

## Background

- The World Health Organization (WHO) defines IPV as the self-report of physical or sexual violence by a current or former partner since the age of 15<sup>1</sup>
- An estimated 30% of women age 15 or over have experienced physical or sexual intimate partner violence (IPV)<sup>2</sup>
- Reproductive control is a form of IPV<sup>3</sup>
  - A recent systematic review indicates that women who experience IPV are more likely to report terminating their pregnancy<sup>4</sup>

## Research Objective

To estimate the association between intimate partner violence and time-to-event for interpartum intervals

## Data

Demographic and Health Survey (DHS) Data

- Population-representative data from 24 countries (2005 – 2012)
- Restrict to most recent survey from countries that includes:
  - DV module
  - Year when IPV began
  - Reproductive Health Calendar data
  - 22% of 322,708 observations missing value for exposure to IPV

Measures

- Measure of IPV initiation and duration
  - Did your (current or last) partner ever?
  - Did your partner in the last year?
  - What year did your partner begin to?
- Time-fixed covariates
  - 5-level age category, SES, urban/rural, education, minority status
- Time-varying covariates
  - Intimate partner violence

## Methods

- Individual participant data meta-analysis
- Cox proportional hazards models
- Clustered standard errors to adjust for multiple events within individuals
- Country fixed effect
- Listwise deletion
- Assumptions:
  - Hazard ratio constant over time
  - Covariates linearly related to log hazard
  - Constant baseline hazard within countries

## Results

### Distribution of physical and sexual IPV by DHS region & country

Country	Year	Total*	Physical IPV (%)	Sexual IPV (%)
<b>Central Asia</b>				
Kyrgyz Republic	2012	4,831	18.6	3.1
Tajikistan	2012	4,402	18.2	3.8
<b>Latin America &amp; Caribbean</b>				
Colombia	2010	34,681	36.0	9.3
Honduras	2011	12,494	18.9	6.1
Peru	2012	13,483	37.6	9.2
<b>North Africa, West Asia, Europe</b>				
Azerbaijan	2006	4,299	14.5	2.8
Moldova	2005	4,591	22.3	4.1
Ukraine	2007	2,417	12.6	2.4
<b>South &amp; Southeast Asia</b>				
India	2005	69,436	31.0	8.3
Nepal	2011	3,505	23.4	14.7
Pakistan	2012	3,686	28.2	0 <sup>+</sup>
Timor Leste	2009	2,162	34.5	2.1
<b>Sub-Saharan Africa</b>				
Burkina Faso	2010	10,003	11.3	1.5
Ghana	2008	1,835	21.2	6.7
Kenya	2008	4,901	36.5	13.2
Malawi	2010	5,374	21.6	16.6
Mali	2006	8,922	17.7	3.7
Mozambique	2011	5,824	31.7	7.9
Nigeria	2008	19,242	17.7	4.1
Rwanda	2010	3,470	55.5	17.6
Tanzania	2010	5,689	34.0	12.9
Uganda	2011	1,702	41.5	26.9
Zambia	2007	4,230	46.0	16.6
Zimbabwe	2010	10,560	28.5	14.7

\*restricted to those who responded to any question related to physical or sexual IPV  
<sup>+</sup>Pakistan 2012 has no measure of sexual violence

## Results

### Effect estimates for predictors of interpartum intervals from Cox proportional hazards fixed effect model (48,428 events; 339,022 person-years at risk)

Covariate	Hazard Ratio	95% CI
Physical or sexual IPV	1.07	1.04, 1.09
Age category		
15-19	ref	
20-29	1.54	1.48, 1.61
30-39	1.26	1.21, 1.31
40-49	0.75	0.71, 0.79
Rural residence	1.01	0.99, 1.03
Education level		
Higher	0.84	0.81, 0.88
Secondary	0.89	0.87, 0.92
Primary	0.97	0.95, 0.99
No education	ref	
Wealth quintile		
Highest	0.79	0.76, 0.81
High	0.86	0.84, 0.88
Middle	0.92	0.90, 0.94
Low	0.95	0.93, 0.96
Lowest	ref	
Minority	1.09	1.06, 1.11

## Conclusions

- In adjusted models, women's experience of sexual or physical IPV is associated with an estimated 7% increase in the hazard of incident pregnancy (95% CI: 1.04, 1.09).
- Education and household wealth have a protective effect on the hazard of incident pregnancy in the adjusted model.
- Minority status is associated with an estimated 9% increase in the hazard of incident pregnancy in the adjusted model (95% CI: 1.06, 1.11).

1. WHO. Global and regional estimates of intimate partner violence against women. 2013.  
 2. Devries, K. The global prevalence of intimate partner violence against women. Science. 20 June 2013.  
 3. Campbell, J. Health consequences of intimate partner violence. The Lancet. 13 April 2002.  
 4. Hall M, et al. (2014) Associations between Intimate Partner Violence and Termination of Pregnancy: A Systematic Review and Meta-Analysis. PLoS medicine.