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Intimate Partner Violence and Its Associated Factors in a Sample of Colombian Immigrant Population in Spain

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Abstract Immigrants are vulnerable to Intimate partner violence (IPV). This study aims at characterising IPV among Colombian immigrants, and to identify its associated factors. Cross-sectional study on 336 Colombian immigrants (46 % women), aged 15–70 years, living in Spain. Self-reported questionnaire information on IPV suffered throughout the last year was collected face-to-face. Multivariable logistic regression was used to identify factors associated with IPV. Almost 30 % of participants reported IPV, without differences by gender ($p = 0.339$). Partner's alcohol consumption was associated with a higher frequency of being victim of IPV in both sexes. In women, low educational level, and discrimination were further associated to IPV. Younger age, and poorer self-perceived health in Spain as compared to Colombia were factors associated in men. Results showed similarly high levels of IPV among immigrant men and women. Alcohol

consumption, education, discrimination, age, and poor self-perceived health were factors associated to IPV.

Keywords Intimate partner violence (IPV) · Domestic violence · Immigrants · Colombians · Spain

Introduction

Intimate partner violence (IPV) is an important public health concern of severe consequences for the physical and mental health of its victims, especially women [1]. Women are more likely than men to report longer lasting victimization, to suffer bodily injuries, to suffer poor mental health, and to require medical and legal assistance" [2]. Consequently, the vast majority of investigations on IPV have exclusively focused on violence perpetrated on women by their male partners. However, some latest population-based studies assessing IPV as any act of abuse, controlling behaviour, and physical or sexual coercion, suggest that men and women are similarly likely to experience abusive relationships [3–5]. Nevertheless, injuries resulting from physical and sexual abuse may be more severe when they are perpetrated by men towards women [6]. In addition, it is known that the immigrant condition is an additional factor of vulnerability that turn immigrants into a population at particularly high risk of IPV [1, 7].

Within the context of immigration in Spain, IPV has been reported to be higher in foreign than native women (27 vs. 14 %, respectively) [8]. In 2007, near 40 % of death victims were IPV were foreign women. Such a finding is further supported by recent data from the '2011 Macro-Survey on Gender-based Violence' which confirmed that immigrant women were more likely to suffer acts of gender-based violence than their native counterparts [9].

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Besides, the authors noted that the prevalence of IPV among immigrant women was higher as the time of residence in Spain became longer. Factors such as a young age, lower educational level, economic constraints, lack of social support, a poor self-perceived health, and discrimination, all frequent conditions among immigrants, have been associated to the prevalence of violence [8, 10–16]. In addition, immigrants do not form a homogenous group, and factors such as ethnic, country of origin, legal status and time of residence, may also influence IPV [17–19].

Spain has been a leading country of immigration within the last decade in Europe, with immigrants representing 12 % of the total country population in 2007, and reaching up to 14 % in 2013. Colombians are among the most important immigration groups in Spain, being the second largest Latin-American group, with a predominant concentration in the Eastern Levante region [20]. It is a young, economic immigration, equally distributed by sex [21]. As further characteristic of Colombian immigrants, a large proportion of them declare to have a stable marriage (41 %) or common-law partnership, according to 2007 Spanish National Immigration Survey [22]. Such circumstance would affect the migration process itself, but would also provide the context within which IPV could develop in the destination country.

The present study aims at characterising the extent of IPV and to identify its associated socio-economic, lifestyle, and health-related factors, in an immigrant Colombian population living in Eastern Spain before the onset of the 2007 global financial crisis.

Methods

Study Design and Participants

The study was designed as a cross-sectional research on a convenience sample of Colombian population living in Elda (Alicante, Spain) at the time of the study. The target population comprised all Colombian immigrants without Spanish citizenship, aged over 15 years, and registered in the city population census ($n = 1127$). No exclusions were applied regarding the legal status or time of residence in Spain. The recruitment began by scheduling in person appointments at the most frequent meeting places of the Colombian population, such as religious charity organisations, non-governmental organisations, and the Colombians Association in Elda. Primary care centres, cybercafés, and leisure-time meeting places for Colombians were also visited in moments of great influx of people to recruit further potential participants. A snowball sampling method was employed in an attempt to enlarge the study sample as much as possible. For this purpose, recruited participants

were asked to introduce the interviewer to other Colombians or to provide contact details of potentially eligible subjects. A total of 459 subjects were invited to participate, and only 7 eligible subjects (1.6 %) refused to take part in the study. Finally, 240 men and 212 women, representing 40.4 % of the total Colombian population of the municipality within the age range 15–70 years, joined the study between June 2006 and June 2007.

All participants were informed of the objectives and methodology of the study, and all agreed to participate. The study was approved by the Department of Public Health, History of Science, and Gynaecology of the University Miguel Hernández (Alicante, Spain), and the Department of Health and Social Sciences of the University of Murcia (Spain).

Questionnaire and Data Collection

A previous questionnaire developed by Torres and Sanz to study immigrant population in Spain was specifically adapted for the present study [23]. The questionnaire was structured into four main sections: (1) socio-demographic characteristics, and living and working conditions of the participant and his/her partner; (2) lifestyle habits (smoking, alcohol consumption) and self-reported health of the interviewee and the partner; (3) accidents (in Spain) and related medical assistance; and (4) violence and discrimination. Section (4) included 24 closed-ended questions about violence that could be answered in 12 min, whereas completing the whole questionnaire took approximately 20–30 min. Questionnaires were completed in face-to-face interviews carried out by the main researcher of the study (SC), although a small proportion ($\approx 20\%$) of the questionnaires were self-administered upon request by the participants. The researcher was always available to the participants in case they needed assistance to fill in the questionnaire. For privacy purposes, interviews and self-administered questionnaires were completed with participants not in the presence of close friends or relatives. Furthermore, all information was collected anonymously and the participants were guaranteed the confidentiality of the data they provided. Once the questionnaires were completed, they were deposited immediately in a secure box provided for this purpose, which was kept locked by the main researcher and opened daily.

Assessment of Intimate Partner Violence (IPV)

The dependent variable in the analyses was defined as having undergone sexual, physical, or psychological harm by a former or current partner within the last year. Physical violence was evaluated with the question: “Within the last year, have you suffered harm or physical abuse by your partner?” Psychological violence was evaluated by three

questions: (1) “Within the last year, have you suffered threatens of physical harm, abandon, or abuse by your partner?”, (2) “Within the last year, has your partner insulted you or called you with derogatory names?”, and (3) “Within the last year, have you felt abused or ridiculed by your partner?” Finally, sexual violence was evaluated by the question: “Within the last year, have you suffered sexual abuse by your partner?”

One dichotomous variable was created to define the IPV victim status in the past 12 months, considering those participants who answered “yes” to any of the questions on sexual, physical, or psychological violence, whereas those who answered negatively to all questions were considered to be non victims.

Statistical Analyses

Sample characteristics were described according to case status (victim of IPV vs. non-victim), separately for men and women. Differences in mean age between victims and non-victims were evaluated using Student-t tests, whereas χ^2 tests were used to assess differences in the distribution of categorical study variables by IPV status. For working-related variables, differences between informative categories were assessed after exclusion of non-workers. Differences in legal status and labour formality of participants’ partners were estimated only for those with their partner living in Spain. Variables significantly associated with IPV in univariate analyses at $p \geq 0.10$ level, were further considered for multivariable logistic regression. Odds ratios (OR) and 95 % confidence intervals (CI) were calculated to identify determinants of IPV and to assess the magnitude of their association. The independent effect of IPV determinants was further evaluated by fitting models with two different level of adjustment: a basic model considered age, and educational level as potential confounders, whereas a second model also considered health status (in absolute terms, and in relation to Colombia), discrimination, self- and partner’s alcohol consumption, and job skill level. The final set of confounders in each model was determined by a backward selection step-wise procedure based on likelihood ratio tests implemented to define parsimonious models (p for removal ≥ 0.20). Missing values in study variables were defined as a separate category in regression models. Non-linear associations between IPV and age in men and women were explored by using restricted cubic spline terms for age (with knots at percentiles p5, 35, p65, and p95) in regression models. Finally, all variables were defined as categorical, except for age in case of men, since underwent cubic spline transformation given the evidence for non-linearity.

Analyses were performed with STATA/SE version 12.0 (Stata Corp., College Station, Texas). Two-tailed p values < 0.05 were considered significant, unless otherwise stated.

Results

Table 1 show descriptive data on socio-demographic, immigration-related, and health-related variables in the study sample, according to IPV case status. For ease of reading, variables were dichotomised and only one informative category is presented. As shown, participants who reported IPV were more frequently alcohol consumers and tend to perceive their health status (absolute and relative) as worse as compared to non-victims. Besides, partners of IPV victims used to drink alcohol in a much larger proportion than partners of non-victims (34 vs. 10 % among male victims, and 70 vs. 46 % among female victims). Men reporting IPV were younger and more frequently smokers. Female victims showed lower education, and reported having felt discriminated to a larger proportion than non-victims (81 vs. 61 %). Results showed no statistically significant differences in the reported frequency of last year IPV between men and women overall (26 vs. 31 %, respectively; $p = 0.339$), or by type of violence: 10.4 vs. 14.9 % for physical violence ($p = 0.214$); and 24.7 vs. 29.2 % for psychological violence ($p = 0.354$) (sexual violence was reported only by 1 man and 1 woman).

The results of logistic regression models for the multivariate association of IPV with socio-demographic factors, working-related variables, immigration status characteristics, and health habits, are shown in Tables 2 and 3. Factors showing an independent statistically significant association with IPV in men were younger age, self- and partner’s alcohol consumption, and a worse self-reported health as perceived in relation to the country of origin. In women, factors independently associated to IPV were lower educational level, self-perceived discrimination, and partner’s alcohol consumption. It is noteworthy that the association of IPV with self-alcohol consumption in women found in models adjusted for age and educational level was no longer significant after adjustment for partner’s alcohol consumption ($p = 0.255$).

A curve modelling of the association of IPV with age was explored in men and women by using restricted cubic splines, as illustrated in Fig. 1. A strong inverse non-linear association was found in men ($p < 0.05$), with a plateau roughly within the 30–40 age interval, whereas no such association was found in women ($p = 0.72$).

Discussion

Results from the present study revealed the high frequency of IPV experiences both in men (26 %) and women (31 %) from an immigrant Colombian population in Spain. These figures are in contrast with the much lower prevalence of IPV in Spanish population, which, according to the

Table 1 Sociodemographic and occupational characteristics of interviewees and their partners among victims and non victims of intimate partner violence, by sex

| | Men (n = 182) | | | Women (n = 154) | | |
|--|---------------|------------|-----------------------|-----------------|------------|-----------------------|
| | Non victims | Victims | <i>P</i> ^a | Non victims | Victims | <i>P</i> ^a |
| All n (%) | 135 (74.2) | 47 (25.8) | – | 107 (69.5) | 47 (30.5) | – |
| <i>Sociodemographic characteristics</i> | | | | | | |
| Age (years), mean (sd) | 37.4 (9.1) | 31.9 (9.0) | <0.001 | 33.3 (9.3) | 33.7 (9.1) | 0.598 |
| Secondary studies or higher, n (%) | 116 (85.9) | 40 (85.1) | 0.890 | 93 (86.9) | 34 (72.3) | 0.028 |
| Married or common-law partnership, n (%) | 120 (88.9) | 41 (87.2) | 0.760 | 95 (88.8) | 42 (89.4) | 0.916 |
| Partner with secondary studies or higher, n (%) | 116 (85.9) | 38 (80.9) | 0.510 | 88 (82.2) | 35 (74.5) | 0.219 |
| <i>Immigration status</i> | | | | | | |
| Legal status, n (%) | 97 (63.2) | 32 (44.5) | 0.624 | 81 (64.1) | 30 (44.3) | 0.130 |
| Working with contract or self-employed, n (%) | 77 (60.2) | 21 (53.9) | 0.484 | 37 (43.0) | 15 (36.6) | 0.490 |
| Skilled or semi-skilled job, n (%) | 43 (33.6) | 19 (48.7) | 0.087 | 14 (16.3) | 3 (7.3) | 0.165 |
| Four years or more of residence in Spain, n (%) | 97 (71.9) | 34 (72.3) | 0.949 | 70 (65.4) | 31 (66.0) | 0.949 |
| Self-perceived discrimination, n (%) | 85 (63.0) | 36 (76.6) | 0.088 | 65 (60.8) | 38 (80.9) | 0.015 |
| Partner's legal status | 69 (69.3) | 28 (65.1) | 0.648 | 77 (77.0) | 30 (68.2) | 0.265 |
| Partner working with contract or self-employed, n (%) | 33 (24.4) | 16 (34.0) | 0.685 | 71 (66.4) | 29 (61.7) | 0.860 |
| <i>Health habits and self-reported health</i> | | | | | | |
| Current smoking, n (%) | 29 (28.4) | 17 (32.7) | 0.046 | 15 (37.5) | 6 (22.2) | 0.835 |
| Current alcohol consumption, n (%) | 73 (54.1) | 35 (74.5) | 0.014 | 25 (23.4) | 21 (44.7) | 0.008 |
| Good or very good health (self-reported), n (%) | 97 (71.9) | 26 (55.3) | 0.037 | 56 (52.3) | 16 (34.0) | 0.036 |
| Similar or better health in Spain than Colombia (self-reported), n (%) | 97 (71.9) | 23 (48.9) | 0.004 | 58 (54.2) | 18 (38.3) | 0.069 |
| Partner's alcohol consumption, n (%) | 14 (10.4) | 16 (34.0) | 0.002 | 49 (45.8) | 33 (70.2) | 0.002 |

^a *P* value for differences in study variables by IPV status, according to Student *t* tests (continuous variables) or Chi square tests (categorical variables). See text for details

published literature, ranges from 1 to 4 % for self-reported violence, and between 14 and 15 %, for technically defined acts of violence based on the Index of Spouse Abuse [13, 14, 24]. One further study based on the “2011 Macro-Survey on Gender-based Violence” found a 6 % prevalence of last year IPV among immigrant women in Spain [9]. These marked differences between studies largely reflect the extent of the variability in the definition of violence, study design, methodology used, questionnaire sensitivity to less severe forms of abuse, the characteristics of the study population and the socio-cultural context of the research. Furthermore, immigrant populations in Spain are diverse with regard to ethnic origin, religion, and culture. Characterising the prevalence of IPV and establishing its determinants in these groups thus warrants that analyses are conducted separately according to country of origin. Although our analysis does not allow to elucidate the influence that the culture of origin could have on the occurrence of IPV among Colombian immigrants, the academic literature in Colombia has long argued about the role of chronic violence and high homicide rates as social determinants of IPV in the country, where some types of

violence, including violence against women, are socially tolerated. For illustration, results from the 2007 National Health Survey in Colombia showed that one in five women and one in three men agreed with the statement that “when a man hits a woman it is almost certainly because she has given him a reason to do so” [25].

Remarkably, our study has not found statistically significant differences in prevalence of IPV by sex, either globally or by type of violence (physical, psychological, or sexual). This finding is consistent with several published studies reporting data on the prevalence of IPV both in men and women. Ansara et al. [3] reported that men and women older than 15 years participating in the 2004 Canadian General Social Survey were similarly likely to experience less severe forms of physical aggression or psychological abuse. More recently, previous results from the authors on a representative sample of immigrant population living in a South-Eastern Spanish region showed a similarly low prevalence of IPV in Latin-American women (2 %) and men (1 %) [26]. A previous meta-analysis on gender-based differences of physical aggression among heterosexual partners revealed that women used certain types of physical

Table 2 Odds ratios (OR) and 95 % confidence intervals (CI) for the association of sociodemographic and immigration-related variables with intimate partner violence in Colombian men and women residing in Spain

| | Men (n = 182) | | | | | Women (n = 154) | | | | |
|---|---------------|-----------------|-----------|-----------------|------------|-----------------|-----------------|-----------|-----------------|------------|
| | n | OR ^a | 95% CI | OR ^b | 95% CI | n | OR ^a | 95% CI | OR ^b | 95% CI |
| Sociodemographic characteristics | | | | | | | | | | |
| Age group | | | | | | | | | | |
| 15–34 | 78 | 1 | | 1 | | 88 | 1 | | 1 | |
| 35–44 | 73 | 0.55 | 0.26–1.14 | 0.80 | 0.34–1.88 | 48 | 1.10 | 0.51–2.37 | 0.81 | 0.34–1.93 |
| ≥45 | 31 | 0.19 | 0.05–0.70 | 0.27 | 0.07–1.08 | 18 | 0.73 | 0.22–2.37 | 0.59 | 0.16–2.22 |
| Educational level | | | | | | | | | | |
| Secondary or higher | 156 | 1 | | 1 | | 127 | 1 | | 1 | |
| Primary or no formal education | 26 | 1.37 | 0.51–3.68 | 1.36 | 0.43–4.31 | 27 | 2.63 | 1.10–6.29 | 3.05 | 1.18–7.90 |
| Marital status | | | | | | | | | | |
| Married/common-law partnership | 161 | 1 | | 1 | | 137 | 1 | | 1 | |
| Single/separated/divorced/widowed | 21 | 0.72 | 0.23–2.23 | 0.45 | 0.12–1.62 | 17 | 0.88 | 0.28–2.71 | 0.83 | 0.25–2.79 |
| Partner's educational level | | | | | | | | | | |
| Universitary/secondary | 154 | 1 | | 1 | | 123 | 1 | | 1 | |
| Primary or no formal education | 26 | 1.63 | 0.60–4.40 | 1.55 | 0.47–5.08 | 30 | 1.13 | 0.43–2.96 | 1.17 | 0.41–3.35 |
| Immigration status | | | | | | | | | | |
| Legal status | | | | | | | | | | |
| Legal | 129 | 1 | | 1 | | 111 | 1 | | 1 | |
| Not legal | 53 | 1.05 | 0.49–2.27 | 0.70 | 0.28–1.76 | 43 | 1.53 | 0.71–3.29 | 1.74 | 0.76–3.99 |
| Labour formality | | | | | | | | | | |
| Contract/self-employed | 98 | 1 | | 1 | | 52 | 1 | | 1 | |
| Informal economy | 69 | 1.13 | 0.53–2.43 | 1.06 | 0.46–2.43 | 75 | 1.14 | 0.52–2.50 | 0.90 | 0.38–2.13 |
| Job skill level | | | | | | | | | | |
| Skilled/semi-skilled | 62 | 1 | | 1 | | 17 | 1 | | 1 | |
| Unskilled | 105 | 0.52 | 0.24–1.12 | 0.46 | 0.19–1.09 | 110 | 2.05 | 0.55–7.69 | 3.20 | 0.79–12.91 |
| Not working | 15 | 1.90 | 0.53–6.76 | 3.05 | 0.75–12.44 | 27 | 1.00 | 0.21–4.87 | 1.57 | 0.29–8.51 |
| Time of residence in Spain | | | | | | | | | | |
| <4 years | 51 | 1 | | 1 | | 53 | 1 | | 1 | |
| ≥4 years | 131 | 1.09 | 0.50–2.40 | 1.56 | 0.61–4.01 | 101 | 1.02 | 0.49–2.12 | 0.76 | 0.34–1.70 |
| Self-perceived discrimination | | | | | | | | | | |
| No | 61 | 1 | | 1 | | 51 | 1 | | 1 | |
| Yes | 121 | 1.74 | 0.78–3.87 | 1.64 | 0.70–3.84 | 103 | 2.73 | 1.18–6.29 | 2.68 | 1.10–6.51 |
| Partner's legal status | | | | | | | | | | |
| Legal | 97 | 1 | | 1 | | 107 | 1 | | 1 | |
| Not legal | 46 | 1.09 | 0.49–2.42 | 0.73 | 0.29–1.87 | 37 | 1.31 | 0.58–2.98 | 1.43 | 0.60–3.42 |
| Partner's labour formality | | | | | | | | | | |
| Contract/self-employed | 49 | 1 | | 1 | | 100 | 1 | | 1 | |
| Informal economy | 91 | 0.72 | 0.32–1.62 | 0.40 | 0.15–1.08 | 46 | 0.92 | 0.42–2.04 | 0.92 | 0.40–2.13 |

^a Model 1: OR adjusted by age, in men, and by educational level, in women

^b Model 2: OR adjusted by job skill level, alcohol consumption and partner's alcohol consumption. In men, further adjusted by age, and comparative health perception; in women, further adjusted by educational level, and self-perceived discrimination

aggression even more frequently than men, although men were more likely to cause injuries to their partners [27]. Furthermore, a recent review evaluating gender differences in the perpetration, motivation, and impact of IPV showed

that both women and men commit acts of physical IPV and emotional abuse to a comparable extent [28]. Nevertheless, the impact, severity and chronicity of the violence differ by sex. From a gender-based point of view, it should be

Table 3 Odds ratios (OR) and 95 % confidence intervals (CI) for the association of health-related variables with intimate partner violence in Colombian men and women residing in Spain

| | Men (n = 182) | | | | | Women (n = 154) | | | | |
|--|---------------|-----------------|-----------|-----------------|-----------|-----------------|-----------------|-----------|-----------------|-----------|
| | N | OR ^a | 95% CI | OR ^b | 95% CI | n | OR ^a | 95% CI | OR ^b | 95% CI |
| Health habits and self-reported health | | | | | | | | | | |
| Smoking | | | | | | | | | | |
| No | 136 | 1 | | 1 | | 133 | 1 | | 1 | |
| Yes | 46 | 1.66 | 0.75–3.65 | 1.29 | 0.52–3.19 | 21 | 0.83 | 0.29–2.34 | 0.58 | 0.18–1.81 |
| Alcohol consumption | | | | | | | | | | |
| No | 74 | 1 | | 1 | | 108 | 1 | | 1 | |
| Yes | 108 | 2.35 | 1.08–5.12 | 2.60 | 1.12–6.04 | 46 | 2.75 | 1.31–5.79 | 1.62 | 0.71–3.70 |
| Self-reported health | | | | | | | | | | |
| Very good/good | 123 | 1 | | 1 | | 72 | 1 | | 1 | |
| Fair/bad/very bad | 59 | 2.63 | 1.24–5.57 | 0.79 | 0.24–2.64 | 82 | 2.14 | 1.04–4.42 | 1.66 | 0.75–3.68 |
| Self-perceived health in Spain as compared to Colombia | | | | | | | | | | |
| Much better/better/same | 120 | 1 | | 1 | | 76 | 1 | | 1 | |
| Worse/much worse | 62 | 3.22 | 1.53–6.77 | 2.45 | 1.15–5.22 | 78 | 2.05 | 1.00–4.22 | 1.48 | 0.67–3.28 |
| Partner's alcohol consumption | | | | | | | | | | |
| No | 113 | 1 | | 1 | | 67 | 1 | | 1 | |
| Yes | 30 | 3.84 | 1.54–9.58 | 3.20 | 1.27–8.07 | 82 | 3.50 | 1.58–7.76 | 3.22 | 1.42–7.30 |

^a Model 1: OR adjusted by age, in men, and by educational level, in women

^b Model 2: OR adjusted by job skill level, alcohol consumption and partner's alcohol consumption. In men, further adjusted by age, and comparative health perception; in women, further adjusted by educational level, and self-perceived discrimination

pointed out that women are more frequently victims of severe acts of physical violence and chronic patterns of control and abuse, and thus, the consequences of IPV are more severe for women than men [3, 27]. The higher female vulnerability to partner's violence should be considered in terms of the greater impact of IPV on women's physical and psychological health, rather than in terms of a differential (higher) prevalence in women.

As a second objective, our study aimed to deepen the knowledge of factors related to IPV that could provide guidance for effective prevention policies. As shown, alcohol consumption was the factor most consistently involved in acts of IPV in each gender. Although this result is in agreement with other studies that showed alcohol consumption associated with domestic violence [29], the scientific evidence is still insufficient to claim a causal effect for alcohol on acts of IPV, due to the lack of studies with longitudinal design and enough inferential power, and the possibility of publication bias [30]. Other variables significantly related to having experienced IPV were, in women, a lower educational level, and experiences of discrimination; in men, a worse self-perceived health status were more frequently reported by those who had been victims of IPV. These factors had previously been reported by other authors studying IPV in different population

settings, which underpins their strong role in determining IPV and their potential relevance for policies on IPV prevention [14, 26, 29, 31–33]. However, given the cross-sectional design of most studies, the directionality of the associations between IPV and the above-mentioned factors cannot be properly established.

On the other hand, if self-perceived discrimination could be interpreted as a proxy of the degree of social integration, it could be hypothesized that any action in support of the integration of immigrant groups could assist in alleviating the social problem of violence. Further studies addressing the specific links between discrimination and violence, and the particular causes for their association with the female gender, are thus warranted.

It is worth mentioning the strong protective effect of age against IPV in men. Previous research support that partner violence and mistreatment would be more frequent at younger ages [34, 35], frequently due to physical and emotional factors, and a larger exposition to stressful events, such as difficulties in raising children and maintaining the household [36]. However, the null association of IPV with age in women is challenging. Further research should clarify the role of age on IPV occurrence among Latin-American women, and establish whether this association differs by sex.

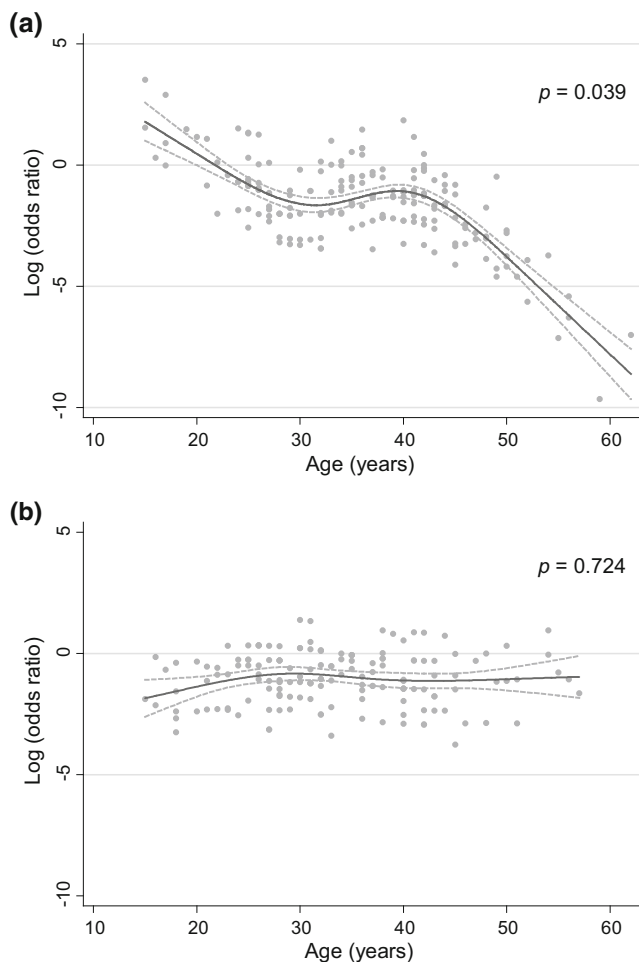


Fig. 1 Frequency of intimate partner violence by age among Colombian immigrants in Spain. **a** Men ($n = 182$). **b** Women ($n = 154$). *Solid lines* represent log-odds ratios (*dashed lines* for 95 % CI) plotted against age, from multivariate stepwise models adjusted for educational level, self-reported health, self-perceived discrimination, job skill level, and partner's alcohol consumption. Age was transformed using restricted cubic splines with knots at the 5th, 35th, 65th, and 95th percentile

Some limitations of the study should be considered. First, the snowball sampling method does not guarantee the representativeness of the sample, which would limit the external validity of our results. However, near four in ten Colombians residing in the municipality were included in the study, and we checked that the age and sex distribution of the sample did not significantly differ from that of the total Colombian population in the city and the country, according to official population census data at the time the study was conducted. It is important to consider the response rate was very high (98.4 %) and this situation would argue against an important selection bias of the study sample. Secondly, the cross-sectional design precludes inferences on the directionality of the associations reported. Finally, as in all observational studies, residual or unmeasured confounding cannot be fully discarded.

The study also has important strengths. Notably, this is the first in-depth investigation on the frequency and determinants of IPV in immigrant men and women in Spain. So far, published literature on IPV in Spain (as much in immigrants as in natives) had been restricted to the female gender, not allowing for direct gender comparisons [8–10, 13, 14, 16, 37]. Furthermore, the questionnaire inquired about relevant characteristics of the partner, important for the comprehension of the social dimension of IPV, according to Heise's ecological conceptual framework [38]. Finally, the study contributes important data to the scarce evidence available in Spain on the magnitude of IPV in immigrant populations, which should aid in the design and implementation of policies for the prevention of IPV and the social integration of immigrants, a group of particular vulnerability to this problem [8, 16, 39].

Conclusions

Our results reveal the high frequency of intimate partner violence in an immigrant Colombian population in Spain, which did not differ significantly by sex. Factors which are either modifiable or amenable to intervention, such as discrimination and alcohol consumption, have been identified as important correlates of IPV. Thus, our results shed light on potential ways to address and effectively reduce the burden of IPV among the immigrant population.

As an epilogue, the authors noted that the study was conducted just before the global financial crisis struck the Spanish economy. The ongoing economic recession, with its devastating consequences for the participation of immigrants in the labour market [40], social policies and a reduction in resources [41], severely aggravates this group's vulnerability to IPV. These results should serve as a pre-crisis referent for future studies evaluating the impact of the financial crisis on IPV experiences among immigrants in Spain.

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