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Association between Early Marriage and Intimate Partner Violence in India: A Focus on Youth from Bihar and Rajasthan

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Abstract

The relationship between intimate partner violence (IPV) and early marriage is explored using the 2005-2006 India National Family Health Survey (NFHS-3). The NFHS-3 collected data from a representative sample of women and men in India with a large enough sample size to have a representative sample at the state level. The focus is on youth from Bihar and Rajasthan, two states with high IPV and early marriage. Multivariate logistic regression analyses demonstrate that women ages 20-24 who married before age eighteen, the legal age at marriage in India, are more likely to have ever experienced IPV in their lifetime and recently experienced IPV (in the last 12 months) than their counterparts who married later. The results were significant in Rajasthan but not in Bihar. To reduce IPV, targeted efforts must be made to decrease the proportion of India's girls who are married under the legal age of marriage.

Keywords

Intimate partner violence; early marriage; India; youth

Background

Intimate partner violence (IPV) is abuse that occurs between two people in a close relationship, including current and former spouses and dating partners; IPV includes physical abuse, sexual abuse, threats, and emotional abuse (CDC, 2006). IPV is a violation of women's rights that negatively affects community and individual-level health and well-being (Heise, 1994; Garcia-Moreno, Jansen, Ellsberg, Heise, Watts, et al., 2006; Verma & Collumbien, 2003). Previous research has demonstrated that women who experience IPV are at increased risk of unwanted pregnancy, teenage pregnancy, human immunodeficiency virus (HIV), sexually transmitted infections (STI), malnutrition, pregnancy complications, and negative birth outcomes (Ackerson & Subramanian, 2008; Heise, 1994; Sarkar, 2008; Silverman, Decker, Saggurti, Balaiah, & Raj, 2008). Additionally, women exposed to IPV experience psychosocial problems including lower self-esteem that may lead to depression, alcohol use, or drug use (Heise et al., 1999; Sarkar, 2008).

Child marriage has been defined by the international community to be any marriage that occurs before the age of 18; child marriage is considered to be a violation of human rights (UNICEF, 2007). Early or child marriage has been found to be associated with early and rapid childbearing, reduced educational opportunities for the mother, and age and power disparities within unions (Raj et al., 2009; UNICEF, 2001; ICRW, 2007; Dommaraju, 2008). Two studies from India that included age at marriage as a correlate of IPV found that older age at marriage is protective against IPV; although, in some cases, the effect was only borderline significant (Rocca, Rathod, Falle, Pande, & Krishnan, 2009; Jejeebhoy & Cook, 1997). Lack of relationship power among young brides is considered to be a key moderating factor for risk of IPV (Heise, Ellsberg, & Gottmoeller, 2002; Mathur, Greene, & Malhotra, 2003). The effect of age at marriage has also been found to be in the opposite direction such that a later age at marriage is associated with an increased risk of IPV (Srinivasan & Bedi, 2007). Furthermore, studies from India that examined the age gap between spouses suggest that a larger age gap between spouses is protective against IPV (Panda & Agarwal, 2005; INCLEN, 2000).

In India, the location of this study, the prevalence of marriage before the 18th birthday ranks 11th among the top 20 “hot spot” countries for child marriage with 50% of women marrying before the age of 18 (ICRW, 2007). In India, the legal age at marriage for women is 18 years, and the country has wide variability in the prevalence of child marriage (Moore, Singh, Ram, Remez, & Audam, 2009). The highest prevalence of child marriage is in some of the northern and eastern states where about three-quarters of currently married women were married before their 18th birthday, and more than one-quarter of women ages 20-49 were married before the age of fifteen (IIPS & Macro International, 2007). In some parts of India, girls participate in a marriage ceremony at a very young age, but they do not begin a sexual relationship or cohabit with their husbands until a ceremony known as *gauna* has taken place (Joshi Dhapola, Kurian, & Pelto, 2001). *Gauna* is most common in North India where parents may wait several years between the marriage and *gauna* until the girl attains puberty or is deemed mature enough to begin living with her husband (Joshi, Dhapola, Kurian, & Pelto, 2001). Most examinations of early marriage, including this study, define the age at marriage as the age at cohabitation or *gauna*.

This study examines the associations between IPV and child marriage, two violations of human rights prevalent in India with a particular focus on two states with high levels of IPV and early marriage, Bihar and Rajasthan. Throughout India, including in Bihar and Rajasthan, early marriages often occur because parents believe that this is the best way to protect their girls from social and economic vulnerability (ICRW, 2007). However, Rajasthan has particular cultural practices that encourage child marriage. Akha Teej or Akshaya Tritiya, which falls in April or May according to the Hindu lunar calendar, is a festival considered to be an auspicious day for marriage among many communities in Rajasthan (Rahman, 2010). Often, to save on the costs of weddings, families will marry all of their daughters in the year that their oldest daughter becomes marriageable; as a result, hundreds of Hindu children are married on this day each year (Singh, 1994). Though the child brides from Rajasthan will not cohabit with their husbands until after they reach menarche, their mobility and educational opportunities are often restricted from the time of marriage at the husband's or in-laws' request (Kulkarni, 1994). In Bihar, child marriage remains common for social and economic reasons, without a specific ceremony that encourages the practice, as Akha Teej in Rajasthan.

This study that focuses on these two high early marriage and high IPV states in India examines the hypothesis that women who marry before the legal age at marriage (age 18) will be at increased risk of IPV than women who married at age 18 or older. The analysis examines whether this hypothesis holds for the most recently married women aged 20-24

and for recent experience of IPV (in the last 12 months). This study provides policy and programmatically relevant findings to help protect future cohorts of young women who will be entering the marriageable age groups.

Methods

Data

This study uses the 2005-2006 India National Family Health Survey (NFHS-3) data, a nationally representative survey of households in India. In the NFHS-3, all women aged 15-49 in all states of India were eligible for survey participation; a total of 124,385 women were interviewed. The target sample size for each state was determined based on state populations to permit state-stratified analyses. Urban and rural samples were drawn separately using a uniform sample design. For both rural and urban areas, the sampling frame was drawn from the 2001 census list of villages or wards which was stratified by various demographic characteristics. All interviews with women were conducted verbally by trained female interviewers to encourage openness on sensitive topics.

The domestic violence module was administered to only one eligible woman per household if her privacy could be ensured. In total, 67% of the entire NFHS-3 sample of women were eligible and responded to the domestic violence module. Domestic violence weights are used to adjust for sampling variation in the women who were included in the domestic violence sample used for this analysis. For these analyses, only women who were currently married were included in the analysis sample since the outcome of interest is lifetime IPV experience and recent IPV experience; IPV experience in the last year was only asked to a pre-selected sub-set of currently married women (only one per household). For these analyses, we restrict the sample further to include only currently married women who are ages 20 and older. The analysis sample is reduced to include only those women who had non-missing data on the questions of interest (4.4% of sample dropped; the unweighted analysis sample is 59,841 for the all-India sample with 50,213 women ages 25+ and 9,628 youth ages 20-24).

Analyses are performed for all of India and then stratified by state (Bihar and Rajasthan). The all-India and state-level analyses are performed for adult women (25-49 years old) and for the youth sample ages 20-24 years. The 20-24 age group is examined separately because the majority of women are ever married by this age group, and this age group provides a recent perspective on the association between early marriage and recent IPV. Thus, the 20-24 age group provides an opportunity to make recommendations for future programming, as compared to the adult analyses that demonstrate a broader lived experience for the association between age at marriage and IPV. Bihar and Rajasthan were selected for more in-depth analyses in this study because they are states that have a high prevalence of IPV (56% and 45% of women report ever experiencing physical or sexual violence in their lifetime, respectively – IIPS & Macro International, 2007) and are states where more than half of women are married before age 18 (64% and 58%, respectively – IIPS & Macro International, 2007).

Measures

The key dependent variables of interest in this analysis are lifetime experience of physical or sexual IPV and experience of physical or sexual IPV in the last 12 months. Currently married women were asked a series of questions on experience of physical and sexual violence based on a modified version of the revised Conflict Tactics Scale (Ellsberg, & Heise, 2005; Straus, Hamby, Boney-McCoy, & Sugarman, 1996; INCLIN, 2000). A woman was considered to have ever experienced physical or sexual IPV in her lifetime if she responded that her husband ever: slapped her; twisted her arm or pulled her hair; pushed

or shook her or threw something at her; punched her with his fist or with something that could hurt her; kicked her, dragged her or beat her up; tried to choke her or burn her on purpose; threatened or attacked her with a knife, gun, or any other weapon; physically forced her to have sexual intercourse with him even when she did not want to; or forced her to perform any sexual acts she did not want to. Women who responded affirmatively were asked how often the husband had performed each act within the last 12 months (often, sometimes, or not at all). This question about experience of IPV in the last 12 months is used to create a dichotomous variable for experience of recent physical or sexual IPV.

The key independent variable of interest to this analysis is age at marriage coded as under 18 years old and age 18 or older. Since 18 is the legal age of marriage in India, this was the appropriate cut-off to examine early marriage experience. As noted above, the age at marriage used is the age at first cohabitation or *gauna*.

Potential predictors and control variables for analyses of IPV were drawn from a review of the literature on women's experience of IPV in the South Asian context (Kishor & Johnson, 2004; Rocca, et al., 2009; Koenig, Stephenson, Ahmed, Jejeebhoy, & Campbell, 2006; Santhya, Haberland, Ram, Sinha, & Mohanty, 2007; Rao, 1997; Panda & Agarwal, 2005; INCLIN, 2000). The predictor variables include: witnessing violence between her father and mother (yes vs. no), age difference between husband and wife (same age, husband younger, husband 1-4 years older; husband 5-9 years older; husband 10+ years older), household structure (nuclear vs. non-nuclear), and husband alcohol use (yes vs. no). An additional predictor variable is attitude toward spouse abuse measured from a question on whether the woman agrees that the husband has the right to beat his wife if she goes out without telling him; neglects the house or children; argues with him; refuses to have sex with him; doesn't cook the food properly; he suspects her of being unfaithful; or she shows disrespect for the in-laws. This variable is coded one if the woman reports any supportive attitudes and zero if she reports no supportive attitudes. Control variables included in the models are education level of the woman (none, primary, secondary or higher), wealth quintile (poorest, poorer, middle, richer, richest), residence (urban vs. rural), religion (Hindu, Muslim, Christian/other), husband's education (none, primary, secondary or higher), spousal education difference (same level, husband higher, wife higher), and husband work status (does not work, agriculture worker, skilled or unskilled, professional). The all-India analyses also control for state. For the analyses of the adult age groups, all models control for the age group of the woman (25-29; 30-34; 35-39; 40-49); in the model of the youth sample, age is not included in the model. Notably, some additional correlates of IPV were not included in the model because of high correlation with age at marriage, particularly for the youth sample. These included duration of marriage and whether the woman had any children. We discuss the implications of not including these variables in the limitations section.

Data Analysis

All analyses were performed using Stata statistical software, version 10. All univariate, bivariate, and multivariate models are weighted and control for the sample survey design. Multivariate logistic regression models are performed to examine the association between IPV experience and key independent variables, particularly marriage before age 18. Odds ratios and 95% confidence intervals are presented for the outcome of physical or sexual IPV in the last year. Models were also run for the outcome of lifetime experience of physical or sexual IPV; due to space constraints, lifetime IPV findings are discussed but model odds ratios and confidence intervals are not shown.

Results

Table 1 presents the early marriage and IPV-related variables for currently married women in the all-India, Bihar, and Rajasthan adult and youth analysis samples. Among currently married women from Bihar, Table 1 shows that 76% of adult women and 71% of youth were married before age 18; the corresponding figures for Rajasthan are 70% and 68%. These figures are higher than those in the all-India sample (58% and 59%, respectively). Across the three samples, 56-60% of women agree that spouse abuse is acceptable in at least one scenario. Among adults and youth from all-India and the two target states, around 20% of women report witnessing their father beat their mother. Greater distinctions are observed by state for lifetime IPV and recent IPV experience (last 12 months). IPV is most common in Bihar where 64% of currently married adult women and 60% of currently married youth report lifetime IPV experience. Experience of recent IPV is also high in Bihar where 46% of adults and 51% of youth report IPV within the past 12 months. In Rajasthan, the adult and youth percentages for lifetime IPV experience are 48% and 46%, respectively. As in Bihar, the percentage of youth in Rajasthan who experienced recent IPV is higher than the percentage of adult women who experienced IPV (37% and 26%, respectively). The figures for lifetime IPV experience and recent IPV experience are lower for all-India.

Table 2 presents the cross-tabulation between age at marriage and IPV experience (lifetime experience of IPV in Panel A and IPV in the last 12 months in Panel B). In Panel A, the pattern is the same for all-India and for each state: women who married before the age of 18 are more likely to have experienced IPV in their lifetime than women who married at an older age (significant at $p < 0.05$ for India adult and youth samples as well as Rajasthan adult and youth samples).

Panel B of Table 2 presents the bivariate association between experience of IPV in the last 12 months and age at marriage. Early age at marriage and recent IPV presents a different pattern for adults and youth. In particular, in the all-India and state-specific analyses, a greater percentage of currently married female youth who married before age 18 reported recent IPV experience than in the adult woman sample (e.g., for Rajasthan the youth value is 42% whereas the adult woman value is 28%). Notably, while the percent of youth who married at age 18 and older and experienced recent IPV is higher than the comparable percentage among the adult sample, the distinction between the youth and adult samples is generally small for those who married later.

Tables 3 and 4 present the multivariate logistic regression odds ratios and 95% confidence intervals for the outcome of IPV in the last 12 months. All models control for the woman's age, education, household wealth quintile, residence, religion, employment status, and type of household. Only key IPV-related predictor variables found in the literature to be associated with lifetime and recent IPV are presented in these tables. Two models are presented in each table for the adult women and for the youth sample. Model 1 includes only the women's variables and the key independent variable of interest - age at marriage. Model 2 includes the same variables as Model 1 but adds the husband's characteristics. In Model 2, additional husband-related control variables not shown include: husband's education level, education difference between spouses, the husband's work status, and age difference between spouses. As mentioned above, similar models were performed for lifetime IPV experience and the results are discussed as relevant.

In Table 3, the all-India analyses for adult women demonstrate no significant association between age at marriage and recent IPV in Model 1 and Model 2. Conversely, for the youth sample, Model 1 demonstrates that youth who married before age 18 are significantly more likely to have experienced IPV in the last 12 months than youth who married at age 18 or

older. Controlling for husband characteristics, the association remains positive and significant (Model 2). In Bihar (top panel of Table 4) this pattern is not found; there is no significant association between age at marriage and recent IPV experience among adults or youth. This may reflect the fact that both early marriage and IPV are common in Bihar, and thus there is less variability to be found. Conversely, in Rajasthan (bottom panel of Table 4), a positive and significant association is found between early marriage (before age 18) and recent IPV experience for the youth sample. In both the all-India and Rajasthan samples, adult women and youth who married before the age of 18 were significantly more likely to report lifetime experience of physical or sexual IPV than adult women and youth who married at age 18 or older (results not shown). No association between early marriage and lifetime experience of physical or sexual IPV was found in Bihar.

Tables 3 and 4 also present other key factors found in the literature to be associated with IPV experience. Among the adult women in all samples, those women who have supportive attitudes toward spouse abuse and those women who witnessed wife beating are significantly more likely to have experienced recent (and lifetime) IPV. In the youth sample for Bihar and Rajasthan, the pattern was less consistent such that in a small number of scenarios, witnessing wife beating and attitudes toward spouse abuse were not significantly associated with IPV experience. The other consistent factor found to be associated with lifetime and recent IPV was husband alcohol use. Women who report that their husband consumes alcohol are significantly more likely to report IPV than women who report that their husbands do not drink alcohol.

Discussion

The findings from this paper clearly demonstrate that youth in India and particularly youth from Rajasthan who marry before the legal age at marriage of 18 are at increased risk of intimate partner violence. This was found in models of lifetime IPV experience and in models of IPV experience in the last year. The association between early age at marriage and IPV was not found in Bihar, which may be an indication of low variability in the sample since IPV and early marriage are common (50% and 75%, respectively) in Bihar. In addition, the significant effect found in Rajasthan may be related to the practice of early childhood marriage during Akha Teej, as mentioned earlier, that leads to even fewer educational opportunities for child brides compared to girls married during their teenage years; these girls may be less empowered and thus at increased risk of violence upon cohabitation.

This study demonstrates that even after controlling for key factors known to be associated with IPV, such as attitudes toward spouse abuse, witnessing the father beat the mother, and husband alcohol use, early age at marriage remains a risk-factor for lifetime and recent IPV experience. The finding that there is a significant association between early marriage and IPV experience among the youth sample suggests that progress towards achieving women's rights is slow despite India's rapid development. Early marriage among the youth sample is at a similar level as among the adult women sample. Furthermore, comparing the youth and adult women, recent IPV experience is more common among the youth sample, especially among those who married before age 18. This suggests that IPV is still pervasive, especially among youth who married before age 18.

This study contributes to prior research on factors associated with IPV risk in India. Prior research that examined the role of age at marriage on IPV has demonstrated that early marriage increases a woman's risk of lifetime IPV experience (Jejeebhoy & Cook, 1997) and risk of experiencing violence in the last six months (Rocca et al., 2009). Conversely, a small number of studies provide the opposite perspective: older age at marriage increases a

woman's risk of IPV (Srinivasan & Bedi, 2007). These studies generally include women of all ages and a continuous age at marriage variable. Our study contributes to these recent studies by examining youth and adult women separately and by examining age at marriage in two categories (before age 18, the legal age at marriage, versus age 18 and older). We demonstrate that among youth from Rajasthan, early marriage is associated with increased risk of lifetime and recent experience of IPV.

There are several limitations that should be acknowledged before concluding. First, the data used in this study come from a large, demographic survey that is prone to certain types of biases in the data collection phase. In particular, women may under-report behaviors that are not considered socially acceptable (in this case early age at marriage which is illegal and experience of IPV); under-reporting would attenuate the results. However, the NFHS-3 data collection team attempted to improve reporting by ensuring privacy, especially for administration of the domestic violence module (IIPS & Macro International, 2007). Furthermore, female interviewers were employed in an attempt to increase respondent's comfort level. However, some women may not have felt confident about having privacy or may not have trusted the interviewer, and thus they may not have reported their experiences. This would lead to an underestimate of IPV and early marriage age.

The second limitation is a problem of causality. In particular, some of the independent variables may not be precursors to IPV but rather may be affected by the experience of IPV. For example, the woman may experience IPV and then change her attitudes toward spouse abuse to be more supportive rather than being supportive of spouse abuse and thus at greater risk of IPV. Likewise, a husband may perpetrate IPV which leads him to drink rather than the hypothesized relationship that would say that men who drink are more likely to perpetrate IPV. The direction of causality is less of a problem for the key variable of interest, age at marriage. Given that there is little premarital sex in India, it is likely that most of the IPV took place after marriage, so the age at marriage would be a precursor to the IPV experience.

Third, the measurement of IPV is limited to those questions asked as part of the modified Conflict Tactics Scale (CTS). The module developed by Macro International has been used in multiple countries and has been found to be valid; however, if in India another type of physical abuse takes place, this may not be captured with the current measure. Moreover, if the types of abuse are understood differently by respondents, this would also bias the results.

Fourth, only a sub-sample of women were administered the domestic violence module. The analyses used the domestic violence weights to ensure that the sample was representative; however, the sample size was small for detailed analyses, especially for the state-specific youth analyses.

Finally, a number of factors that have been found to be associated with increased risk of IPV including dowry harassment, being in a 'love marriage,' and women's power and decision-making (Rocca et al., 2008; Jeyaseelan, Kumar, Neelakantan, Peedicayil, Pillai, & Duvvury, 2007; Jejeebhoy & Cook, 1997) were not included in the analyses; this may bias the results. Notably, information on dowry and love marriage was not available in the NFHS-3. Conversely, the power and decision-making variables that have been shown to be key moderating factors associated with IPV (Heise et al., 2002; Mathur et al., 2003) were not included because of problems with endogeneity for model estimation. Finally, as mentioned earlier, whether the woman had any children and the duration of marriage were not included in the final models presented. These were highly correlated with the age at marriage variable, particularly for the youth sample, and it was decided that the examination of age at marriage was more relevant for policy and programmatic purposes.

Conclusions

This study demonstrates an association between early age at marriage and IPV, particularly among youth in Rajasthan. It is interesting to note that this association was not found in Bihar. This may have been a consequence of a small sample size, or alternatively, IPV may be embedded in the Bihar to the extent that there are no distinctions by age at marriage in IPV experience. Furthermore, if in Bihar early marriage is predominately practiced for economic reasons and less related to cultural practices, as in Rajasthan, then controlling for socio-economic status in the multivariate models may capture the effect of early marriage on IPV in Bihar. To better explore these issues, future qualitative studies are needed in Bihar to understand whether and how early marriage age is associated with IPV. Given that Bihar has the highest percentage of women marrying at an early age and the highest prevalence of IPV, understanding the associations between these harmful practices can lead to improved maternal and reproductive health outcomes for all women.

Early age at marriage is still common in India, as indicated by these findings. More than two-thirds of women from Rajasthan and Bihar marry before their 18th birthday. In India, the legal age at marriage is 18 years; these findings indicate that legal restrictions on marriage age are not being enforced. Given the finding that early age at marriage is associated with IPV experience (lifetime and recent) even among the youth sample, IPV prevention programs need to work closely with interventions that seek to enforce marriage laws and policies. By combining efforts and working with men and communities to change norms that are supportive of IPV and early marriage, programs may have a chance to change the early marriage and IPV cycle for the next generation of youth who are currently ages 10-19 and on the cusp of marriage. These types of joint programs are needed to reduce human rights violations to women and result in improved reproductive health for all women in India and throughout South Asia.

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Table 1

Early marriage, attitudes toward spouse abuse, witness father beat mother, and intimate partner violence (IPV) experience for adult and youth sample by state, India, NFHS-3

	India		Bihar		Rajasthan	
	Adult (n=50,213)	Youth (n=9,628)	Adult (n=1,367)	Youth (n=315)	Adult (n=1,590)	Youth (n=337)
	%	%	%	%	%	%
Age at marriage^a						
<18	57.9	58.9	76.4	71.0	70.3	68.3
18+	42.1	41.1	23.6	29.0	29.7	31.7
Attitudes toward spouse abuse						
Husband never has the right to beat his wife	44.2	44.1	41.7	43.1	40.1	39.8
Agrees with at least one reason husband has the right to beat his wife	55.8	55.9	58.3	56.9	59.9	60.2
Witness father beat her mother						
No	82.4	80.2	76.5	79.8	79.7	78.4
Yes	17.6	19.8	23.6	20.2	20.3	21.6
Lifetime IPV experience^a						
No	62.2	64.7	36.5	39.8	52.1	54.1
Yes	37.9	35.3	63.5	60.3	47.9	46.0
Experienced IPV in the last 12 months						
No	77.0	72.8	54.4	49.2	74.1	63.1
Yes	23.0	27.2	45.6	50.8	25.9	37.0

All n's are unweighted and weighted percentages are presented.

^aThe prevalence of early marriage and IPV are different in this table as compared to the text because the text values are from the NFHS-3 report that includes all women whereas the table is limited to only currently married women in the analysis sample.

Table 2

Percentage of adults and youth who experienced intimate partner violence (IPV) in their lifetime (Panel A) and recently experienced IPV in the last 12 months (Panel B), by age at marriage, India NFHS 3

Panel A	India		Bihar		Rajasthan	
	Lifetime IPV		Lifetime IPV		Lifetime IPV	
	Adult	Youth	Adult	Youth	Adult	Youth
	%	%	%	%	%	%
Age at marriage						
<18	44.1	43.3	65.3	64.8	51.0	53.2
18+	29.3	23.9	57.7	49.1	40.5	30.4
Panel B	India		Bihar		Rajasthan	
	IPV in last 12 months		IPV in last 12 months		IPV in last 12 months	
	Adult	Youth	Adult	Youth	Adult	Youth
	%	%	%	%	%	%
Age at marriage						
<18	26.6	32.7	47.3	53.3	27.7	41.6
18+	17.9	19.5	40.2	44.7	21.8	26.9

Table 3

Odds ratios (95% confidence intervals) from multivariate logistic regressions of factors associated with intimate partner violence (IPV) experience in the last 12 months among currently married women and youth in India NFHS-3

	IPV in the last 12 months					
	Adult (n=50,213)			Youth (n=9,628)		
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Attitudes toward wife beating						
Never supports wife beating	1.00	1.00	1.00	1.00	1.00	1.00
Agrees with 1+ reasons	1.50 (1.38-1.62)***	1.51 (1.39-1.64)***	1.53 (1.31-1.77)***	1.52 (1.31-1.77)***	1.52 (1.31-1.77)***	1.52 (1.31-1.77)***
Witnessed father beat mother						
No	1.00	1.00	1.00	1.00	1.00	1.00
Yes	2.44 (2.22-2.68)***	2.23 (2.02-2.45)***	2.81 (2.37-3.32)***	2.57 (2.16-3.05)***	2.57 (2.16-3.05)***	2.57 (2.16-3.05)***
Husband alcohol use						
Does not drink (ref)	1.00	1.00	1.00	1.00	1.00	1.00
Husband drinks alcohol	---	2.42 (2.24-2.61)***	---	2.16 (1.86-2.51)***	---	2.16 (1.86-2.51)***
Age at marriage						
Married at age 18+ (ref)	1.00	1.00	1.00	1.00	1.00	1.00
Married under age 18	1.08 (1.00-1.17)	1.05 (0.97-1.14)	1.39 (1.18-1.64)***	1.36 (1.15-1.61)***	1.36 (1.18-1.64)***	1.36 (1.15-1.61)***

All n's unweighted; all models control for state, age, education, wealth quintile, residence, religion.

Model 2 also includes husband's education level, education difference between spouses, and the husband's work status.

* p .05;

** p .01;

*** p .001

Table 4

Odds ratios (95% confidence intervals) from multivariate logistic regressions of factors associated with intimate partner violence (IPV) in the last 12 months among currently married women and youth in Bihar (top panel) and Rajasthan (bottom panel)panel), NFHS-3

	Bihar Adult (n=1,366)		Bihar Youth (n=315)	
	Model 1	Model 2	Model 1	Model 2
Attitudes toward wife beating				
Never supports wife beating	1.00	1.00	1.00	1.00
Agrees with 1+ reasons	1.72 (1.24-2.40)**	1.76 (1.26-2.46)***	2.53 (1.47-4.38)***	2.72 (1.55-4.76)***
Witnessed father beat mother				
No	1.00	1.00	1.00	1.00
Yes	2.45 (1.63-3.68)***	2.32 (1.55-3.48)***	1.97 (0.97-3.99)	1.93 (0.95-3.93)
Husband alcohol use				
Does not drink (ref)		1.00		1.00
Husband drinks alcohol	---	1.56 (1.13-2.15)***	---	2.10 (1.11-3.96)*
Age at marriage				
Married at age 18+ (ref)	1.00	1.00	1.00	1.00
Married under age 18	1.18 (0.81-1.72)	1.13 (0.78-1.65)	1.10 (0.53-2.27)	1.07 (0.51-2.21)
Rajasthan Adult (n=1,590)				
Attitudes toward wife beating				
Never supports wife beating	1.00	1.00	1.00	1.00
Agrees with 1+ reasons	1.46 (1.10-1.95)**	1.45 (1.08-1.95)*	1.41 (0.78-2.54)	1.17 (0.65-2.10)
Witnessed father beat mother				
No	1.00	1.00	1.00	1.00
Yes	2.39 (1.68-3.39)***	2.27 (1.61-3.19)***	2.44 (1.28-4.64)**	2.31 (1.22-4.38)*
Husband alcohol use				
Does not drink (ref)		1.00		1.00
Husband drinks alcohol	---	2.33 (1.71-3.17)***	---	5.39 (2.53-11.46)***
Rajasthan Youth (n=337)				
Age at marriage				
Married at age 18+ (ref)	1.00	1.00	1.00	1.00
Married under age 18	1.31 (0.96-1.798)	1.26 (0.93-2.42)	1.76 (1.09-2.83)*	1.63 (1.00-2.65)*

All *n*'s unweighted; All models control for age, education, wealth quintile, residence, religion, employment status, and type of household; Model 2 includes husband's education level, education difference between spouses, husband's work status, and age difference between spouses.

* *p* .05;

** *p* .01;

*** *p* .001.