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Child marriage and intimate partner violence: a comparative study of 34 countries

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Abstract

Background: Studies in South Asia suggest that child marriage is a strong risk factor for intimate partner violence (IPV), but evidence outside the region is lacking.
Methods: This study uses standardized data from demographic and health surveys in 34 countries to test the hypothesis that young women (age 20–24) who married as children are at increased risk of past year physical and/or sexual IPV as compared with those women who married as adults.
Results: Globally, 9% of respondents were married before they turned 15; another 25% were married between the ages of 15 and 17. Past year physical and/or sexual IPV was higher among women who married as children (29%) compared with those who married as adults (20%). This difference persisted in logistic regression models that adjust for sociodemographic characteristics [odds ratio (OR) 1.41 (1.30–1.52) for marriage before 15, and 1.42 (1.35–1.50) for marriage at 15–17]. However, there was considerable heterogeneity between countries: marriage before age 15 was associated with a combined measure of past year physical and/or sexual IPV in nine countries; women married between 15 and 17 were at increased risk of physical and/or sexual IPV in 19 countries. This heterogeneity was most evident in sub-Saharan Africa, and warrants further investigation in so far as it may help identify protective policies and norms.
Conclusion: Substantial reductions in IPV will likely require interventions to combat child marriage itself and to protect women from IPV within child marriages.

Key words: Intimate partner violence, child marriage, cross-national comparison, demographic and health survey

Key Messages

- The previous evidence base on child marriage and IPV was mixed and focused almost exclusively on South Asia.
- This study used nationally representative samples from 34 countries to test the hypothesis that young women who had child marriages are at increased risk of past year IPV.
- The study found that women who married as children were more likely to report past year physical and/or sexual intimate partner violence compared with those who married as adults.
- To protect the rights of girls, there is a need to combat child marriage, institute programmes and policies to protect those who marry early, and ensure that all women have the resources and support to leave abusive relationships.

Introduction

Child marriage is a pervasive human rights violation and public health concern.[1] We use the term child marriage to refer to any marriage involving persons under age 18, the legal definition of a child.[2] Globally, 34% of young women (aged 20–24) were married before age 18 and 12% before age 15 during the period 2000–11, with the highest prevalence found in South Asia and sub-Saharan Africa.[3] Each day, another 39 000 girls are married before their 18th birthday.[3] The harmful consequences of child marriage include higher rates of unintended and high-risk pregnancy, maternal and infant mortality and HIV.[4–7] All marriages under 18 carry heightened risks, and such consequences can be most pronounced for the youngest brides (those under 15).[8]

Research suggests that child marriage also places young women at elevated risk for intimate partner violence (IPV), which is in turn linked to additional adverse physical and mental health outcomes.[9–17] There are a number of potential reasons why child marriages may be characterized by greater violence. Women who marry as children are more likely to be uneducated, live in poverty and subscribe to traditional gender norms.[18–20] Child marriages are characterized by spousal age gaps, power imbalances, social isolation and lack of female autonomy;[18,20,21] all of the above are demonstrated risk factors for IPV and represent potential causal mechanisms.[20–24]

It may be, for example, that the same inequitable gender norms that give rise to child marriages also perpetuate violence. Men who marry very young girls may hold traditional masculine ideologies, and because of this be more likely to abuse their wives.[25] Child brides are also often given away or sold by families that undervalue women.[18–20] By the time they marry, young girls may have internalized harmful beliefs. They are more likely, for example, to believe that husbands can be justified in beating their wives –a belief that places them at higher risk for IPV.[18,22,26] Moreover, child marriages are typically arranged by the family, and young girls have no input into the choice of spouse. In an Ethiopian study, 71% of women who married before age 15 had never met their husband before their wedding day.[27] A number of studies have shown that this lack of familiarity before marriage can lead to greater marital conflict and elevates the risk of subsequent violence.[18,27,28]

Another reason that child brides may be more likely to experience IPV is that they are socially vulnerable (e.g. uneducated, poor, young). Poor families can see marriage as pathway to greater economic security for their daughters, particularly when education is unaffordable.[29] Dowry systems create further incentive for poor families to marry off their daughters early.[29] Within child marriages, male partners are thus more likely to be older, more educated and have higher social status than their young wives;[19,30] such power dynamics can increase the likelihood of abuse.[31,32] The same factors –economic dependence and low perceptions of self-efficacy –mean that women who married as children may be unable to extradite themselves from an abusive relationship.[33]

Although the above is suggestive, the evidence on the relationship between child marriage and IPV is not yet definitive. Most peer-reviewed studies have been limited to national household surveys in South Asia, and there is considerable diversity in methods and findings. Studies in India,[18,34] Pakistan[35] and Nepal[36] suggest that women who marry as children are at higher risk of ever having experienced physical IPV. The evidence for sexual IPV is less compelling: of the three studies that examined lifetime sexual IPV in India and Bangladesh,[18,34,37] only one reported a significant association with child marriage.[34]

There have been fewer studies outside South Asia. A UNICEF report examined physical domestic violence across nine countries in Latin America, Africa and Asia.[19] In each country, the proportion experiencing domestic violence (not defined in the report) was higher among women who married before age 18. In adjusted models, domestic violence remained associated with child marriage in six of nine countries –though the report does not provide details

on the strength of association, specify the countries in which an association was observed or discuss potential reasons for the heterogeneity. Studies in individual countries – including Viet Nam,[38] Peru[39] and Ethiopia[27] –provide broad support for the hypothesis that child marriage is a risk factor for IPV, but their methodological approaches make it difficult to compare results across studies. For instance, the Vietnamese study used a combined measure of lifetime physical, sexual and emotional IPV, and thus cannot disentangle which types of violence were elevated among women who married as children. The study in Peru also differed from those above by using a continuous measure of marital age to predict lifetime physical IPV. Finally, a study from Ethiopia found that women who married as children were more likely to have experienced forced first sex with their husband compared with those who married as adults; women who married before 15 years were at particularly high risk.[27] Not all studies have supported an association, however. A study in Egypt focused on past year physical IPV and found no evidence to support an association with child marriage.[40]

As Le *et al.* have highlighted, differences in reported associations may be a product of IPV measurement, cut-off points for child marriage, or analytical technique.[38] Moreover, many focus on very young cohorts in which child marriage and duration of marriage are highly correlated: a recent study suggested that IPV begins on average 3.5 years after union formation.[41] This may introduce bias. Finally, the geographical representation of the previous studies is narrow, substantially limiting our ability to generalize to contexts outside South Asia. There is a critical need to extend this evidence base to other regions. In particular, seven of the 10 countries with the highest prevalence of child marriage are in Africa,[20] yet there is almost no evidence on the relationship between child marriage and IPV in this region.

To guide both advocacy and intervention, we need better evidence on the impact of child marriage on IPV. In the late 1990s, the Demographic and Health Survey (DHS) Program began implementing a domestic violence module,[31] thus enabling cross-national comparisons using standardized definitions and measurement. This study conducts secondary analyses of data from 34 countries to test the hypothesis that women who enter into child marriages are at increased risk of past year physical and/or sexual intimate partner violence.

Methods

Data and sample

Data from 34 demographic and health surveys (DHS) were used for this study. The DHS are nationally representative surveys conducted in low- and middle-income countries. Households are randomly selected in a two-stage process. Women aged 15–49 are surveyed; typically one ever-married or partnered woman per household is randomly chosen to complete a domestic violence module. Further detail on the design and implementation of these surveys can be found elsewhere;[42] detail on country-specific implementation can be found in country reports available at [dhsprogram.com/publications]. Surveys were selected for inclusion if: they were conducted between 2005 and 2013; represented the most recent, publicly available survey for that country; and included a domestic violence module. The primary analyses are restricted to women aged 20–24 years, both because this is the age group used by the UN to measure child marriage[3] and because it is most representative of recent trends in child marriage and IPV.[34] Sensitivity analyses use an extended age range (20–39 years).

Measures

In the optional domestic violence module, questions are based on a modified version of the conflict tactics scale.[43–45] Respondents who have ever been married or cohabitated with a man are asked about their IPV experience. Questions on physical IPV include whether their last partner ever: pushed, shook or threw something at the respondent; slapped her; punched her with his fist or something harmful; kicked or dragged her; tried to strangle or burn her; threatened or attacked her with a knife, gun or other weapon; twisted her arm or pulled her hair. There are two standard questions on sexual IPV: whether the partner ever physically forced the respondent to have sex when she did not want to; and whether he ever forced her to perform other sexual acts when she did not want to. For both physical and sexual IPV, we created a dichotomous variable to represent whether a respondent had reported experiencing that form of violence in the past 12 months. We also created a third dichotomous variable to represent whether a respondent had reported experiencing either physical and/or sexual violence in the past 12 months.

Our primary predictor was child marriage. The United Nations uses the term ‘early marriage’ for all marriages involving a person under 18, and ‘child marriage’ for all marriages involving a person under 18 unless the age of majority is below 18.[46] Our operational definition does not include the caveat, but for simplicity we continue to refer to the concept as child marriage. The DHS provides the age at which women were first married or began cohabitating with a partner as if married; this information was used to create a dichotomous variable for whether women married as children. Given the potential for unique

vulnerabilities among very early marriages, we created separate dummy variables representing marriage before the age of 15 and marriage at age 15–17 years. In addition, we controlled for potential confounders including age (continuous in years), education (dichotomized by whether they completed primary school), area of residence (rural or urban) and wealth quintile (based on the DHS-provided wealth index calculated using assets and dwelling characteristics).[47]

Analyses

The prevalence of child marriage was calculated for women aged 20–24 in the domestic violence sample ($N = 59\,157$); analyses used the provided domestic violence weights and took into account clustering created by the sampling design. All other analyses, including the prevalence of past year physical and/or sexual IPV, were further restricted to currently married or cohabitating women ($N = 39\,877$). This was necessary as the outcome of interest was past year IPV, and thus only those currently in a relationship were at risk. Logistic regression models were used to assess the association between the above variables within individual countries. Modelling proceeded in two steps: the first set of models include the child marriage variables only; the second set also controlled for socio-demographic characteristics of the individual and household mentioned above. We also pooled data across countries to generate regional and global estimates, adding a control for survey year. Finally, we ran sensitivity analyses to examine whether observed associations (at the global level) persisted in older cohorts, using additional data from women aged 25–29 years, 30–34 years and 35–39 years. All models accounted for community-level clustering, and pooled estimates additionally accounted for country-level clustering (by using the SVY command in Stata 13.0). Weights were not included, per standard recommendations.[48] Listwise deletion was used for missing data (i.e. observations were deleted if data were missing on any modelled variable); this resulted in 21 observations being dropped for analyses of physical IPV and 502 for sexual IPV.

Results

Sample description

Our sample (women aged 20–24 who were currently married or cohabitating ($N = 39\,877$)) came from 34 countries in six regions. A third were married as children: 9% were married before they turned 15, another 25% married between the ages of 15 and 17 (see Table 1). Among the countries included, the overall prevalence of child marriage among women aged 20–24 was lowest in Kyrgyzstan (8%) and highest in Mali (58%). Approximately half (48%) the sample had completed primary education and 64% lived in a rural area.

Over a fifth (22%) of the sample reported experiencing past year physical violence by their intimate partner; prevalence ranged from 2% in Ukraine to nearly 60% in the Democratic Republic of Congo (DRC) (see Table 2). Past year sexual IPV was less prevalent (8%) but had a substantial range (i.e. from a low of 2% in several countries to a high of 31% in the DRC; see Table 2). The majority of women who reported experiencing past year sexual IPV also reported past year physical IPV. Overall, over 5% of women reported experiencing both forms of violence, 17% reported only physical IPV, 2% reported only sexual IPV and 75% did not report either form of violence in the past year.

The association between child marriage and intimate partner violence

Overall, both forms of past year IPV were substantially higher among women who married as children as compared with those married as adults (see Table 2): 26% of those married before age 18 reported past year physical IPV compared with 18% of those married as adults. Past year sexual IPV was similarly elevated in women who married as children (10% for those who married aged < 15, 9% for those who married aged 15–17) as compared with women who married as adults (6%).

Table 3 presents the results of the logistic regressions predicting past year IPV based on marriage age, in a pooled sample from all 34 countries, by age cohort. Table 4 focuses on the cohort age 20–24, and presents models by region and country. For both tables, unadjusted odds ratios are presented under Model 1 headings; odds ratios adjusted for socio-demographic characteristics are presented under Model 2 headings.

Global estimates

In the globally pooled sample, child marriage emerged as a predictor of past year physical IPV, sexual IPV and the combined measure of physical and/or sexual IPV. After controlling for a limited set of socio-demographic factors, being married as a child versus as an adult increased the odds of physical and/or sexual IPV: adjusted odds ratio (aOR) 1.41 [95% confidence interval (CI) 1.30–1.52] for marriage aged < 15; aOR 1.42 (1.35–1.50) for marriage at 15–17. The magnitude of the association was very similar when the dependent variable was limited to physical IPV only, and slightly lower with regard to sexual violence: aOR 1.35 (1.20–1.52) for age < 15; aOR 1.26 (1.15–1.37)

Table 1. Weighted distribution of marriage age by country, among women aged 20–24

		Marriage age			
	Survey year	<15	15–17	18+	Never married
Americas					
Colombia	2010	5.6	17.3	28.9	48.3
Dominican Republic	2007	13.0	24.7	29.0	33.4
Haiti	2012	2.7	14.5	32.3	50.6
Honduras	2011	7.7	25.1	29.9	37.3
East Asia & Pacific					
Philippines	2008	2.8	15.3	39.0	42.8
Timor-Leste	2009	3.7	19.9	29.3	47.2
Europe and Central Asia					
Azerbaijan	2006	0.9	11.3	42.7	45.2
Kyrgyzstan	2012	0.0	7.7	53.8	38.5
Moldova	2005	0.5	18.1	42.3	39.1
Tajikistan	2012	0.0	11.5	60.6	27.8
Ukraine	2007	0.0	11.2	41.2	47.7
Middle East & North Africa					
Jordan	2012	0.6	23.6	75.8	0.0
South Asia					
India	2005–06	12.8	31.2	31.5	24.5
Nepal	2011	8.7	33.8	35.0	22.5
Pakistan	2012	4.7	37.9	57.3	0.0
Sub-Saharan Africa					
Eastern and Southern Africa					
Comoros	2012	11.2	21.1	24.9	42.8
Kenya	2008–09	7.4	20.8	36.9	34.9
Malawi	2010	12.1	40.6	35.6	11.8
Mozambique	2011	13.7	34.3	37.4	14.5
Rwanda	2010	0.8	7.9	32.2	59.1
Tanzania	2010	7.9	30.3	34.4	27.4
Uganda	2011	9.6	29.0	37.7	23.7
Zambia	2007	8.3	32.4	31.8	27.6
Zimbabwe	2010–11	3.9	26.6	44.0	25.6
West and Central Africa					
Burkina Faso	2010	10.4	41.3	32.4	15.9
Cameroon	2011	12.1	27.1	30.2	30.6
Cote D'Ivoire	2011–12	8.7	25.6	25.8	39.8
Democratic Republic of the Congo	2007	7.6	28.7	32.2	31.5
Gabon	2012	5.8	14.1	29.6	50.6
Ghana	2008	4.3	18.7	26.4	50.7
Liberia	2007	10.1	27.1	22.2	40.7
Mali	2012–13	23.4	34.7	29.7	12.2
Nigeria	2013	18.0	25.3	24.8	31.9
Sao Tome	2008–09	4.3	32.7	42.5	20.5
Total		9.1	25.3	33.2	32.3

for age 15–17. To explore the possibility that child marriage is acting as a proxy for years since marriage, analyses were repeated with older cohorts (see Table 3). The association between child marriage and past year IPV persists across all cohorts, though it decreases in magnitude. Focusing on the cohort age 35–39, for instance, the adjusted odds ratios for past year IPV were 1.17 (1.08–1.27) for women married before age 15 and 1.12 (1.05–1.19) for women married between 15 and 17, as compared with those married at 18 and above.

Regional estimates

IPV risk was generally elevated for women (aged 20–24) who married as children compared with women who

Table 2. Weighted distribution of past year IPV by country and marriage age, among currently married or cohabitating women aged 20–24

			Past year physical IPV (%), by marriage age				Past year sexual IPV (%), by marriage age				Past year physical and/or sexual IPV (%), by marriage age			
	Survey year	*N*	< 15	15–17	18+	Total	< 15	15–17	18+	Total	< 15	15–17	18+	Total
Americas														
Colombia	2010	3582	40.4	35.9	25.2	30.2	8.2	3.9	2.7	3.7	41.9	36.3	25.4	30.6
Dominican Republic	2007	1011	21.0	17.6	6.4	13.6	10.8	4.4	1.7	4.6	23.3	19.4	6.4	14.8
Haiti	2012	932	32.1	22.0	17.5	19.5	13.0	13.1	7.5	9.4	32.1	24.9	19.9	21.9
Honduras	2011	1805	13.2	13.0	10.0	11.6	4.8	3.1	1.9	2.7	14.4	14.0	10.5	12.3
East Asia & Pacific														
Philippines	2008	797	21.9	14.5	7.5	10.1	7.4	7.1	2.9	4.3	24.2	16.8	9.2	11.9
Timor-Leste	2009	285	34.4	29.0	30.3	30.1	0.0	1.9	2.1	1.9	34.4	29.0	31.9	31.0
Europe and Central Asia														
Azerbaijan	2006	468	29.4	11.2	8.5	9.3	0.0	0.9	2.1	1.8	29.4	11.2	8.8	9.5
Kyrgyzstan	2012	721	na	19.2	9.1	10.3	na	5.1	1.1	1.6	na	19.2	9.2	10.4
Moldova	2005	516	12.4	27.3	9.6	14.8	0.0	0.9	1.8	1.5	12.4	27.8	10.5	15.6
Tajikistan	2012	639	na	12.9	14.1	13.9	na	0.6	4.1	3.5	na	12.9	14.6	14.3
Ukraine	2007	183	na	3.7	1.4	1.9	na	3.7	0.9	1.5	na	3.7	1.4	1.9
Middle East & North Africa														
Jordan	2012	701	10.1	24.0	9.1	12.7	10.1	5.5	3.9	4.4	10.1	26.9	11.6	15.3
South Asia														
India	200–06	10514	30.5	28.1	16.9	23.8	12.4	10.1	5.9	8.7	34.4	31.8	19.5	27.0
Nepal	2011	606	25.4	15.7	8.6	13.5	13.8	11.2	6.6	9.4	29.7	19.9	11.1	17.0
Pakistan	2012	473	38.9	20.2	12.5	16.7	na	na	na	na	na	na	na	na
Sub-Saharan Africa														
Eastern and Southern Africa														
Comoros	2012	397	11.9	4.7	6.0	6.8	7.9	0.0	2.2	2.5	16.1	4.7	6.1	7.6
Kenya	2008–09	910	24.2	40.3	20.4	27.2	13.5	17.5	9.2	12.4	28.5	43.2	22.8	30.0
Malawi	2010	1027	20.1	17.7	10.3	15.1	8.3	15.6	11.1	12.8	24.0	26.1	16.3	21.9
Mozambique	2011	969	32.5	28.5	24.6	27.4	12.1	6.8	7.0	7.7	37.0	29.8	26.2	29.3
Rwanda	2010	456	62.7	60.3	41.3	44.6	18.0	17.2	10.4	11.6	62.7	60.3	41.8	45.1
Tanzania	2010	900	36.4	31.9	28.9	30.9	13.0	11.5	13.5	12.6	36.4	34.6	33.8	34.4
4Uganda	2011	323	44.1	47.8	28.4	37.3	23.3	32.5	16.1	22.8	44.1	53.4	32.8	41.4
Zambia	2007	807	53.2	44.1	35.4	41.1	20.1	17.8	13.5	16.1	56.1	47.6	37.9	44.1
Zimbabwe	2010–11	928	35.3	36.0	22.8	28.1	23.9	16.8	14.0	15.5	46.0	43.9	30.0	35.8
West and Central Africa														
Burkina Faso	2010	2041	10.9	11.3	6.4	9.4	3.6	1.8	1.3	1.8	11.1	12.2	7.3	10.1
Cameroon	2011	760	32.8	40.4	31.9	35.4	17.9	16.8	9.4	13.8	38.2	45.3	34.8	39.5
Cote D'Ivoire	2011–12	841	23.8	26.5	26.4	26.1	5.3	2.4	7.6	5.1	24.2	26.7	27.2	26.5
Democratic Republic of the Congo	2007	560	68.9	65.6	50.5	58.8	55.5	32.9	23.8	31.1	71.6	70.1	58.7	64.8
Gabon	2012	585	45.7	44.2	36.1	39.5	14.5	14.8	8.7	11.1	46.1	48.6	38.5	42.3
Ghana	2008	251	32.8	17.8	18.0	19.3	9.3	5.7	1.8	3.9	32.8	20.6	19.1	20.9
Liberia	2007	585	47.2	39.3	41.6	41.5	13.9	5.9	11.5	9.4	49.4	40.6	44.0	43.4
Mali	2012–13	596	23.2	22.4	22.7	22.7	11.4	13.7	12.4	12.7	26.5	28.0	26.0	26.9
Nigeria	2013	3491	7.8	9.9	13.5	10.7	3.4	3.9	5.0	4.2	8.8	11.5	14.7	12.0
Sao Tome	2008–09	238	36.8	36.3	13.6	24.5	2.3	7.2	4.4	5.5	36.8	36.3	15.2	25.3
Total		39898	26.2	25.8	17.9	22.0	10.4	8.8	5.9	7.6	29.0	28.9	20.3	24.6

na, not available.

Table 3. Odds ratios (95% CI) for the association between IPV and marriage age among married or cohabitating women in three age cohorts, pooled across all countries

	Past year physical IPV							
	Model 1 (unadjusted ORs)				Model 2 (adjusted ORs)			
Cohort	Married < 15		Married 15–17		Married < 15		Married 15–17	
Age 20–24	1.62	(1.51–1.74)	1.55	(1.47–1.63)	1.43	(1.33–1.55)	1.43	(1.35–1.51)
Age 25–29	1.49	(1.40–1.60)	1.41	(1.34–1.48)	1.17	(1.10–1.26)	1.19	(1.13–1.25)
Age 30–34	1.38	(1.29–1.49)	1.35	(1.29–1.42)	1.09	(1.01–1.18)	1.15	(1.09–1.21)
Age 35–39	1.43	(1.32–1.55)	1.26	(1.19–1.34)	1.15	(1.06–1.26)	1.08	(1.02–1.15)
	Past year sexual IPV							
	Model 1 (unadjusted ORs)				Model 2 (adjusted ORs)			
Cohort	Married < 15		Married 15–17		Married < 15		Married 15–17	
Age 20–24	1.67	(1.49–1.86)	1.44	(1.32–1.56)	1.35	(1.20–1.52)	1.26	(1.15–1.37)
Age 25–29	1.56	(1.41–1.73)	1.49	(1.38–1.61)	1.21	(1.08–1.35)	1.24	(1.15–1.35)
Age 30–34	1.53	(1.37–1.71)	1.50	(1.38–1.63)	1.16	(1.04–1.31)	1.25	(1.13–1.35)
Age 35–39	1.49	(1.32–1.69)	1.41	(1.28–1.55)	1.19	(1.04–1.36)	1.19	(1.08–1.32)
	Past year physical and/or sexual IPV							
	Model 1 (unadjusted ORs)				Model 2 (adjusted ORs)			
Cohort	Married < 15		Married 15–17		Married < 15		Married 15–17	
Age 20–24	1.60	(1.49–1.72)	1.54	(1.47–1.62)	1.41	(1.30–1.52)	1.42	(1.35–1.50)
Age 25–29	1.50	(1.41–1.60)	1.43	(1.36–1.50)	1.18	(1.10–1.26)	1.20	(1.15–1.26)
Age 30–34	1.38	(1.28–1.48)	1.37	(1.30–1.44)	1.09	(1.01–1.17)	1.16	(1.10–1.23)
Age 35–39	1.45	(1.34–1.57)	1.31	(1.24–1.39)	1.17	(1.08–1.27)	1.12	(1.05–1.19)

Model 2 is adjusted for controlled for age, primary education, rural residence and wealth quintile.

married as adults. However, there are some notable differences between regions in the magnitude of association. East Asia consistently had the highest odds of IPV, particularly when related to child marriage before age 15 [e.g. for the combined measure of IPV: aOR 2.88 (1.55–5.38) for age < 15; aOR 1.58 (1.09–2.29) for 15–17]. Sub-Saharan Africa was on the other end of the spectrum, with odds ratios of comparatively lower magnitude [e.g. for the combined measure of IPV: aOR 1.27 (1.14–1.43) for age < 15; aOR 1.30 (1.20–1.41) for 15–17]. Europe and Central Asia were unique in showing no evidence of a relationship between early child marriage (< 15 years) and any type of past year IPV; it also showed no evidence of a relationship between later child marriage (15–17 years) and sexual IPV. This should be interpreted with caution, however, given the very low rates of both early child marriage and sexual violence in the region.

Country estimates

Finally, we examined associations within individual countries and again found considerable heterogeneity. In the adjusted models predicting the combined measure of past year physical and/or sexual IPV, the 95% confidence interval associated with marriage before age 15 (as compared with marriage at age 18+) excluded the null hypothesis of no relationship between child marriage and IPV in 9 of 34 countries; the highest odds ratio was 3.60 (1.19–10.92) in Ghana (Table 3, Model 2). Women married between 15 and 17 were also at increased risk of physical and/or sexual IPV in 19 countries, with the highest odds ratio found in Kyrgyzstan: aOR 3.46 (1.89–6.34). Within-region heterogeneity was most evident in sub-Saharan Africa, for which we have data on the greatest number of countries. For example, in Ghana, Uganda and Zambia, marriages before age 15 were associated with increased odds of physical and/or sexual IPV. For the same relationship, however, many other countries (e.g. Cote D'Ivoire, DRC, Kenya, Liberia, Nigeria) had 95% confidence intervals that included the null. Whereas other regions–including East and South Asia–demonstrated greater consistency, they also had far fewer countries to compare.

Table 4. Odds ratios (95% CI) for the association between IPV and early marriage age (compared with age 18+) among married or cohabitating women aged 20–24, by country, region and total

	Past year physical IPV							
	Model 1 (unadjusted ORs)				Model 2 (adjusted ORs)			
	Married < 15		Married 15–17		Married < 15		Married 15–17	
Americas	1.58	(1.34–1.86)	1.45	(1.28–163)	1.76	(1.48–2.10)	1.53	(1.35–1.73)
Colombia	1.91	(1.54–2.37)	1.64	(1.40–1.91)	1.98	(1.58–2.49)	1.67	(1.42–1.96)
Dominican Republic	2.32	(1.39–3.86)	2.47	(1.56–3.91)	1.54	(0.86–2.75)	1.94	(1.19–3.15)
Haiti	2.00	(1.07–3.76)	1.24	(0.87–1.78)	1.74	(0.90–3.39)	1.16	(0.80–1.67)
Honduras	1.38	(0.89–2.14)	1.42	(1.05–1.94)	1.48	(0.92–2.36)	1.47	(1.07–2.03)
East Asia & Pacific	2.78	(1.53–5.04)	1.69	(1.19–2.40)	3.01	(1.57–5.74)	1.55	(1.05–2.28)
Philippines	3.13	(1.43–6.86)	1.93	(1.18–3.17)	3.07	(1.37–6.91)	1.93	(1.15–3.24)
Timor-Leste	2.67	(0.91–7.82)	1.14	(0.67–1.94)	2.68	(0.86–8.33)	1.18	(0.68–2.07)
Europe and Central Asia	1.59	(0.34–7.35)	1.78	(1.37–2.31)	1.78	(0.39–8.16)	1.93	(1.46–2.54)
Azerbaijan	1.71	(0.19–15.76)	1.54	(0.85–2.79)	1.50	(0.14–15.77)	1.50	(0.83–2.71)
Kyrgyzstan			2.93	(1.68–5.14)			3.50	(1.91–6.41)
Moldova	2.11	(0.23–19.62)	2.84	(1.72–4.71)	2.19	(0.25–19.18)	2.98	(1.73–5.13)
Tajikistan			0.73	(0.39–1.39)			0.77	(0.40–1.50)
Ukraine			1.23	(0.12–12.26)			1.13	(0.09–14.66)
Middle East & North Africa								
Jordan	1.62	(0.19–13.94)	2.72	(1.74–4.25)	1.58	(0.22–11.58)	2.45	(1.52–3.95)
South Asia	2.41	(2.12–2.73)	1.95	(1.76–2.16)	1.65	(1.44–1.89)	1.51	(1.36–1.68)
India	2.37	(2.07–2.70)	1.95	(1.76–2.17)	1.60	(1.39–1.84)	1.50	(1.34–1.68)
Nepal	2.87	(1.50–5.48)	1.91	(1.14–3.20)	2.00	(1.00–4.01)	1.35	(0.79–2.31)
Pakistan	3.32	(1.54–7.17)	2.31	(1.39–3.82)	3.26	(1.44–7.39)	2.41	(1.42–4.09)
Sub-Saharan Africa	1.04	(0.94–1.17)	1.21	(1.12–1.30)	1.29	(1.15–1.45)	1.29	(1.18–1.40)
Eastern and Southern Africa	1.36	(1.14–1.62)	1.42	(1.26–1.59)	1.35	(1.12–1.62)	1.39	(1.23–1.57)
Comoros	2.76	(1.14–6.69)	1.20	(0.45–3.15)	2.21	(0.91–5.37)	1.02	(0.40–2.59)
Kenya	1.37	(0.85–2.20)	2.00	(1.45–2.75)	1.09	(0.66–1.80)	1.69	(1.22–2.36)
Malawi	1.62	(0.95–2.76)	1.56	(1.09–2.24)	1.66	(0.96–2.88)	1.61	(1.10–2.33)
Mozambique	1.19	(0.79–1.80)	1.09	(0.79–1.49)	1.27	(0.84–1.93)	1.22	(0.89–1.69)
Rwanda	1.48	(0.20–10.75)	2.24	(1.30–3.86)	1.63	(0.22–12.12)	2.33	(1.33–4.06)
Tanzania	1.64	(0.97–2.78)	1.62	(1.16–2.25)	1.53	(0.88–2.64)	1.58	(1.12–2.21)
Uganda	4.15	(2.01–8.57)	2.68	(1.64–4.39)	3.98	(1.85–8.55)	2.38	(1.37–4.10)
Zambia	1.95	(1.17–3.25)	1.40	(1.01–1.93)	2.25	(1.31–3.86)	1.53	(1.09–2.15)
Zimbabwe	1.72	(0.95–3.11)	1.77	(1.32–2.36)	1.64	(0.90–3.01)	1.70	(1.26–2.31)
West and Central Africa	0.99	(0.86–1.14)	1.11	(0.99–1.24)	1.30	(1.12–1.52)	1.24	(1.10–1.39)
Burkina Faso	1.96	(1.22–3.15)	1.61	(1.14–2.28)	2.13	(1.32–3.47)	1.72	(1.17–2.49)
Cameroon	1.41	(0.90–2.19)	1.50	(1.05–2.16)	1.75	(1.09–2.81)	1.69	(1.17–2.46)
Cote D'Ivoire	1.11	(0.67–1.87)	1.24	(0.86–1.80)	1.21	(0.73–2.01)	1.34	(0.93–1.95)
Democratic Republic of the Congo	1.14	(0.65–1.99)	1.22	(0.85–1.75)	1.12	(0.64–1.97)	1.22	(0.84–1.76)
Gabon	1.68	(1.00—2.82)	1.60	(1.10–2.32)	1.57	(0.92–2.68)	1.47	(1.01–2.15)
Ghana	3.07	(1.20–7.83)	1.11	(0.56–2.19)	3.70	(1.23–11.12)	1.31	(0.60–2.86)
Liberia	1.30	(0.81–2.09)	1.00	(0.69–1.46)	1.35	(0.83–2.19)	1.04	(0.71–1.52)
Mali	0.93	(0.56–1.53)	0.97	(0.62–1.52)	0.94	(0.56–1.57)	0.98	(0.62–1.54)
Nigeria	0.65	(0.47–0.88)	0.89	(0.69–1.16)	0.88	(0.61–1.26)	1.07	(0.81–1.42)
Sao Tome	2.20	(0.76–6.39)	1.89	(1.17–3.07)	2.35	(0.70–7.88)	1.89	(1.13–3.19)
Total	1.62	(1.51–1.74)	1.55	(1.47–1.63)	1.43	(1.33–1.55)	1.43	(1.35–1.51)

Table 4. Continued

	Past year sexual IPV							
	Model 1 (unadjusted ORs)				Model 2 (adjusted ORs)			
	Married < 15		Married 15–17		Married < 15		Married 15–17	
Americas	1.76	(1.30–2.37)	1.22	(0.95–1.57)	1.85	(1.34–2.55)	1.24	(0.96–1.60)
Colombia	2.16	(1.36–3.44)	1.27	(0.86–1.87)	2.01	(1.21–3.33)	1.22	(0.82–1.82)
Dominican Republic	4.59	(1.77–11.89)	2.71	(1.07–6.86)	4.82	(1.60–14.51)	2.82	(1.03–7.70)
Haiti	1.52	(0.68–3.42)	1.23	(0.78–1.95)	1.28	(0.55–3.01)	1.16	(0.73–1.85)
Honduras	2.79	(1.24–6.26)	1.79	(0.91–3.49)	2.32	(0.98–5.50)	1.60	(0.78–3.28)
East Asia & Pacific	2.24	(0.74–6.75)	2.00	(1.09–3.68)	2.71	(0.90–8.17)	2.55	(1.35–4.84)
Philippines	2.59	(0.84–8.02)	2.30	(1.21–4.38)	3.32	(1.05–10.50)	2.74	(1.39–5.42)
Timor-Leste			1.46	(0.20–10.61)			1.41	(0.22–9.16)
Europe and Central Asia			0.83	(0.43–1.60)			0.93	(0.48–1.81)
Azerbaijan			0.87	(0.24–3.23)			0.95	(0.29–3.13)
Kyrgyzstan			2.43	(0.76–7.71)			2.85	(0.87–9.37)
Moldova			0.79	(0.15–4.26)			0.87	(0.17–4.40)
Tajikistan			0.21	(0.03–1.55)			0.17	(0.02–1.48)
Ukraine			1.86	(0.16–21.21)			1.62	(0.11–24.60)
Middle East & North Africa								
Jordan	3.81	(0.44–33.11)	1.44	(0.69–3.01)	4.50	(0.32–63.99)	1.23	(0.55–2.73)
South Asia	2.28	(1.88–2.76)	1.70	(1.45–2.00)	1.52	(1.23–1.87)	1.28	(1.08–1.52)
India	2.32	(1.91–2.83)	1.72	(1.46–2.02)	1.53	(1.23–1.90)	1.29	(1.08–1.55)
Nepal	1.71	(0.79–3.71)	1.46	(0.77–2.78)	1.37	(0.59–3.19)	1.13	(0.56–2.26)
Pakistan								
Sub-Saharan Africa	1.09	(0.94–1.27)	1.19	(1.06–1.34)	1.26	(1.07–1.49)	1.23	(1.09–1.38)
Eastern and Southern Africa	1.24	(0.98–1.58)	1.36	(1.17–1.59)	1.23	(0.96–1.57)	1.33	(1.13–1.56)
Comoros	2.61	(0.64–10.70)			2.60	(0.61–11.12)		
Kenya	1.49	(0.81–2.75)	1.77	(1.14–2.76)	1.37	(0.74–2.56)	1.70	(1.09–2.64)
Malawi	0.90	(0.49–1.68)	1.45	(0.99–2.15)	0.89	(0.47–1.68)	1.45	(0.98–2.17)
Mozambique	1.21	(0.66–2.22)	0.88	(0.52–1.48)	1.18	(0.64–2.17)	0.88	(0.52–1.48)
Rwanda	2.83	(0.28–28.06)	1.84	(0.96–3.52)	4.74	(0.42–53.84)	1.77	(0.88–3.58)
Tanzania	1.05	(0.46–2.37)	1.15	(0.73–1.80)	0.92	(0.40–2.10)	1.06	(0.67–1.68)
Uganda	1.88	(0.84–4.18)	2.14	(1.23–3.71)	1.77	(0.76–4.08)	2.06	(1.13–3.76)
Zambia	1.54	(0.86–2.77)	1.20	(0.78–1.83)	1.61	(0.88–2.94)	1.23	(0.79–1.92)
Zimbabwe	1.62	(0.69–3.79)	1.39	(0.97–1.99)	1.42	(0.59–3.42)	1.35	(0.91–1.99)
West and Central Africa	1.17	(0.94–1.45)	1.13	(0.96–1.35)	1.41	(1.12–1.77)	1.20	(1.01–1.44)
Burkina Faso	1.93	(0.88–4.20)	0.90	(0.41–2.00)	2.23	(0.98–5.10)	1.00	(0.42–2.37)
Cameroon	1.92	(1.05–3.51)	2.21	(1.32–3.68)	1.87	(0.99–3.56)	2.24	(1.31–3.85)
Cote D'Ivoire	0.52	(0.18–1.51)	0.55	(0.26–1.16)	0.53	(0.18–1.62)	0.57	(0.26–1.25)
Democratic Republic of the Congo	1.59	(0.88–2.89)	1.33	(0.92–1.93)	1.57	(0.85–2.92)	1.32	(0.91–1.93)
Gabon	1.16	(0.50–2.67)	1.40	(0.82–2.37)	1.26	(0.54–2.95)	1.35	(0.80–2.25)
Ghana	6.20	(1.15–33.41)	2.61	(0.64–10.63)	9.55	(1.57–58.15)	4.37	(0.80–23.77)
Liberia	1.45	(0.74–2.84)	0.79	(0.42–1.47)	1.29	(0.63–2.65)	0.72	(0.39–1.33)
Mali	1.05	(0.55–1.99)	1.05	(0.60–1.83)	1.04	(0.55–1.95)	1.03	(0.58–1.83)
Nigeria	0.99	(0.62–1.56)	1.28	(0.85–1.93)	1.01	(0.62–1.66)	1.32	(0.87–2.00)
Sao Tome	0.99	(0.11–9.24)	1.11	(0.40–3.13)	0.82	(0.09–7.46)	0.92	(0.34–2.51)
Total	1.67	(1.49–1.86)	1.44	(1.32–1.56)	1.35	(1.20–1.52)	1.26	(1.15–1.37)

Table 4. Continued

	Past year physical and/or sexual IPV							
	Model 1 (unadjusted ORs)				Model 2 (adjusted ORs)			
	Married < 15		Married 15–17		Married < 15		Married 15–17	
Americas	1.59	(1.36–1.87)	1.43	(1.27–1.61)	1.78	(1.50–2.12)	1.51	(1.34–1.71)
Colombia	1.94	(1.57–2.41)	1.62	(1.39–1.89)	2.01	(1.60–2.52)	1.64	(1.40–1.93)
Dominican Republic	2.67	(1.62–4.41)	2.62	(1.66–4.15)	1.81	(1.02–3.20)	2.09	(1.29–3.38)
Haiti	1.60	(0.85–3.00)	1.17	(0.83–1.65)	1.44	(0.75–2.78)	1.10	(0.77–1.57)
Honduras	1.48	(0.97–2.26)	1.46	(1.08–1.97)	1.54	(0.98–2.44)	1.49	(1.09–2.05)
East Asia & Pacific	2.61	(1.46–4.64)	1.62	(1.15–2.28)	2.88	(1.55–5.38)	1.58	(1.09–2.29)
Philippines	2.76	(1.31–5.83)	1.82	(1.15–2.88)	2.97	(1.37–6.47)	1.95	(1.21–3.16)
Timor-Leste	2.59	(0.88–7.58)	1.10	(0.65–1.88)	2.59	(0.83–8.01)	1.14	(0.65–2.00)
Europe and Central Asia	1.54	(0.33–7.21)	1.77	(1.36–2.30)	1.70	(0.37–7.75)	1.91	(1.46–2.51)
Azerbaijan	1.66	(0.18–15.26)	1.59	(0.90–2.83)	1.44	(0.14–14.56)	1.56	(0.88–2.75)
Kyrgyzstan			2.89	(1.65–5.06)			3.46	(1.89–6.34)
Moldova	1.99	(0.21–18.51)	2.78	(1.68–4.58)	2.11	(0.24–18.40)	2.88	(1.68–4.94)
Tajikistan			0.71	(0.37–1.35)			0.75	(0.38–1.45)
Ukraine			1.23	(0.12–12.25)			1.16	(0.87–14.66)
Middle East & North Africa								
Jordan	1.22	(0.14–10.45)	2.35	(1.52–3.64)	1.30	(0.17–9.77)	2.15	(1.36–3.41)
South Asia	2.31	(2.04–2.62)	1.89	(1.72–2.09)	1.56	(1.37–1.79)	1.44	(1.30–1.60)
India	2.35	(2.06–2.67)	1.92	(1.74–2.12)	1.57	(1.37–1.81)	1.47	(1.32–1.64)
Nepal	2.57	(1.44–4.59)	1.68	(1.04–2.70)	1.82	(0.98–3.40)	1.18	(0.71–1.96)
Pakistan								
Sub-Saharan Africa	1.03	(0.92–1.14)	1.21	(1.13–1.31)	1.27	(1.14–1.43)	1.30	(1.20–1.41)
Eastern and Southern Africa	1.31	(1.10–1.55)	1.44	(1.28–1.61)	1.31	(1.09–1.57)	1.42	(1.26–1.60)
Comoros	2.79	(1.19–6.55)	1.08	(0.42–2.79)	2.29	(0.96–5.46)	0.93	(0.37–2.30)
Kenya	1.40	(0.89–2.19)	1.92	(1.40–2.63)	1.10	(0.69–1.78)	1.63	(1.18–2.25)
Malawi	1.33	(0.82–2.14)	1.51	(1.10–2.06)	1.32	(0.81–2.16)	1.52	(1.10–2.11)
Mozambique	1.27	(0.85–1.89)	1.07	(0.79–1.45)	1.34	(0.89–2.02)	1.20	(0.87–1.64)
Rwanda	1.45	(0.20–10.52)	2.19	(1.27–3.78)	1.64	(0.22–12.24)	2.26	(1.29–3.95)
Tanzania	1.36	(0.80–2.30)	1.51	(1.10–2.08)	1.25	(0.73–2.16)	1.48	(1.06—2.05)
Uganda	2.98	(1.47–6.03)	2.46	(1.53–3.95)	2.90	(1.37–6.11)	2.32	(1.38–3.89)
Zambia	2.00	(1.19–3.36)	1.45	(1.04–2.00)	2.27	(1.33–3.90)	1.57	(1.12–2.19)
Zimbabwe	1.65	(0.89–3.05)	1.88	(1.42–2.47)	1.55	(0.83–2.90)	1.82	(1.36–2.43)
West and Central Africa	0.99	(0.86–1.14)	1.12	(1.00–1.25)	1.31	(1.12–1.52)	1.25	(1.11–1.40)
Burkina Faso	1.82	(1.15–2.87)	1.48	(1.05–2.09)	2.01	(1.26–3.19)	1.60	(1.11–2.29)
Cameroon	1.49	(0.97–2.28)	1.72	(1.22–2.42)	1.80	(1.14–2.84)	1.93	(1.35–2.75)
Cote D'Ivoire	1.11	(0.67–1.84)	1.21	(0.83–1.75)	1.20	(0.73–1.98)	1.31	(0.90–1.89)
Democratic Republic of the Congo	1.10	(0.63–1.94)	1.25	(0.85–1.83)	1.08	(0.60–1.93)	1.25	(0.85–1.85)
Gabon	1.59	(0.94–2.70)	1.58	1.10–2.27	1.51	(0.87–2.62)	1.46	(1.01–2.11)
Ghana	2.91	(1.15–7.38)	1.19	(0.62–2.26)	3.60	(1.19–10.92)	1.50	(0.71–3.14)
Liberia	1.29	(0.80–2.10)	0.98	(0.67–1.44)	1.32	(0.81–2.17)	1.01	(0.68–1.48)
Mali	0.88	(0.54–1.41)	0.93	(0.61–1.42)	0.88	(0.55–1.42)	0.94	(0.62–1.44)
Nigeria	0.70	(0.52–0.94)	0.99	(0.77–1.28)	0.90	(0.65–1.51)	1.16	(0.88–1.51)
Sao Tome	2.09	(0.72–6.03)	1.80	(1.11–2.90)	2.15	(0.65–7.12)	1.76	(1.06–2.93)
Total	1.60	(1.49–1.72)	1.54	(1.47–1.62)	1.41	(1.30–1.52)	1.42	(1.35–1.50)

Model 2 is adjusted for age, primary education, rural residence and wealth quintile.

Empty cells result because there is no sample in that marriage category (refers to marriage < 15 only), because the marriage category predicts failure perfectly, or because the outcome was not measured (refers to Pakistan only).

Discussion

Our study adds to a large and growing literature on the harmful impact of child marriage. In adjusted analyses, we found that found that young women (age 20–24) who married as children were more likely to report past year physical IPV compared with young women who married as adults. Similarly, we found that women who married as children were more likely to report past year sexual IPV, although the strength of the association was lower compared with physical IPV. Primary analyses focused on a cohort aged 20–24 to capture current trends. However, findings held in older cohorts; thus elevated IPV risk from child marriage is not limited to the first few years of marriage, but rather persists into adulthood.

These findings confirm associations found in past studies between child marriage and physical IPV [18,34–36,38] while greatly extending the geographical generalizability. They also build a more robust evidentiary base around sexual IPV. Past studies (limited exclusively to Asian settings) have reported contradictory finding for the association between child marriage and sexual IPV.[18,34,37] Although this study found an association with past year sexual IPV overall, it was weaker than the association with physical IPV and present in fewer individual countries. The stronger associations between child marriage and physical IPV as opposed to sexual IPV may be real; they may also be a result of differential reporting bias: women married as children may hold more traditional gender attitudes and be less likely to view unwanted sexual acts as violence.

The findings from this study also add to our knowledge in two distinct ways. First, very few previous studies have separated out women who were married extremely early from women who married in later adolescence. The emotional, social and psychological immaturity of girls who marry before the age of 15 may predispose them to particularly severe adverse outcomes. Indeed, studies of other important health outcomes (e.g. maternal mortality and forced sexual initiation) have found greater disadvantage among those married or giving birth before age 15,[27,48] leading to calls to target efforts towards the prevention of very early marriages.[27] We similarly expected that IPV risk would be greatest among women who married at the youngest ages. Our results suggest that the younger the girl is at the time of marriage, the more likely she is to report experiencing past year sexual IPV. However, this did not hold true for past year physical IPV. This is somewhat surprising, and suggests narrowly targeted interventions to reduce IPV would miss an important group of women at risk: those who marry in later adolescence.

Second, we found considerable heterogeneity in both the significance and strength of associations across countries. There are also many different explanations for child marriage, ranging from economic necessity to religious preference.[29] The overarching determinants in one setting may differ from those in another; this may fundamentally affect the quality of the marital relationship and risk for IPV.[29] For instance, religion could impact on both the risk of child marriage and the risk of IPV.[28] Given that the association between denomination and child marriage varies by setting,[19,26] the direction of influence would likely also vary. The extent to which child marriage is a response to economic pressure may likewise modify the association. There is evidence that child marriage is responsive to educational and economic interventions in sub-Saharan Africa, whereas similar interventions do not impact on child marriage practices in Bangladesh.[49–51] Thus, it is likely that societies in which child marriage is a response to economic instability may demonstrate a weaker relationship with IPV. Societies in which traditional gender norms perpetuate the low status of women, and thus drive child marriage, may demonstrate a stronger relationship with IPV.

Limitations

There are notable limitations to this study. For example, our estimates of past year sexual IPV may be low because the definition focuses on physical force; many more young women may experience sexual coercion.[28,52,53] This could affect study power: the low prevalence of both sexual IPV and child marriage, combined with small sample sizes, may limit our ability to detect an association in some countries. In our study, fewer countries demonstrated an association between child marriage and past year sexual IPV as compared with past year physical IPV, consistent with reports from India[18] and Bangladesh.[37] Moreover, IPV–a sensitive and socially stigmatized experience–is likely to be underestimated in the DHS due to reporting bias. As mentioned earlier, the association with child marriage may be biased downward if women in such marriages were less likely to disclose. Thus, before we conclude that child marriage has a more consistent impact on physical IPV, studies with larger sample sizes and better measurement of sexual IPV are needed.

Furthermore, cross-sectional studies such as ours cannot demonstrate causality. This is partially dealt with by limiting our sample to women who are at least 20 years old, thereby ensuring that our exposure of interest (child marriage) precedes the outcome of interest (past year IPV). We also opted to include a minimal group of sociodemographic controls so as to avoid over-adjustment for

risk factors that are potential mediators (e.g. women's secondary education; spousal control). However, our choices have inherent trade-offs. For example, our controls may not adequately capture social vulnerabilities (e.g. traditional gender attitudes) or the reason for marriage (e.g. forced, sold) that increase both the likelihood that a girl is married as a child and that she subsequently experiences IPV.[35] The marital duration was also not included: although a potential confounder,[54] it is also collinear with age at marriage. Likewise, women were grouped based on their age of cohabitation or marriage; future research may want to examine these groups separately and in relation to individual country practices. Finally, focusing on past year IPV meant we had to limit our analyses to currently married women; if IPV victims are more likely to separate or divorce, our study could potentially underestimate the relationship between child marriage and IPV.

Implications

Like child marriage itself, IPV represents a human rights violation with substantial repercussions for women's health. Globally, a third of all women report being victims of physical and/or sexual IPV.[55] Our findings indicate that women who were married as children suffer lasting disadvantage. Even as they mature and acquire greater resources, there is a persistent higher likelihood of experiencing violence. This suggests the need for a two-pronged approach. We need to know what works to address child marriage, particularly in societies where the practice is deeply entrenched. Enacting minimum marriage age legislation, expanding educational and economic opportunity and changing community gender norms have all been put forth as potential solutions,[56–59] but greater work needs to be done to implement and evaluate such efforts.[60] We also need programmes and policies to protect those who marry as children and ensure that all women have the resources and support to leave abusive relationships. Many of the interventions (e.g. economic empowerment) that are recommended to address child marriage are also recommended for the primary prevention of IPV.[61] Additional interventions may be needed which focus on the nature of the marital relationship and the characteristics of those involved in child marriages; future research could identify the factors that best predict IPV risk within child marriages and help target such programmes.

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