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Children, Parental Alcohol Consumption and Intimate Partner Violence: A Multi-Country Analysis by Perpetration Versus Victimization and Sex

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Abstract

Both living with children and alcohol consumption are positively associated with intimate partner violence (IPV). We assessed their combined relationship with physical IPV (P-IPV) victimization and perpetration, and explored possible moderating roles of sex and culture. Data included 15 surveys of 13,716 men and 17,832 women in 14 countries from the GENACIS (Gender, Alcohol, and Culture: An International Study) collaboration. P-IPV was measured as victim of physical aggression by an intimate partner (Vic-Only), perpetrator of physical aggression toward a partner (Perp-Only), or both victim and perpetrator (i.e., bidirectional) (Bi-Dir). Participants reported whether they lived with children below 18 years of age, whether the participant was a drinker/abstainer, and, among drinkers, usual frequency and quantity of alcohol consumed. Multilevel multinomial logistic regression, controlling for age and nesting of data within countries, indicated that Vic-Only, Perp-Only, and Bi-Dir (compared with no P-IPV) were positively associated with living with children, being a drinker, and quantity/frequency of drinking among drinkers (especially higher quantity). The positive association of P-IPV with living with children and being a drinker was evident within most countries. Significant interactions with sex were found, with (a) living with children more strongly associated with Perp-Only for men and Vic-Only for women, and (b) Perp-Only and Bi-Dir more strongly associated with being a drinker for men but with quantity consumed for women. Also, alcohol consumption was more strongly related to Perp-Only and Bi-Dir than with Vic-Only. In conclusion, higher risk of P-IPV with alcohol consumption is compounded when living with children—putting children who live with drinkers, especially

drinkers who consume large amounts per occasion, at special risk of exposure to P-IPV. This is an important area for future research and prevention.

Keywords

alcohol and drugs; domestic violence; cultural contexts; anything related to domestic violence; children exposed to domestic violence

Introduction

Intimate partner violence (IPV) has been found to be more likely among those living with children, although this relationship may vary for men and women and by victimization versus perpetration (Catalano, 2012; Nash, 2016; Roberts, McLaughlin, Conron, & Koenen, 2011; Tillyer & Wright, 2014; Vest, Catlin, Chen, & Brownson, 2002). IPV is also related to alcohol consumption, with the relationship again varying by victimization versus perpetration as well as by how alcohol consumption is measured (Cafferky, Mendex, Anderson, & Stith, 2018; Foran & O'Leary, 2008; Graham, Bernards, Wilsnack, & Gmel, 2011; Stith, Smith, Penn, Ward, & Tritt, 2004). Despite the links of IPV with both living with children and alcohol consumption, no research to date has *examined the independent associations of IPV with these two risk factors as well as possible interactions. For example, the presence of children in the home might amplify the relationship between alcohol consumption and IPV, if stress related to living with children makes one or both of the partners more likely to drink to intoxication and/or become volatile when drinking, and therefore more likely to be violent. On the other hand, the presence or consideration of children could reduce the association between drinking and IPV by increasing inhibitory cues that can deter alcohol-related IPV* (Leonard & Quigley, 2017). Thus, it is important to evaluate the combination of drinking and living with children in terms of their relationship with IPV so that preventive interventions focused on alcohol-related IPV can address contextual factors such as the role of living with children. The present study used existing data to better understand the role of living with children and alcohol consumption in IPV. And, because these relationships are likely to be affected by socio-cultural factors, including sex, we conducted additional analyses in which we compared men and women across 14 countries.

Living with children and IPV

The presence of children in the home has been found to increase the likelihood of IPV, although the findings are not wholly consistent and all studies were conducted in the US and focused mostly on female victimization. Vest et al. (2002) found that women living with children (versus not living with children) were more likely to be victims of IPV, and Nash (2016) found that women with two or more children (versus one or no children) were more likely to be both victims and perpetrators. Catalano (2012) found that IPV victimization was more likely for *both* men and women living with children versus not living with children, while Roberts et al. (2011) found higher self-reported perpetration by men but not women for persons who had a child under five years of age. Finally, Tillyer and Wright (2014) found

increased victimization but not perpetration or bi-directional aggression for young adults living with children, but did not report results by sex.

The association between IPV and living with children has been attributed to stress associated with raising children and to conflicts between partners about children (Nash, 2016). However, other factors could account for the positive relationship between living with children and IPV. For example, Taft et al (2004) found that compared with women who had not been abused, victimized women became pregnant at a younger age, were pregnant more frequently and had poorer outcomes from pregnancy (i.e., more miscarriages, abortions, preterm births and stillbirths). Similar rates of poor outcomes associated with IPV have been confirmed globally (WHO, 2013). These circumstances likely put more strain on parenting, and recent research has found a strong association between parenting problems and IPV victimization (Hooker et al., 2016). Thus, stress associated with being pregnant at a younger age and with pregnancy complications may strain the relationship thereby increasing the likelihood of violence. On the other hand, women in abusive situations may be more likely to have children which could also account for some of the relationship between living with children and IPV.

Alcohol and IPV

Meta-analyses of epidemiological studies of alcohol consumption and IPV have shown an overall link between *alcohol consumption and perpetration of IPV* (Cafferky et al., 2018; Foran & O’Leary, 2008; Stith et al., 2004). Meta-analyses of experimental research on alcohol and aggression indicate that (a) consuming alcohol is associated with aggression (Bushman & Cooper, 1990), (b) men who have consumed alcohol are more aggressive toward both male and female targets (including aggression toward intimate partners and sexual aggression) than are men who have not consumed alcohol (Crane, Godleski, Przybyla, Schlauch, & Testa, 2016), and (c) alcohol consumption appears to have a *causal contributing role* in aggressive behavior (Bushman & Cooper, 1990). Leonard and Quigley (2017) have argued that the effects of alcohol (e.g., impaired cognitive abilities and problem solving, narrowed attentional focus) almost certainly contribute to perpetration of IPV among some individuals.

Meta-analyses and reviews also indicate that *alcohol consumption is associated with IPV victimization*, with most research focusing on women who are victims of IPV by a male partner (Cafferky et al., 2018). A review by Devries et al. (2014) found that the relationship is bidirectional; that is, drinking pattern predicts later victimization but victimization also predicts later heavier drinking. A number of explanations may account for the association between IPV victimization and alcohol consumption including: (a) women who drink or drink heavily have partners who are also drinkers or heavier drinkers and therefore more likely to be violent than male partners who are not heavy drinkers; (b) the female victim’s drinking is a source of conflict or contributes to conflict and resulting IPV; (c) female partners who are drinking are less able to avoid victimization; and (d) emotional impacts of IPV victimization lead to drinking or heavy drinking, possibly to self-medicate. However, compared to the relationship between drinking and IPV perpetration by men toward females partners, the relationship between drinking and IPV for female victims is less consistent

(Devries et al., 2014; Stith et al., 2004) and has shown a smaller overall effect size across studies (Cafferky et al., 2018; Stith et al., 2004).

Although bi-directional physical aggression between partners is common in some countries (Graham, Bernardis, Munné, & Wilsnack, 2008; Okuda et al., 2015; Tillyer & Wright, 2014), only a few studies have examined the relationship between alcohol consumption and bi-directional aggression, with some evidence suggesting that heavy or problem drinking is associated more strongly with being the perpetrator of IPV (i.e., perpetration only *or* bi-directional aggression) than with being a nonaggressive victim (Testa, Quigley, & Leonard, 2003; Tillyer & Wright, 2014). Finally, the results of meta-analyses suggest a larger effect size for the relationship of alcohol consumption with IPV for male versus female perpetrators, while the effect size for victimization was larger for females than for males (Cafferky et al., 2018).

Drinking pattern is also important. Experimental studies have revealed greater increases in aggression with higher doses of alcohol consumed (Ito, Miller, & Pollock, 1996), suggesting that IPV may be more likely among drinkers who consume larger amount per occasion. Reviews and meta-analyses of epidemiological data confirm that IPV is associated with consuming higher quantities on drinking occasions, and that IPV is more strongly associated with problem drinking/abuse/dependence than with frequency of drinking, per se (Foran & O'Leary, 2008; Schumacher, Feldbau-Kohn, Smith Slep, & Heyman, 2001; Stith et al., 2004).

Living with children and alcohol consumption

Some studies have found that drinkers reduce their drinking when they become parents (Leonard & Eiden, 2007; Paradis, Demers, Nadeau, & Picard, 2011). This suggests that living with children could attenuate the relationship between alcohol and IPV by impacting alcohol consumption. However, the one study that we found of the relationship between living with children (as opposed to becoming parents) and alcohol consumption found no significant relationship with heavy drinking for men or women but did find that alcohol dependence was three times more likely among women who did not live with children (vs. women who did) (Joutsenniemi et al., 2007).

Research Hypotheses of the present study

Using existing data from general population surveys in 15 jurisdictions (14 countries), we examined the relationship of IPV perpetration and victimization with: whether the participant lived with children under age 18, alcohol consumption, and sex of the participant. Based on existing research, we hypothesized that:

H1. participants who live with children are more likely than participants who do not live with children to report both IPV victimization and perpetration;

H2. the association between living with children and IPV victimization is stronger for women than for men;

H3. alcohol consumption is positively related to IPV, with:

- a. drinkers and heavier drinkers more likely to report IPV than nondrinkers and lighter drinkers,
- b. a stronger association of IPV with drinking larger amounts on usual drinking occasions than with more frequent drinking;

H4. alcohol consumption is more strongly related to perpetration than to victimization; and

H5. alcohol consumption is more strongly related to IPV perpetration for men than for women. Given insufficient prior research on which to base hypotheses about possible interactions of alcohol consumption and living with children in relation to IPV, we explored the interactions of these two measures in predicting IPV as well as the 3-way interaction of alcohol consumption, living with children and sex of the drinker to assess the possibility that living with children modifies the relationship between drinking and IPV differently for men than for women. Finally, to the extent that within-country sample sizes allowed, we assessed the consistency of findings across each of the 15 different jurisdictions.

Methods

This research was conducted as part of the multi-national GENACIS project (Gender, Alcohol, and Culture: An International Study), a collaboration involving over 40 countries, including less affluent countries that had never previously conducted comprehensive surveys on alcohol consumption. Previous analyses of these data have focused on predictors and correlates of drinking and drinking problems. The present analyses are part of an initiative to re-examine these data from the perspective of *harms to others from drinking, in this case, the potential impact of alcohol consumption on increasing children's risk of exposure to IPV*. Countries were included in the analyses if they sampled both men and women and included relevant questions on IPV, drinking pattern and living with children.

Design and sampling

The analyses included 13,716 men and 17,832 women in countries from diverse areas of the world, including: Africa; Europe; North, South and Central America; Asia; and Australia/New Zealand. Cross-sectional surveys were conducted with national or regional general population samples from: Argentina (Buenos Aires City and Province, 2003), Brazil (Metro São Paulo, 2007), Canada (national, 2004–5), Costa Rica (Greater Metropolitan area, 2003), India (5 districts in Karnataka state, 2003), Japan (national, 2001); New Zealand (national, 2007), Nicaragua (5 mid-sized cities, 2005), Nigeria (states of Benue, Nasarawa, Plateau, Akwa Ibom and Rivers plus the Federal Capital Territory, 2003), Peru (cities of Lima and Ayacucho, 2005), Spain (Galicia, Valencia, Cantabria, 2002), Uganda (districts of Kabale, Tororo, Lira and Wakiso, 2003), United Kingdom (England and Wales, 2000; separate survey in the Isle of Man, 2005); Uruguay (several cities, primarily Montevideo (53.6% of interviews) and Canelones (11.6% of interviews) in 2004). Surveys were administered in person except in Canada (100% by telephone), Isle of Man (mixed face-to-face 57.5% and telephone 42.5%), Japan and New Zealand (self-administered, returned by postal mail). More details about the methods used in individual countries can be found in Wilsnack et al. (2009), Obot and Room (2005) and Graham et al. (2008).

Measures

Demographic variables.—Participant's sex was recorded by the interviewer and participants were asked for their year of birth. The age range of participants varied among countries; therefore, analyses were limited to persons aged 18 to 65 (18–64 for Peru) to maximize comparability of samples in terms of the age of participants.

P-IPV.—The survey was implemented in different cultures and languages; therefore, to ensure comparability of meaning, we limited the measure of IPV to *physical aggression* toward an intimate partner (P-IPV). In addition because much of the survey focused on alcohol consumption and culture, it was necessary to restrict the questionnaire to a small number of questions on IPV. Participants were asked to describe the most severe act of physical aggression *by a partner* toward the participant in the past two years (*i.e., victimization*) with the following question: *People can be physically aggressive in many ways, for example, pushing, punching, or slapping, or physically aggressive in some other way. What is the most physically aggressive thing done to you during the last two years by someone who is or was in a close romantic relationship with you such as a spouse/partner, lover, or someone you are or were dating or going out with?* Responses were open-ended and later classified by the research team as any victimization versus no victimization for the present analyses. The same format was used to ask about physical aggression *by the participant toward an intimate partner (i.e., perpetration)*. Based on their responses to these questions, participants were classified as: no P-IPV, victim only (Vic-Only); perpetrator only (Perp-Only); or bi-directional (Bi-Dir, *i.e.* reporting both victimization and perpetration—although these two types of aggression might not have occurred within the same incident).

Living with children.—Participants were asked how many children under the age of 18 lived with them; this was dichotomized as: lived versus did not live with children under 18.

Drinking status.—In some countries, participants were asked if they drank any alcohol (more than a sip or taste) in the past 12 months (categorized as drinker vs. abstainer). In other countries, participants were asked about the frequency of their drinking and were defined as abstainers if they answered “never” to the following question on frequency of drinking in the past 12 months.

Frequency of drinking.—Participants were asked how often they drank any kind of alcohol in the past 12 months. In 12 of the 15 countries, this question was preceded by beverage-specific questions on how often participants drank beer, wine, liquor, and other alcoholic drinks in the past 12 months. Because some participants reported more frequent drinking of beer or wine than they did for “any kind of alcohol” (suggesting that they may not have included certain types of consumption such as wine with meals in their estimate of overall drinking frequency), their frequency score was based on the maximum frequency reported for a specific beverage or for drinking overall. Response categories varied slightly among countries. To ensure consistency across countries, responses were converted into the following categories which were then converted into estimated number of drinking days per week: never (abstainer), less than once a month (.12 days per week), 1–3 times a month (.46

days per week), once or twice a week (1.5 days), 3 or 4 days a week (3.5 days) or 5 to 7 days a week (6 days).

Usual quantity consumed.—Participants were asked about the usual number of standard drinks consumed on days they drank during the past 12 months. Because standard drink sizes vary across countries, responses were converted into number of drinks based on each drink containing 12g of absolute alcohol.

Ethics.

This study was approved by the Research Ethics Board of the Centre for Addiction and Mental Health (Canada). Individual country surveys were reviewed according to procedures created to protect research participants in each country.

Analyses

In the overall analyses using all countries, we adjusted standard errors to account for nesting of individuals (level 1) within country (level 2) using Hierarchical Linear Modelling (HLM V7.0). Relative risk ratios were computed from multilevel multinomial logistic regressions of Vic-Only, Perp-Only and Bi-Dir (vs. no P-IPV) on living with children, each of the three measures of alcohol consumption (past 12 month drinking status, usual quantity (# of drinks), and frequency of drinking) and sex in four separate models (1 for each of the three drinking variables and 1 model including both quantity and frequency). Analyses including quantity or frequency of alcohol consumption excluded past 12 month abstainers. All variables at the individual level (level 1) were grand mean centered and contained a random error component for the slope. To test whether alcohol consumption was more strongly related to perpetration than to victimization we calculated z statistics post hoc for the difference between the log odds for (a) Perp-Only versus Vic-Only and for (b) Bi-Dir versus Vic-Only ($z\text{-statistic} = (b1-b2)/\text{square root } ((\text{standard error of } b1)^2 + (\text{standard error of } b2)^2)$ where b1 relates to perpetration or bidirectional IPV and b2 relates to victimization only) for drinker (vs. abstainer), usual quantity and frequency. Significance was assessed using z score tables.

Results

Table 1 shows the number of participants from each country included in the analyses, number/percent living with children, number/percent who were past 12 month drinkers, and number/percent reporting P-IPV victimization, perpetration or both. As shown in the table, the percent of past 12 month drinkers varied greatly among countries ranging from 95.9% of male participants from the Isle of Man to 3% of female participants from India. The percent of participants who reported living with children ranged from 32.7% of female participants from Spain to 76.9% of female participants from Nigeria. Rates of those reporting Vic-Only varied from a low of 1.1% for men from India and Spain to a high of 19.7% for women from India; those reporting Perp-Only varied from 0.2 for women from India to 10.2% for men from Uganda; and those reporting Bi-Dir P-IPV varying from 1.1% for women in Spain to 11.8% for men in the UK.

Table 2 shows the main effects models of Vic-Only, Perp-Only and Bi-Dir (vs. no P-IPV) regressed on living with children, alcohol consumption measures and sex, controlling for age, with separate models for each alcohol consumption measure. Table 3 shows models including interaction terms. To reduce the number of different analyses conducted to examine interactions, we used only two alcohol consumption measures to compute models including interactions: (1) drinker versus abstainer (all participants) and (2) usual number of drinks consumed on a drinking occasion (drinkers only). We focused on usual quantity rather than frequency because main effects analyses (shown in Table 2 and described below) indicated that quantity was more strongly related to P-IPV than was frequency. For the interaction models, we first tested the full factorial model for each measure of alcohol consumption (drinker/abstainer, usual number of drinks). In these models, the 3-way interaction (sex by alcohol consumption by living with children) was non-significant as was the interaction of alcohol consumption with living with children (results not shown). Therefore, the final models shown in Table 3 included only the hypothesized interactions (sex by living with children, sex by alcohol consumption).

H1. Living with children is associated with IPV victimization and perpetration

As shown in Table 2, consistent with hypothesis 1, living with children was positively and significantly related to all forms of P-IPV when included with all drinking measures, except that the relationship was non-significant in some models for Vic-Only. The relationship was strongest for Bi-Dir.

H2. Living with children is more strongly related to female victimization than to male victimization

The sex by living with children interaction was significant for Vic-Only (women with children more likely to be victims only) and Perp-Only (men with children more likely to be perpetrators) in the analysis that included all participants (drinkers vs. abstainers, Table 3, model a) and significant for Perp-Only in the analysis that included only drinkers (average number of drinks per occasion) as shown in Table 3, model b.

H3. Alcohol consumption is positively related to IPV, with a stronger relationship for usual number of drinks consumed than for frequency of drinking

As shown in Table 2, all alcohol consumption measures were significantly related to all forms of P-IPV (Vic-Only, Perp-Only, Bi-Dir), except that frequency was not statistically significant for Vic-Only. We tested whether P-IPV was more strongly related to quantity than to frequency (H3b) by calculating the difference for a model with only quantity compared to a model with only frequency using the Akaike Information Criterion (AIC) (Burnham & Anderson, 2002) and the Bayesian Information Criterion (BIC) (Kass & Raftery, 1995; Neath & Cavanaugh, 2012), for which a difference greater than 10 for either measure is indicative of real differences in the relationship between the two predictors with the outcome. In the present analyses both differences (AIC (frequency) – AIC (quantity) and BIC (frequency) – BIC (quantity)) were 81.2. This supports our hypothesis that P-IPV was strongly related to usual quantity than to frequency of drinking.

H4. Alcohol consumption is more strongly related to perpetration than to victimization

For the alcohol consumption measure of past year drinking (vs. abstaining), the z statistic was 2.84 ($p < .003$) for the log odds for Perp-Only compared to Vic-Only, and 2.95 ($p < .002$) comparing Bi-Dir to Vic-Only. These findings indicate that being a drinker was significantly more related to any perpetration (Perp-Only or Bi-Dir) than to Vic-Only. However, we found no significant differences for perpetration versus victimization in the relationship with usual quantity and frequency of alcohol consumption among drinkers: comparing Perp-Only versus Vic-Only, analyses indicated $z = 0.54$ ($p = .295$) for usual quantity and $z = 0.45$ ($p = .326$) for frequency; comparing Bi-Dir versus Vic-Only, $z = 1.08$ ($p = .156$) for usual quantity and $z = 0.99$ ($p = .161$) for frequency.

H5. Alcohol consumption is more strongly related to IPV perpetration for men than for women.

As shown in Table 3, the sex by alcohol consumption interaction was significant for Bi-Dir and approached significance ($p < .10$) for Perp-Only in both models. However, the sex by alcohol consumption interaction showed different results for drinking versus abstaining than for usual quantity, with a stronger relationship between being a drinker and IPV for men than for women but a stronger relationship between usual quantity and IPV for women than for men.

Analyses by sex.—To better understand the significant sex interactions (H2, H5), we conducted analyses examining the combined main effects of living with children and alcohol consumption for men and women using separate models for the two alcohol consumption measures (a. drinker vs. abstainer; b. usual number of drinks per occasion). Model a in Table 4 includes all participants and Model b (usual quantity as the measure of alcohol consumption) excludes nondrinkers. For both models, *men living with children were more likely than were women to be perpetrators of IPV while women living with children were more likely to be victims* (non-significant for drinkers only model). Living with children was significantly associated with Bi-Dir for both men and women.

As shown in Model a in Table 4, *being a drinker* was significantly related to Vic-Only, Perp-Only and Bi-Dir for both men and women; however, consistent with the significant sex by drinker interaction shown in Table 3, *the relative risk ratios for Vic-Only, Perp-Only and Bi-Dir by whether participant was a drinker were higher for men than for women*. However, consistent with the sex by alcohol consumption interaction shown in Table 3 (model b), *usual quantity was significantly related to Vic-Only, Perp-Only and Bi-Dir for both men and women, but the relative risk ratios were higher for women than for men* (Table 4, Model b).

Cross cultural patterns.—Table 5 shows the *country-specific relative risk ratios* (and confidence intervals) for living with children and being a drinker, computed separately for men and women (controlling for age), using multinomial regression analysis. Numbers for analyses were quite small because of low rates of IPV or low or high rates of abstaining; thus, analyses focus on this single drinking measure and, even limiting to this alcohol consumption measure, some ratios could not be calculated and some confidence intervals were large.

There were few significant findings at the country level (partly because sample sizes were limited by skewed distributions); however, the results showed considerable consistency in the direction of the relationship of P-IPV with living with children and alcohol consumption across surveys, an important consideration when examining results across studies (Rothman, 2002). In all surveys, women who were living with children were more likely to report Vic-Only, while men who *did not* live with children were more likely to report Vic-Only in 9 of 15 surveys. For perpetration, men who were living with children were more likely to report Perp-Only in 14 out of 15 surveys, while women living with children were more likely to report Perp-Only in 10 of 14 surveys. For Bi-Dir, there was a positive association for women in 12 of 15 surveys and for men in 13 out of 15 surveys. These findings suggest that living with children is associated with IPV across most countries, and highlight the strong and consistent association between living with children and Vic-Only IPV for women but *not* for men.

Discussion

These secondary analyses of surveys across different cultures and regions provide important new information about the relationship of P-IPV with living with children and alcohol consumption, as well as new information about how this relationship differs for men and women, by perpetration vs. victimization, and by drinking pattern.

As hypothesized, the present analyses showed a consistent positive relationship between living with children and P-IPV, as has been found in the few studies that have examined this issue (Catalano, 2012; Nash, 2016; Roberts et al., 2011; Vest et al., 2002). However, all previous research was from North America and most studies examined the relationship of living with children and female victimization by a male partner. Thus, a particularly important new finding of the present study is the significant interaction of sex by living with children in the relationship with P-IPV; that is, *living with children was more strongly associated with perpetration for men than for women and more strongly associated with victimization for women than for men*. This finding suggests a need for greater attention to sex and gender roles in the relationship of P-IPV with the presence of children. For example, one explanation offered for the relationship of perpetration of IPV and living with children is that IPV results from the stress of raising children (Nash, 2016); however, our results suggest that something about this stress affects men's perpetration of physical violence more than it does women's. Alternatively, the relationship of IPV with living with children may reflect factors other than stress. For example, research on men's IPV perpetration toward pregnant women (Brownridge et al., 2011; Hellmuth, Gordon, Stuart, & Moore, 2013; Lau & Chan, 2007) suggests that some men are violent toward pregnant partners because of men's jealousy about the partner's attention being diverted from them and directed toward the unborn child. Thus, a possible alternative explanation for the relationship of male perpetration with living with children is feelings of rivalry and jealousy among some male partners related to the female's attention toward children.

A concerning and consistent finding across all countries was that women who lived with children were more likely than women who did not live with children to be victims of P-IPV. This finding may be partly explained by the factors discussed in the previous paragraph

relating to greater odds of IPV perpetration by men living with children. However, other factors may also make women with children in the home more likely to be victimized when compared with women who do not live with children. For example, women who live with children may be less likely to have the resources necessary to leave an abusive partner or more likely to stay in an abusive relationship to keep the family together. Another explanation for the association, as noted in the introduction, is that women who are victims of violence (i.e., have an abusive partner) are more likely to live with children because they are younger when they have children and they have more children (Taft et al., 2004). Overall, these findings suggest a critical need for more research on the relationship of living with children and IPV, especially the increased risk of victimization for women.

As noted in the introduction, considerable research links alcohol consumption with IPV. The present study extends these findings by showing within the same analyses that there is a positive relationship of alcohol consumption with IPV for: (1) all alcohol consumption measures; (2) Vic-Only, Perp-Only and Bi-Dir; (3) men and women; and (4) across different countries. Although at least some of the relationship with alcohol can be attributed to the effects of alcohol on thinking, perception and impulse control (Leonard & Quigley, 2017), other socio-cultural factors may enhance the relationship between alcohol consumption and IPV in some countries, for example, drinking being perceived by the perpetrator and the culture generally as an acceptable excuse for violence, and drinking by the female victim being used to justify attributing greater blame to her for IPV victimization (McMahon & Farmer, 2011).

We were able to examine different alcohol consumption measures within the same samples and identified that the usual quantity of alcohol consumed was more important than frequency of drinking in the association with P-IPV. This finding is consistent with the argument that IPV is related to the effects of alcohol, not just to drinking per se (Leonard & Quigley, 2017), and it also extends previous IPV research using more limited samples (Foran & O'Leary, 2008; Schumacher, Feldbau-Kohn, et al., 2001; Stith et al., 2004) and experimental studies showing greater increases in aggression with larger doses of alcohol (Ito et al., 1996).

We also found that alcohol consumption was more strongly related to any perpetration (Perp-Only and Bi-Dir) than to victimization only (Vic-Only) for all alcohol consumption measures, consistent with previous meta-analyses (Cafferky et al., 2018; Devries et al., 2014; Stith et al., 2004). However, most previous studies of the relationship of IPV with alcohol consumption have focused on male perpetration toward female partners and/or female victimization from male partners. In the present study, we were able to examine whether the relationship between alcohol consumption and victimization versus perpetration was moderated by sex/gender. We found significant moderation for Bi-Dir in all models and significant moderation for Perp-Only in some models. However, the findings differed by alcohol measure. Sex-specific analyses indicated that *Perp-Only and Bi-Dir P-IPV were more strongly related to being a drinker for male than for female participants*. On the other hand, *the relationship between P-IPV (Bi-Dir and Perp-Only) and amount consumed (quantity) was stronger for female than for male drinkers*. There are a number of possible explanations for quantity being more strongly linked to female than to male aggression.

First, it is possible that women who drink larger amounts per occasion differ from women who consume lesser amounts on characteristics related to IPV, while male heavier and lighter drinkers are less different on these characteristics. It may also be an artifact of the alcohol measure (i.e., number of drinks) in that because of biological sex differences, each additional drink is likely to increase blood alcohol level more for women than for men (Graham, Wilsnack, Dawson, & Vogeltanz, 1998).

Finally, although we found no evidence of a statistical interaction of alcohol consumption and living with children with regard to the risk of Vic-Only, Perp-Only or Bi-Dir, both variables were significantly related to P-IPV when included in the same models suggesting an additive effect – that is, P-IPV is more likely if the participant is a drinker/drinks more per occasion *and* lives with children than if the participant has only one of these risk factors, and this pattern is reflected generally in the within-country analyses as well.

Limitations

One possible limitation is that these secondary analyses use data mostly collected 10 or more years ago; however, because the research questions being applied to these data are about relationships among variables rather than prevalence and because of the general consistency in these relationships across diverse countries, it is likely that these findings reflect patterns that are not time constrained. Nevertheless, new relationships identified in these analyses relating to sex interactions and different types of physical intimate partner aggression (i.e., perpetrator vs. victim) merit further research. A further limitation of the present study is that the measure of partner aggression excluded nonphysical aggression and abuse, constructs that are more difficult to measure briefly and in comparable ways cross-culturally (Schumacher, Slep, & Heyman, 2001). More detailed measures of IPV that can separate serious abuse and control (sometimes referred to as “intimate terrorism”) from less controlling “situational couple violence” and “violent resistance” committed in self-defense (Johnson, Ollus, & Nevala, 2008) might help to further clarify the relationships of IPV with alcohol and living with children. Finally, these analyses focus only on the drinking behavior of the survey participant and do not include measures of the partner’s drinking.

Diversity

These analyses used general population samples from a very diverse set of countries, geographically and culturally. These samples are broadly representative of the countries or regions surveyed. We include analyses by sex of the participant. However, the research is limited in that it focuses on M-F/F-M P-IPV because there were too few cases of same sex P-IPV to conduct separate analyses. Thus, the application of the findings is limited in terms of gender identity and sexual orientation.

Conclusions

The combination of living with children and alcohol consumption is an especially important area for IPV research. Children who witness IPV suffer from a range of negative impacts (Callaghan et al., 2018; Edeleson, 1999; Wood & Sommers, 2011). And, not only are children negatively impacted by drinkers with whom they live, including but not limited to

parents (Laslett, Room, Dietze, & Ferris, 2012), they are also more likely to witness IPV (Laslett, Jiang, & Room, 2017; Laslett, Rankin, et al., 2017) if they live with drinkers. Although living with children did not moderate the alcohol-IPV relationship, the significant relationship between alcohol consumption and IPV means that children living with adults who are drinkers, and especially drinkers who consume large amounts per occasion, are more likely to be exposed to IPV than are those living with nondrinkers and lighter drinkers. Greater focus is needed on the combined effects on children of alcohol consumption by adults with whom children live and the exposure of these children to IPV and other alcohol-related harms.

Implications for practice include the need to ensure awareness among those working in prevention of the compounded risk of IPV for women who both live with children and have a heavy drinking partner. For those providing services to victims and perpetrators of IPV, it may be important to address the potential roles of living with children and alcohol consumption in the incidence and escalation of violence. As well, assistance needs to be available for female victims of IPV so that having children does not prevent them from protecting themselves against future violence related to the partner's drinking. In addition, supports for children who have been exposed to IPV may need to take into account the extent that they are exposed to additional harms related to drinking in the home.

References

- Brownridge DA, Taillieu TL, Tyler KA, Tiwari A, Chan KL, & Santos SC (2011). Pregnancy and intimate partner violence: Risk factors, severity, and health effects. *Violence Against Women, 17*(7), 858–888. [PubMed: 21775311]
- Burnham KP, & Anderson DR (2002). *Model selection and multi-model inference: a practical information-theoretic approach* (Second ed.). New York, NY: Springer.
- Bushman BJ, & Cooper HM (1990). Effects of alcohol on human aggression: An integrative research review. *Psychological Bulletin, 107*, 341–354. doi: 10.1037/0033-2909.107.3.341 [PubMed: 2140902]
- Cafferky BM, Mendex M, Anderson JR, & Stith SM (2018). Substance use and intimate partner violence: A meta-analytic review. *Psychology of Violence, 8*(1), 110–131. doi: 10.1037/vio0000074
- Callaghan JEM, Alexander JH, Sixmith J, & Fellin LC (2018). Beyond “witnessing”: Children's experiences of coercive control in domestic violence and abuse. *Journal of Interpersonal Violence, 33*, 1551–1581. [PubMed: 26663742]
- Catalano S (2012). *Intimate Partner Violence, 1993–2010*. Bureau of Justice Special Report, U.S. Department of Justice, Office of Justice Programs (revised 9 29, 2015).
- Crane CA, Godleski SA, Przybyla SM, Schlauch RC, & Testa M (2016). The proximal effects of acute alcohol consumption on male-to-female aggression: A meta-analytic review of the experimental literature. *Trauma, Violence & Abuse, 17*(5), 520–531. doi: 10.1177/1524838015584374
- Devries KM, Child JC, Bacchus LJ, Mak J, Falder G, Graham CR, ... Heise L (2014). Intimate partner violence victimization and alcohol consumption in women: A systematic review and meta-analysis. *Addiction, 109*(3), 379–391. doi: 10.1111/add.12393 [PubMed: 24329907]
- Edeleson JL (1999). Children's witnessing of adult domestic violence. *Journal of Interpersonal Violence, 14* (8), 839–870.
- Foran HM, & O'Leary KD (2008). Alcohol and intimate partner violence: A meta-analytic review. *Clinical Psychology Review, 38*, 1222–1234. doi: 10.1016/j.cpr.2008.05.001
- Graham K, Bernardis S, Munné M, & Wilsnack S (Eds.). (2008). *Unhappy hours: Alcohol and physical partner aggression in the Americas*. Washington, DC: Pan American Health Organization.

- Graham K, Bernards S, Wilsnack S, & Gmel G (2011). Alcohol may not cause partner violence but it seems to make it worse: A cross national comparison of the relationship between alcohol and severity of partner violence. *Journal of Interpersonal Violence*, 26(8), 1503–1523. doi: 10.1177/0886260510370596 [PubMed: 20522883]
- Graham K, Wilsnack R, Dawson D, & Vogeltanz N (1998). Should alcohol consumption measures be adjusted for gender differences? *Addiction*, 93(8), 1137–1147. doi: 10.1046/j.1360-0443.1998.93811372.x [PubMed: 9813895]
- Hellmuth JC, Gordon KC, Stuart GL, & Moore TM (2013). Risk factors for intimate partner violence during pregnancy and postpartum. *Archives of Women's Mental Health*, 16(1), 19–27.
- Hooker L, Samaraweera, Agius P, & Taft A (2016). Intimate partner violence and the experience of early motherhood: A cross-sectional analysis of factors associated with a poor experience of motherhood. *Midwifery*, 34, 88–94. doi: 10.1016/j.midw.2015.12.011 [PubMed: 26805605]
- Ito TA, Miller N, & Pollock VE (1996). Alcohol and aggression: A meta-analysis on the moderating effects of inhibitory cues, triggering events, and self-focused attention. *Psychological Bulletin*, 120, 60–82. doi: 10.1037/0033-2909.120.1.60 [PubMed: 8711017]
- Johnson H, Ollus N, & Nevala S (2008). *Violence against women. An international perspective*. New York: Springer.
- Joutsenniemi K, Martelin T, Kestila L, Martikainen P, Pirkola S, Koskinen S (2007). Living arrangements, heavy drinking and alcohol dependence. *Alcohol & Alcoholism*, 42, 480–491, 2007 doi:10.1093/alcalc/agn011 [PubMed: 17369285]
- Kass RE, & Raftery AE (1995). Bayes Factors. *Journal of the American Statistical Association*, 90, 773–795. doi: 10.2307/2291091
- Laslett A-M, Jiang H, & Room R (2017). Alcohol's involvement in an array of harms to intimate partners. *Drug and Alcohol Review*, 36(1), 72–79. doi: 10.1111/dar.12435 [PubMed: 27286890]
- Laslett A-M, Rankin G, Waleewong O, Callinan S, Hoang HTM, Florenzano R, Room R (2017). A multi-country study of harms to children because of others' drinking. *Journal of Studies on Alcohol and Drugs*, 78, 195–202. doi: 10.15288/jsad.2017.78.195 [PubMed: 28317499]
- Laslett A-M, Room R, Dietze P, & Ferris J (2012). Alcohol's involvement in recurrent child abuse and neglect cases. *Addiction*, 107, 1786–1793. doi: 10.1111/j.1360-0443.2012.03917.x [PubMed: 22507640]
- Lau Y, & Chan KS (2007). Influence of intimate partner violence during pregnancy and early postpartum depressive symptoms on breastfeeding among Chinese women in Hong Kong. *Journal of Midwifery & Women's Health*, 52(2), e15–20.
- Leonard KE, & Eiden RD (2007). Marital and family processes in the context of alcohol use and alcohol disorders. *Annual Review of Clinical Psychology*, 3, 285–310. doi: 10.1146/annurev.clinpsy.3.022806.091424
- Leonard KE, & Quigley BM (2017). Thirty years of research show alcohol to be a cause of intimate partner violence: Future research needs to identify who to treat and how to treat them. *Drug and Alcohol Review*, 36(1), 7–9. doi: 10.1111/dar.12434 [PubMed: 27305859]
- McMahon S, & Farmer L (2011). An updated measure for assessing subtle rape myths. *Social Work Research*, 35(2), 71–81. doi: 10.1093/swr/35.2.71
- Nash SP (2016). *Young adult mothers and intimate partner violence*. (Doctor of Philosophy), Graduate College of Bowling Green State University, Bowling Green, Ohio.
- Neath AA, & Cavanaugh JE (2012). The Bayesian information criterion: background, derivation, and applications. *WIREs Computational Statistics*, 4, 199–203. doi: 10.1002/wics.199
- Obot IS, & Room R (Eds.). (2005). *Alcohol, gender and drinking problems. Perspectives from low and middle income countries*. Geneva: World Health Organization.
- Okuda M, Olfson M, Wang S, Rubio JM, Xu Y, & Blanco C (2015). Correlates of intimate partner violence peretration: Results from a national epidemiologic survey. *Journal of Traumatic Stress*, 28, 49–56. doi: 10.1002/jts.21986 [PubMed: 25624189]
- Paradis C, Demers A, Nadeau L, & Picard E (2011). Parenthood, alcohol intake, and drinking contexts: Occasio furem facit. *Journal of Studies on Alcohol and Drugs*, 72, 259–269. doi: 10.15288/jsad.2011.72.259 [PubMed: 21388599]

- Roberts AL, McLaughlin KA, Conron KJ, & Koenen KC (2011). Adulthood stressors, history of childhood adversity, and risk of perpetration of intimate partner violence. *American Journal of Preventive Medicine*, 40(2), 128–138. [PubMed: 21238860]
- Rothman KJ (2002). *Epidemiology - An Introduction*. Oxford: Oxford University Press.
- Schumacher JA, Feldbau-Kohn S, Smith Slep AM, & Heyman RE (2001). Risk factors for male-to-female partner physical abuse. *Aggression and Violent Behavior*, 6, 281–352. doi:10.1016/S1359-1789(00)00027-6
- Schumacher JA, Slep AMS, & Heyman RE (2001). Risk factors for male-to-female partner psychological abuse. *Aggression and Violent Behavior*, 6, 255–268.
- Stith SM, Smith DB, Penn CE, Ward DB, & Tritt D (2004). Intimate partner physical abuse perpetration and victimization risk factors: A meta-analytic review. *Aggression and Violent Behavior*, 10, 65–98. doi: 10.1016/j.avb.2003.09.001
- Taft A, & Watson L. (2004). Violence against young Australian women and association with reproductive events: A cross-sectional study. *Australian and New Zealand Journal of Public Health*, 28, 324–9. [PubMed: 15704695]
- Testa M, Quigley BM, & Leonard KE (2003). Does alcohol make a difference? Within-participants comparison of incidents of partner violence. *Journal of Interpersonal Violence*, 18(7), 735–743. doi: 10.1177/0886260503253232 [PubMed: 14675506]
- Tillyer MS, & Wright EM (2014). Intimate partner violence and the victim-offender overlap. *Journal of Research in Crime and Delinquency*, 51(1), 29–55. doi: 10.1177/0022427813484315
- Vest JR, Catlin TK, Chen JJ, & Brownson RC (2002). Multistate analysis of factors associated with Intimate Partner Violence. *American Journal of Preventive Medicine*, 22(3), 156–164. [PubMed: 11897459]
- Wilsnack RW, Wilsnack SC, Kristjanson AF, Vogeltanz-Holm ND, & Gmel G (2009). Gender and alcohol consumption: Patterns from the multinational GENACIS project. *Addiction*, 104, 1487–1500. doi: 10.1111/j.1360-0443.2009.02696.x [PubMed: 19686518]
- Wood SL, & Sommers MS (2011). Consequences of intimate partner violence on child witnesses: A systematic review of the literature. *Journal of Child and Adolescent Psychiatric Nursing*, 24, 223–236. doi: 10.1111/j.1744-6171.2011.00302.x [PubMed: 22044570]
- World Health Organization. (2013). *Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner violence*. Geneva, Switzerland.

Table 1.

Number in sample, number (%) living with children, number (%) who were past 12 month drinkers, and number (%) reporting P-IPV victimization, perpetration or both by sex and country

Country	Number (%) living Number in sample	with children < 18 years of age	Number (%) past 12 month drinkers	Number (%) who reported being victim only of P-IPV (Vic-Only)	Number (%) who reported being perpetrator only of P-IPV (Perp-Only)	Number (%) who reported bidirectional P-IPV (i.e., victim & perpetrator)(Bi-Dir)
<i>Argentina</i>						
Males	400	144 (36.0%)	366 (91.5%)	30 (7.5%)	5 (1.3%)	28 (7.0%)
Females	598	311 (52.0%)	441 (73.7%)	29 (4.8%)	23 (3.8%)	27 (4.5%)
<i>Brazil</i>						
Males	768	419 (54.6%)	477 (62.1%)	14 (1.8%)	15 (2.0%)	19 (2.5%)
Females	1046	628 (60.0%)	345 (33.0%)	31 (3.0%)	21 (2.0%)	30 (2.9%)
<i>Canada</i>						
Males	4950	1703 (34.4%)	4132 (83.5%)	272 (5.5%)	55 (1.1%)	127 (2.6%)
Females	6487	2569 (39.6%)	5026 (77.5%)	221 (3.4%)	236 (3.6%)	158 (2.4%)
<i>Costa Rica</i>						
Males	368	146 (39.7%)	258 (70.1%)	18 (4.9%)	12 (3.3%)	8 (2.2%)
Females	764	460 (60.2%)	350 (45.8%)	40 (5.2%)	23 (3.0%)	20 (2.6%)
<i>India</i>						
Males	1234	624 (50.6%)	465 (37.7%)	13 (1.1%)	47 (3.8%)	33 (2.7%)
Females	1219	860 (70.5%)	36 (3.0%)	240 (19.7%)	3 (0.2%)	27 (2.2%)
<i>Isle of Man</i>						
Males	341	139 (40.8%)	327 (95.9%)	23 (6.7%)	13 (3.8%)	14 (4.1%)
Females	386	149 (38.6%)	340 (88.1%)	9 (2.3%)	18 (4.7%)	10 (2.6%)
<i>Japan</i>						
Males	750	411 (54.8%)	704 (93.9%)	22 (2.9%)	46 (6.1%)	43 (5.7%)
Females	770	390 (50.6%)	620 (80.5%)	27 (3.5%)	28 (3.6%)	53 (6.9%)
<i>New Zealand</i>						
Males	618	205 (33.2%)	560 (90.6%)	43 (7.0%)	20 (3.2%)	58 (9.4%)
Females	822	318 (38.7%)	760 (92.5%)	26 (3.2%)	70 (8.5%)	64 (7.8%)
<i>Nicaragua</i>						
Males	565	271 (48.0%)	254 (45.0%)	13 (2.3%)	13 (2.3%)	23 (4.1%)

Country	Number (%) living Number in sample ^a	with children < 18 years of age	Number (%) past 12 month drinkers	Number (%) who reported being victim only of P-IPV (Vic-Only)	Number (%) who reported being perpetrator only of P-IPV (Perp-Only)	Number (%) who reported bidirectional P-IPV (i.e., victim & perpetrator)(Bi-Dir)
<i>Nigeria</i>						
Females	1360	966 (71.0%)	147 (10.8%)	48 (3.5%)	54 (4.0%)	36 (2.6%)
<i>Spain</i>						
Males	829	625 (75.4%)	367 (44.3%)	23 (2.8%)	43 (5.2%)	58 (7.0%)
Females	735	565 (76.9%)	157 (21.4%)	41 (5.6%)	22 (3.0%)	40 (5.4%)
<i>Peru</i>						
Males	474	237 (50.0%)	392 (82.7%)	20 (4.2%)	12 (3.3%)	8 (2.2%)
Females	909	654 (71.9%)	558 (61.4%)	69 (7.6%)	23 (3.0%)	20 (2.6%)
<i>United Kingdom</i>						
Males	735	195 (26.5%)	541 (73.6%)	8 (1.1%)	7 (1.0%)	9 (1.2%)
Females	733	240 (32.7%)	383 (52.3%)	19 (2.6%)	5 (0.7%)	8 (1.1%)
<i>Uruguay</i>						
Males	537	310 (57.7%)	294 (54.7%)	24 (4.5%)	55 (10.2%)	40 (7.4%)
Females	558	382 (68.5%)	221 (39.6%)	93 (16.7%)	12 (2.2%)	39 (7.0%)
<i>Uruguay</i>						
Males	771	306 (39.7%)	709 (92.0%)	59 (7.7%)	19 (2.5%)	91 (11.8%)
Females	821	419 (51.0%)	693 (84.4%)	37 (4.5%)	65 (7.9%)	86 (10.5%)
<i>Uruguay</i>						
Males	376	134 (35.6%)	305 (81.1%)	12 (3.2%)	3 (0.8%)	14 (3.7%)
Females	624	294 (47.1%)	376 (60.3%)	20 (3.2%)	17 (2.7%)	21 (3.4%)
Total						
Males	13,716	5,869 (42.8%)	10,151 (74.0%)	594 (4.3%)	373 (2.7%)	586 (4.3%)
Females	17,832	9,205 (51.6%)	10,453 (58.6%)	950 (5.3%)	649 (3.6%)	665 (3.7%)

^aExcludes participants who: had missing data on partner aggression, living with children or alcohol consumption measures; were older than 65 years of age; reported that they were gay/lesbian or whose partner aggression was with a same sex intimate partner.

Table 2.

Relative risk ratios (RRR) and 95% confidence intervals (CI) from HLM multinomial logistic regression of P-IPV (Vic-Only, Perp-Only, Bi-Dir) compared to no P-IPV on sex, living with children, and four measures of alcohol consumption (a. whether participant consumed alcohol in past 12 months, b. usual number of drinks), c. usual frequency of drinking, and d. usual number of drinks and drinking frequency), controlling for age

	Victim only	Perpetrator only	Bi-directional IPV
	RRR (CI)	RRR (CI)	RRR (CI)
(a) Drinkers vs. abstainers (N = 31,548)			
Lives with children (vs. not)	1.32* (1.03, 1.70)	1.29* (1.03, 1.60)	1.81** (1.29, 2.54)
Drinker (vs. abstainer)	1.45** (1.19, 1.76)	2.40*** (1.73, 3.34)	2.31*** (1.75, 3.04)
Male (vs. female)	0.70 (0.40, 1.23)	0.72 (0.46, 1.13)	0.95 (0.78, 1.16)
Age (18–65)	0.97*** (0.96, 0.98)	0.97*** (0.95, 0.98)	0.96*** (0.94, 0.97)
(b) # of drinks (drinkers only) (N = 20,376)			
Lives with children (vs. not)	1.25 [‡] (0.96, 1.63)	1.36* (1.08, 1.72)	1.82** (1.28, 2.60)
Usual number of drinks	1.06*** (1.03, 1.09)	1.07*** (1.04, 1.09)	1.08*** (1.04, 1.13)
Male (vs. female)	0.70 (0.44, 1.11)	0.71 (0.42, 1.21)	0.94 (0.75, 1.19)
Age	0.97*** (0.96, 0.98)	0.97*** (0.96, 0.98)	0.95*** (0.94, 0.97)
(c) Frequency (drinkers only) (N = 20,376)			
Lives with children (vs. not)	1.21 (0.90, 1.64)	1.32* (1.05, 1.65)	1.78** (1.25, 2.56)
Frequency of drinking	1.06 [‡] (0.99, 1.14)	1.08** (1.03, 1.15)	1.13** (1.06, 1.20)
Male (vs. female)	0.75 (0.47, 1.23)	0.78 (0.48, 1.25)	1.00 (0.82, 1.23)
Age	0.97*** (0.95, 0.98)	0.97*** (0.95, 0.98)	0.95*** (0.93, 0.97)
(d) # of drinks and frequency (drinkers only) (N = 20,376)			
Lives with children (vs. not)	1.22 (0.89, 1.67)	1.36* (1.07, 1.72)	1.83** (1.29, 2.59)
Usual number of drinks	1.05*** (1.03, 1.08)	1.06*** (1.03, 1.09)	1.08** (1.04, 1.12)
Frequency of drinking	1.05 (0.97, 1.13)	1.07* (1.00, 1.14)	1.10* (1.02, 1.18)
Male (vs. female)	0.68 (0.43, 1.09)	0.68 (0.41, 1.12)	0.87 (0.69, 1.10)

	Victim only	Perpetrator only	Bi-directional IPV
	RRR (CI)	RRR (CI)	RRR (CI)
Age	0.97 ^{***} (0.96, 0.98)	0.97 ^{***} (0.95, 0.98)	0.95 ^{***} (0.93, 0.97)

[†] p < .10
 * p < .05
 ** p < .01
 *** p < .001

Table 3.

Relative risk ratios (RRR) and 95% confidence intervals (CI) from HLM multinomial logistic regression of P-IPV (Vic-Only, Perp-Only, Bi-Dir) compared to no P-IPV on sex, living with children, and two measures of alcohol consumption (a. whether participant consumed alcohol in past 12 months, b. usual number of drinks), including significant interactions and controlling for age

	Victim only		Perpetrator only		Bi-directional IPV	
	RRR (CI)		RRR (CI)		RRR (CI)	
(a) Drinkers vs. abstainers						
Lives with children (vs. not)	1.59 ^{**}	(1.23, 2.07)	1.12	(0.86, 1.46)	2.05 ^{**}	(1.32, 3.19)
Drinker (vs. abstainer)	1.42 ^{**}	(1.12, 1.79)	1.85 ^{***}	(1.35, 2.54)	1.93 ^{***}	(.141, 2.64)
Male (vs. female)	0.72	(0.34, 1.52)	0.42 [*]	(0.21, 0.83)	0.73	(0.44, 1.21)
Male X lives with children	0.64 [*]	(0.43, 0.95)	1.64 [*]	(1.09, 2.48)	0.84	(0.55, 1.27)
Male X drinker	1.31	(0.85, 2.01)	1.67 [‡]	(0.98, 2.85)	1.76 [*]	(1.08, 2.86)
Age	0.97 ^{***}	(0.96, 0.98)	0.96 ^{***}	(0.95, 0.99)	0.95 ^{***}	(0.94, 0.97)
(b) # of drinks (drinkers only)						
Lives with children (vs. not)	1.41	(0.91, 2.16)	1.12	(0.85, 1.47)	2.18 ^{**}	(1.32, 3.60)
Frequency of drinking	1.05	(0.97, 1.13)	1.07 [*]	(1.00, 1.14)	1.10 [*]	(1.02, 1.19)
Male (vs. female)	0.86	(0.43, 1.71)	0.69	(0.39, 1.24)	1.47	(0.89, 2.41)
Male X lives with children	0.71 [‡]	(0.46, 1.07)	1.60 [*]	(1.01, 2.53)	0.74	(0.47, 1.15)
Usual number of drinks	1.08 [*]	(1.02, 1.15)	1.10 ^{**}	(1.04, 1.16)	1.14 ^{**}	(1.06, 1.22)
Male X # of drinks	0.98	(0.91, 1.04)	0.95 [‡]	(0.90, 1.01)	0.93 [*]	(0.86, 0.10)
Age	0.97 ^{***}	(0.96, 0.98)	0.96 ^{***}	(0.95, 0.98)	0.95 ^{***}	(0.93, 0.97)

[‡] p < .10

* p < .05,

** p < .01,

*** p < .0001

Table 4.

Relative risk ratios (RRR) and 95% confidence intervals (CI) from HLM multinomial logistic regression of P-IPV (Vic-Only, Perp-Only, Bi-Dir) compared to no P-IPV on whether living with children and two measures of alcohol consumption (a. whether participant consumed alcohol in past 12 months, b. usual number of drinks), done separately for men and women and controlling for age

	Victim only		Perpetrator only		Bi-directional IPV				
	RRR (CI)		RRR (CI)		RRR (CI)				
(a) Drinkers (vs. abstainers)									
Men									
Lives with children (vs. not)	1.00	(0.73, 1.39)	1.71	**	(1.21, 2.40)	1.68**	(1.20, 2.36)		
Drinker (vs. abstainer)	1.92	**	(1.36, 2.70)	2.82	***	(1.69, 4.72)	3.48***	(2.42, 5.01)	
Women									
Lives with children (vs. not)	1.60	**	(1.20, 2.14)	1.13		(0.88, 1.45)	2.02**	(1.31, 3.47)	
Drinker (vs. abstainer)	1.35	*	(1.07, 1.70)	1.97	***	(1.55, 2.50)	1.91	***	(1.41, 2.59)
(b) # of drinks (drinkers only)^a									
Men									
Lives with children	0.97		(0.97, 2.08)	1.78	**	(1.22, 2.58)	1.6**	(1.17, 2.21)	
Usual number of drinks per occasion	1.05	**	(1.02, 1.08)	1.05	**	(1.02, 1.08)	1.06	**	(1.02, 1.10)
Women									
Lives with children (vs. not)	1.42	†	(0.97, 2.08)	1.08		(0.83, 1.39)	2.14**	(1.32, 3.47)	
Usual number of drinks per occasion	1.10	***	(1.02, 1.08)	1.10	***	(1.05, 1.15)	1.15	***	(1.08, 1.22)

† p < .10
 * p < .05
 ** p < .01
 *** p < .001

^a Also controls for frequency of drinking.

Table 5.

Relative risk ratios (RRR) and 95% confidence intervals (CI) from logistic regression of P-IPV (Vic-Only, Perp-Only, Bi-Dir) compared to no P-IPV on living with children and whether participant had consumed alcohol in the past 12 months by gender and country, controlling for age

	Victim only		Perpetrator only		Bidirectional IPV	
	Living with children RRR (CI)	Drinker RRR (CI)	Living with children RRR (CI)	Drinker RRR (CI)	Living with children RRR (CI)	Drinker RRR (CI)
Female participants						
Spain	2.60 [*] (1.01-6.66)	1.52 (0.59-3.88)	<i>a</i>	2.74	0.29 (0.04-2.4)	0.91 (0.22-3.79)
United Kingdom	1.32 (0.65-2.69)	1.56 (0.54-4.51)	1.65 [‡] (0.94-2.88)	1.27	1.65 [‡] (1.00-2.72)	1.24 (0.60-2.54)
Nigeria	1.47 (0.64-3.41)	1.03 (0.46-2.30)	1.38 (0.45-4.18)	3.08 [*]	0.72 (0.35-1.49)	4.70 ^{***} (2.41-9.15)
Argentina	1.04 (0.49-2.24)	1.65 (0.61-4.44)	1.08 (0.45-2.58)	0.66	2.19 [‡] (0.90-5.34)	1.71 (0.57-5.15)
Canada	1.24 (0.95-1.63)	1.35 (0.94-1.93)	(0.64-1.11)	1.51 [*]	1.16 (0.83-1.61)	1.75 [*] (1.10-2.79)
Uganda	2.27 ^{**} (1.31-3.93)	0.84	(0.11-1.38)	1.44	3.18 [*] (1.16-8.75)	4.07 ^{***} (1.99-8.31)
Japan	1.40 (0.59-3.29)	1.93 ^{**} (1.21-3.08)	0.38 (0.70-3.90)	2.84	0.98 (0.54-1.79)	0.84 (0.40-1.75)
Costa Rica	1.04 (0.54-1.99)	1.80 (0.53-6.12)	1.65 (0.48-2.87)	3.99 ^{**}	8.68 ^{**} (1.90-39.71)	1.47 (0.59-3.65)
India	2.85 ^{***} (1.94-4.19)	1.10 (0.58-2.08)	1.18 (0.09-12.60)	<i>a</i>	2.78 [‡] (0.95-8.15)	1.79 (0.23-14.05)
Uruguay	1.20 (0.48-2.98)	1.26 (0.53-2.99)	1.07 (0.83-7.28)	3.74 [‡]	2.91 [*] (1.07-7.97)	1.69 (0.59-4.82)
Isle of Man	1.19 (3.0-4.75)	<i>a</i>	1.37 (0.52-3.60)	<i>a</i>	3.60 [‡] (0.86-15.01)	1.08 (0.13-9.00)
Nicaragua	1.35 (0.69-2.64)	1.83 (0.86-3.90)	0.83 (0.46-1.48)	0.97	8.45 ^{**} (1.99-35.86)	1.44 (0.55-3.82)
New Zealand	1.37 (0.61-3.08)	1.79 (0.23-13.72)	0.88 (0.52-1.47)	0.81	1.73 [*] (1.03-2.93)	4.94 (0.67-36.65)
Brazil	1.89 (0.82-4.36)	1.34 (0.64-2.81)	1.44 (0.55-3.77)	1.79	2.04 (0.86-4.85)	2.68 ^{**} (1.28-5.63)
Peru	5.76 ^{***} (2.48-13.40)	1.99 [*] (1.14-3.48)	1.22 (0.63-2.38)	1.78 [‡]	9.81 ^{***} (3.27-29.49)	2.30 [*] (1.15-4.60)
N countries > 1	15/15 (100%)	13/14 (92.86%)	10/14 (71.43%)	10/13 (76.92%)	12/15 (80.00%)	13/15 (86.67%)
Male participants						
Spain	1.67 (0.39-7.16)	0.36 (0.90-1.47)	1.10 (0.21-5.84)	<i>a</i>	1.50 (0.36-6.29)	2.87 (0.36-23.14)
United Kingdom	0.61 [‡] (0.34-1.10)	0.80 (0.32-1.98)	1.43 (0.56-3.62)	0.46	1.21 (0.76-1.91)	2.60 (0.78-8.66)

	Victim only		Perpetrator only		Bidirectional IPV	
	Living with children RRR (CI)	Drinker RRR (CI)	Living with children RRR (CI)	Drinker RRR (CI)	Living with children RRR (CI)	Drinker RRR (CI)
Nigeria	0.65 (0.26-1.62)	1.20 (0.51-2.80)	1.28 (0.57-2.88)	2.65 ^{**}	0.77 (0.41-1.46)	3.24 ^{***} (1.81-5.80)
Argentina	0.72 (0.29-1.79)	2.97 (0.39-22.83)	8.71 (0.88-86.53)	^a	2.06 (0.79-5.37)	^a
Canada	0.89 (0.67-1.17)	2.07 ^{**} (1.32-3.23)	1.10 (0.63-1.93)	1.12	1.36 (0.94-1.98)	2.15 [*] (1.12-4.13)
Uganda	0.95 (0.36-2.52)	1.84 (0.76-4.47)	0.81 (0.42-1.57)	2.23 [*]	1.78 (0.76-4.16)	2.48 [*] (1.17-5.26)
Japan	1.35 (0.53-3.44)	1.08 (0.14-8.45)	1.05 (0.54-2.02)	3.10	1.22 (0.62-2.38)	1.89 (0.25-14.44)
Costa Rica	0.53 (0.16-1.75)	2.14 (0.60-7.65)	1.09 (0.28-4.21)	^a	11.71 [*] (1.76-77.81)	^a
India	12.83 [*] (1.54-107.16)	3.50 [*] (1.06-11.53)	3.32 ^{**} (1.53-7.23)	11.60 ^{***}	7.92 ^{***} (2.57-24.43)	7.26 ^{***} (2.95-17.86)
Uruguay	0.74 (0.19-2.93)	^a	4.21 (0.23-75.94)	^a	1.55 (0.39-6.12)	2.28 (0.28-18.43)
Isle of Man	1.34 (0.57-3.15)	0.92 (0.11-7.46)	2.40 (0.75-7.63)	^a	1.47 (0.50-4.34)	0.53 (0.06-4.52)
Nicaragua	1.16 (0.34-3.90)	2.10 (0.67-6.57)	1.75 (0.51-6.05)	2.99 [†]	2.89 [*] (1.05-7.94)	6.05 ^{**} (2.01-18.20)
New Zealand	1.00 (0.51-1.96)	1.61 (0.48-5.43)	1.72 (0.69-4.30)	^a	1.44 (0.82-2.51)	2.10 (0.63-6.99)
Brazil	0.55 (0.19-1.62)	2.22 (0.61-8.08)	2.01 (0.63-6.41)	3.54	0.67 (0.27-1.67)	3.36 [*] (0.96-11.70)
Peru	0.93 (0.29-2.99)	2.02 (0.45-9.02)	6.23 ^{**} (1.94-20.00)	4.15	2.22 (0.75-6.58)	4.45 (0.58-34.04)
N countries > 1	5/15 (33.33%)	11/14 (78.57%)	14/15 (93.33%)	8/9 (88.89%)	13/15 (86.67%)	12/13 (92.31%)

[†] $p < .10$

^{*} $p < .05$

^{**} $p < .01$

^{***} $p < .001$

^a Could not be computed.