Cooperative Decision-Making and Intimate Partner Violence in Peru

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Abstract

Using the continuous Demographic and Health Surveys (2005–2012) for Peru, we employ multinomial logistic regression estimates to assess risk for intimate partner violence (IPV). Using empowerment and gender frameworks for IPV, we find that women making more household decisions jointly are less likely to experience physical violence. We also find that education is negatively associated with IPV, unless a woman's attainment exceeds her partner's. Although women earning more than their partners are more likely to experience violence, joint decision-makers have a lower risk of moderate physical violence even when their status exceeds that of a male partner. By adding measures for relationship dynamics, we highlight the ways decision-making within the household contributes to violence risk for women. While deviating from male-breadwinning norms can result in violence, risk factors are conditioned on the nature of cooperation within a partnership. Our findings suggest that shared power within the household reduces IPV risk.

Intimate partner violence (IPV) has severe negative consequences for women's physical and mental health (Dude 2007; Umberson et al. 1998), for their ability to work and maintain their incomes (Koenig et al. 2003; Johnson and Ferraro 2000; Villarreal 2007; Friedemann-Sánchez and Lovatón 2012), and for the long-term well-being of the children of parents in relationships experiencing violence (Wolfe et al. 2003). These findings have fueled the growth of academic research calling for the incorporation of IPV into development discourses and interventions (Agarwal and Panda 2007; Friedemann-Sánchez and Lovatón 2012). Such calls from academia align with World Bank Group President Jim Yong Kim's (2014) identification of the "blind spot" that keeps IPV hidden from the development agenda. Kim argues that violence against women is far more than a private matter; it is one that affects "not only them [women], but their families, communities, and economies." Women's protection from IPV thus becomes intertwined with parallel notions of women's status and empowerment and the economic development of countries.[1]

Our research is motivated by two strands of IPV literature that often treat women's economic status and broader gender norms in isolation from each other. For example, bargaining frameworks assume that women's improved economic or social standing in the household leads to greater power in the relationship, greater ability to influence household

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[1] These status and empowerment measures can also be conceptualized as economic (financial) and cultural (education) capital. They are typically operationalized in quantitative studies as a woman's level of financial independence through earned income and assets, participation in the formal labor force, and accumulation of education (Agarwal and Panda 2007).

decisions and resource distribution (Hoddinott and Haddad 1995; Doss 1996), higher self-esteem, and the ability to leave or threaten to leave relationships that become violent (Friedemann-Sánchez 2006). Yet, recent research (Weitzman 2014) has shown that factors assumed to empower women (e.g., higher education and earnings) are also linked with a higher prevalence of partner abuse when such attainments exceed those of a male partner. While increased bargaining power may reduce women's risk of partner abuse, such increases in women's status may also be interpreted as a threat to norms surrounding male-dominated households to which men respond violently. This notion of gender deviance neutralization[2] (Goode 1971; Atkinson, Greenstein, and Lang 2005; Weitzman 2014) emphasizes the importance of broader gender ideologies as a crucial factor that can shape and, at times, override women's individual socioeconomic gains.

Using the Peru Demographic and Health Surveys, we run multinomial logistic regressions on household resources and decision-making distributions, as well as known correlates of IPV, to examine women's likelihood of experiencing violence. We find that women who have higher earnings and higher education than their partners are more likely to experience physical violence. At the same time, women in households where decision-making is shared by both partners are less likely to report physical violence. We suggest that shared decision-making power constitutes a model of gender-cooperative partnerships that are linked with lower levels of violence, even in higher-risk households that deviate from gender norms. Our study contributes to disentangling the concepts of gender and empowerment in IPV research.

Framework

IPV risk factors and individual empowerment

Studies of IPV risk using variations of the intra-household bargaining framework supports the hypothesis that women's increased individual status lowers the risk of IPV. The bargaining framework posits that in a dyadic relationship, the person with more resources (including income, fixed assets, employment, and education) is able to leverage those resources to prioritize their own goals within a relationship (Agarwal 1997), or, specifically with respect to IPV, to leave a violent relationship (Lundberg and Pollack 1996). For example, women's labor force participation, higher incomes, and fixed-asset ownership are negatively associated with the likelihood of experiencing violence in India (Chin 2012; Panda and Agarwal 2005), the United States (Farmer and Tiefenthaler 1997; Kalmuss and Straus 1982), Colombia (Friedemann-Sánchez 2006), and Nicaragua (Grabe 2010). Women's education and paid labor are often theorized to reduce the risk of intimate partner violence by enhancing women's decision-making power within and outside of a relationship (Kabeer 2005). Increases in women's financial and social resources can reduce economic dependence on a male partner, enabling them to use credible threats to leave a violent relationship or withhold resources (McElroy and Horney 1981, as cited by Weitzman 2014). Bargaining theory is at heart economic, and sees power in intimate relationships as reflected by resource allocation on the micro level. Based on this research, we hypothesize that women who work are less likely to experience physical violence than women who do not

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[2]Gender deviance neutralization is also known as gender resource theory.

and that women with higher educational attainment are less likely to experience physical violence than women with less than a primary education.

We test the applicability of individual women's enhanced resources and capabilities as a protective factor against IPV. However, Weitzman (2014) notes that while intra-household bargaining models acknowledge relational power as determined by each partner's relative share of resources, the majority of IPV studies using bargaining frameworks measure resources on an individual, absolute scale. The effect of women's higher education or income can be obscured when ignoring such attainment in relation to a male partner's attainment. Thus, accounting for the social and symbolic meaning of women's higher earnings and education can be crucial in understanding socioeconomic status effects on intimate partner violence.

Gender deviance neutralization

Chambers (1999) and Mitchell (2013) suggest that labor force participation, education, income, and asset ownership have gender-coded meanings that manifest relationally. Gender deviance neutralization posits that when partners deviate from traditional gender roles (e.g., male breadwinner/female caretaker), men and women tend to compensate by intensifying traditionally gendered behaviors (Weitzman 2014). Rather than seeing gendered relationships and IPV as a simple reflection of material resource allocation within a household, gender deviance neutralization sees IPV emerging from norm transgression and norm reification. Men whose masculine roles are threatened in one realm (e.g., having a substantially lower-paying job than their female partner) may use violence to assert gender domination in other spheres. For example, Macmillan and Gartner (1999) demonstrate that labor force participation and breadwinning are symbolic markers of contemporary masculinity and that the relationship between women's employment and IPV risk is conditioned by the employment status of her partner. For employed US women whose partners also worked, there was a negative association with IPV risk; for employed women whose partners did not work, IPV risk was heightened (Macmillan and Gartner 1999; Renzetti 2009). More recent work confirms this general pattern, showing men's employment as negatively associated with IPV risk (Dalal and Lindqvist 2012; Krishnan et al. 2010), while women's employment, vocational training, and additional income such as savings and participation in credit groups can increase the likelihood of violence (Dalal and Lindqvist 2012; Friedemann-Sánchez and Lovatón 2012; Krishnan 2005; Krishnan et al. 2010; Rocca et al. 2008; Koenig et al. 2003; Menjivar 1999, 2011; Castro and Casique 2009; Mogford 2011). A study of education differentials and IPV in India found that women who had more education than their partners were at a heightened risk of IPV, while there was no difference for women with the same level of education as their partners or less education than their partners (Ackerson et al. 2008).

Ultimately, numerous findings indicate that women's enhanced work and educational attainment can increase their risk of IPV when these conflict with male-breadwinner norms. While women's socioeconomic gains can increase their bargaining power within a relationship, gender contexts that perpetuate male-dominated models of the family can shape the meaning of those gains. Building on the gender deviance neutralization framework, we

hypothesize that women who earn more than their partners are more likely to experience physical violence than those who earn less than or the same as their partners. Further, we expect that women who have achieved higher educational attainment than their partners will be more likely to experience physical violence than those who have achieved lower or the same educational attainment.

Our research does not view these bargaining and neutralization theories as diametrically opposed but, rather, as complementary. Thus, while bargaining theory may explain some risk of IPV, gender deviance neutralization would posit that this is true only when these resources do not significantly transgress social norms. Since gender deviance neutralization rests on symbolic understandings of power, gender deviance neutralization theory may only be helpful in understanding IPV risk insofar as couples adhere to traditional gender beliefs or practices in their relationships.

Gendered practices and household decision-making

A number of studies suggest that decision-making structures can have a profound impact on the likelihood of intimate partner violence. Coleman and Straus (1986), for example, find that couples with equal decision-making power have a lower prevalence of IPV than couples in which one partner (male or female) dominates the decision-making process. Flake and Forste (2006) find that female-dominated decision-making increases the likelihood of IPV in five Latin American countries.[3] Gage (2005) and Friedemann-Sánchez and Lovatón (2012) similarly observe that egalitarian (or cooperative, in our terms) decision-making is associated with a lower likelihood of intimate partner violence, while female-dominated decisions motivate violent behavior by male partners in response to their perceived powerlessness.

Rettig (1993: 205) notes that family decision-making is partly defined by family values derived from cultural and social norms "but [which] have to be accepted and acted upon by the family in its current orientation." In other words, decision-making structures can reflect the particular socio-cultural definitions of gender roles that are integrated into the management style of the household. While bargaining frameworks often view decision-making power as the culmination of each partner's economic clout (Gage 2005; Hindin and Adair 2002), it is also plausible that cooperative decision-making indicates gender-egalitarian beliefs net of economic resource differentials between partners (Bartley et al. 2005). For example, Greenstein (1996) finds that American women who value gender equality are more likely to perceive unequal division of household labor as unfair, a perception that can predict marital conflict. Brines (1994) and Bittman et al. (2003) argue that "gender trumps money" in Australia and the United States, as couples who deviate from male-breadwinner frameworks compensate with a more traditional gender division of labor.

While most studies on gendered practices in households focus on division of labor, we suggest that decision-making power along gender lines can provide similar insight into which gender values are incorporated within a relationship. Cooperative decision-making is

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[3]The countries are Colombia, Dominican Republic, Haiti, Nicaragua, and Peru.

shown to be negatively associated with IPV and is plausibly indicative of more equal gendered relationships and beliefs that are not solely defined by partners' economic statuses.

Based on the conceptualization of joint decision-making as an expression of more equal gender beliefs and practices in relationships, we expect that women who make more decisions jointly with their partner are less likely to experience physical violence and that, in particular, joint decisions decrease the risk of violence for women who earn more than their partner or have more education than their partner. Our chiefly expectation is that cooperative and egalitarian households have lower risks of IPV for women compared to households that are dominated by either partner.

Data and methods

Sample

We analyze data from Peru's continuous Demographic and Health Survey, a nationally representative survey. Intimate partner violence in Peru is highly prevalent, with several national and international organizations estimating that nearly 40 percent of women are victims of physical violence at some point in their lives (MIMDES 2008, as cited by Immigration and Refugee Board of Canada 2010; Garcia-Moreno et al. 2006). Despite legislation that outlaws intimate partner violence,[4] women's organizations criticize the tepid enforcement and legal delays that victims confront when reporting IPV. Partly as a result, a large proportion of intimate partner violence goes unreported, leading the World Health Organization to provide a higher estimate of 69 percent of women experiencing IPV. Mitchell (2013) notes that as Peruvian women account for a growing share of the formal labor force, "[w]omen have typically reported that their husbands object to their wives' absences from home, and feel threatened by their wives' new sense of self-esteem, seeing changes in the power dynamics in the relationship." The historical context of gendered expectations and behaviors in Peru (Chambers 1999), particularly during a period in which more women abandon roles as domestic caretakers (Mitchell 2013), makes the country an informative case for observing the impact of individual and relational characteristics on intimate partner violence.

While most DHS data are collected for nationally representative samples for particular years, the continuous data in Peru were collected over several years from 2004 to 2012. In the present study, we are limited to samples collected from 2005 to 2012 due to the exclusion of some key variables in 2004. Using stratified cluster sampling, the DHS consists of data collected through a household questionnaire administered to all women aged 15–49. In addition to standard questions, the survey includes the "DHS domestic violence module," which surveys one woman per household who has ever been in a relationship. We limit our sample to currently partnered women in which all household decisions are made by either the woman, her partner, or both. The total analytic sample consists of 41,778 respondents.

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[4]The Law for Protection from Family Violence, adopted in 1993, provided a judicial procedure for victims to lodge formal complaints. The law was strengthened in 1997 and again in 2008, with the latter amendment providing stronger protections from the aggressor including restraining orders and suspension of weapons possession.

Dependent variable

We simultaneously test two dependent outcomes: experiencing *moderate physical violence* and *severe physical violence* in the past 12 months. Experience of moderate physical violence is determined by women's response to four survey questions: did your husband/partner "ever slap you?" "push, shook or threw something at you?" "punched or kicked you?" and "kick or drag you?" Severe physical is determined by women's response to three survey questions: did your husband/partner "ever try to strangle or burn you?" "threaten with a knife, gun or other weapon?" and "attack with a knife, gun or other weapon?" The dependent variable is coded as a trichotomous outcome of whether a woman has not experienced any physical violence (0), experienced moderate physical violence (1), or experienced severe physical violence (2). Women who report experiencing severe physical violence often report moderate forms of violence as well. In such cases, women are coded as having experienced the most severe form in the past 12 months. The questions related to IPV are informed by the Conflict Tactics Scale (CTS) created by Straus (1979), and we rely on the CTS to construct the categories of abuse. We include moderate and severe violence as separate categories since previous research indicates these forms of violence may be distinct in their qualitative meanings in relationships. For example, Johnson and Ferraro (2000) distinguish between "common couples' violence," which is sometimes present as less severe, and often mutual, incidents of violence between partners that arise from conflicts but do not mark everyday life in a relationship, and "intimate terrorism," where violence is one aspect of escalating abuse in a general pattern of control. While we do not speculate on whether moderate or severe violence in our sample is indicative of common couples' violence or intimate terrorism, severe violence, particularly non-fatal strangulation and the presence of a firearm in the home, has been found to be a strong indicator of intimate partner homicide or attempted homicide (Glass et al. 2008; Wiebe 2003).

Explanatory variables

We focus on women's educational attainment and work status as resources that shape the risk of intimate partner violence within a relationship. Women's *individual educational attainment* is categorized as having less than primary, primary, secondary and higher than secondary education. Less than primary education is the reference category. The DHS also asks whether a respondent is currently working and, if she is, whether her occupation is in or outside her home. We use these two survey instruments to construct a measure of *whether the respondent does not work, works in the home, or works outside the home.*

As noted earlier, women's economic resources are associated with a heightened risk of IPV if they exceed men's (Weitzman 2014). We include two categorical indicators for women's *education and earnings relative to their partner's.* Respondents were asked their male partner's education level: less than primary, primary, secondary, and higher than secondary. Based on the women's responses, we construct a relative education measure coded into three categories: respondent has lower educational attainment than her partner, respondent has the same education as her partner, and respondent has more education than her partner. The first category is the reference category. Respondents were also asked whether they earn more, the same as, or less than their husband or partner. Women earning less than their partner are the reference category as this is the most common group in the sample. Women who did not

work but whose partners were employed were recoded as earning less than their husband or partner. Rather than exclude women who do not earn cash, and thus women who primarily belong to the two lowest wealth quintiles, we assume that women who have no incomes but whose partners are currently working earn less than their husbands or partners.

A crucial question here is whether cooperative gender practices in a household are associated with a reduced risk of violence. In the DHS, respondents are asked who makes the final decision on a number of household decisions: "final say on how to spend money," "final say on making large household purchases," "final say on making household purchases for daily needs," "final say on woman's visits to family or relatives," "final say on deciding what to do with money the husband earns," and "final say on food to be cooked." We include these six decision types based on previous literature regarding decision-making as a reflection of gender dynamics. Steil and Weltman (1991) observe that decision-making power is often distributed along traditional gender lines in which wives most frequently make day-to-day decisions while husbands more often make decisions on larger issues such as household resource distribution. We argue both that equality in a household is related to women participating in more of the decision-making (as decision-making is circumscribed by gender) and that men's participation in decisions typically relegated to the domain of "women's work" (e.g., food to be cooked, daily financial management of the household) is similarly important.

Among the six decision-making questions listed above, we construct three count variables for the number of times a decision is made by the woman (autonomous), jointly with her partner (joint), and by the male partner only (partner). As numerous studies treat decision-making as a reflection of gender-normative expectations within the household (Bartley et al. 2005; Rosenbluth et al. 1998), we similarly treat joint decision-making as a proxy measure of cooperative gender practices, whereas autonomous and partner-only decisions are treated as a gender-divided dynamic. In these data, we only include three possible decision types (autonomous, joint, partner) between partners since the total number of decisions is always six. Thus, we can only include two of three decision variables (autonomous and joint) in our analyses.

Control variables

All of our models control for numerous demographic characteristics that are known to affect women's risk of intimate partner violence. These characteristics include respondent's age, the number of children under age five in the household, and whether the respondent is married or cohabiting. Patrilocality, or social systems in which married couples live with the husband's parents, is often positively associated with IPV risk (Raj and Silverman 2002). The DHS provides, in addition to women's surveys, a household member roster that includes all persons in a household and their relationship to the household head. Using this information, we include a dummy indicator for whether the woman's in-laws reside in the household. Because several studies (Hindin and Adair 2002; Renzetti 2009) indicate that financial stressors exacerbate IPV risk, we control for household socioeconomic characteristics using the DHS wealth index, which is generated by a principal components analysis that constructs scores for a household's wealth relative to other households in the

country. Household wealth scores are based on ownership of durable goods such as radios, bicycles, and televisions as well as the type of materials used for housing. The scores are then categorized into ordinal quintiles from poorest to richest. We also include a dummy variable for whether a respondent lives in a rural (0) or urban (1) area.

Research consistently highlights several robust factors that heighten women's risk of IPV. Women's prior exposure to parents' partner violence and a partner's alcohol consumption greatly increase IPV risk (Jewkes, Levin, and Penn-Kekana 2002; Flake and Forste 2006). Our analyses include measures for both factors, supplied by the DHS data. Respondents are asked whether their father hit or abused their mother in the past. This is included as a dummy variable. The DHS data also include a question regarding the male partner's current alcohol consumption, which is included as a dummy variable (no = 0, yes = 1). Lastly, a husband's or partner's controlling behaviors are a common correlate of physical violence risks (Garcia-Moreno et al. 2006). The DHS asks five questions regarding a partner's controlling behaviors: the woman's partner is "jealous if talking with other men," "does not permit her to meet her [female friends]," "tries to limit her contact with family," "insists on knowing where she is," and "does not trust her with money." We construct a count variable of these five controlling behaviors ranging from none (0) to all (5).[5]

Table 1 provides the means and standard deviations of all variables used in the analysis. Among the 41,778 women in our sample in Peru, approximately 14 percent report experiencing moderate physical violence and 1 percent report severe physical violence in the past year. Women are more likely to make decisions jointly (2.3 joint decisions) compared to autonomous decisions (1.5 autonomous decisions). Women's own educational attainment is fairly evenly distributed, with primary education (28 percent) being the largest education attainment group; 62 percent of women work outside the home. However, despite high levels of employment, the great majority (80 percent) earn less than their partner and similarly have lower educational attainment than their partner (75 percent). As noted earlier, women who did not earn any cash were excluded. Samples that include women who did not earn cash produced more evenly distributed wealth quintiles compared to our analytic sample that excluded them. Overall, 50 percent of households in our sample are in the second and third wealth quintiles, with the wealthiest two quintiles accounting for 32 percent of households.

Multivariate analysis

This study aims to examine whether and to what extent relationship equality is associated with lower risks of IPV. We assess the likelihood of women experiencing any physical violence in the past 12 months by their individual education and work status as well as their relative economic status vis-à-vis their male partner. We subsequently include autonomous and joint decision-making measures to test our hypothesis that cooperative decision-making is associated with lower levels of violence, net of individual and relational resource dynamics. Lastly, we explore whether particular risks in the form of gender-deviant

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[5]We tested an additional construction of husband's controlling behaviors using a factor analysis. However, a significant likelihood ratio test (p < 0.00) indicates that the model has a poor overall fit. As there are no additional factors, and the results are nearly identical to our final models, we use a count variable of the available husband's control variables for ease of interpretation.

relationships (i.e., women having more education or more income than their partner) varies by cooperative decision-making statuses in the household.

As the dependent variable consists of three categories of IPV, we employ a set of multinomial logistic regressions to simultaneously test the occurrence of moderate physical violence and severe physical violence, relative to no violence, in the past year. Since the data consist of women continuously surveyed over eight years (2005 to 2012), estimation techniques include clustered standard errors at the DHS region level, which are first-level administrative units in Peru. Since the survey is continuously collected as cross-sections over time, clustered standard errors are the most appropriate technique to account for unobserved between-group heterogeneity in IPV prevalence. All models also include year dummies to account for economic and normative changes over time but are not included in the table. For ease of interpretation, all coefficients are converted into odds ratios.

Results

Figure 1 shows the proportion of women experiencing any physical violence (both moderate and severe) by the number of joint and autonomous decisions. We observe a stark contrast between autonomous and joint decisions in the correlations with physical violence. Women who make no joint decisions are the most likely (21 percent) to report physical violence, while women who make all household decisions jointly are the least likely (9 percent) to do so. Autonomous decision-making exhibits a positive correlation with physical violence: 11 percent of women making no autonomous decisions report physical violence compared with 19 percent of women making all decisions autonomously.

Table 2 presents the odds of experiencing moderate and severe physical violence by economic and decision-making indicators. Coefficients for both outcomes are relative to women who have not experienced any physical violence in the last 12 months. Model 1 includes all independent variables, including year dummies which are not shown. Net of all other factors, women's education is not significantly associated with experiencing moderate violence. However, relative to women with less than a primary education, women with a secondary education (OR = 0.55) and higher than secondary education (OR = 0.41) have 45 percent and 59 percent lower odds of severe violence, respectively. Whereas women's increased education is associated with a lower risk of severe violence, working women are generally more likely to report both moderate and severe violence in the past year. Compared to women who are not working, working in the home is associated with 15 percent higher odds of moderate violence (OR = 1.15). Working outside the home is associated with even higher odds of both moderate violence (OR = 1.24) and severe violence (OR = 1.52). The results only partially support the hypothesis that education is a protective factor against violence, as this relationship is significant and negative for severe violence only. Moreover, women's work, especially working outside the home, is a major risk factor for violence. Thus, our results contradict the hypothesis that employment, and the economic benefits it confers, protect against IPV.

Examining women's relative education and earnings, we observe that exceeding their partners' corresponding status is a significant risk factor. Women with more education have

12 percent higher odds of moderate violence and 61 percent higher odds of severe violence. Similarly, earning more than a male partner is associated with 29 percent higher odds of moderate violence and 60 percent higher odds of severe violence. Having the same educational or earnings status as her partner is not significantly associated with either form of violence in these models. These results consistently support the hypothesis that women's higher educational and earning statuses increase the risk of IPV.[6]

The findings in Model 1 highlight the importance of distinguishing decision-making structures in IPV. Each additional decision made jointly between partners is associated with 9 percent lower odds of moderate physical violence and 16 percent lower odds of severe physical violence. On the other hand, autonomous decisions have positive coefficients but are not significantly related to the odds of moderate or severe physical violence. While it is plausible that women's autonomous decisions constitute a form of household power, null associations with either form of violence call into question autonomous decision-making as a protective factor in itself. Rather, autonomous decisions may indicate gendered divisions that trigger, or possibly result from, power struggles within the household. By contrast, these results support our hypothesis that joint decision-making, which signifies a more gender-cooperative household, is linked to lower levels of violence.

In Model 2, we include the interaction term between relative education and joint decisions. We hypothesized that more cooperative decision-making in the household moderates the heightened risk of violence for women with higher statuses than their partners. We do not observe a significant interaction with respect to joint decisions by relative education categories. Rather, joint decision-making in general is negatively associated with moderate and severe violence, but that negative association does not vary by women's education relative to their partner.

Model 3 examines the interaction between relative earnings and joint decisions. This model similarly shows that women earning more than their partner have a higher risk of moderate violence (OR = 1.45) whereas joint decision-making is negatively associated with moderate violence (OR = 0.91). The significant and negative interaction for the moderate violence outcome (OR = 0.94) highlights the heterogeneous nature of women's relative status. Each joint decision is associated with 6 percent reduced odds of violence within households where women have higher earnings. We do not observe a significant interaction for the severe violence outcome. However, across all models, the magnitude of joint decision-making as a protective factor is highest for severe physical violence. Thus, we find evidence that gender cooperation is linked with lower odds of violence in general and in gender-deviant households.

All models include control factors that are strongly associated with violence. Women who are cohabiting, relative to married women, have around 34 percent higher odds of reporting both moderate and severe violence. Other known violence correlates are highly positively

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[6]We tested whether our relative education variable was indicating that men with lower education were more likely to be violent toward their partners. When testing the relationship between experiencing violence and men's education, women's education, and education differential (separately and together), partner's education levels had no significant effect on the likelihood of the woman experiencing violence, while the education differential variable remained significant.

and significantly related with both forms of violence. Partner drinking, witnessing IPV as a child, and husband's controlling behaviors are all associated with higher odds of violence. We focus on these factors as possible mediators of the joint decision-making associations. The negative association between joint decision-making and physical violence is consistent across models and specifications.

Figure 2 displays the predicted probabilities of moderate physical violence, with corresponding 95 percent confidence intervals, for the interaction between joint decisions and relative earnings. Women who make no decisions jointly and earn more than their partner are at the highest risk of physical violence at nearly 30 percent. However, as the number of joint decisions increases, the probability of violence for all relative earnings categories decreases. For women making all six decisions jointly, women earning more than their partners have the lowest probability of experiencing violence, although that difference is not significantly different from high joint decision-makers for any relative earnings groups. Findings from the regression results and the predicted probabilities support the hypothesis that joint decision-making is associated with lower odds of violence, in this case moderate violence, even in households that deviate from gender norms.

Discussion and conclusion

From 2005 to 2012, more than one in six Peruvian women was physically abused by their partners in the past year. The risk of IPV is partially explained by women's economic status, although that relationship is conditioned by gender practices within the household. Women with the highest levels of education are less likely to report violence. On the other hand, women who work, especially outside the home, are much more likely to experience violence. These contradictory findings make more sense when analyzed with attention to gender frameworks. The protective nature of women's economic achievements is channeled through bargaining frameworks which theorize that women have resources to leverage in times of conflict. Yet, as women's roles increasingly diverge from conventional gender roles, achieving higher economic status may constitute a norm transgression that threatens masculinity (Mitchell 2013). Peruvian women whose earnings and education levels exceed those of partners are more likely to experience both moderate and severe violence. Thus, IPV risk appears to operate at the intersection of economic capabilities for women and the gender norms that define those increasing capabilities as deviant.

In light of bargaining and gender implications for IPV risk, our main focus is whether cooperation within a household protects women from physical violence and lowers risks stemming from gender norm deviance. We observe that women in cooperative households, measured by the number of joint household decisions, are significantly less likely to experience physical violence. Moreover, the additional risk of moderate violence posed by earning more than a male partner is lower by each additional decision made jointly. One interpretation is that household perceptions and practices of gender equality can reduce, or possibly override, violence risks of deviating from gender norms.

Sociologists note that normative gender expectations can have a significant effect on gendered practices in a household (Greenstein 1996; Bittman et al. 2003). Expectations that

women are the primary domestic caretaker (Chang and Song 2010; Greenstein 1996), men's control over resources (Goetz and Gupta 1996), and men's decisions on childbearing (Kaufman 2000) are examples of gender norms overriding individual and relational circumstances. Working women, many of whom earn more than their partners, may still be expected to defer to men's dominance in the household due to persisting patriarchal norms. Those normative expectations may define the risk associated with women's economic achievements while, at the same time, relational equality may constitute a bulwark against the gender norms that promote violence against women.

The analyses consistently show that the confluence of gender deviation in economic status and non-cooperative decision-making corresponds with higher risks of physical violence for women. Risks of physical violence are lower for women in increasingly cooperative decision-making households. This is especially the case for the most severe forms of violence, as the magnitude of joint decision-making associations is twice as high for severe violence than for moderate violence. However, the data also show that moderate violence has more varied associations between economic and decision-making variables. While joint decisions are generally associated with lower odds of moderate IPV, women who earn more than their partner in a household with no cooperative decision-making are a distinctly high-risk group. It is possible that women who earn more than their partners but also make no decisions jointly constitute a rare category. Further, households in which women earn more but are non-cooperative may also have disproportionately high risks of IPV from other sources. Women may be forced to work but husbands may control all finances and resources. We see little evidence that this particular group has disproportionately higher risks from other covariates,[7] although some unobserved factors may elevate IPV risks for women earning more and making no joint decisions.

While the data support our hypotheses on cooperative household associations with IPV, we caution that we are not able to make a causal connection. The continuous DHS data are cross-sectional, with unique individuals in each survey wave from 2005 to 2012. Since IPV, decision-making, and relative economic structures were measured concurrently, our analyses are limited to correlations. Given the interrelation among socioeconomic and gendered factors in IPV and the general lack of longitudinal data, the issue of causality is difficult to study in IPV and is beyond the scope of this research. Rather, we focus on the consistent pattern that more cooperative households, in terms of decision-making, have lower odds of IPV across socioeconomic categories. We suggest that heterogeneous risks of violence across decision-making structures highlight the importance of distinguishing women's status and gendered cooperation, the latter of which includes men's equal participation.

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[7]Women who earn more than their partner but make no joint decisions account for 2 percent of the overall sample but are the plurality among women who earn more than their partner. In a sample consisting only of women earning more than their partner, 23 percent of women make zero joint decisions while the second largest group (19 percent) make one joint decision and the third largest group (18 percent) make three joint decisions. When examining socioeconomic and demographic characteristics, women who earn more than their partner and make no decisions jointly are the oldest age group (37.2 years on average) and are most often in middle wealth households. Women's higher education attainments are positively correlated with joint decisions, but for all levels of joint decisions, women earning more than their partner (compared to less or equal earnings), have the highest educational attainment. The proportion of women working outside the home is consistently 75–80 percent for all joint decision-making levels among women earning more than their partner. The data do not suggest that women who earn more than their partner and make zero decisions jointly are socioeconomic or demographic outliers.

Intimate partner violence operates within a complex array of gender and empowerment factors that can produce unexpected results. We suggest that decision-making is a useful proxy for a multitude of factors such as how couples perceive the role of men and women in society. Studying decision-making, and joint decision-making specifically, could be fruitful in understanding how to reduce IPV risk within a development agenda, especially for women at risk of IPV from transgressing gender norms with their employment and educational status. In policy realms particularly, increasing women's individual status through income and other forms of capital without addressing local gender practices and attitudes can sometimes leave women in positions that are more vulnerable. Targeted development and anti-violence interventions should take into account the ramifications of such interventions from a multitude of relational perspectives and contexts, including family and intimate partner relationships and broader gender norms.

Acknowledgments

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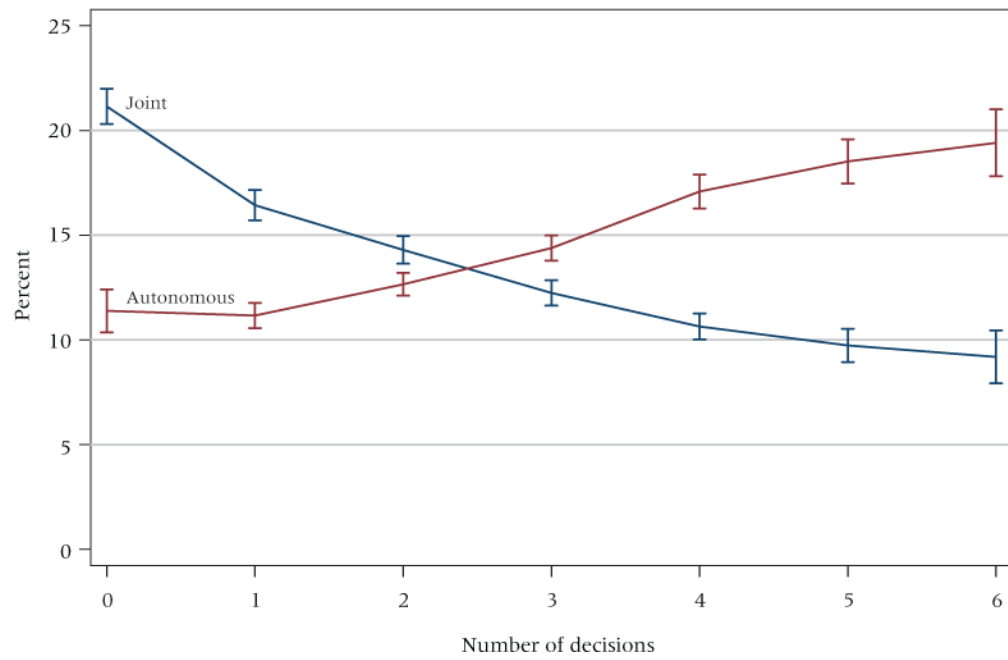
FIGURE 1.
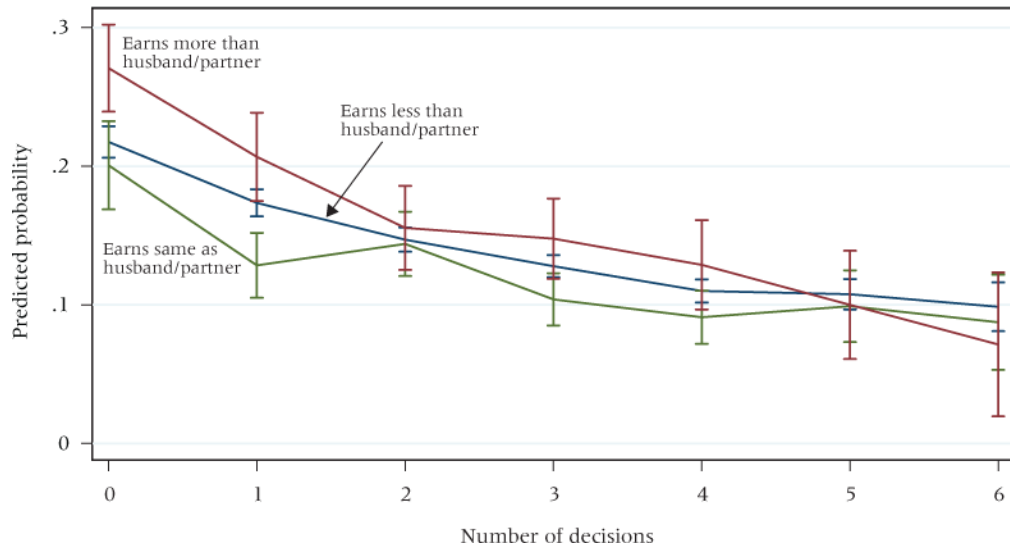Percent of women experiencing any physical violence by the number of autonomous and joint decisions (0–6)

FIGURE 2.

Predicted probabilities of moderate physical violence by the interaction between number of joint decisions and relative earnings

TABLE 1

Means and standard deviations of variables used in multivariate analyses

	Mean	Standard deviation
Moderate physical violence in past 12 months (%)	14	0.4
Severe physical violence in past 12 months (%)	1	0.1
Woman's education (%)		
Less than primary	26	0.5
Primary	28	0.5
Secondary	22	0.4
Higher than secondary	24	0.4
Current work status (%)		
Not working	21	0.5
Works in the home	17	0.3
Works outside the home	62	0.5
Relative education (%)		
Less than husband/partner	75	0.4
Same as husband/partner	16	0.4
More than husband/partner	10	0.3
Relative earnings (%)		
Less than husband/partner	80	0.4
Same as husband/partner	12	0.3
More than husband/partner	8	0.3
Autonomous decisions (0–6)	1.5	1.6
Joint decisions (0–6)	2.3	2.0
Woman's age (in single years)	34.2	8.0
Number of children under age five	0.7	0.7
Cohabiting (%)	56	0.5
In-laws in the household (%)	3	0.2
Wealth quintiles (%)		
Poorest	18	0.4
Poor	25	0.4
Middle	25	0.4
Rich	18	0.4
Richest	14	0.3
Urban (%)	61	0.5
Woman's father hit mother in the past (%)	49	0.5
Husband/partner drinks (%)	75	0.4
Husband's controlling behaviors (0–5)	1.3	1.3
Total (N)	41,778	

TABLE 2

Logistic regression predicting moderate or severe physical violence in the past year on economic and decision-making indicators

	Model 1		Model 2		Model 3	
	Moderate	Severe	Moderate	Severe	Moderate	Severe
Woman's education						
Less than primary (omitted)						
Primary	1.00 (0.92–1.08)	0.81 (0.60–1.10)	1.00 (0.92–1.08)	0.81 (0.59–1.10)	1.00 (0.92–1.08)	0.81 (0.59–1.10)
Secondary	1.05 (0.96–1.15)	0.55 *** (0.39–0.76)	1.05 (0.96–1.15)	0.55 *** (0.39–0.76)	1.05 (0.96–1.15)	0.54 *** (0.39–0.76)
Higher than secondary	0.97 (0.87–1.08)	0.41 ** (0.23–0.72)	0.97 (0.87–1.08)	0.41 ** (0.23–0.72)	0.98 (0.87–1.09)	0.40 ** (0.23–0.71)
Current work status						
Not working (omitted)						
Works in the home	1.15 * (1.03–1.29)	1.19 (0.81–1.74)	1.15 * (1.03–1.29)	1.19 (0.81–1.74)	1.15 * (1.03–1.29)	1.19 (0.81–1.75)
Works outside the home	1.24 *** (1.15–1.34)	1.52 *** (1.22–1.91)	1.24 *** (1.15–1.34)	1.52 *** (1.21–1.90)	1.24 *** (1.15–1.34)	1.52 *** (1.22–1.90)
Relative education						
Less than husband/partner (omitted)						
Same as husband/partner	1.04 (0.97–1.11)	1.21 (0.90–1.63)	1.03 (0.91–1.17)	1.33 (0.82–2.16)	1.03 (0.97–1.11)	1.21 (0.90–1.63)
More than husband/partner	1.12 * (1.02–1.23)	1.61 * (1.11–2.34)	1.08 (0.89–1.31)	1.71 (0.96–3.03)	1.11 * (1.01–1.22)	1.62 * (1.12–2.35)
Relative earnings						
Less than husband/partner (omitted)						
Same as husband/partner	0.95 (0.86–1.05)	0.76 (0.52–1.12)	0.95 (0.86–1.05)	0.77 (0.52–1.12)	0.94 (0.80–1.10)	0.83 (0.50–1.37)
More than husband/partner	1.29 *** (1.19–1.41)	1.60 ** (1.21–2.11)	1.29 *** (1.19–1.41)	1.60 ** (1.21–2.11)	1.45 *** (1.27–1.65)	1.40 (0.94–2.10)
Autonomous decisions (0–6)	1.02 (0.98–1.05)	1.09 (1.00–1.19)	1.02 (0.98–1.05)	1.09 (1.00–1.19)	1.01 (0.98–1.05)	1.09 (1.00–1.20)
Joint decisions (0–6)	0.91 *** (0.88–0.94)	0.84 ** (0.76–0.95)	0.91 *** (0.87–0.94)	0.85 * (0.75–0.97)	0.91 *** (0.88–0.94)	0.84 ** (0.75–0.94)

	Model 1		Model 2		Model 3	
	Moderate	Severe	Moderate	Severe	Moderate	Severe
Age (in single years)	0.97*** (0.96–0.97)	0.98* (0.97–1.00)	0.97*** (0.96–0.97)	0.98* (0.97–1.00)	0.97*** (0.96–0.97)	0.98* (0.97–1.00)
Number of children under five	1.04 (1.00–1.09)	1.00 (0.87–1.14)	1.04 (1.00–1.09)	1.00 (0.87–1.14)	1.04 (1.00–1.09)	0.99 (0.86–1.14)
Cohabiting	1.34*** (1.26–1.43)	1.33* (1.01–1.76)	1.34*** (1.26–1.43)	1.33* (1.01–1.76)	1.34*** (1.26–1.43)	1.33* (1.01–1.76)
In-laws in the household	0.90 (0.79–1.02)	0.84 (0.61–1.18)	0.90 (0.79–1.02)	0.85 (0.61–1.17)	0.90 (0.79–1.02)	0.85 (0.61–1.18)
Wealth quintiles						
Poorest (omitted)						
Poor	1.08 (0.98–1.20)	0.85 (0.63–1.14)	1.08 (0.98–1.20)	0.85 (0.63–1.14)	1.08 (0.98–1.20)	0.85 (0.63–1.14)
Middle	1.01 (0.86–1.19)	0.61** (0.43–0.86)	1.01 (0.85–1.19)	0.61** (0.43–0.86)	1.01 (0.86–1.20)	0.60** (0.43–0.86)
Rich	0.93 (0.76–1.14)	0.38*** (0.22–0.66)	0.93 (0.76–1.14)	0.38*** (0.22–0.66)	0.93 (0.76–1.14)	0.38*** (0.22–0.66)
Richest	0.79** (0.66–0.94)	0.57 (0.32–1.03)	0.79** (0.66–0.94)	0.57 (0.31–1.03)	0.79** (0.66–0.94)	0.57 (0.32–1.03)
Urban	1.20* (1.04–1.38)	1.26 (0.97–1.64)	1.20* (1.04–1.38)	1.26 (0.97–1.64)	1.20* (1.04–1.38)	1.25 (0.96–1.64)
Woman's father hit mother in the past	1.49*** (1.40–1.59)	1.59*** (1.26–2.01)	1.49*** (1.40–1.59)	1.59*** (1.26–2.01)	1.49*** (1.40–1.59)	1.59*** (1.26–2.00)
Husband/partner drinks	1.97*** (1.82–2.14)	3.21*** (2.18–4.73)	1.97*** (1.82–2.14)	3.20*** (2.17–4.72)	1.97*** (1.82–2.14)	3.21*** (2.18–4.73)
Husband's controlling behaviors (0–5)	1.91*** (1.85–1.97)	2.80*** (2.50–3.14)	1.91*** (1.85–1.97)	2.80*** (2.50–3.14)	1.91*** (1.85–1.97)	2.81*** (2.50–3.15)
Interaction: Joint decisions X relative education						
Joint X less education (omitted)						
Joint X same education			1.00 (0.95–1.07)	0.94 (0.78–1.15)		
Joint X more education			1.02 (0.95–1.08)	0.96 (0.72–1.27)		
Interaction: Joint decisions X relative earnings						
Joint X less earnings (omitted)						

	Model 1		Model 2		Model 3	
	Moderate	**Severe**	**Moderate**	**Severe**	**Moderate**	**Severe**
Joint X same earnings					1.01 (0.95–1.07)	0.96 (0.72–1.27)
Joint X higher earnings					0.94* (0.88–1.00)	1.12 (0.90–1.39)
Constant	0.06*** (0.05–0.09)	0.00*** (0.00–0.00)	0.06*** (0.05–0.09)	0.00*** (0.00–0.00)	0.06*** (0.05–0.09)	0.00*** (0.00–0.00)
Observations	41,778	41,778	41,778	41,778	41,778	41,778

***
$p<0.001$,

**
$p<0.01$,

*
$p<0.05$