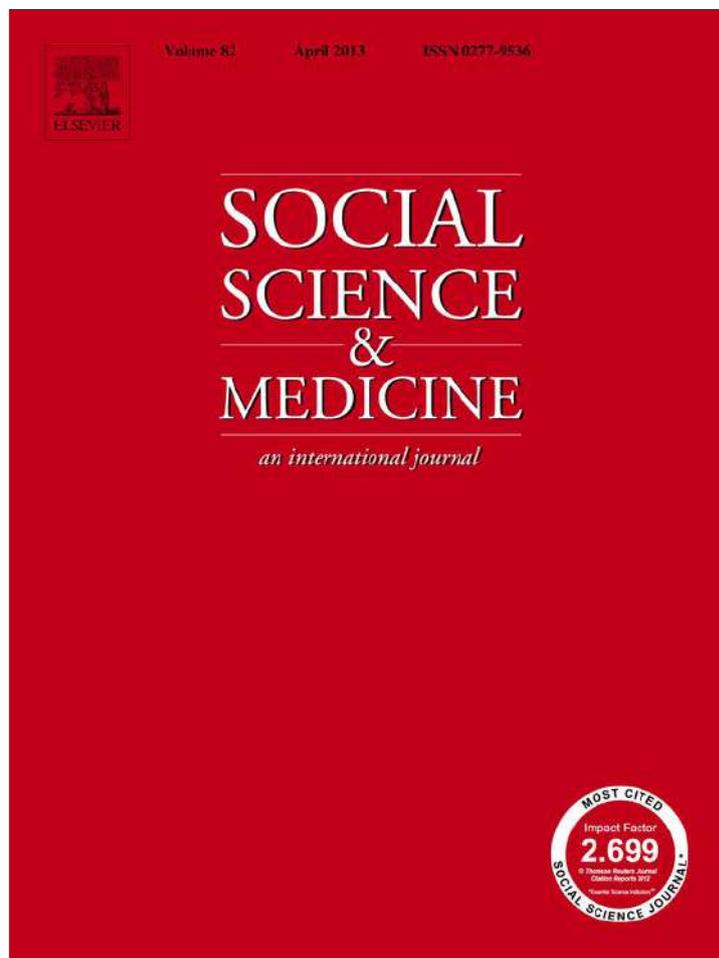


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Social Science & Medicine

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Prevalence and severity of intimate partner violence in women living in eight indigenous regions of Mexico

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ARTICLE INFO

Article history:

Available online 29 January 2013

Keywords:

Intimate partner violence
Indigenous population
Women
Mexico

ABSTRACT

The aim of this study was to identify the prevalence and severity of intimate partner violence (IPV) in eight indigenous regions of Mexico, as well as the socioeconomic and demographic variables that are associated with this phenomenon. A cross-sectional study was conducted in indigenous regions that have a greater availability of government medical services than other indigenous regions. Interviews were conducted with female patients ($n = 3287$) seeking medical care in either of the two public health institutions in these regions. The severity of intimate partner violence (SIPV) during the previous 12 months was measured using a 33-item scale. Multinomial logistic regression analyses were performed to explore the factors associated with SIPV. Intimate partner violence prevalence was 25.5% (95%CI 24.93–25.26). Female partner variables such as personal history of child abuse ($OR_A 3.48$; 95%CI 2.48–4.89) and work outside the home ($OR_A 1.74$; 95%CI 1.22–2.49) and male partner variables such as unemployment ($OR_A 2.31$; 95%CI 1.34–3.97) and a high frequency of alcohol use ($OR_A 13.35$; 95%CI 7.02–25.39) were the main predictors for IPV. We found a three-fold higher risk of IPV for women living in the Los Altos de Chiapas region ($OR_A 3.01$; 95%CI 1.88–4.79) compared with women in the Mayan region (reference category). Such results should aid decision makers in the development of extended public policies and interventions to address violence against women in the indigenous populations of Mexico.

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Introduction

There are approximately 42 million indigenous individuals living in the Americas, distributed among 400 different ethnic groups; they constitute almost 10% of the Latin American population. The majority is distributed among Mexico, Guatemala, Peru, Bolivia, and Ecuador (PAHO, 1998, p. 95). It is estimated that in Mexico alone the indigenous population comprises 12.5 million individuals who speak 62 different languages; these characteristics make the Mexican indigenous population the largest and most heterogeneous indigenous population on the American continent.

Indigenous women of the region confront a triple disadvantage, given their ethnic origin, gender, and segregation. The social position of indigenous women is mainly characterized by their subordination to men and by their productive, reproductive, and community responsibilities; these conditions contribute to their higher vulnerability to gender violence and social discrimination,

as widely documented in Latin America (Sierra, 2008) and worldwide (FIMI, 2006). Nevertheless, IPV in the Americas has been minimally examined; even countries such as the United States and Canada that have devoted extensive research to this problem have produced only limited evidence documenting IPV directed toward indigenous women (Fairchild, Fairchild, & Stoner, 1998).

In the United States, Malcoe, Duran, and Montgomery (2004) reviewed eight publications documenting the prevalence of IPV among native American women. They identified a lifetime prevalence of IPV of 38%–79%. Certain limitations were identified: a) the sample size was small (only two of the studies had a sample of 300 or more observations); b) there were no studies exploring violence typology of IPV among the various ethnic groups in the United States; and c) there were limited analyses of the socioeconomic factors associated with IPV among indigenous women.

The ethnicity and language of participants and communities are rarely documented in these studies. The study conducted by García-Moreno, Jansen, Ellsberg, and Watts (2006) compared IPV in ten countries from all continents, but in Latin America, only Peru included a large indigenous population. Language was included as a variable but was not analyzed for participants residing in Cuzco and Lima.

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Our study is the first that is specifically designed to capture the prevalence, severity, and other aspects of IPV among indigenous populations in Mexico and Latin America. The study was carried out in clinics associated with the public health service institutions of Mexico in eight indigenous regions; it aims to identify the socio-economic and demographic variables associated with the prevalence and severity of IPV during the preceding year.

Method

A cross-sectional study of violence against women was conducted in two public health institutions of Mexico between September 2006 and March 2007.

Sample selection

A stratified probabilistic sampling was carried out in three stages. In the first stage, the units were the current 25 indigenous regions in Mexico. The selection was proportional to the indigenous population size. Following this criterion, eight indigenous regions were selected: Altos de Chiapas (Chiapas), Istmo (Oaxaca), Huasteca (San Luis Potosí), Mazahua-otomí (Querétaro), Maya (Yucatán), Chinanteca (Oaxaca), Costa y Sierra Sur (Oaxaca) and Zongolica (Veracruz) (see Fig. 1).

In the second stage, clinics and hospitals located throughout the study regions were selected with a probability proportional to the number of medical units per type of institution. The strata were the two health institutions providing medical care to the Mexican indigenous population: The Health Ministry (HM) and the Mexican Institute of Social Security Opportunity (IMO). Then, using a systematic sampling method, respondents were selected from female patients receiving preventive or curative services who fulfilled the following selection criteria: aged 15–59 years and having had an intimate partner at some point. Exclusion criteria included women with any type of vision, hearing, or cognitive disability that interfered with their ability to complete the questionnaire.

After providing written informed consent, selected women were interviewed individually in a private room in the clinic. Only the interviewer and the respondent were present during the

interview. Translators were present for respondents who did not speak Spanish; wherever possible, translators from another community who would not know the respondent were selected. Women participated voluntarily without any type of incentive. Interviews were conducted by professional female interviewers who were trained to handle the emotional experiences that might arise as a result of answering the questions.

The sample included 3949 women; all were users of public health services. The non-response rate was approximately 5%. This project was reviewed and approved by the Research, Ethics, and Bio-Safety Commission of the National Institute of Public Health and by the National Commission of Indigenous Communities of Mexico.

Data collection

A pilot study was conducted with 200 women from a non-participating indigenous community. The pilot helped to clarify the wording of some items and to adjust certain study procedures. For example, difficulties that arose from home interviewing, such as suspicions about the activities of unfamiliar female interviewers, led to the decision to conduct the interviews in medical units. Questionnaires were administered verbally. The field crew consisted of 15 interviewers, 2 supervisors, and 1 field coordinator. Ethical and safety recommendations established by the World Health Organization (WHO), including training of and support to field workers, obtaining informed consent from participants, emphasizing voluntary participation and securing confidentiality and anonymity, were strictly followed throughout the study and data analysis (WHO, 2001).

Assessments

Intimate partner violence (IPV)

To measure intimate partner violence, we used a modified version of the “Scale to measure male partner violence (SV),” which was validated with Mexican women during the first and second National Survey on Violence against Women, conducted in 2003 and 2006 (Avila-Burgos et al., 2009; ENVIM, 2009; Valdez-Santiago



Fig. 1. The eight indigenous regions of Mexico.

et al., 2006). The original scale consisted of 27 items. Six items were added, including four exploring neglect, which was defined as preventing access to care, such as forbidding women to seek needed medical attention or forcing women to do housework when sick. Such acts have been found to be common in the indigenous regions of Mexico. The scale was tested, modified, and validated during the pilot study.

For this study, intimate partner violence was defined as an isolated life-threatening event or a repetitive pattern of violent and coercive behavior, including physical, sexual and psychological attacks, as well as economic coercion inflicted on women by their intimate partner. The scale measures the following dimensions: a) *physical violence*: pushing, blows, or wounds by a firearm or a sharp object; b) *emotional violence*: intimidation, verbal humiliation, or threats of violence; c) *neglect*: partner intimidation to perform household duties during sickness or a delay or postponement in seeking medical attention; d) *sexual violence*: any form of forced sexual activity through physical or emotional coercion; and e) *financial violence*: partner abuse through restriction of monetary resources.

The violence scale also required the respondent to report the frequency with which each violent episode occurred during the preceding twelve months using the response format: 0 = never; 1 = once; 2 = often; and 3 = many times. To reduce the number of highly correlated variables, a factor analysis was used. Six factors were identified for different types of violence: Factor 1, emotional violence; Factor 2, physical violence; Factor 3, neglect; Factor 4, financial violence; Factor 5, severe violence; and Factor 6, sexual violence. These factors and their respective items are available from the authors upon request. Three items were removed from the scale because of ambiguous factor loadings, namely, above 0.30 for more than one factor (Hair, Anderson, Tatham, & Black, 2000). The items comprising each of these factors were consistent with the general indices of the National Surveys on Violence Toward Women conducted in 2003 and 2006 (Avila-Burgos et al., 2009; ENVIM, 2009). The reliability of the complete scale was an alpha value of 0.90.

With the linear combination of these factors, a new continuous variable was created: severity of partner violence index (SPVI). The criteria used to define the cut-off points were those used by the previously mentioned surveys:

Scores of 0 up to 1 point below the mean = *no violence*. Values from the mean up to 1 standard deviation = *non-severe violence*. Values greater than 1 standard deviation indicate cases of *severe violence* (for a more detailed description of the methodology, see Valdez-Santiago et al., 2006).

The severity index was reviewed and validated theoretically and statistically, establishing that any single life-threatening experience was classified as a case of severe violence, such as pointing a gun or threatening the partner with a sharp object, inflicting burns, firing a gun, attempting to choke or suffocate the partner, or forcing sexual intercourse.

Independent variables of interest

- a) Socio-demographic characteristics of indigenous women, their partners, and their households. This dimension was measured with 20 questions addressing age, education, and the number of children born alive. These variables were measured with a continuous scale. Work activity during the week preceding the interview, the frequency of alcohol use, and the indigenous language spoken were measured categorically. All variables were reported for both partners. Male partner information was provided by the interviewed women.
- b) Types of partnership. Indigenous communities follow certain traditional practices with respect to marital unions. This variable was recorded using the following categories: a) the woman was married with her parents' approval; b) the woman was married without her parents' approval; c) the woman eloped with her partner; d) the woman was abducted by her partner without her consent; and e) the woman was given to her partner in exchange for a dowry or payment in cash or in kind, as arranged by the woman's father and the young man's family and without consulting the woman. Other variables included age at first union, duration of the union, and the respondent's lifetime number of partners.
- c) Interpersonal history of violence. This category was explored with two questions: the first asked about blows and humiliation inflicted by parents or caretakers during childhood, and the second asked about sexual abuse before age 15.
- d) Index of possessions. This was measured with 10 items concerning the possession or presence of different home appliances, dwelling ownership, the possession of an automobile or truck, and overcrowding of the dwelling (1). Affirmative answers were summed, and the new variable was categorized in tertiles, corresponding to low, middle, and high strata (Avila-Burgos et al., 2009).
- e) Type of municipality. This category was classified as an indigenous municipality or as a municipality with an indigenous presence. This classification was created and validated by the National Population Council (CONAPO, 2012). An indigenous municipality is identified when 40% or more of its population 5 years of age and older speaks an indigenous language; a municipality with an indigenous presence is identified when less than 40% of the population speaks an indigenous language.
- f) The level of poverty of a community is a measure of the intensity of deprivation on dimensions related to basic needs that are established as constitutional rights. A Deprivation Index was developed and validated by the National Population Council (CONAPO, 2012). This index encompasses the following four dimensions (as well as nine indicators): *education*, which indicates illiteracy and individuals with an incomplete grammar school education; *dwelling*, which addresses whether the home possesses running water, a sewage system and/or a toilet and whether the home has dirt floors, electricity, and is overcrowded; *income*, which indicates an employed population earning minimum wage; and *population distribution*, which indicates communities with a population under 5 thousand inhabitants. Deprivation is classified as very high, high, middle, low, and very low (3).

Statistical analyses

The categorical variables (frequency of alcohol use, occupation, history of child abuse, etc.) were analyzed individually to obtain their proportions; bivariate chi-squared tests were used to examine the association of these variables with the severity index. For continuous variables, means and medians were used to examine the differences among the severity groups, namely, no violence (0), non-severe violence (1), and severe violence (2). The Ordinal Logistic Regression Model (Model 1) was used initially but later rejected because it did not comply with the model's central supposition test (Test of Parallel Lines); the Multinomial Logistic Regression Model (Model 2) was used instead. Model 2 assumes that the dependent variable has more than two non-ordered categories. Women who were exposed to severe partner violence and those who experienced non-severe violence were compared to those who did not report violence.

Variables showing a value of $p < .20$ (Hosmer & Lemeshow, 2000) in the bivariate analysis were tested in the multivariate model as confounders and effect modifiers and were kept when $p < .05$. The model's global adjustment was verified with Pearson's goodness-of-fit test and adjusted as needed when $p > .20$ (Hosmer

& Lemeshow, 2000). In both bivariate and multivariate analyses, the confidence intervals were calculated with a robust standard error (Williams, 2000). Continuous variables were evaluated to determine whether they were linearly related to the logit of the dependent variable in the final model (Box–Tidwell Test) (Bagley, White, & Golomb, 2001; Hosmer & Lemeshow, 2000). This test was rejected; therefore, these variables became categories that were incorporated in the model.

Differences among the variable categories were evaluated to determine significant differences. Thus, when the statistics showed no differences (Lincom Test $p > .10$) (Hosmer & Lemeshow, 2000), the categories collapsed. The Stata version 10.1 statistical package was used (Stata, 2009).

Results

The overall IPV prevalence in indigenous women was 25.1% (95%CI 24.93–25.26), of which 15% (95%CI 14.86–15.13) and 10.10% (95%CI 9.98–10.21) corresponded to non-severe and severe violence, respectively. The Los Altos de Chiapas region showed the greatest significant prevalence of IPV (41.37%), whereas the Coastal and South mountain regions had the lowest prevalence (15.81%). IPV by type of violence was distributed as follows: emotional 21%, physical 10%, financial 10%, sexual 10%, and neglect 6%.

Socio-demographic correlates of IPV

The average age of the study respondents was 35 ± 15.78 years; education was low among most of the respondents, with an average of 4.5 school years. Women subjected to IPV had significantly less education (3.5 ± 5.74 years), particularly those reporting severe IPV (2.76 ± 4.79). Most participants were housewives, although among those who were victims, 41% worked outside the home, and almost half of these suffered from SIPV (46%). Women reporting severe IPV married at a young age, did not have consensual unions, were married against their will or had a history of more than one union; they also had a higher frequency of alcohol consumption and a larger number of offspring, and they lived in urban areas and belonged to poorer households (Table 1).

Fifty-nine percent of women reporting severe IPV reported a personal history of severe child abuse. The proportion of women reporting sexual abuse before age 15 was significantly higher among the IPV victims (10%), particularly among those who reported severe IPV (19%).

Male partners of women reporting severe IPV had significantly less education (4.06 ± 7.62 years), and a larger number of them were unemployed (14%) in comparison with women reporting non-severe IPV (10%). The reported proportion of male partners consuming alcohol daily was also significantly larger for women who experienced severe IPV (20%) (Table 2).

Table 3 presents the unadjusted model with the variables found to be most associated with severity of partner abuse. Table 4 presents the multivariate model's IPV results. In the final model, 97% ($n = 3287$) of women remained in a union with their partners. Of those variables characterizing the women in the study, child abuse was the most important predictor for IPV; women subjected to violence during their childhood had a 3.48 (OR_A 3.48; 95%CI 2.48–4.89) times greater likelihood of experiencing severe IPV and a 2.3 times greater likelihood of experiencing non-severe IPV (OR_A 2.31; 95%CI 1.76–3.01) when compared with women not exposed to child abuse.

Each one-year increment in the women's education functioned as a protector for severe violence (OR_A .91; 95%CI .86–.96). Women working outside the home had a higher risk of suffering IPV; they had a 74% higher probability of experiencing SIPV (OR_A 1.74; 95%CI 1.22–2.49) and a 64% higher probability of experiencing non-severe IPV. Housewives were the reference group for this comparison.

Table 1
Intimate partner violence and demographic characteristics of female participants.

| Characteristics | No violence (<i>n</i> = 191 435) | Non-severe violence ^a (<i>n</i> = 38 661) | Severe violence ^a (<i>n</i> = 26 032) | <i>p</i> |
|------------------------------------------------------|--------------------------------------|-------------------------------------------------------------|---------------------------------------------------------|----------|
| | % | % | % | |
| <i>General data</i> | | | | |
| Age (continuous) | 34.62 (mean) | 35.23 (mean) | 36.05 (mean) | |
| Education in years (mean ± SD) | 4.67 ± 3.52 | 3.56 ± 5.74 | 2.76 ± 4.79 | |
| <i>Women's work activity</i> | | | | |
| Housewife | 71 | 59 | 54 | <.0001 |
| Work outside the home ^b | 29 | 41 | 46 | |
| <i>Age at start of partnership</i> | | | | |
| 19 years or younger | 67 | 78 | 75 | <.0001 |
| 20 years or older | 33 | 22 | 25 | |
| <i>Number of partners</i> | | | | |
| One partner | 96 | 93 | 91 | <.0001 |
| More than one | 4 | 7 | 9 | |
| <i>Union in agreement with male partner's family</i> | | | | |
| Yes | 91 | 81 | 81 | <.0001 |
| No | 9 | 19 | 19 | |
| <i>Partnership's modality</i> | | | | |
| Engaged and/or eloped consensually | 97 | 95 | 91 | <.0001 |
| Engaged and/or eloped against the woman's will | 2 | 4 | 8 | |
| Bought | 1 | 1 | 1 | |
| <i>Live births</i> | | | | |
| Without children | 3 | 1 | 3 | .06 |
| With children | 97 | 99 | 97 | |
| <i>Child abuse</i> | | | | |
| No | 73 | 52 | 41 | <.0001 |
| Yes | 27 | 48 | 59 | |
| <i>Sexual abuse before age 15</i> | | | | |
| No | 95 | 90 | 81 | <.0001 |
| Yes | 5 | 10 | 19 | |
| <i>Frequency of alcohol use</i> | | | | |
| Never | 86 | 79 | 81 | <.0001 |
| Occasionally | 13 | 20 | 17 | |
| Once or more per month | 1 | 1 | 2 | |
| <i>Language</i> | | | | |
| Monolingual (only indigenous language spoken) | 8 | 7 | 12 | .83 |
| Bilingual | 53 | 50 | 52 | |
| Spanish only | 39 | 43 | 36 | |
| <i>Income index</i> | | | | |
| Very low | 23 | 23 | 29 | .58 |
| Low | 20 | 18 | 17 | |
| Middle | 36 | 36 | 38 | |
| High | 21 | 23 | 16 | |
| <i>Type of locality</i> | | | | |
| Urban | 16 | 22 | 21 | .08 |
| Rural | 84 | 78 | 79 | |
| <i>Type of municipality</i> | | | | |
| Indigenous municipality | 62 | 54 | 53 | .12 |
| With indigenous presence | 38 | 46 | 47 | |

^a All types of violence were included (emotional, physical, financial, sexual, and neglect).

^b All work activities explored by the survey were included: employee, laborer, day laborer, unskilled laborer, self-employed worker, and house maid.

Women having their first intimate partnership at age 19 or younger had a 65% higher probability of being subjected to non-severe IPV (OR_A 1.66; 95%CI 1.21–2.29) and a 17% probability of experiencing SIPV. Women ages 20 and older were the reference group.

Of the male partner variables, the most important predictor for IPV was the male partner's reported higher frequency of alcohol

Table 2
Demographic characteristics of women's partners (% unless reported otherwise).

| Characteristics | No violence (n = 191 435) | Non-severe violence ^a (n = 38 661) | Severe violence ^a (n = 26 032) | p |
|---------------------------------------------------------------|------------------------------|-----------------------------------------------------|-------------------------------------------------|--------|
| | % | % | % | |
| Age (continuous) | 38.50 (mean) | 39.17 (mean) | 40.14 (mean) | |
| Education in years (mean ± SD) | 5.33 ± 6.03 | 4.92 ± 7.37 | 4.06 ± 7.62 | |
| <i>Partner's occupation (during the week prior to survey)</i> | | | | |
| Unemployed | 5 | 10 | 14 | <.0001 |
| Employed | 95 | 90 | 86 | |
| <i>Contributes to household expenses</i> | | | | |
| Yes | 96 | 89 | 76 | <.0001 |
| No | 4 | 11 | 24 | |
| <i>Frequency of alcohol consumption</i> | | | | |
| Never drinks | 45 | 23 | 20 | <.0001 |
| Occasionally, less than once per month | 30 | 31 | 14 | |
| One to three times per month | 13 | 19 | 14 | |
| One to two times per week | 9 | 20 | 31 | |
| Every day or almost every day | 3 | 7 | 20 | |
| <i>Language</i> | | | | |
| Indigenous language only | 3 | 4 | 4 | .75 |
| Bilingual | 58 | 53 | 60 | |
| Spanish only | 39 | 43 | 36 | |

^a All types of violence were included (emotional, physical, financial, sexual, and neglect).

use. A gradient was observed; as the frequency of alcohol use increased, so did the risk for IPV. Women whose partners used alcohol daily had a 13.35 times greater risk of experiencing severe IPV than women whose partners never used alcohol (OR_A 13.35; 95%CI = 7.02–25.39). Women with unemployed partners had a higher risk for severe IPV (OR_A 2.31; 95%CI = 1.34–3.97) and non-severe IPV (OR_A 1.61; 95%CI = .97–2.68); the comparison group was women with employed partners.

Additionally, two variables exploring regional IPV prevalence were included. Women living in municipalities classified as having an indigenous presence (<40%) had a higher risk of experiencing severe (OR_A 2.45; 95%CI 1.29–4.67) and non-severe IPV (OR_A 1.68; 95%CI 1.00–2.84) when compared with those participants residing in communities classified as indigenous municipalities.

When comparing IPV by study regions, *Los Altos de Chiapas* stands out, as women from that area showed a higher risk for severe and non-severe IPV. Remarkably, in this region, the risk of severe IPV was three times higher (OR_A 3.01; 95%CI 1.88–4.79); women from the Huasteca and Zongolica regions also had a higher probability of being subjected to severe and non-severe IPV. In all cases, the comparison group was the Mayan region.

Discussion

The main findings of the study were that the *Altos de Chiapas* region showed almost a two-fold higher prevalence of IPV when compared with other study regions and to national data. Interestingly, the prevalence and severity of IPV was lower in regions that were exclusively indigenous when compared with those communities where the indigenous population was a minority. This suggests that the preservation of cultural traditions of the communities of origin may be important and that being a minority presents tensions and contradictions that may be one source of violence.

Another finding was that working women experienced higher levels of partner violence. This has been noted previously among

Table 3
Factors associated with intimate partner violence in indigenous women, Mexico.

| Variables | Non-severe violence ^a | | | Severe violence ^a | | |
|----------------------------------------------------------|----------------------------------|---------------------|--------|------------------------------|-------------|--------|
| | ORc | CI 95% ^b | p | ORc | CI 95% | p |
| Women's characteristics | | | | | | |
| Age in years (continuous) | 1.00 | .99–1.01 | .35 | 1.01 | .99–1.02 | .06 |
| Education in years (continuous) | .98 | .95–1.02 | .53 | .91 | .87–.95 | <.0001 |
| <i>Age at first union</i> | | | | | | |
| 20 years or older | 1 | | | 1 | | |
| 19 years or younger | .67 | .48–.95 | .02 | .57 | .42–.77 | <.0001 |
| <i>Live children</i> | | | | | | |
| No children | 1 | | | 1 | | |
| 1–2 children | .82 | .63–1.06 | .14 | .55 | .39–.79 | <.0001 |
| 3–4 children | 1.15 | .82–1.51 | .47 | .82 | .56–1.21 | .33 |
| 5 or more children | 1.09 | .855–1.41 | .46 | 1.75 | 1.30–2.37 | <.0001 |
| <i>Working activity</i> | | | | | | |
| Works only at home | 1 | | | 1 | | |
| Works outside the home | 1.73 | 1.34–2.24 | <.0001 | 2.09 | 1.55–2.82 | <.0001 |
| <i>Child abuse (humiliation and blows)</i> | | | | | | |
| No | 1 | | | 1 | | |
| Yes | 2.46 | 1.91–3.17 | <.0001 | 3.90 | 2.88–5.28 | <.0001 |
| Partners' characteristics | | | | | | |
| <i>Work activity</i> | | | | | | |
| Employed-laborer | 1 | | | 1 | | |
| Day laborer-unskilled laborer | .87 | .68–1.12 | .29 | .95 | .71–1.29 | .78 |
| Self-employed | .79 | .59–1.05 | .15 | .58 | .39–.85 | <.0001 |
| Unemployed | 1.82 | 1.23–2.69 | <.0001 | 3.04 | 2.05–4.96 | <.0001 |
| Male partner NOT contributing to household support | 2.82 | 1.86–4.28 | <.0001 | 6.84 | 4.56–10.27 | <.0001 |
| <i>Frequency of alcohol use</i> | | | | | | |
| Never | 1 | | | 1 | | |
| Occasionally | 1.05 | .80–1.38 | .06 | .40 | .26–.61 | <.0001 |
| One to three times per month | 1.60 | 1.16–2.24 | <.0001 | 1.13 | .74–1.71 | .56 |
| Once or twice per week | 2.42 | 1.72–3.39 | <.0001 | 4.27 | 2.98–6.10 | <.0001 |
| Daily or almost daily | 2.71 | 1.54–4.77 | <.0001 | 8.73 | 5.36–114.21 | <.0001 |
| Household characteristics | | | | | | |
| <i>Household asset index</i> | | | | | | |
| High | 1.00 | .75–1.34 | .97 | 1.37 | .99–1.87 | .05 |
| Medium | .85 | .62–1.16 | .32 | .80 | .55–1.16 | .25 |
| Low | 1.00 | .77–1.29 | .99 | 1.06 | .74–1.44 | .68 |
| Very low | 1.14 | .84–1.55 | .39 | .74 | .48–1.15 | .19 |
| Locality's characteristics | | | | | | |
| Indigenous municipality | 1 | | | 1 | | |
| Municipality with indigenous presence | 1.37 | 1.06–1.77 | .01 | 1.42 | 1.05–1.92 | .02 |
| <i>Level of community marginality</i> | | | | | | |
| Very low | 1 | | | 1 | | |
| High | .89 | .69–1.15 | .39 | .61 | .45–.82 | <.00 |
| Low | 1.05 | .76–1.46 | .74 | .51 | .30–.86 | .01 |
| Medium | 1.29 | .83–1.85 | .29 | 1.66 | 1.06–2.60 | .02 |
| Very high | .89 | .54–1.44 | .60 | 2.27 | 1.52–3.40 | <.00 |
| <i>Regions</i> | | | | | | |
| Maya | 1 | | | 1 | | |
| Altos de Chiapas | 1.39 | 1.04–1.86 | .02 | 3.36 | 2.54–4.44 | <.00 |
| Istmo de Tehuantepec | .71 | .52–.98 | .04 | .30 | .17–.51 | <.00 |
| Chinanteca | .90 | .66–1.21 | .49 | .63 | .42–.95 | .02 |
| Costa y Sierra Sur de Oaxaca | .57 | .40–.82 | .00 | .46 | .29–.74 | <.00 |
| Mazahua-Otomí | 1.22 | .91–1.62 | .17 | 1.12 | .79–1.59 | .51 |
| Huasteca | 1.11 | .83–1.49 | .45 | .99 | .69–1.43 | .99 |
| Zongolica | 1.19 | .89–1.60 | .22 | 1.11 | .78–1.59 | .53 |

ORc = OR crude.

^a Women who were victims of severe or non-severe violence inflicted by their partners are compared with women who experienced no violence.

^b The analyses were carried out by adjusting stratum and design, and 95% confidence intervals were calculated, with a robust standard error adjusted by "clusters" (institution).

working women of both indigenous and mixed ethnicities (Archer, 2006; Avila-Burgos et al., 2009; Bustillos-Domínguez, Sanín-Aguirre, Valdez-Santiago, & Harlow, 2006; Casique, 2006). The women studied were typically unskilled, working as farm laborers,

Table 4
Multivariate model of independent factors associated with partner abuse in indigenous women.

| Characteristics | Partner violence Non-severe vs no violence | | | Partner violence Severe vs no violence | | |
|---------------------------------------|--------------------------------------------------|---------------------|--------|----------------------------------------------|---------------------|--------|
| | OR _A ^a | CI 95% ^b | p | OR _A ^a | CI 95% ^b | p |
| Women's characteristics | | | | | | |
| Education in years | .99 | .95–1.03 | .63 | .91 | .86–.96 | <.0001 |
| Age at first union | | | | | | |
| 20 years or older | 1 | | | | | |
| 19 years or younger | 1.65 | 1.20–2.26 | .002 | 1.17 | .79–1.74 | .43 |
| Work activity | | | | | | |
| Housewife | 1 | | | 1 | | |
| Works outside the home | 1.64 | 1.24–2.17 | <.0001 | 1.74 | 1.22–2.49 | <.0001 |
| Child abuse (humiliation and blows) | | | | | | |
| No | 1 | | | 1 | | |
| Yes | 2.31 | 1.76–3.01 | <.0001 | 3.48 | 2.48–4.89 | <.0001 |
| Male partner's characteristics | | | | | | |
| Work activity | | | | | | |
| Employed | 1 | | | 1 | | |
| Unemployed | 1.61 | .97–2.68 | .07 | 2.31 | 1.34–3.97 | <.0001 |
| Frequency of alcohol use | | | | | | |
| Never | 1 | | | 1 | | |
| Occasionally | 2.74 | 1.47–2.92 | <.0001 | 1.08 | .65–1.81 | .76 |
| 1–3 times per month | 2.96 | 1.99–4.39 | <.0001 | 2.49 | 1.48–4.21 | <.0001 |
| 1–3 times per week | 4.22 | 2.81–6.33 | <.0001 | 7.32 | 4.59–11.64 | <.0001 |
| Daily or almost daily | 4.43 | 2.39–8.19 | <.0001 | 13.35 | 7.02–25.39 | <.0001 |
| Locality characteristics | | | | | | |
| Type of municipality | | | | | | |
| Indigenous | 1 | | | | | |
| Indigenous presence | 1.68 | 1.00–2.84 | .05 | 2.45 | 1.29–4.67 | <.0001 |
| Regions | | | | | | |
| Maya | 1 | | | 1 | | |
| Altos de Chiapas | 1.51 | .98–2.30 | .06 | 3.01 | 1.88–4.79 | <.0001 |
| Istmo de Tehuantepec | 1.21 | .78–1.89 | .40 | .57 | .29–1.11 | .10 |
| Chinanteca | 1.13 | .72–1.77 | .59 | .77 | .42–1.44 | .42 |
| Costa y Sierra Sur de Oaxaca | 1.17 | .74–1.91 | .50 | 1.21 | .65–2.26 | .54 |
| Mazahua-Otomí | 1.04 | .61–1.76 | .85 | .58 | .29–1.15 | .12 |
| Huasteca | 1.80 | 1.16–2.78 | <.0001 | 1.99 | 1.15–3.44 | <.0001 |
| Zongolica | 2.07 | 1.34–3.21 | <.0001 | 1.87 | 1.08–3.23 | .02 |

^a OR adjusted.

^b 95% Confidence intervals were calculated.

house maids, or street vendors. Many of the women had low levels of education. Education was protective of severe forms of IPV. Jewkes (2002), noted that education had a protective effect in South Africa only when it extended beyond the high school level; at this level, women were better able to utilize information and social resources. It is possible that given the low educational levels of women from the indigenous regions, the protective effect of higher education may only exist in severe cases of IPV.

The association of IPV with violence inflicted by parents or caregivers during a woman's childhood has been widely documented in indigenous and non-indigenous populations in Mexico and elsewhere (Avila-Burgos et al., 2009; Chartier, Walker, & Naimark, 2009). Perhaps both female victims and male perpetrators are more accepting of violence as a way to resolve conflicts when they are exposed to violence at a young age.

The relationship between a male partner's higher alcohol use and the severity of violence against women in diverse cultural contexts is widely documented (Finney, 2004; Jewkes, 2002); this association is marked by an observed exacerbation of conflicts along with increased use of physical force when the male partner is under the influence of alcohol. Alcohol use inhibits normal constraints on aggression and the ability to reason. This relationship could also be due to other factors such as poverty, which is itself found to be associated with high alcohol use (García-Moreno et al., 2006; Jewkes, 2002; Parish, Wang, Laumann, Luo, & Pan, 2004).

Even though the male partners' different employment categories were explored, unemployment was the only category found to be statistically significant. This could be due to employment homogeneity, given that the predominant occupations are farm work, unskilled labor (36.1%), and work as a self-employed street vendor (22.5%). Male partners' unemployment was associated with severe IPV. Various authors (Jewkes, 2002; Koeing, Ahmed, Hossain, & Korshed Alam Mozumder, 2003; Valentini, Meloinem, & Souza, 2006) have demonstrated that men with low income levels are exposed to higher levels of conflict, particularly concerning the stereotypical male identity. When men are not capable of fulfilling expectations as household providers, they are unable to enforce household norms and regulations and resort to aggression as a strategy to maintain control.

Socioeconomic status variables, measured using a financial resources index and the partner's education, were not found to be significantly associated with IPV. The results documented by other Mexican studies on non-indigenous populations are similar to these findings (Medina-Mora, Berenzon, & Natera, 1999). These data reveal that indices created to measure socioeconomic status in mixed ethnicity populations are limited when measuring financially precarious households, particularly in Mexico. However, these results may suggest that violence is associated not with economic factors but rather with social and gender norms in some populations.

Even though this study overcame a number of limitations reported by prior studies, it is important to mention that our study has some biases. For example, the women were all patients of medical services available in the indigenous communities, which are known to be under-utilized; thus, these women represent a select group. It is probable that women who do not have access to medical services in isolated indigenous regions are subject to IPV, and their inclusion might alter the significant correlates.

An additional limitation was the cross-sectional design of the study, which is susceptible to temporal ambiguity, for which causal relationships cannot be established. Consequently, the associations reported here are correlates rather than causes.

Endnotes

1. Overcrowding: when 2.5 individuals or more share a bedroom.
2. Minimum salary in Mexico is 4.18 dollars per day, Comisión Nacional de Salario Mínimo (CONASAMI), 2011. http://www.conasami.gob.mx/pdf/salario_minimo/sal_min_gral_prom.pdf. Consulted November 29, 2011.
3. This index was generated by the National Population Council (Consejo Nacional de Población (CONAPO)) through the National Survey on Housing, 2010. Available at: http://www.conapo.gob.mx/es/CONAPO/Indice_de_Marginacion_por_Localidad_2010.

Acknowledgments

We extend our gratitude to all the women who participated in this study. Likewise, we acknowledge the financial support provided by the CONACYT (Consejo Nacional de Ciencia y Tecnología) and CDI (Comisión Nacional para el desarrollo de los pueblos indígenas), which made it possible to carry out this study.

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