$) and Offender's personal context ($M = 10.82$, $SD = 4.13$). Participants' responsibility assumption assessed by therapist. 1 item. Response scale; 1: not at all, 5: very much ($M = 2$, $SD = 1.15$).
Attitudes	Hostile and benevolent sexism	<i>Ambivalent Sexism Inventory</i> (ASI; Glick & Fiske, 1997; Spanish version by Expósito, Moya, & Glick, 1998). 22 items. Response scale; 1: strongly disagree, 5: strongly agree. Hostile sexism: $\omega = .89$ ($M = 26.17$, $SD = 13.54$); Benevolent sexism: $\omega = .84$ ($M = 31.00$, $SD = 12.81$).
	Perceived severity of IPVAV	<i>Perceived Severity of IPVAV Scale</i> (PS-IPVAV; Gracia, García, & Lila, 2008, 2009; Lila, Gracia, & García, 2013). 8 IPVAV scenarios. Response scale; 0: not at all severe, 10: extremely severe. $\omega_{total} = .89$ ($M = 71.87$; $SD = 11.58$).

Table 1. Predictor Variables Included in the Model, Measures Description, and Descriptive Statistics (N = 393) (continuation)

Category	Predictor variable	Measure description, Omega, Means (SD) or %
<i>Individual variables</i>		
Psychological adjustment	State and Trait Anxiety	<i>State-Trait Anxiety Inventory</i> (STAI; Spielberger, Gorsuch, & Lushene, 1970 ; Spanish version by Virella, Arbona, & Novy, 1994). 40 items. Response scale; 0: <i>not at all/almost never</i> , 3: <i>very much/almost always</i> . State anxiety ($M = 18.53$, $SD = 11.25$); Trait anxiety ($M = 19.63$; $SD = 12.07$).
	Depressive symptomatology	<i>Center for Epidemiologic Studies Depression Scale-7</i> (CESD-7; Radloff, 1977; short version by Herrero & Gracia, 2007). 7 items. Response scale; 1: <i>rarely or never, less than 1 day</i> , 4: <i>all the time or most of the time, 5-7 days</i> . $\omega_{total} = .89$ ($M = 12.94$; $SD = 5.59$).
	Global self-esteem	<i>Rosenberg Self-Esteem Scale</i> (Rosenberg, 1965 ; Spanish version by Martín-Albo, Núñez, Navarro, & Grijalvo, 2007). 10 items. Response scale; 1: <i>totally disagree</i> , 4: <i>totally agree</i> . $\omega_{total} = .79$ ($M = 61.49$, $SD = 9.61$).
	Social self-esteem; Familiar self-esteem; Emotional self-esteem; Intellectual self-esteem; Physical self-esteem; Total self-esteem.	<i>Self-esteem Questionnaire</i> (AUT-17; Gracia, Herrero, & Musitu, 2002). 17 items. Response scale; 1: <i>totally disagree</i> , 5: <i>totally agree</i> . $\omega_{total} = .83$. Social self-esteem ($M = 10.24$, $SD = 3.04$); Familiar self-esteem ($M = 16.75$, $SD = 3.49$); Emotional self-esteem ($M = 12.19$, $SD = 2.46$); Intellectual self-esteem ($M = 10.73$, $SD = 3.01$); Physical self-esteem ($M = 11.59$, $SD = 3.25$); Total self-esteem ($M = 32.37$, $SD = 4.56$).
	State anger; Feeling angry; Expressing anger verbally; Expressing anger physically; Trait anger.	<i>State-Trait Anger Expression Inventory</i> (STAXI-2; Spielberger, 1999 ; Spanish version by Miguel-Tobal, Casado, Cano-Vindel, & Spielberger, 2001). 44 items. Response scale; 1: <i>not at all</i> , 4: <i>very much</i> . State anger ($M = 16.52$, $SD = 3.34$), Feeling angry ($M = 6.09$, $SD = 2.14$), Expressing anger verbally ($M = 5.49$, $SD = 1.81$), Expressing anger physically ($M = 5.09$, $SD = 0.59$), Trait anger ($M = 15.63$, $SD = 4.83$).
Impulsivity	<i>Plutchick Impulsivity Scale</i> (Plutchik & van Praag, 1989 ; Spanish version by Páez et al., 1996). 15 items. Response scale; 1: <i>never</i> , 4: <i>almost always</i> . $\omega = .83$ ($M = 27.91$, $SD = 10.27$).	
<i>Relational-contextual variables</i>		
Community social support	Community integration; Community participation; Support from formal organizations; Support from voluntary groups and organizations.	<i>Perceived Community Support Questionnaire</i> (Gracia et al., 2002). 18 items. Response scale; 1: <i>completely disagree</i> , 4: <i>completely agree</i> . $\omega_{total} = .90$. Community integration ($M = 13.95$, $SD = 3.45$), Community participation ($M = 13.85$, $SD = 5.59$), Support from formal organizations ($M = 14.49$, $SD = 3.86$), Support from voluntary groups and organizations ($M = 17.95$, $SD = 5.23$).
Intimate support	Intimate social support	<i>Intimate Social Support Questionnaire</i> (Lin, Dean, & Ensel, 1986 ; Spanish version by Herrero, Gracia, Fuente, & Lila, 2012). 3 items. Response scale; 1: <i>most of the time</i> , 5: <i>never</i> . $\omega = .61$ ($M = 11.12$, $SD = 3.02$).
Stressful life events accumulation	Stressful life events experienced during the last six months.	<i>Stressful Life Events Inventory</i> (Gracia & Herrero, 2004). 33 items. The participant must choose the events he may have experienced from the list ($M = 3.34$, $SD = 3.13$).
Social rejection	Perceived social rejection	<i>Perceived Social Rejection Index</i> (PSRI; Catalá-Miñana, Lila, & Oliver, 2013). 13 items. Response scale; 1: <i>completely agree</i> , 5: <i>completely disagree</i> . $\omega = .75$ ($M = 27.95$, $SD = 6.29$).
<i>Violence-related variables</i>		
Risk of future violence	Risk of future IPVAV; Risk of future violence against non-partners (assessed by program staff).	Two risk ratings of future violence from the <i>Spousal Assault Risk Assessment Guide</i> (SARA; Kropp et al., 1999 ; Spanish version by Andrés Pueyo et al., 2008). Two risk ratings based on 20 risk factors. Response scale; 0: <i>low</i> , 1: <i>moderate</i> , 2: <i>high</i> . Risk of future IPVAV ($M = 0.75$, $SD = 0.78$). Risk of future violence against non-partners ($M = 0.40$, $SD = 0.63$).
Physical violence	Conviction for IPVAV that involve physical violence.	Presence at participants' legal sentence of physical IPVAV. Response scale; 0: No, 1: Yes (68%).
Length of sentence	Length of imprisonment sentence	Number of months of imprisonment ($M = 10.68$, $SD = 6.85$)
<i>Intervention process-related variables</i>		
Dropout	To stop attending BIP after the evaluation phase had started.	Dropout after first program attendance. Response scale; 0: No, 1: Yes (19%)
Intervention dose	Sessions attended by participant	Number of sessions attended by participant ($M = 25.45$, $SD = 9.08$)
Homework activities	Homework activities	Number of homework activities accomplished by participant ($M = 9.87$, $SD = 5.80$).
Motivation of change	Stage of change	Stage of change assessed by therapists (Carbajosa, Catalá-Miñana, Lila, Gracia & Boira, 2017). Response scale; 1: <i>precontemplation</i> , 2: <i>contemplation</i> , 3: <i>preparation</i> , 4: <i>action</i> , 5: <i>maintenance</i> ($M = 1.18$, $SD = 0.42$).
	Motivation to change	Participants' motivation to change assessed by therapist. 1 item. Response scale; 1: <i>not at all</i> , 5: <i>very much</i> ($M = 2.11$, $SD = 1.19$).

immigrants ($n = 100$); median family yearly household income was between €6,000 and €12,000; 45.29% of the participants were unemployed ($n = 178$); 64.6% completed the BIP, 28.5% were still attending the BIP, and 6.9% left the BIP before completing it.

Procedure

All participants were referred to the BIP by penitentiary social services. Data were gathered as part of regular in-take (pre-treatment) and final (post-treatment) data collection for IPVAV offenders entering the program. All predictor variables included in the study were assessed at baseline with the exception of five intervention process-related variables obtained when participants finished the BIP. Official recidivism data for the total sample were obtained up to February, 2019. IPVAV offenders who agreed to participate in this study signed a written consent form, and confidentiality was guaranteed. Participants were informed that neither participation nor refusal would affect their legal situation. Instruments were administered with the help of the intervention program staff. The University of Valencia Ethics Committee approved the study (ref. nº H1537520365110).

Measures

Dependent variable: recidivism. The dependent variable considered in this study was official recidivism. Recidivism data were provided by the Ministry of the Interior and recidivism is defined as any further incident of IPVAV violence or any breach of the conditions mandated by a judge (e.g., mandatory no-contact order) committed by participants after their first program attendance (i.e., initial assessment session). This dependent variable refers to whether an IPVAV offender recidivated (Yes/No). Time was also considered in this variable, measured as the number of months between the last contact with the BIP (date of program termination or date of program dropout) and the date of the recidivism event, yielding a recidivism follow-up period of between 0 and 69 months. This variable included censored cases, meaning that for some participants the event of interest (i.e., recidivism) had not occurred at the time the data were analyzed.

Predictor variables. The study included 89 variables as potential key predictors of recidivism based on official data. Four sets of variables were considered as key potential predictors of recidivism: individual-level variables, relational- and contextual-level variables, violence-related variables, and intervention process-related variables. These sets of variables are described in [Table 1](#).

Data Analyses

We first obtained the descriptive statistics for each variable and established the internal consistency for each of the scales used as predictors in the study. To this end, we used the omega total statistic (ω_t), which is theoretically more suitable than other statistics when the items present some skew and are not tau-equivalent, as was the case of most of the variables presented in [Table 1](#) (McNeish, 2015; Revelle, 2018; Trizano-Hermosilla & Alvarado, 2016).

We then used a Cox regression—a type of survival analysis—to identify the key predictors of recidivism over time (Cox, 1972; Petersson & Strand, 2017; Stansfield & Williams, 2014). Cox's regression is typically preferred over classic regression models as it assesses both the time elapsed before an event and its probability of occurrence. However, when the number of predictors is large and the sample size is small or moderate, regression models could be overfitted, leading to regression coefficients that can overestimate the effect of a particular predictor, and inflating the magnitude

of otherwise superfluous variables (Babyak, 2004; Cohen, Cohen, West, & Aiken, 2003). Given the large number of variables used in this study and the moderate size of the sample, we used penalized regression method to estimate Cox regression coefficients, as they are the optimal solution to this overfitting issue (Helwig, 2017; McNeish, 2015). The underlying idea behind these methods is to penalize the regression coefficients in order to obtain a parsimonious model, including in the analysis only the most relevant predictors to account for the observed phenomena in a single step.

In this study we used the adaptive least absolute shrinkage and selection operator (ALASSO), which is a penalized regression method that meets the oracle property (i.e., it consistently selects the same set of predictors and yields the same estimates for the model parameters; Zhang & Lou, 2007; Zou, 2006). The ALASSO shrinks to zero the estimates of those predictors that do not contribute sufficiently to the model:

$$L^{\text{alasso}}(\beta) = \|Y - X\beta\|^2 + \lambda W|\beta|$$

where L is the penalized regression function, X is the matrix for the predictors, Y is the vector of responses, β are the regression coefficients of each predictor, λ the regularization parameter of shrinkage, and W is a weighting vector that imposes a different penalization for each variable. The weighting vector in the ALASSO is based on the estimated ridge regression coefficients—which is equivalent to equation (1) without the W vector—where $W = 1/\beta_{\text{ridge}}$. Estimates of β are obtained by minimizing the L^{alasso} function.

The shrinkage parameter for the ALASSO (i.e., λ) was computed through cross-validation, splitting the sample into ten folds (McNeish, 2015). Each fold is used to fit the model, except one that assesses the model performance. The process is repeated ten times, ensuring that each fold is used once to test the model. Once this process is completed, the mean squared error is averaged and used to compute a λ value for each fold. The value for λ is then changed and the process continues to iterate for 100 values of λ . The value of λ with the smallest squared error is finally used to penalize the β coefficients of the model. Following Helwig's (2017) suggestion, a non-parametric bootstrap was performed to obtain the estimation errors and confidence intervals of the model parameter estimates (i.e., the β coefficients) (Efron & Tibshirani, 1994). To this end, the Cox regression model was fitted separately to 10,000 samples of 300 participants (with replacement). The resampled parameter estimates were then used to compute the confidence intervals.

In order to assess the model performance, a receiving operator characteristic (ROC) curve was performed with the remaining 93 participants. The area under the curve (AUC) was used to test the accuracy of the model. The ROC curve is constructed by plotting the true positive rate (i.e., sensitivity) against the false positive rate (i.e., 1-specificity), informing how much the model is able to distinguish between recidivist and non-recidivist participants. AUC values above .70 indicate a fair model, above .80 a good model, and above .90 an excellent model (Hosmer & Lemeshow, 2000).

All analyses were conducted with the R statistical package (R Core Team, 2018), using the glmnet and pROC libraries (Robin et al., 2011; Simon, Friedman, Hastie, & Tibshirani, 2011).

Results

The overall recidivism of the offenders included in the sample was 15.01%. Of them, 49.16% recidivated during the first 12 months after the first contact with the BIP (i.e., 7.88% of the total sample), and almost 75% of the offenders who recidivated did so after 33 months (i.e., 11.45% of the total sample). This percentage increases to almost 90% 48 months after the first contact with the BIP (i.e., 13.99% of the total sample) (see [Figure 1](#)). The percentage of those

participants who completed the program and recidivated was 7.63% (7.38% after the first 12 months). The complete set of 89 predictors was included in the model, involving individual-level variables, relational- and contextual-level variables, violence-related variables, and intervention process-related variables. Categorical variables were dummy coded, the lower category of ordinal variables was fixed to zero, and continuous variables were standardized (with the exception of age, which was mean-centered), before being introduced in the survival analysis. We then conducted the Cox regression via ALASSO, which penalizes the regression coefficients and selects the best predictors in the data set (see Table 2).

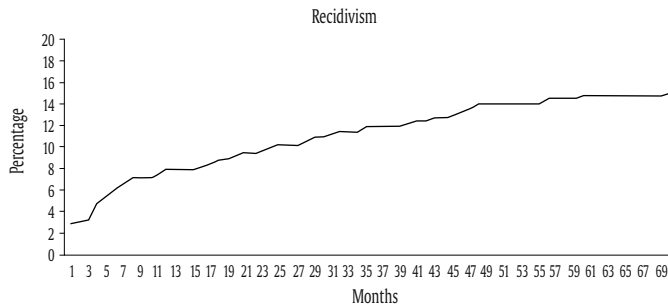


Figure 1. Intimate Partner Violence Offender Recidivism over Time.

Table 2. Cox Regression Coefficients and Hazard Ratios

	β	SE	exp(β)	95% CI [lower-upper]
Immigrant status	.223	.053	1.26	[1.14-1.40]
Family violence exposure	.275	.003	1.32	[1.31-1.32]
Trait anger	.135	.015	1.14	[1.11-1.18]
Stressful life events	.207	.021	1.23	[1.18-1.28]
Risk of future violence against non-partners	.449	.012	1.57	[1.53-1.60]
Dropout	.695	.007	2.00	[1.98-2.03]

Note. β = adaptive least absolute shrinkage and selection operator β coefficients; SE = standard error; exp(β) = Cox regression hazard ratios; 95% CI = hazard ratios confidence interval.

The ALASSO regression dropped from the model the β coefficients of those predictors less related to the dependent variable (i.e., recidivism) by directly fixing them to zero. The predictors included in the final model were immigrant status (i.e., whether participants were immigrant or Spanish), family violence exposure, risk of future violence against non-partners, trait anger, accumulation of stressful life events, and program dropout.

After estimating the ALASSO coefficients, we computed the hazard ratios (HR) for each variable, i.e., exp(β) (see Table 2). In this context, the HR express how much the probability of occurrence of the event (i.e., recidivism) increases per unit of each predictor. All the HR were above 1, indicating that as the values of the predictive variables increase, the probability of recidivism also increases. Dropout was the predictor with the largest effect, as the probability of recidivism was 100% higher for participants who dropped out of the program. Risk of future violence against non-partners had the second largest effect, increasing the probability of recidivism by 53% for every point that this variable increased (i.e., 0% for participants with no risk, 53% for participants with moderate risk, and 106% for participants with high risk). Thirdly, the predictor family violence exposure increased the probability of recidivism by 32% among participants who had been exposed to violence during their childhood or adolescence. In

the same line, immigrant participants had a 26% higher probability of recidivism than Spanish participants. Accumulation of stressful life events was found to increase the probability of recidivism by 23% for each standard deviation that this variable increases (e.g., 0% for those participants in the mean, 23% for participants one standard deviation above the mean, 46% for participants two standard deviations above the mean, etc.). Trait anger was the last predictor included in the Cox regression, increasing the probability of recidivism by 14% for each standard deviation that this variable increases (e.g., 0% for participants in the mean, 14% for participants one standard deviation above the mean, 28% for participants two standard deviations above the mean, etc.).

Finally, a ROC curve was computed to assess the accuracy of the model, testing how well the model distinguished between recidivist and non-recidivist participants. The AUC of our model was .808, indicating the model's good predictive ability; specifically, the model correctly classified 80.8% of the cases (Figure 2).

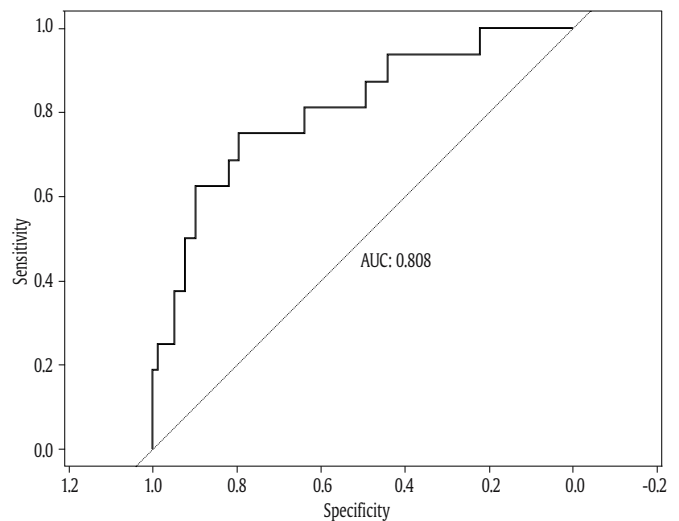


Figure 2. ROC Curve for the ALASSO Cox's Regression Model.

Discussion

The aim of this study was to identify key predictors of recidivism from a large set of variables drawn from a sample of IPVAV offenders court-mandated to a community-based BIP, with a follow-up period of between 0 and 69 months. From a pool of eighty-nine variables, six were selected as key predictors: dropout, risk of future violence against non-partners, family violence exposure, immigrant status, accumulation of stressful life events, and trait anger. The predictive model based on these variables correctly classified 80.8% of the cases.

Official recidivism was the dependent variable in our study. For the whole study period (69 months), the recidivism rate for the total sample was 15.01% and 7.63% for those who completed the program. Previous studies have found recidivism rates ranging from 15 to 60%. Recidivism in BIP studies varies significantly depending on the source of information (i.e., recidivism rates based on victims' reports are higher than rates based on offenders' or official reports only), and length of follow-up (i.e., recidivism rates are higher for longer follow-up periods) (Hilton, Harris, Popham, & Lang, 2010; Klein & Tobin, 2008; Lin et al., 2009; Loinez, 2014). In line with other studies, our results also showed higher rates of recidivism during the first year after program completion, with a percentage of recidivism for the total sample during this period of 7.88% (Goldstein, Cantos, Brenner, Verborg, & Kosson, 2016; Loinez, 2014; Petersson & Strand, 2017; Richards, Jennings, Tomsich, & Gover, 2014; Stansfield & Williams, 2014).

Regarding the key predictors selected in this study, dropout was the variable with the largest effect associated with IPVAV offenders' recidivism (dropout percentage in our study was 19.34%). Our results build on evidence from previous studies showing that BIP completers are less likely to re-offend than dropouts (Eckhardt, Holtzworth-Munroe, Norlander, Sibley, & Cahill, 2008; Gordon & Moriarty, 2003; Hamberger & Hastings, 1988; Jones, D'Agostino, Gondolf, & Heckert, 2004). Dropout is a common issue in this type of program, with rates ranging from 15% to 58%, and is one of the main problems affecting BIP effectiveness (Babcock et al., 2004; Bennett, Stoops, Call, & Flett, 2007; Daly & Pelowski, 2000; Feder & Wilson, 2005; Jewell & Wormith, 2010; Lila, Gracia, & Catalá-Miñana, 2017; Olver, Stockdale, & Wormith, 2011; Rondeau, Brodeur, Brochu, & Lemire, 2001). Clearly, reducing BIP dropout rates remains one of the main challenges in this field. Available research suggests that one of the most promising approaches for achieving this goal are interventions based on motivational strategies (Alexander, Morris, Tracy, & Frye, 2010; Babcock et al., 2016; Crane & Eckhardt, 2013; Eckhardt et al., 2013; Lila et al., 2018; Musser, Semiatin, Taft, & Murphy, 2009; Santirso, Martín-Fernández, Lila, Gracia, & Terreros, 2018). In this regard, one of the main contributions of our study is not only to underline dropout as a key risk factor associated with recidivism, but also the need to reduce it as one of the main priorities in BIPs.

The risk of future violence against non-partners was the key predictor with the second largest effect on recidivism. Generality of violence (i.e., being violent towards others outside the family context vs. being violent only within the family) is one of the main dimensions used to identify IPVAV offender typologies (Holtzworth-Munroe & Stuart, 1994), and previous studies have validated the usefulness of this dimension to differentiate between generally violent/antisocial and family-only subtypes of IPVAV offenders (Cantos & O'Leary, 2014; Juarros, Herrero, Fernández, Pérez, & Rodríguez, 2018; Petersson, Strand, & Selenius, 2016; Weber, Taylor, Cantos, Amado, & O'Leary, 2019). There is evidence of a higher risk of recidivism among antisocial or generally violent IPVAV offenders than family-only IPVAV offenders (Carbajosa, Catalá-Miñana, Lila, & Gracia, 2017; Goldstein et al., 2016; Huss & Ralston, 2008; Petersson & Strand, 2017). Although in our study we did not use IPVAV offender typologies, those participants with higher scores in risk of future violence against non-partners could be classified as generally violent/antisocial (Carbajosa, Catalá-Miñana, Lila, & Gracia, 2017). Our results support the idea that risk assessment and management of those generally violent participants should be a key intervention target to improve BIP effectiveness (Arbach & Bobbio, 2018; Bowen, 2011; Cantos, Kosson, Goldstein, & O'Leary, 2019; López-Ossorio et al., 2018; Snead, Bennett, & Babcock, 2018).

The third key predictor in this study was family violence exposure earlier in life. Exposure to family violence during childhood is one of the most frequently recognized risk factors of IPVAV perpetration (Capaldi, Knoble, Shortt, & Kim, 2012; Fleming et al., 2015; Gracia, Rodríguez, Martín-Fernández, & Lila, 2017; Mbilinyi et al., 2012; Ruddle, Pina, & Vasquez, 2017). Our results underline the importance of this key predictor also in IPVAV offender recidivism (see also, Fowler, Cantos, & Miller, 2016). Family violence exposure during childhood negatively influences crucial developmental processes (Ruddle et al., 2017). As Fowler et al. (2016) point out, understanding the effect that family violence exposure has on IPVAV offenders may be important in reducing recidivism rates. Early family violence exposure among IPVAV offenders could have long-term consequences such as mental health problems, poor emotional regulation, greater acceptability and normalization of violence, a tendency towards aggression, and attachment problems; consequently it should be acknowledged, assessed, and addressed in BIPs (Card, Stucky, Sawalani, & Little, 2008; Dutton & White, 2012; Gracia, Lila, & Musitu, 2005; Malinosky-Rummell & Hansen, 1993; Martín-Fernández, Gracia, & Lila, 2018; O'Leary, Smith, Slep & O'Leary, 2007; Ruddle et al., 2017).

Immigrant status was the fourth key predictor of recidivism identified in our analyses. Although research on the relationship between immigrant status and IPVAV perpetration remains inconclusive (Erez, Adelman, & Gregory, 2009; Gupta et al., 2010), our results provide strong evidence that immigrant status deserves special consideration as a predictor of IPVAV recidivism (see also Raj & Silverman, 2002; Vaughn et al., 2014). In Spain, where this study was conducted, around half of the participants in BIPs are immigrants (Carbajosa, Lila, Negredo, & Pérez, 2011; Echaury, Fernández-Montalvo, Martínez, & Azcárate, 2013), and one third of all reported IPVAV cases are perpetrated by immigrants (Consejo General del Poder Judicial, 2018). Risk of femicide is also associated with immigrant status (Sanz-Barbero, Heras-Mosterio, Otero-García, & Vives-Cases, 2016). Immigrant women in Spain exposed to IPV are five times more likely to be murdered than Spanish women (Sanz-Barbero et al., 2016; Vives-Cases, Ruiz-Cantero, Escribà-Agüir, & Miralles, 2010). In this regard, a WHO report on intimate partner violence against migrant and ethnic minority women (Vives-Cases et al., 2014) identifies these highly vulnerable social groups as deserving special attention. Regarding offenders, although some studies conducted in Spain found that immigrants participating in BIPs benefit from the intervention in several proximal outcomes such as attitudes towards IPVAV and psychological adjustment (Echaury et al., 2013; Vargas, Lila, & Catalá-Miñana, 2015), our study emphasizes the need for further efforts to reduce recidivism rates among this group of IPVAV offenders. Training professionals in managing cultural differences and implementing culturally adapted BIPs are intervention strategies that deserve further attention and research to examine their potential to reduce IPVAV recidivism rates among immigrants (Ellsberg et al., 2015; Gondolf, 2012).

Stressful life events and trait anger were the last key predictors of recidivism identified in this study. The role of stressful life events in explaining violence has long been supported in the literature (e.g., Agnew, 1992; Hirschi, 1969; Silver & Teasdale, 2005). The accumulation of stressful life events has been related to IPVAV offenders' psychological adjustment and attributions of responsibility, and has been found to increase both the occurrence of violence and its stability over time (Gracia, Herrero, Lila, & Fuente, 2009; Lanier & Maume, 2009; Lila, Gracia, & Murgui, 2013; Silver & Teasdale, 2005). Some specific stressful events, such as employment problems, have been closely related to general violence recidivism (Bonta & Andrews, 2016). However, with a few exceptions, there is little research into the effects of accumulated stressful life events among IPVAV offenders (Capaldi et al., 2012; Choi, Cheung, & Cheung, 2012). Previous studies have also linked trait anger with IPVAV (Barbour, Eckhardt, Davison, & Kassino, 1998; Farzan-Kashani & Murphy, 2017; Norlander & Eckhardt, 2005), and IPVAV treatment response (Murphy, Taft, & Eckhardt, 2007). Our results reveal the need to implement training in coping strategies, stress-control techniques, and anger management in BIPs, along with extended monitoring or intensive intervention for IPVAV offenders with accumulated stress or anger problems (Maiuro & Eberle, 2008; Maiuro, Hagar, Lin, & Olson, 2001). Some research also suggests new approaches based on enhanced mindfulness to deal with IPVAV offenders' anger and stress-related problems, such as dialectical behavior therapy (Linehan, 1993) or acceptance and commitment therapy (Eifert, McKay, & Forsyth, 2006).

This study has both strengths and limitations. One of its main strengths is the multifactorial approach used to identify the key predictors of IPVAV offender recidivism out of a large set of variables (i.e., individual, relational and contextual, violence-related, and intervention process-related variables). Recidivism was studied by means of survival analysis rather than linear or logistic regression, as it takes into account not only whether participants recidivated, but also the time elapsed since their first contact with the BIP. The use of the ALASSO to carry out this analysis was another strength of this study; unlike conventional regression methods, it allowed us

to obtain more accurate regression coefficients—avoiding possible overfitting issues—and select the best predictors of recidivism in a single step (McNeish, 2015; Zhang & Lu, 2007). To the best of our knowledge, this is the first time that penalized regression methods have been used to examine recidivism among BIP participants/users. The cross-validation approach used to test and re-test the Cox regression model through the ROC curve was also a strength of this study, since the six variables included in the final model were able to discriminate reasonably well between participants who recidivated and those that did not.

The first of the study's limitations concerns the use of official recidivism rates as the dependent variable. Because victims' reports of offender recidivism (compared to offender or official reports) tend to yield higher recidivism rates, relying on data from official reports underestimates the amount of actual recidivism (Cheng, Davis, Jonson-Reid, & Yaeger, 2019; Goldstein et al., 2016; Williams & Houghton, 2004). However, this was not possible in this study because Spanish legislation prevents the services referring IPVAV perpetrators to intervention programs from providing information that would allow access to their victims (Lila et al., 2018). Second, the immigrant status condition included participants from different countries of birth, with very different cultural backgrounds and social conditions. Immigrants are not a homogeneous social group (Vives-Cases et al., 2013), and future research dealing with cultural adaptation in BIPs should have deeper knowledge of the differences among immigrant subgroups. Finally, in spite of the advantages of ALASSO over conventional estimation methods (e.g., OLS), the software available to conduct the analyses did not provide estimation errors for the estimated regression coefficients, hampering the computation of confidence intervals for the hazard ratios. However, we addressed this issue by carrying out a non-parametric bootstrap, as suggested by Helwig (2017).

In conclusion, IPVAV is a social and public health problem that deserves more informed and better targeted interventions. The results of our study provide a set of six key risk predictors of IPVAV offender recidivism. These key predictors should be taken into account by professionals and researchers in this field to improve their evaluation and intervention strategies, and thus increase BIP effectiveness.

Conflict of Interest

The authors of this article declare no conflict of interest.

References

- Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology*, 30, 47-87. <https://doi.org/10.1111/j.1745-9125.1992.tb01093.x>
- Alexander, P. C., Morris, E., Tracy, A., & Frye, A. (2010). Stages of change and the group treatment of batterers: A randomized clinical trial. *Violence and Victims*, 25, 571-587. <https://doi.org/10.1891/0886-6708.25.5.571>
- Andrés-Pueyo, A., López, S., & Álvarez, E. (2008). Valoración del riesgo de violencia contra la pareja por medio de la SARA [Assessment of the risk of intimate partner violence and the SARA]. *Papeles del Psicólogo*, 29, 107-122.
- Arbach, K., & Bobbio, A. (2018). Intimate partner violence risk assessment in community health facilities: A multisite longitudinal study. *Psychosocial Intervention*, 27, 105-112. <https://doi.org/10.5093/pi2018a13>
- Arias, E., Arce, R., & Vilariño, M. (2013). Batterer intervention programmes: A meta-analytic review of effectiveness. *Psychosocial Intervention*, 22, 153-160. <https://doi.org/10.5093/in2013a18>
- Babcock, J., Armenti, N., Cannon, C., Lauve-Moon, K., Buttell, F., Ferreira, R., . . . Lehmann, P. (2016). Domestic violence perpetrator programs: A proposal for evidence-based standards in the United States. *Partner Abuse*, 7, 355-460. <https://doi.org/10.1891/1946-6560.7.4.355>
- Babcock, J. C., Graham, K., Canady, B., & Ross, J. M. (2011). A proximal change experiment testing two communication exercises with intimate partner violent men. *Behavior Therapy*, 42, 336-347. <https://doi.org/10.1016/j.beth.2010.08.010>
- Babcock, J. C., Green, C. E., & Robie, C. (2004). Does batterers' treatment work? A meta-analytic review of domestic violence treatment. *Clinical Psychology Review*, 23, 1023-1053. <https://doi.org/10.1016/j.cpr.2002.07.001>
- Babor, T. F., & Grant, M. (1989). From clinical research to secondary prevention: International collaboration in the development of the Alcohol Disorders Identification Test (AUDIT). *Alcohol Health & Research World*, 13, 371-375.
- Babyak, M. A. (2004). What you see may not be what you get: A brief, nontechnical introduction to overfitting in regression-type models. *Psychosomatic Medicine*, 66, 411-421. <https://doi.org/10.1097/01.psy.0000127692.23278.a9>
- Barbour, K. A., Eckhardt, C. I., Davison, G. C., & Kassnové, H. (1998). The experience and expression of anger in maritally violent and maritally discordant-nonviolent men. *Behavior Therapy*, 29, 173-191. [https://doi.org/10.1016/S0005-7894\(98\)80001-4](https://doi.org/10.1016/S0005-7894(98)80001-4)
- Bennett, L. W., Stoops, C., Call, C., & Flett, H. (2007). Program completion and re-arrest in a batterer intervention system. *Research on Social Work Practice*, 17, 42-54. <https://doi.org/10.1177/1049731506293729>
- Bonta, J., & Andrews, D. A. (2016). *The psychology of criminal conduct*. New York, NY: Routledge.
- Bowen, E. (2011). *The rehabilitation of partner-violent men*. London, UK: John Wiley & Sons.
- Campbell, J. C. (2002). Health consequences of intimate partner violence. *The Lancet*, 359, 1331-1336. [https://doi.org/10.1016/S0140-6736\(02\)08336-8](https://doi.org/10.1016/S0140-6736(02)08336-8)
- Cannon, C., Hamel, J., Buttell, F., & Ferreira, R. J. (2016). A survey of domestic violence perpetrator programs in the United States and Canada: Findings and implications for policy and intervention. *Partner Abuse*, 7, 226-276. <https://doi.org/10.1891/1946-6560.7.3.226>
- Cantos, A. L., Kosson, D., Goldstein, D. A., & O'Leary, K. D. (2019). Treatment impact on recidivism of family only vs. generally violent partner violence perpetrators. *International Journal of Clinical and Health Psychology*, 19, 171-180. <https://doi.org/10.1016/j.ijchp.2019.05.002>
- Cantos, A. L., & O'Leary, K. D. (2014). One size does not fit all in treatment of intimate partner violence. *Partner Abuse*, 5, 204-236. <https://doi.org/10.1891/1946-6560.5.2.204>
- 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, 231-280. <https://doi.org/10.1891/1946-6560.3.2.231>
- Capaldi, D. M., Shortt, J. W., & Crosby, L. (2003). Physical and psychological aggression in at-risk young couples: Stability and change in young adulthood. *Merrill-Palmer Quarterly*, 49, 1-27.
- Carbajosa, P., Catalá-Miñana, A., Lila, M., & Gracia, E. (2017). Differences in treatment adherence, program completion, and recidivism among batterer subtypes. *The European Journal of Psychology Applied to Legal Context*, 9, 93-101. <https://doi.org/10.1016/j.ejpal.2017.04.001>
- Carbajosa, P., Catalá-Miñana, A., Lila, M., Gracia, E., & Boira, S. (2017). Responsive versus treatment-resistant perpetrators in batterer intervention programs: Personal characteristics and stages of change. *Psychiatry, Psychology and Law*, 24, 936-950. <https://doi.org/10.1080/13218719.2017.1347933>
- Carbajosa, P., Lila, M., Negro, L., & Pérez, M. (2011). *El delito de violencia de género y los penados extranjeros* [Intimate partner violence among immigrants offenders]. Madrid, Spain: Ministerio del Interior. Recuperado de <http://www.interior.gob.es/file/53/53723/53723.pdf>
- Card, N. A., Stucky, B. D., Sawalani, G. M., & Little, T. D. (2008). Direct and indirect aggression during childhood and adolescence: A meta-analytic review of gender differences, intercorrelations, and relations to maladjustment. *Child Development*, 79, 1185-1229. <https://doi.org/10.1111/j.1467-8624.2008.01184.x>
- Cardenal, V., & Sanchez, M. P. (2007). *Adaptación y baremación al español del inventario clínico multiaxial de Millon-III (MCMI-III)* [Spanish adaptation and scaling of the Millon Clinical Multiaxial Inventory-III]. Madrid, Spain: TEA Ediciones.
- Catalá-Miñana, A., Lila, M., & Oliver, A. (2013). Consumo de alcohol en hombres penados por violencia contra la pareja: factores individuales y contextuales [Alcohol consumption in men punished for intimate partner violence: Individual and contextual factors]. *Adicciones*, 25, 19-28. <https://doi.org/10.20882/adicciones.68>
- Cattaneo, L. B., & Goodman, L. A. (2003). Victim-reported risk factors for continued abusive behavior: Assessing the dangerousness of arrested batterers. *Journal of Community Psychology*, 31, 349-369. <https://doi.org/10.1002/jcop.10056>
- Cattaneo, L. B., & Goodman, L. A. (2005). Risk factors for reabuse in intimate partner violence: A cross-disciplinary critical review. *Trauma, Violence, & Abuse*, 6, 141-175. <https://doi.org/10.1177/1524838005275088>
- Cheng, S. Y., Davis, M., Jonson-Reid, M., & Yaeger, L. (2019). Compared to what? A meta-analysis of batterer intervention studies using nontreated controls or comparisons. *Trauma, Violence, & Abuse*, <https://doi.org/10.1177/1524838019865927>
- Choi, S. Y., Cheung, Y. W., & Cheung, A. K. (2012). Social isolation and spousal violence: Comparing female marriage migrants with local women. *Journal of Marriage and Family*, 74, 444-461. <https://doi.org/10.1111/j.1741-3737.2012.00963.x>
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple correlation/regression analysis for the social sciences*. Hillsdale, NJ: Erlbaum.

- Collins, A. M., Bouffard, L. A., & Wilkes, N. (2019). Predicting recidivism among defendants in an expedited domestic violence court. *Journal of Interpersonal Violence, 34*, 4759-4764. <https://doi.org/10.1177/0886260518822343>
- Consejo General del Poder Judicial. (2018). *La violencia sobre la mujer en la estadística judicial - Anual 2018*. Retrieved from <http://www.poderjudicial.es/cgpj/es/Temas/Violencia-domestica-y-de-genero/Actividad-del-Observatorio/Datos-estadisticos/La-violencia-sobre-la-mujer-en-la-estadistica-judicial---Anual-2018>
- Contel Guillamón, M., Gual Solé, A., & Farran Colom, J. (1999). Test para la identificación de trastornos por uso de alcohol (AUDIT). *Adicciones: Revista de Sociodrogalcohol, 11*, 337-347.
- Cox, D. R. (1972). Regression models and life-tables. *Journal of the Royal Statistical Society: Series B (Methodological), 34*, 187-202. <https://doi.org/10.1111/j.2517-6161.1972.tb00899.x>
- Crane, C. A., & Eckhardt, C. I. (2013). Evaluation of a single-session brief motivational enhancement intervention for partner abusive men. *Journal of Counseling Psychology, 60*, 180-187. <https://doi.org/10.1037/a0032178>
- Craparo, G., Gori, A., Petrucci, I., Cannella, V., & Simonelli, C. (2014). Intimate partner violence: Relationships between alexithymia, depression, attachment styles, and coping strategies of battered women. *The Journal of Sexual Medicine, 11*, 1484-1494. <https://doi.org/10.1111/jsm.12505>
- Daly, J. E., & Pelowski, S. (2000). Predictors of dropout among men who batter: A review of studies with implications for research and practice. *Violence and Victims, 15*, 137-160. <https://doi.org/10.1891/0886-6708.15.2.137>
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology, 44*, 113-126. <https://doi.org/10.1037/0022-3514.44.1.113>
- Davis, R. C., Smith, B. E., & Nickles, L. B. (1998). The deterrent effect of prosecuting domestic violence misdemeanors. *Crime & Delinquency, 44*, 434-442. <https://doi.org/10.1177/0011128798044003006>
- De las Cuevas, C., González de Rivera, J. L., Henry-Benítez, M., Monterrey, A. L., Rodríguez-Pulido, F., & Gracia-Marco, R. (1991). Análisis factorial de la versión española del SCL-90-R en la población general [Factorial analysis of the SCL-90-R Spanish version in general population]. *Anales de Psiquiatría, 7*, 93-96.
- Derogatis, L. R. (1977). *The SCL-90 Manual I: Scoring, administration and procedures for the SCL-90*. Baltimore, MD: Clinical psychometric research.
- Devries, K. M., Mak, J. Y., Garcia-Moreno, C., Petzold, M., Child, J. C., Falder, G., ... & Pallitto, C. (2013). The global prevalence of intimate partner violence against women. *Science, 340*, 1527-1528. <https://doi.org/10.1126/science.1240937>
- Dutton, D. G., & White, K. R. (2012). Attachment insecurity and intimate partner violence. *Aggression and Violent Behavior, 17*, 475-481. <https://doi.org/10.1016/j.avb.2012.07.003>
- Echauri, J. A., Fernández-Montalvo, J., Martínez, M., & Azkarate, J. M. (2013). Effectiveness of a treatment programme for immigrants who committed gender-based violence against their partners. *Psicothema, 25*, 49-54. <https://doi.org/10.7334/psicothema2012.75>
- Eckhardt, C. I., Murphy, C. M., Whitaker, D. J., Sprunger, J., Dykstra, R., & Woodard, K. (2013). The effectiveness of intervention programs for perpetrators and victims of intimate partner violence. *Partner Abuse, 4*, 196-231. <https://doi.org/10.1891/1946-6560.4.2.196>
- Eckhardt, C. I., Holtzworth-Munroe, A., Norlander, B., Sibley, A., & Cahill, M. (2008). Readiness to change, partner violence subtypes, and treatment outcomes among men in treatment for partner assault. *Violence and Victims, 23*, 446-475. <https://doi.org/10.1891/0886-6708.23.4.446>
- Efron, B., & Tibshirani, R. J. (1994). *An introduction to the bootstrap*. Boca Raton, FL: CRC press.
- Eifert, G. H., McKay, M., & Forsyth, J. P. (2006). *Act on life not on anger: The new acceptance and commitment therapy guide to problem anger*. Oakland, CA: New Harbinger Publications.
- Ellsberg, M., Arango, D. J., Morton, M., Gennari, F., Kiplesund, S., Contreras, M., & Watts, C. (2015). Prevention of violence against women and girls: What does the evidence say? *The Lancet, 385*, 1555-1566. [https://doi.org/10.1016/S0140-6736\(14\)61703-7](https://doi.org/10.1016/S0140-6736(14)61703-7)
- Ellsberg, M., Jansen, H. A., Heise, L., Watts, C. H., & Garcia-Moreno, C. (2008). Intimate partner violence and women's physical and mental health in the WHO multi-country study on women's health and domestic violence: An observational study. *The Lancet, 371*, 1165-1172. [https://doi.org/10.1016/S0140-6736\(08\)60522-X](https://doi.org/10.1016/S0140-6736(08)60522-X)
- Erez, E., Adelman, M., & Gregory, C. (2009). Intersections of immigration and domestic violence: Voices of battered immigrant women. *Feminist Criminology, 4*, 32-56. <https://doi.org/10.1177/1557085108325413>
- Expósito, F., Moya, M. C., & Glick, P. (1998). Sexismo ambivalente: medición y correlatos [Ambivalent sexism: Measurement and correlates]. *Revista de Psicología Social, 13*, 159-169. <https://doi.org/10.1174/021347498760350641>
- Farzan-Kashani, J., & Murphy, C. M. (2017). Anger problems predict long-term criminal recidivism in partner violent men. *Journal of Interpersonal Violence, 32*, 3541-3555. <https://doi.org/10.1177/0886260515600164>
- Feder, L., & Dugan, L. (2002). A test of the efficacy of court-mandated counseling for domestic violence offenders: The Broward experiment. *Justice Quarterly, 19*, 343-375. <https://doi.org/10.1080/07418820200095271>
- Feder, L., & Wilson, D. (2005). A meta-analytic review of court-mandated batterer intervention programs: Can courts affect abusers' behaviour? *Journal of Experimental Criminology, 1*, 239-262. <https://doi.org/10.1007/s11292-005-1179-0>
- Fitzgerald, R., & Graham, T. (2016). Assessing the risk of domestic violence recidivism. *Crime and Justice Bulletin, 189*, 1-12.
- Fleming, P. J., McCleary-Sills, J., Morton, M., Levtor, R., Heilman, B., & Barker, G. (2015). Risk factors for men's lifetime perpetration of physical violence against intimate partners: Results from the international men and gender equality survey (IMAGES) in eight countries. *PLoS One, 10*, e0118639. <https://doi.org/10.1371/journal.pone.0126676>
- Fowler, D. R., Cantos, A. L., & Miller, S. A. (2016). Exposure to violence, typology, and recidivism in a probation sample of domestic violence perpetrators. *Child Abuse & Neglect, 59*, 66-77. <https://doi.org/10.1016/j.chabu.2016.07.007>
- García-Moreno, C., Hegarty, K., d'Oliveira, A. F. L., Koziol-McLain, J., Colombini, M., & Feder, G. (2015). The health-systems response to violence against women. *The Lancet, 385*, 1567-1579. [https://doi.org/10.1016/S0140-6736\(14\)61837-7](https://doi.org/10.1016/S0140-6736(14)61837-7)
- García-Moreno, C., Jansen, H. A., Ellsberg, M., Heise, L., & Watts, C. H. (2006). Prevalence of intimate partner violence: Findings from the WHO multi-country study on women's health and domestic violence. *The Lancet, 368*, 1260-1269. [https://doi.org/10.1016/S0140-6736\(06\)69523-8](https://doi.org/10.1016/S0140-6736(06)69523-8)
- Glick, P., & Fiske, S. T. (1997). Hostile and benevolent sexism: Measuring ambivalent sexist attitudes toward women. *Psychology of Women Quarterly, 21*, 119-135. <https://doi.org/10.1111/j.1471-6402.1997.tb00104.x>
- Goldstein, D. A., Cantos, A. L., Brenner, L. H., Verborg, R. J., & Koss, D. S. (2016). Perpetrator type moderates the relationship between severity of intimate partner violence and recidivism. *Criminal Justice and Behavior, 43*, 879-898. <https://doi.org/10.1177/0093854815616841>
- Gondolf, E. W. (2000). A 30-month follow-up of court-referred batterers in four cities. *International Journal of Offender Therapy and Comparative Criminology, 44*, 111-128. <https://doi.org/10.1177/0306624X00441010>
- Gondolf, E. W. (2012). *The future of batterer programs: Reassessing evidence-based practice*. Boston, MA: Northeastern University Press.
- Goodman, L. A., Dutton, M. A., & Bennett, L. (2000). Predicting repeat abuse among arrested batterers: Use of the Danger Assessment Scale in the criminal justice system. *Journal of Interpersonal Violence, 15*, 63-74. <https://doi.org/10.1177/08862600015001005>
- Gordon, J. A., & Moriarty, L. J. (2003). The effects of domestic violence batterer treatment on domestic violence recidivism: The Chesterfield County experience. *Criminal Justice and Behavior, 30*, 118-134. <https://doi.org/10.1177/0093854802239166>
- Gracia, E., García, F., & Lila, M. (2008). Police involvement in cases of intimate partner violence against women: The influence of perceived severity and personal responsibility. *Violence Against Women, 14*, 697-714. <https://doi.org/10.1177/1077801208317288>
- Gracia, E., García, F., & Lila, M. (2009). Public responses to intimate partner violence against women: The influence of perceived severity and personal responsibility. *The Spanish Journal of Psychology, 12*, 648-656. <https://doi.org/10.1017/S1138741600002018>
- Gracia, E., & Herrero, J. (2004). Personal and situational determinants of relationship-specific perceptions of social support. *Social Behavior and Personality: An International Journal, 32*, 459-476. <https://doi.org/10.2224/sbp.2004.32.5.459>
- Gracia, E., Herrero, J., Lila, M., & Fuente, A. (2009). Perceived neighborhood social disorder and attitudes toward domestic violence against women among latin-american immigrants. *European Journal of Psychology Applied to Legal Context, 1*, 25-43.
- Gracia, E., Herrero, J., & Musitu, G. (2002). *Evaluación de recursos y estresores psicosociales en la comunidad* [Assessment of psychosocial resources and stressors in the community]. Madrid, Spain: Síntesis.
- Gracia, E., Lila, M., & Musitu, G. (2005). Parental rejection and psychosocial adjustment of children. *Salud Mental, 28*, 73-81.
- Gracia, E., Rodríguez, C. M., Martín-Fernández, M., & Lila, M. (2017). Acceptability of family violence: Underlying ties between intimate partner violence and child abuse. *Journal of Interpersonal Violence, 32*, 1224-1234. <https://doi.org/10.1177/0886260517707310>
- Guedes, A., Bott, S., García-Moreno, C., & Colombini, M. (2016). Bridging the gaps: A global review of intersections of violence against women and violence against children. *Global Health Action, 9*, 31516. <https://doi.org/10.3402/gha.v9.31516>
- Gupta, J., Acevedo, D., Hemenway, D., Decker, M. R., Raj, A., & Silverman, J. G. (2010). Intimate partner violence perpetration, immigration status, and disparities in a community health center-based sample of men. *Public Health Reports, 125*, 79-87. <https://doi.org/10.1177/00333549101250011>
- Hamberger, L. K., & Hastings, J. E. (1988). Skills training for treatment of spouse abusers: An outcome study. *Journal of Family Violence, 3*, 121-130. <https://doi.org/10.1007/BF00994029>
- Hamilton, L., Koehler, J. A., & Lösel, F. A. (2013). Domestic violence perpetrator programs in Europe, part I: A survey of current practice. *International Journal of Offender Therapy and Comparative Criminology, 57*, 1189-1205. <https://doi.org/10.1177/0306624X12469506>
- Hanson, R. K., & Wallace-Capretta, S. (2004). Predictors of criminal recidivism among male batterers. *Psychology, Crime & Law, 10*, 413-427. <https://doi.org/10.1080/10683160310001629283>

- Heise, L. (2011). *What works to prevent partner violence? An evidence overview* (Working paper). STRIVE Research Consortium, London School of Hygiene and Tropical Medicine, London, UK.
- Helwig, N. E. (2017). Adding bias to reduce variance in psychological results: A tutorial on penalized regression. *The Quantitative Methods for Psychology, 13*, 1-19. <https://doi.org/10.20982/tqmp.13.1.p001>
- Herrero, J., & Gracia, E. (2007). Una medida breve de la sintomatología depresiva (CESD-7) [A brief measure of depressive symptomatology (CESD-7)]. *Salud Mental, 30*, 40-46.
- Herrero, J., Gracia, E., Fuente, A., & Lila, M. (2012). Social disorder, social integration, and subjective well-being among Latin-American immigrants in Spain. *Anales de Psicología, 28*, 505-514. <https://doi.org/10.6018/analesps.28.2.148721>
- Hilton, N. Z., Harris, G. T., Popham, S., & Lang, C. (2010). Risk assessment among incarcerated male domestic violence offenders. *Criminal Justice and Behavior, 37*, 815-832. <https://doi.org/10.1177/0093854810368937>
- Hirschi, T. (1969). A control theory of delinquency. In F. P. Williams & M. D. McShane (eds.), *Criminology theory: Selected classic readings* (pp. 289-305). New York, NY: Anderson Publishing Co.
- Holtzworth-Munroe, A., Meehan, J. C., Herron, K., Rehman, U., & Stuart, G. L. (2003). Do subtypes of maritally violent men continue to differ over time? *Journal of Consulting and Clinical Psychology, 71*, 728-740. <https://doi.org/10.1037/0022-006X.71.4.728>
- Holtzworth-Munroe, A., & Stuart, G. L. (1994). Typologies of male batterers: Three subtypes and the differences among them. *Psychological Bulletin, 116*, 476-497. <https://doi.org/10.1037/0033-2909.116.3.476>
- Hosmer, D. W., & Lemeshow, S. (2000). *Applied logistic regression*. New York, NY: John Wiley & Sons.
- Huss, M. T., & Ralston, A. (2008). Do batterer subtypes actually matter? Treatment completion, treatment response, and recidivism across a batterer typology. *Criminal Justice and Behavior, 35*, 710-724. <https://doi.org/10.1177/0093854808316218>
- Jewell, L. M., & Wormith, J. S. (2010). Variables associated with attrition from domestic violence treatment programs targeting male batterers: A meta-analysis. *Criminal Justice and Behavior, 37*, 1086-1113. <https://doi.org/10.1177/0093854810376815>
- Jones, A. S., D'Agostino Jr, R. B., Gondolf, E. W., & Heckert, A. (2004). Assessing the effect of batterer program completion on reassault using propensity scores. *Journal of Interpersonal Violence, 19*, 1002-1020. <https://doi.org/10.1177/0886260504268805>
- Juarros, J., Herrero, J. B., Fernández, A., Pérez, B., & Rodríguez, F. J. (2018). Are generalist batterers different from generally extra-family violent men? A study among imprisoned male violent offenders. *European Journal of Psychology Applied to Legal Context, 10*, 8-14. <https://doi.org/10.5093/ejpalc2018a1>
- Kingsnorth, R. (2006). Intimate partner violence: Predictors of recidivism in a sample of arrestees. *Violence Against Women, 12*, 917-935. <https://doi.org/10.1177/1077801206293081>
- Klein, A. R., & Tobin, T. (2008). A longitudinal study of arrested batterers, 1995-2005: Career criminals. *Violence Against Women, 14*, 136-157. <https://doi.org/10.1177/1077801207312396>
- Kropp, P. R., Hart, S., Webster, C., & Eaves, D. (1999). *Spousal risk assessment guide user's manual*. Toronto, ON: Multi-Health Systems and BC Institute Against Family Violence.
- Lanier, C., & Maume, M. O. (2009). Intimate partner violence and social isolation across the rural/urban divide. *Violence Against Women, 15*, 1311-1330. <https://doi.org/10.1177/1077801209346711>
- Lauch, K. M., Hart, K. J., & Bresler, S. (2017). Predictors of treatment completion and recidivism among intimate partner violence offenders. *Journal of Aggression, Maltreatment & Trauma, 26*, 543-557. <https://doi.org/10.1080/10926771.2017.1299824>
- Levesque, D. A., Ciavatta, M. M., Castle, P. H., Prochaska, J. M., & Prochaska, J. O. (2012). Evaluation of a stage-based, computer-tailored adjunct to usual care for domestic violence offenders. *Psychology of Violence, 2*, 368-684. <https://doi.org/10.1037/a0027501>
- Lila, M., Gracia, E., & Catalá-Miñana, A. (2017). More likely to dropout, but what if they don't? Partner violence offenders with alcohol abuse problems completing batterer intervention programs. *Journal of Interpersonal Violence*. Advance online publication. <https://doi.org/10.1177/0886260517699952>
- Lila, M., Gracia, E., & Catalá-Miñana, A. (2018). Individualized motivational plans in batterer intervention programs: A randomized clinical trial. *Journal of Consulting and Clinical Psychology, 86*, 309-320. <https://doi.org/10.1037/ccp0000291>
- Lila, M., Gracia, E., & García, F. (2013). Ambivalent sexism, empathy and law enforcement attitudes towards partner violence against women among male police officers. *Psychology, Crime & Law, 19*, 907-919. <https://doi.org/10.1080/1068316X.2012.719619>
- Lila, M., Gracia, E., & Murgui, S. (2013). Psychological adjustment and victim-blaming among intimate partner violence offenders: The role of social support and stressful life events. *The European Journal of Psychology Applied to Legal Context, 5*, 147-153. <https://doi.org/10.5093/ejpalc2013a4>
- Lila, M., Oliver, A., Catalá-Miñana, A., Galiana, L., & Gracia, E. (2014). The intimate partner violence responsibility attribution scale (IPVRAS). *European Journal of Psychology Applied to Legal Context, 6*, 29-36. <https://doi.org/10.5093/ejpalc2014a4>
- Lin, N., Dean, A., & Ensel, W. (1986). *Social support, life events and depression*. New York, NY: Academic Press.
- Lin, S. C., Su, C. Y., Chou, F. H. C., Chen, S. P., Huang, J. J., Wu, G. T. E., & Chen, C. C. (2009). Domestic violence recidivism in high-risk Taiwanese offenders after the completion of violence treatment programs. *Journal of Forensic Psychiatry & Psychology, 20*, 458-472. <https://doi.org/10.1080/14789940802638341>
- Linehan, M. M. (1993). *Skills training manual for treating borderline personality disorder*. New York, NY: Guilford Press.
- Llor-Esteban, B., García-Jiménez, J. J., Ruiz-Hernández, J. A., & Godoy-Fernández, C. (2016). Profile of partner aggressors as a function of risk of recidivism. *International Journal of Clinical and Health Psychology, 16*, 39-46. <https://doi.org/10.1016/j.ijchp.2015.05.004>
- Lodewijks, H. P., de Ruiter, C., & Doreleijers, T. A. (2010). The impact of protective factors in desistance from violent reoffending: A study in three samples of adolescent offenders. *Journal of Interpersonal Violence, 25*, 568-587. <https://doi.org/10.1177/0886260509334403>
- Loinaz, I. (2014). Typologies, risk and recidivism in partner-violent men with the B-SAFER: A pilot study. *Psychology, Crime & Law, 20*, 183-198. <https://doi.org/10.1080/1068316X.2013.770854>
- López-Ossorio, J. J., Carbajosa, P., Cerezo-Domínguez, A. I., González-Álvarez, J. L., Loinaz, I., & Muñoz-Vicente, J. M. (2018). Taxonomy of homicides of women in intimate partner relationships. *Psychosocial Intervention, 27*, 95-104. <https://doi.org/10.5093/pi2018a11>
- López-Ossorio, J. J., González-Álvarez, J. L., Buquerín, S., García, L., & Buela-Casal, G. (2017). Risk factors related to intimate partner violence police recidivism in Spain. *International Journal of Clinical and Health Psychology, 17*, 107-119.
- Mackay, E., Gibson, A., Lam, H., & Beecham, D. (2015). *Perpetrator interventions in Australia. Part one: Literature review*. Sydney, Australia: Australia's National Research Organisation for Women's Safety.
- Maiuro, R. D., & Eberle, J. A. (2008). State standards for domestic violence perpetrator treatment: Current status, trends, and recommendations. *Violence and Victims, 23*, 133-155. <https://doi.org/10.1891/0886-6708.23.2.133>
- Maiuro, R. D., Hagar, T. S., Lin, H. H., & Olson, N. (2001). Are current state standards for domestic violence perpetrator treatment adequately informed by research? A question of questions. *Journal of Aggression, Maltreatment & Trauma, 5*, 21-44. https://doi.org/10.1300/J146v05n02_03
- Malinosky-Rummell, R., & Hansen, D. J. (1993). Long-term consequences of childhood physical abuse. *Psychological Bulletin, 114*, 68-79. <https://doi.org/10.1037/0033-2909.114.1.68>
- Martín-Albo, J., Núñez, J. L., Navarro, J. G., & Grijalvo, F. (2007). The Rosenberg Self-Esteem Scale: Translation and validation in university students. *The Spanish Journal of Psychology, 10*, 458-467. <https://doi.org/10.1017/S1138741600006727>
- Martín-Fernández, M., Gracia, E., & Lila, M. (2018). Assessing victim-blaming attitudes in cases of intimate partner violence against women: Development and validation of the VB-IPVAW scale. *Psychosocial Intervention, 27*, 133-143. <https://doi.org/10.5093/pi2018a18>
- Mayfield, D., McLeod, G., & Hall, P. (1974). The CAGE questionnaire: Validation of a new alcoholism screening instrument. *American Journal of Psychiatry, 131*, 1121-1123. <https://doi.org/10.1176/ajp.131.10.1121>
- Mblinyi, L. F., Logan-Greene, P. B., Neighbors, C., Walker, D. D., Roffman, R. A., & Zegree, J. (2012). Childhood domestic violence exposure among a community sample of adult perpetrators: What mediates the connection? *Journal of Aggression, Maltreatment & Trauma, 21*, 171-187. <https://doi.org/10.1080/10926771.2012.639203>
- McNeish, D. M. (2015). Using lasso for predictor selection and to assuage overfitting: A method long overlooked in behavioral sciences. *Multivariate Behavioral Research, 50*, 471-484. <https://doi.org/10.1080/00273171.2015.1036965>
- Mears, D. P., Carlson, M. J., Holden, G. W., & Harris, S. D. (2001). Reducing domestic violence revictimization: The effects of individual and contextual factors and type of legal intervention. *Journal of Interpersonal Violence, 16*, 1260-1283. <https://doi.org/10.1177/088626001016012003>
- Mestre, V., Frías, M. D., & Samper, P. (2004). Measuring empathy: The interpersonal reactivity index. *Psicothema, 16*, 255-260.
- Miguel-Tobal, J. J., Casado, M., Cano-Vindel, A., & Spielberger, C. D. (2001). *Inventario de expresión de la ira estado-rasgo STAXI-2* [State-Trait Anger Expression Inventory]. Madrid, Spain: TEA Ediciones.
- Millon, T. (2007). *Inventario clínico multiaxial de Millon-III* [MCMI-III. Millon Clinical Multiaxial Inventory-III. Manual]. Madrid, Spain: TEA ediciones.
- Murphy, C. M., Taft, C. T., & Eckhardt, C. I. (2007). Anger problem profiles among partner violent men: Differences in clinical presentation and treatment outcome. *Journal of Counseling Psychology, 54*, 189-200. <https://doi.org/10.1037/0022-0167.54.2.189>
- Murphy, C. M., & Ting, L. A. (2010). Interventions for perpetrators of intimate partner violence: A review of efficacy research and recent trends. *Partner Abuse, 1*, 26-44. <https://doi.org/10.1891/1946-6560.1.1.26>
- Musser, P. H., Semiatin, J. N., Taft, C. T., & Murphy, C. M. (2009). Motivational interviewing as a pregroup intervention for partner-violent men. In C. M. Murphy & R. D. Maiuro (Eds.), *Motivational interviewing and stages of change in intimate partner violence* (pp. 61-88). New York: Springer.
- Nesset, M. B., Lara-Cabrera, M. L., Dalsbø, T. K., Pedersen, S. A., Bjørngaard, J. H., & Palmstierna, T. (2019). Cognitive behavioural group therapy for male perpetrators of intimate partner violence: A systematic review. *BMC Psychiatry, 19*, 11. <https://doi.org/10.1186/s12888-019-2010-1>

- Norlander, B., & Eckhardt, C. (2005). Anger, hostility, and male perpetrators of intimate partner violence: A meta-analytic review. *Clinical Psychology Review, 25*, 119-152. <https://doi.org/10.1016/j.cpr.2004.10.001>
- O'Leary, K. D., Smith Slep, A. M., & O'leary, S. G. (2007). Multivariate models of men's and women's partner aggression. *Journal of Consulting and Clinical Psychology, 75*, 752-764. <https://doi.org/10.1037/0022-006X.75.5.752>
- Olver, M. E., Stockdale, K. C., & Wormith, J. S. (2011). A meta-analysis of predictors of offender treatment attrition and its relationship to recidivism. *Journal of Consulting and Clinical Psychology, 79*, 6-21. <https://doi.org/10.1037/a0022200>
- Páez, F., Jiménez, A., López, A., Ariza, J. P. R., Soto, H. O., & Nicolini, H. (1996). Estudio de validez de la traducción al castellano de la Escala de impulsividad de Plutchick [Validity study of the Plutchik Impulsivity scale Spanish version]. *Salud Mental, 19*, 10-12.
- Pence, E., & Paymar, M. (1993). *Education groups for men who batter: The Duluth model*. New York, NY: Springer.
- Petersson, J., & Strand, S. (2017). Recidivism in intimate partner violence among antisocial and family-only perpetrators. *Criminal Justice and Behavior, 44*, 1477-1495. <https://doi.org/10.1177/0093854817719916>
- Petersson, J., Strand, S., & Selenius, E. (2019). Risk factors for intimate partner violence: A comparison of antisocial and family-only perpetrators. *Journal of Interpersonal Violence, 34*, 219-239. <https://doi.org/10.1177/0886260516640547>
- Plutchik, R., & Van Praag, H. M. (1989). The measurement of suicidality and impulsivity. *Progress in Neuro-psychopharmacology and Biological Psychiatry, 13*, 23-24. [https://doi.org/10.1016/0278-5846\(89\)90107-3](https://doi.org/10.1016/0278-5846(89)90107-3)
- R Core Team. (2018). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing.
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401. <https://doi.org/10.1177/014662167700100306>
- Raj, A., & Silverman, J. (2002). Violence against immigrant women: The roles of culture, context, and legal immigrant status on intimate partner violence. *Violence Against Women, 8*, 367-398. <https://doi.org/10.1177/10778010222183107>
- Revelle, W. (2018). *Psych: procedures for personality and psychological research*. Northwestern University. Evanston, IL.
- Richards, T. N., Jennings, W. G., Tomsich, E., & Gover, A. (2014). A 10-year analysis of rearrests among a cohort of domestic violence offenders. *Violence and Victims, 29*, 887-906. <https://doi.org/10.1891/0886-6708.VV-D-13-00145>
- Robin, X., Turck, N., Hainard, A., Tiberti, N., Lisacek, F., Sanchez, J. C., & Müller, M. (2011). pROC: An open-source package for R and S+ to analyze and compare ROC curves. *BMC Bioinformatics, 12*, 77. <https://doi.org/10.1186/1471-2105-12-77>
- Romero-Martínez, Á., Lila, M., Gracia, E., & Moya-Albiol, L. (2019). Improving empathy with motivational strategies in batterer intervention programmes: Results of a randomized controlled trial. *British Journal of Clinical Psychology, 58*, 125-139. <https://doi.org/10.1111/bjc.12204>
- Rondeau, G., Brodeur, N., Brochu, S., & Lemire, G. (2001). Dropout and completion of treatment among spouse abusers. *Violence and Victims, 16*, 127-143. <https://doi.org/10.1891/0886-6708.16.2.127>
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Middletown, CT: Westeyan University Press.
- Ruddle, A., Pina, A., & Vasquez, E. (2017). Domestic violence offending behaviors: A review of the literature examining childhood exposure, implicit theories, trait aggression and anger rumination as predictive factors. *Aggression and Violent Behavior, 34*, 154-165. <https://doi.org/10.1016/j.avb.2017.01.016>
- Santirso, F. A., Martín-Fernández, M., Lila, M., Gracia, E., & Terreros, E. (2018). Validation of the Working Alliance Inventory–Observer Short Version with male intimate partner violence offenders. *International Journal of Clinical and Health Psychology, 18*, 152-161. <https://doi.org/10.1016/j.ijchp.2018.02.003>
- Sanz-Barbero, B., Heras-Mosterio, J., Otero-García, L., & Vives-Cases, C. (2016). Sociodemographic profile of femicide in Spain and its association with domestic abuse reporting. *Gaceta Sanitaria, 30*, 272-278. <https://doi.org/10.1016/j.gaceta.2016.03.004>
- Scott, K. L. (2004). Stage of change as a predictor of attrition among men in a batterer treatment program. *Journal of Family Violence, 19*, 37-47. <https://doi.org/10.1023/B:JOFV.0000011581.01231.1e>
- Silver, E., & Teasdale, B. (2005). Mental disorder and violence: An examination of stressful life events and impaired social support. *Social Problems, 52*, 62-78. <https://doi.org/10.1525/sp.2005.52.1.62>
- Simon, N., Friedman, J., Hastie, T., & Tibshirani, R. (2011). Regularization paths for Cox's proportional hazards model via coordinate descent. *Journal of Statistical Software, 39*, 1-13. <https://doi.org/10.18637/jss.v039.i05>
- Smedslund, G., Dalsbø, T. K., Steiro, A., Winsvold, A., & Clench-Aas, J. (2011). *Cognitive behavioural therapy for men who physically abuse their female partner*. Oslo, Norway: Campbell Collaboration–Campbell Library of Systematic Reviews.
- Snead, A. L., Bennett, V. E., & Babcock, J. C. (2018). Treatments that work for intimate partner violence: Beyond the Duluth Model. In E. Jeglic, & C. Calkins (Eds), *New frontiers in offender treatment* (pp. 269-285). Cham, Switzerland: Springer.
- Spielberger, C. (1999). *State-Trait Anger Expression Inventory manual* (2nd ed.). Odessa, FL: Psychological Assessment Resources.
- Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1970). *Stai. Manual for the State-Trait Anxiety Inventory (self-evaluation questionnaire)*. Palo Alto, CA: Consulting Psychologist.
- Stansfield, R., & Williams, K. R. (2014). Predicting family violence recidivism using the DVSI-R: Integrating survival analysis and perpetrator characteristics. *Criminal Justice and Behavior, 41*, 163-180. <https://doi.org/10.1177/0093854813500776>
- Stöckl, H., Devries, K., Rotstein, A., Abrahams, N., Campbell, J., Watts, C., & Moreno, C. G. (2013). The global prevalence of intimate partner homicide: A systematic review. *The Lancet, 382*, 859-865. [https://doi.org/10.1016/S0140-6736\(13\)61030-2](https://doi.org/10.1016/S0140-6736(13)61030-2)
- Stoops, C., Bennett, L., & Vincent, N. (2010). Development and predictive ability of a behavior-based typology of men who batter. *Journal of Family Violence, 25*, 325-335. <https://doi.org/10.1007/s10896-009-9294-8>
- Thijssen, J., & de Ruiter, C. (2010). Identifying subtypes of spousal assaulters using the B-SAFER. *Journal of Interpersonal Violence, 26*, 1307-1321. <https://doi.org/10.1177/0886260510369129>
- Trizano-Hermosilla, I., & Alvarado, J. M. (2016). Best alternatives to Cronbach's alpha reliability in realistic conditions: Congeneric and asymmetrical measurements. *Frontiers in Psychology, 7*, 769. <https://doi.org/10.3389/fpsyg.2016.00769>
- Vargas, V., Lila, M., & Catalá-Miñana, A. (2015). Do cultural differences influence batterer intervention program outcomes? A study with Spanish and Latin American offenders. *Psychosocial Intervention, 24*, 41-47. <https://doi.org/10.1016/j.psi.2015.03.001>
- Vaughn, M., Salas-Wright, Cooper-Sadlo, S., Maynard, B. R., & Larson, M. (2014). Are immigrants more likely than native-born Americans to perpetrate intimate partner violence? *Journal of Interpersonal Violence, 29*, 1-17. <https://doi.org/10.1016/j.psi.2015.03.001>
- Vilariño, M., Amado, B. G., Vázquez, M. J., & Arce, R. (2018). Psychological harm in women victims of intimate partner violence: Epidemiology and quantification of injury in mental health markers. *Psychosocial Intervention, 27*, 145-152. <https://doi.org/10.5093/pi2018a23>
- Virella, B., Arbona, C., & Novy, D. M. (1994). Psychometric properties and factor structure of the Spanish version of the State-Trait Anxiety Inventory. *Journal of Personality Assessment, 63*, 401-412. https://doi.org/10.1207/s15327752jpa6303_1
- Vives-Cases, C., Parra-Casado, L., Goicolea, I., Felt, E. B., Briones Vozmediano, E., Ortiz Barreda, G. M., & Gil-González, D. (2014). *Preventing and addressing intimate partner violence against migrant and ethnic minority women: The role of the health sector*. Copenhagen, Denmark: World Health Organization.
- Vives-Cases, C., Ruiz-Cantero, M. T., Escribà-Agüir, V., & Miralles, J. J. (2010). The effect of intimate partner violence and other forms of violence against women on health. *Journal of Public Health, 33*, 15-21. <https://doi.org/10.1093/pubmed/fdq101>
- Vives-Cases, C., Torrubiano-Domínguez, J., Gil-González, D., Parra, D. L., Agudelo-Suárez, A. A., Davó, M. C., ... & Martínez-Román, M. A. (2013). Social and immigration factors in intimate partner violence among Ecuadorians, Moroccans and Romanians living in Spain. *The European Journal of Public Health, 24*, 605-612. <https://doi.org/10.1093/eurpub/ckt127>
- Voith, L. A., Logan-Greene, P., Strodtzoff, T., & Bender, A. E. (2018). A paradigm shift in batterer intervention programming: A need to address unresolved trauma. *Trauma, Violence, & Abuse, 19*, 1-17. <https://doi.org/10.1177/1524838018791268>
- Weber, E. N., Taylor, A. R., Cantos, A. L., Amado, B. G., & O'Leary, K. (2019). Exploring typology categorizations of male perpetrators: A methodology study. *European Journal of Psychology Applied to Legal Context, 11*, 93-97. <https://doi.org/10.5093/ejpalc2019a5>
- Wexler, D. B. (2000). *Domestic Violence 2000: Group leader's manual*. New York, NY: W.W. Norton.
- Williams, K. R., & Houghton, A. B. (2004). Assessing the risk of domestic violence reoffending: A validation study. *Law and Human Behavior, 28*, 437-455. <https://doi.org/10.1023/B:LAHU.0000039334.59297.f0>
- Wooldredge, J., & Thistlethwaite, A. (2002). Reconsidering domestic violence recidivism: Conditioned effects of legal controls by individual and aggregate levels of stake in conformity. *Journal of Quantitative Criminology, 18*, 45-70. <https://doi.org/10.1023/A:1013292812895>
- World Health Organization. (2002). *The world health report 2002: Reducing risks, promoting healthy life*. Geneva, Switzerland: World Health Organization.
- World Health Organization. (2013). *Global and regional estimates of violence against women: Prevalence and health effects of intimate partner violence and non-partner sexual violence*. Geneva, Switzerland: World Health Organization.
- Zhang, H. H., & Lu, W. (2007). Adaptive Lasso for Cox's proportional hazards model. *Biometrika, 94*, 691-703. <https://doi.org/10.1093/biomet/asm037>
- Zou, H. (2006). The adaptive lasso and its oracle properties. *Journal of the American Statistical Association, 101*, 1418-1429. <https://doi.org/10.1198/016214506000000735>