Intimate partner violence against adolescent girls: regional and national prevalence estimates and associated country-level factors

LynnMarie Sardinha, Ilknur Yüksel-Kaptanoğlu, Mathieu Maheu-Giroux, Claudia García-Moreno

Summary

Background Intimate partner violence is a serious public health problem and negatively affects short-term and long-term health, development, and wellbeing of adolescent girls. Global estimates from WHO have shown that adolescent girls aged 15–19 years experience high rates of intimate partner violence. We aimed to estimate the lifetime and past-year prevalence and patterns of physical or sexual intimate partner violence against adolescent girls by male partners across 161 countries and areas, and to examine the country-level factors, including the prevalence of child marriage, associated with the lifetime and past-year prevalence of intimate partner violence in this age group.

Methods These analyses used the 2018 global, regional, and country estimates on intimate partner violence published by WHO and economic, social, and political metadata from subject-specific databases. Drawing on data from the WHO Global Database on Prevalence of Violence Against Women, we used hierarchical Bayesian modelling techniques to estimate lifetime and past-year prevalence of physical or sexual (or both) intimate partner violence against adolescent girls aged 15–19 years by country. Linear regression methods were used to examine contextual social, economic, and political factors associated with intimate partner violence against adolescent girls in the 101 countries (lifetime prevalence) and 105 countries (past-year prevalence) for which these metadata were available.

Findings The estimated global prevalence of physical or sexual intimate partner violence against ever-partnered adolescent girls aged 15–19 years was 24% (95% uncertainty interval 21–28) in their lifetime and 16% (14–19) in the past year. Prevalence varied greatly across countries and regions, with lifetime prevalence ranging from 6% (3–11) in Georgia to 49% (35–64) in Papua New Guinea. Overall, the prevalence of both lifetime (154 countries) and past-year (157 countries) intimate partner violence against adolescent girls was higher in low-income and lower-middle-income countries and regions than in high-income countries and regions. Countries with higher rates of female secondary school enrolment and those with inheritance laws that are more gender-equal had lower prevalence of intimate partner violence against adolescent girls. Lower-income countries and societies with a high prevalence of child marriage had higher prevalence of physical or sexual intimate partner violence against adolescent girls.

Interpretation Our findings highlight the widespread prevalence of intimate partner violence against adolescent girls across the globe and its relationship with country-level contextual factors. They emphasise the need for promoting and ensuring policies and programmes that increase and ensure gender equality. Countries should strive to provide secondary education for all girls, ensure equal property rights for women, eliminate discriminatory gender norms, and address harmful practices such as child marriage.

Funding UN Women–WHO Joint Programme on Strengthening Violence Against Women Data funded by the UK Foreign and Commonwealth Development Office and the UNDP-UNFPA-UNICEF-WHO-World Bank Special Programme of Research, Development, and Research Training in Human Reproduction.

Lancet Child Adolesc Health 2024

Published **Online** July 29, 2024 https://doi.org/10.1016/S2352-4642(24)00145-7

See **Online/Comment** https://doi.org/10.1016/S2352-4642(24)00177-9

This online publication has been corrected. The corrected version first appeared at thelancet.com/child-adolescent on July 31, 2024

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Introduction

Intimate partner violence is a serious public health and human rights problem endemic to all countries. More than 27% of ever-partnered women aged 15–49 years have been subjected to physical or sexual (or both) violence by an intimate partner at least once in their lifetime, and 13% have experienced this violence in the past year.[1] Intimate partner violence starts early in the life of women and girls—almost one in four adolescent girls aged 15–19 years who have been partnered have already been

Research in context

Evidence before this study

WHO published its first global and regional estimates on the prevalence of physical or sexual (or both) intimate partner violence and non-partner sexual violence against women in 2013, and the 2018 update was the first such prevalence estimates during the Sustainable Development Goal era (2015–30). The 2018 estimates showed that globally 27% of ever-partnered women aged 15–49 years had experienced physical or sexual intimate partner violence in their lifetime and 13% reported experiencing this violence in the year preceding the survey. Globally, 24% of adolescent girls aged 15–19 years who are or have been partnered have been subjected to intimate partner violence at least once in their lifetime and 16% in the past year. Although there is a growing recognition of the association of intimate partner violence with country-level contextual factors—such as women and girls' access to education and employment, discriminatory family, inheritance, and domestic violence laws, harmful practices, and unequal gender norms—there remains a large gap in understanding how these contextual factors could be different for adolescent girls. We searched PubMed for nationally or subnationally representative population-based studies (cross-sectional or cohort studies) from inception to April 20, 2024, using the terms: (girls OR adolescent OR young) AND women AND ("intimate partner violence" OR "domestic violence" OR "violence against women" GBV OR IPV) AND (correlate* OR predictor* OR ecological), with no language restrictions. We found no previous national and regional estimates on intimate partner violence against adolescent girls aged 15–19 years that were internationally comparable, and spanning all global regions.

Added value of this study

This study, to our knowledge, presents the first internationally comparable national estimates on lifetime and past-year prevalence of physical or sexual intimate partner violence against adolescent girls aged 15–19 years in 161 countries across all global regions. We also identified the country-level social, economic, and political factors that are associated with intimate partner violence against adolescent girls, revealing a positive association with child marriage and negative associations with female secondary education enrolment and rights to property ownership. These findings are useful in establishing the magnitude of violence by male intimate partners against adolescent girls and in identifying important contextual factors to inform effective prevention and early intervention policies and programming.

Implications of all the available evidence

Intimate partner violence against adolescent girls is a serious public health concern globally and across all countries and regions. At the same time, there is a dearth of data to inform policies and programmes that address such violence. No country will meet the Sustainable Development Goal target of eliminating violence against women and girls by 2030, and urgent action is needed to promote and implement sustainable policies and programmes that increase and ensure gender equality.

subjected to physical or sexual violence by an intimate partner at least once in their lives, and 16% have had such experiences within the past year.[1–3] This violence can have substantial and long-lasting effects on their physical and mental health, education, employment, and future relationships.[4–6]

Prevention of intimate partner violence is urgent, given its serious effects on the lives of women, girls, and their families, and on societies. Understanding the national and regional patterns in the prevalence of intimate partner violence against adolescents and the factors that perpetuate this violence, or factors that help to reduce it, is important in informing evidence-based prevention and response policies and programming. Most studies on intimate partner violence against adolescent girls have focused on individual and household-level factors, including marital or partnership status, household poverty, material deprivation, women's and their partner's educational level, and employment status.[7,8] Some of these studies found that girls and women who were married as children (ie, marriage or cohabitation before age 18 years) had a significantly increased risk of being subjected to intimate partner violence.[9,10] Empirical evidence and well established theoretical frameworks—including the ecological model,[11] the Hagemann-White model,[12] and theories on social norms and discriminatory social institutions[13,14]—highlight the important role of macro social, economic, and political factors on the prevalence of intimate partner violence and violence against women more broadly. However, there remains little cross-national evidence on how and whether these ecological factors, including child marriage, gender-inequitable legislation, and women's restricted access to education and the labour force, are associated with intimate partner violence against adolescent girls.

Eliminating all forms of violence against women and girls, including intimate partner violence and sexual violence, as well as harmful practices such as child marriage are targets of the Sustainable Development Goal 5 on achieving gender equality and women's empowerment by 2030.[15] Preventing child and forced marriages and violence against women are also two of the three Zero Commitments of the International Conference on Population and Development+25 Nairobi Summit in 2019, 25 years after the 1994 International Conference on Population and Development in Cairo.[16] Despite these issues being recognised as global priorities, intimate partner violence against adolescent girls and child marriage are still prevalent, with 19% of women aged 20–24 years globally having married before their 18th birthday.[17,18]

We aimed to present regional and national lifetime and past-year prevalence estimates of physical or sexual violence by male intimate partners against adolescent girls (aged 15–19 years) across 161 countries and areas. We also aimed to examine the association of country-level economic, social, and political factors, including the prevalence of child marriage, with the lifetime prevalence of intimate partner violence in 101 countries and past-year prevalence of intimate partner violence in 105 countries.

Methods

Data sources

We used data from the WHO's Global Database on Prevalence of Violence Against Women. This database was developed based on a comprehensive systematic review of population-based surveys and studies conducted between Jan 1, 2000, and Dec 31, 2018, data from National Statistical Office websites, data repositories, and country consultations with 194 countries. All nationally or subnationally representative surveys that used acts-based measures of intimate partner violence were included. Acts-based measures enhance disclosure and refer to questions on whether specific acts (eg, kicking, hitting with a fist, and being physically forced to have sexual intercourse) occurred (appendix p 1). Details on the search strategy and inclusion criteria can be found in the protocol.[19] The Bayesian methods used to produce comparable prevalence estimates of physical or sexual intimate partner violence have also been published elsewhere.[20] Survey comparability was achieved through covariate modelling of adjustment factors. Age and time trends were modelled using flexible splines functions. Non-informative priors were used. The model was validated using both in-sample comparisons and out-of-sample predictions.[20]

Country-level data for the selected contextual variables drew on specialised topic-specific metadatabases and metadata repositories. The country-level social, economic, and political factors included and their data sources are thematically summarised in the appendix (p 2). All data were standardised and were harmonised where needed to ensure international comparability.

Ethical approval was not required as this is a secondary data analysis of publicly available data.

Outcome and explanatory variables

The outcome variables of this study were the lifetime and past-year national prevalence of physical or sexual (or both) intimate partner violence among adolescent girls who are or have been partnered in 2018. Marriage and informal partnerships (ie, cohabitation or other intimate relationships), including both current or former husbands and cohabitating and non-cohabitating male partners, were included. Adolescents are exposed to various types of violence from their intimate partners, including physical, sexual, psychological, and economic violence, and stalking. However, only physical and sexual violence by male intimate partners was estimated, as there is greater consensus on and standardised measures of these two forms of violence, making cross-national comparisons more valid.[1]

The social, economic, and political country-level explanatory factors included in the analyses were selected based on existing conceptual frameworks linking individual or country-level factors to violence against women (appendix pp 2–3).[6,11–14] Child marriage was also included as a harmful practice, given its negative effects on adolescent girls' education, health, and participation in social and economic life, and that it is a violation of their fundamental rights.[4,10,16–18,21] Both civil and religious marriages or unions in which one of the parties is younger than 18 years are recognised as child marriage.[22–24] Although early marriage and child marriage are sometimes used interchangeably, we use the term child marriage as it has a cutoff of age 18 years, which is the globally recognised cutoff for childhood and is cross-nationally measurable and comparable.[23–25]

For more on the **global prevalence database, estimates, and data sources underpinning the estimates** see https://vaw-data.srhr.org

These selected contextual variables draw on subject-specific metadatabases and were chosen based on the quality, completeness, and cross-national comparability of data. Hence, for example, race and ethnicity data were not included, as they are not available in many studies nor comparable across countries. As this study is based on the 2018 intimate partner violence prevalence estimates, 2018 country-level data on the associated factors were used. In the few cases for which data was unavailable for 2018, data from the closest year preceding it were included. The full list of variables considered and included are summarised in the appendix (pp 2–3).

See **Online** for appendix

Statistical analysis

WHO country-specific and age-specific intimate partner violence prevalence estimates and 95% uncertainty intervals (UIs) were produced using five-level Bayesian hierarchical models. The detailed estimation methods and analyses have been described elsewhere.[20] 85% of the studies for lifetime prevalence and 88% for past-year prevalence of intimate partner violence were nationally representative. Surveys representative at a subnational level were included to maximise geographical coverage, but these were given less weight than nationally representative ones. Country-level 5-year and 10-year age-disaggregated prevalence estimates were produced for all countries that had at least one population-based survey conducted between 2000 and 2018 that measured physical or sexual intimate partner violence using acts-based measures. Estimates for lifetime prevalence were produced for 154 countries and areas, and past-year prevalence for 157 countries and areas. Regional prevalence estimates were constructed using the Global Burden of Diseases, Injuries, and Risk Factors Study regional classifications.[26]

Analyses examining the bivariate and multivariable contextual-level factors associated with intimate partner violence were restricted to countries with available

	Lifetime intimate partner violence prevalence (95% UI)	Past-year intimate partner violence prevalence (95% UI)
Central Europe, eastern Europe, and central Asia		
Central Asia	11% (7–16)	7% (4–10)
Central Europe	10% (7–13)	4% (3–6)
Eastern Europe	13% (8–22)	6% (4–12)
High-income		
Asia–Pacific	16% (9–27)	7% (4–14)
Australasia	18% (12–26)	6% (4–9)
Western Europe	18% (13–24)	6% (4–9)
Southern Latin America	18% (11–27)	7% (4–12)
North America	19% (10–32)	11% (7–17)
Latin America and Caribbean		
Caribbean	21% (16–27)	14% (10–18)
Andean Latin America	28% (22–35)	17% (13–22)
Central Latin America	17% (13–22)	10% (7–14)
Tropical Latin America	17% (11–27)	10% (6–15)
North Africa and Middle East	24% (18–32)	16% (12–22)
South Asia	29% (21–38)	21% (14–29)
Southeast Asia, east Asia, and Oceania		
East Asia	17% (9–29)	11% (5–23)
Southeast Asia	21% (14–31)	13% (8–21)
Oceania	47% (35–59)	33% (23–46)
Sub-Saharan Africa		
Central sub-Saharan Africa	40% (29–52)	34% (24–46)
Eastern sub-Saharan Africa	31% (25–38)	24% (19–30)
Southern sub-Saharan Africa	25% (18–35)	18% (12–26)
Western sub-Saharan Africa	21% (17–27)	14% (11–18)
World	24% (21–28)	16% (14–19)

UI=uncertainty interval.

Table 1: **Prevalence estimates of lifetime and past-year physical or sexual (or both) intimate partner violence among ever-married and partnered adolescent girls aged 15–19 years, by Global Burden of Disease region, 2018**

national-level data on the prevalence of child marriage (101 countries for lifetime and 105 countries for past-year intimate partner violence). All variables were standardised. Missing data analysis and collinearity diagnostics were conducted before the analyses. Bivariate analyses using Pearson's *r* and Spearman's rank correlation were done to examine the correlation between each of these country-level variables and the prevalence of lifetime and past-year intimate partner violence. Linear regression models were then used to explore how each of the country-level economic, educational, social, and political indicators (including child marriage), and the proportion of women in secondary education and higher education, were associated with the prevalence of lifetime and past-year intimate partner violence after controlling for other variables in the model. Given that the proportion of women in secondary education, prevalence of child marriage, and country income groupings are highly correlated, these were included in the models using stepwise linear regression. Sons' and daughters' equal rights to inherit assets from their parents, prohibition of discrimination in employment based on gender, domestic violence-related protection orders, tertiary education, primary education, and gross domestic product per capita were excluded from the multivariable models based on multicollinearity diagnostics. Two variables (the Gini index and equal access to justice for women) were omitted because they had more than 10% of missing values. 95% CIs were calculated for all coefficients. All analyses were conducted using SPSS (version 23), STATA (version 16), and R packages.

Role of the funding source

The funders of the study had no role in the study design, data collection, data analysis, data interpretation, or writing of the manuscript.

Results

The estimated prevalence of physical or sexual (or both) intimate partner violence among ever-partnered adolescent girls aged 15–19 years was 24% (95% UI 21–28) in their lifetime and 16% (14–19) in the past year, with wide variations across regions and countries (table 1; see appendix pp 4–8 for country estimates). The lifetime prevalence was highest in Oceania (47%, 95% UI 35–59), followed by central sub-Saharan Africa (40%, 29–52), eastern sub-Saharan Africa (31%, 25–38), and south Asia (29%, 21–38%; table 1). The prevalence was higher than the global average in Andean Latin America and southern sub-Saharan Africa, and similar to the global average in north Africa and the Middle East. The three regions with the lowest estimated prevalence of lifetime intimate partner violence among adolescent girls were central Europe, central Asia, and eastern Europe (table 1). However, even in these low-prevalence regions, on average, around one in ten girls aged 15–19 years were affected by this violence.

The highest prevalence of past-year physical or sexual intimate partner violence among ever-partnered adolescent girls aged 15–19 years was in central sub-Saharan Africa (34%, 95% UI 24–46), Oceania (33%, 23–46), eastern sub-Saharan Africa (24%, 19–30%), and south Asia (21%, 14–29; table 1). Regions with mostly high-income countries had the lowest estimated prevalence of past-year intimate partner violence among ever-partnered adolescent girls aged 15–19 years.

Prevalence of intimate partner violence against adolescent girls varies widely across countries, ranging from 6% to 49% in the lifetime and from 3% to 37% in the past year (appendix pp 4–8). Almost one in two ever-partnered adolescent girls in Papua New Guinea (49%, 95% UI 35–64), Kiribati (48%, 32–66), Solomon Islands (46%, 30–64), Fiji (46%, 30–63), and Vanuatu (46%, 30–63) have been subjected to physical or sexual violence by a husband or other intimate partner at least once in their lives (figure). Equatorial Guinea (43%, 28–60), Democratic

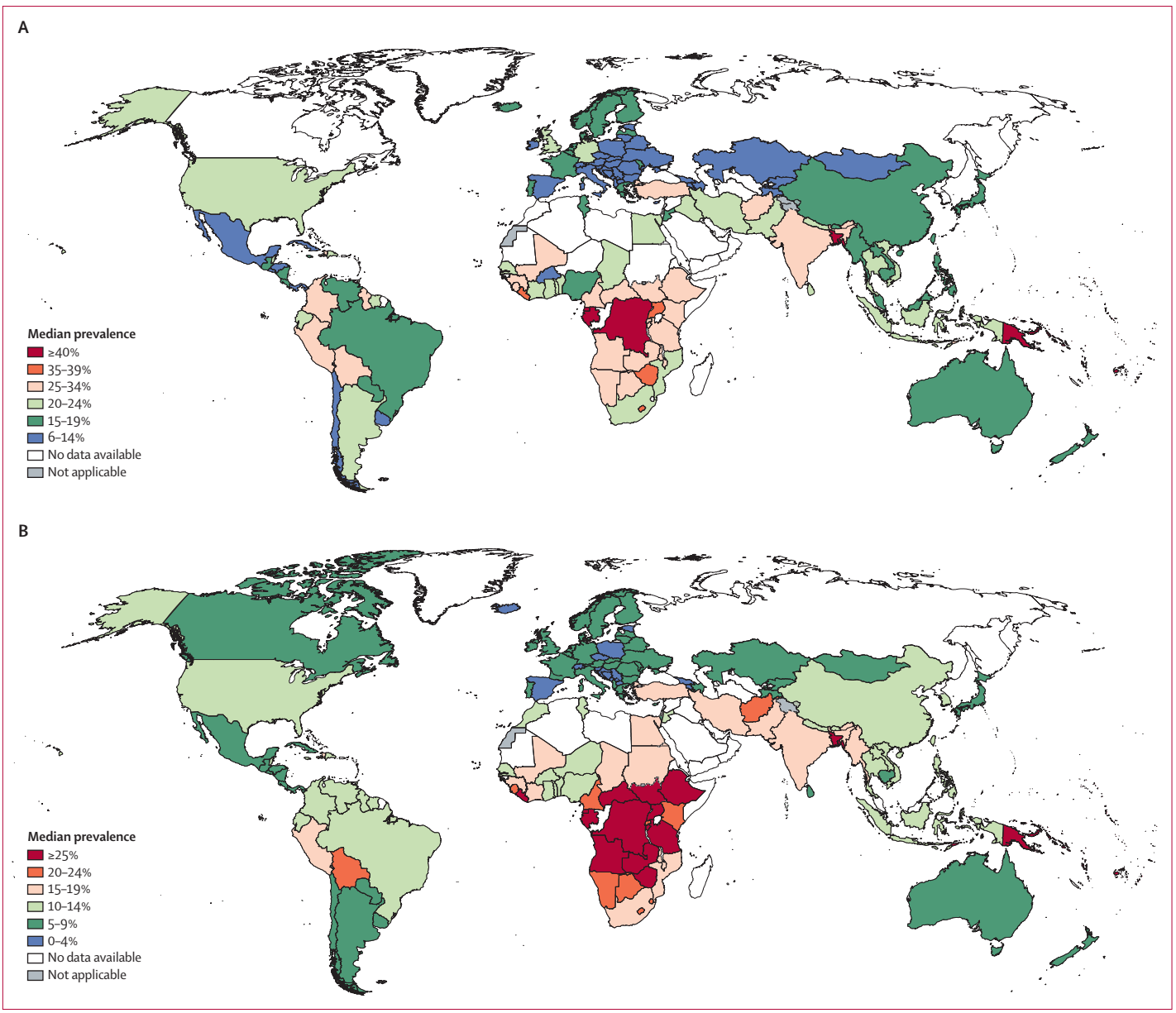

***Figure*: Prevalence estimates of (A) lifetime and (B) past-year physical or sexual (or both) intimate partner violence among ever-married or partnered adolescent girls aged 15–19 years, by country, 2018**

The full list of country prevalence estimates is shown in the appendix pp 4–8. Note: The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Republic of Congo (42%, 29–56), Bangladesh (41%, 29–54), Gabon (40%, UI 26–57), and Nauru (40%, 25–57) had similarly high lifetime prevalence of intimate partner violence (figure). The prevalence was higher than the global median in 48 countries, with a quarter or more adolescent girls in these countries having been subjected to this violence from an intimate partner before the age of 20 years. 26 countries had past-year prevalence estimates of 25% or higher, with estimates exceeding 30% in seven of these countries, mainly in sub-Saharan Africa and Oceania. Overall, countries with lower prevalence estimates were in Europe and other high-income regions; 15 European countries had a prevalence in the lowest median range of 0–4%.

The median prevalence of physical or sexual intimate partner violence against adolescent girls in the past year was higher than the average prevalence for women aged 15–49 years in most regions, except those with lower intimate partner violence prevalence overall (central Asia, central Europe, and eastern Europe; appendix p 9).

	Bivariate associations	Multivariable linear regression		
		Model 1	Model 2	Model 3
Educational and employment factors				
Proportion of women enrolled in secondary education	−0·45 (−0·64 to −0·25)	..	−0·30 (−0·58 to 0·03)	−0·33 (−0·68 to 0·03)
Proportion of women enrolled in tertiary education	−0·47 (−0·66 to −0·27)	..	..	..
Proportion of women enrolled in primary education	0·08 (−0·13 to 0·28)	..	..	..
Labour force participation of women	0·14 (−0·01 to 0·04)	0·09 (−0·10 to 0·26)	0·04 (−0·15 to 0·23)	0·04 (−0·16 to 0·23)
Economic factors				
World Bank Income groups (ref: low income)	−0·26 (−0·59 to −0·09)	..	..	..
Lower-middle income	..	..	..	0·10 (−0·25 to 0·44)
Upper-middle income	..	..	..	0·01 (−0·40 to 0·42)
High-income	..	..	..	0·16 (−0·24 to 1·05)
Gross domestic product per capita	−0·30 (−0·49 to −0·11)	..	..	..
Gini index	−0·17 (−0·04 to 0·38)	..	..	..
Political factors				
Proportion of seats held by women in national parliaments	−0·11 (−0·31 to 0·09)	−0·01 (−0·23 to 0·22)	−0·01 (−0·25 to 0·22)	0·01 (−0·23 to 0·25)
Proportion of women in ministerial level positions	−0·11 (−0·31 to 0·10)	−0·09 (−0·31 to 0·13)	−0·06 (−0·29 to 0·18)	−0·08 (−0·32 to 0·16)
Access to justice for women	−0·27 (−0·62 to −0·08)	..	..	..
Women's economic rights				
Equal ownership rights to immovable property for men and women	−0·36 (−0·54 to −0·17)	−0·31 (−0·52 to −0·11)	−0·27 (−0·49 to −0·05)	−0·27 (−0·50 to −0·04)
Sons and daughters have equal rights to inherit assets	−0·13 (−0·34 to 0·01)	..	..	..
Prohibition of gender-based discrimination in employment	−0·19 (−0·39 to 0·01)	..	..	..
Legislative factors				
Criminal penalties for domestic violence	−0·01 (−0·22 to 0·19)	0·15 (−0·08 to 0·38)	0·13 (−0·11 to 0·37)	0·13 (−0·11 to 0·37)
Criminalisation of marital rape	−0·09 (−0·29 to 0·11)	−0·08 (−0·31 to 0·15)	0·01 (−0·25 to 0·26)	0·03 (−0·23 to 0·28)
Domestic violence-related protection orders	−0·24 (−0·43 to −0·04)	..	..	..
Harmful practices				
Prevalence of child marriage	0·33 (0·15 to 0·52)	0·27 (0·07 to 0·47)	0·11 (−0·15 to 0·36)	0·12 (−0·15 to 0·39)
Adjusted R^2	..	0·17	0·20	0·20

Data are coefficient (95% CI)—a negative coefficient indicates that an increase in the value of the explanatory variable is associated with a decrease in the value of the outcome variable and vice versa; a positive coefficient indicates that an increase in the value of the explanatory variable is associated with an increase in the value of the outcome variable, and vice versa. The individual models contained the variables for which the estimates in each respective model column are shown. Sons' and daughters' equal rights to inherit assets, prohibition of discrimination in employment based on gender, domestic violence-related protection orders, tertiary education, primary education, and gross domestic product per capita were excluded from the model based on multicollinearity diagnostics. Two variables (the Gini index and equal access to justice for women variables) were omitted because they had more than 10% of missing values.

Table 2: **Country-level correlates of lifetime prevalence of physical or sexual (or both) intimate partner violence against ever-partnered adolescent girls aged 15–19 years, bivariate associations and multivariable linear regression**

Bivariate associations of country-level correlates indicated that a higher proportion of female tertiary and secondary school enrolment, gross domestic product per capita, access to justice for women, the existence of equal property rights for women, and protection orders within domestic violence law were correlated with lower prevalence of lifetime and past-year physical or sexual intimate partner violence against ever-partnered adolescent girls aged 15–19 years (table 2, table 3). A higher prevalence of child marriage was associated with a higher prevalence of both lifetime and past-year intimate partner violence against adolescent girls. Country-level educational factors, particularly the proportion of women enrolled in secondary and tertiary education, had the strongest association with national prevalence of both lifetime and past-year physical or sexual intimate partner violence.

Education, national income, access to justice for women, and existence of protection orders had a stronger association with past-year intimate partner violence prevalence than with lifetime prevalence at the country level. Conversely, child marriage have a slightly higher correlation with lifetime prevalence than with past-year prevalence. Political factors related to women's share of seats in national parliaments and at the ministerial level had a weak negative association with both lifetime and past-year prevalence of intimate partner violence.

Table 2 and table 3 also present the multivariable linear regression analyses that examined which of the

	Bivariate associations	Multivariable linear regression		
		Model 4	Model 5	Model 6
Educational and employment factors				
Proportion of women in secondary education	−0·49 (−0·65 to −0·30)	..	−0·43 (−0·67 to −0·15)	−0·44 (−0·75 to −0·01)
Proportion of women in tertiary education	−0·51 (−66 to −0·31)	..	..	..
Proportion of women in primary education	0·06 (−0·14 to 0·24)	..	..	..
Labour force participation of women	0·13 (−0·01 to 0·04)	0·12 (−0·07 to 0·29)	0·06 (−0·13 to 0·23)	0·07 (−0·13 to 0·24)
Economic factors				
World Bank Income groups (ref: low income)	−0·30 (−0·59 to −0·20)	..	..	..
Lower-middle income	..	..	..	0·20 (-0·12 to 0·47)
Upper-middle income	..	..	..	0·05 (−0·31 to 0·39)
High-income	..	..	..	0·10 (−0·33 to 0·85)
Gross domestic product per capita	−0·34 (−0·47 to −0·13)	..	..	..
Gini index	0·18 (−0·03 to 0·37)	..	..	..
Political factors				
Proportion of seats held by women in national parliaments	−0·11 (−0·30 to 0·08)	−0·04 (−0·25 to 0·18)	−0·05 (−0·26 to 0·17)	−0·03 (−0·25 to 0·19)
Proportion of women in ministerial level positions	−0·10 (−0·28 to 0·10)	−0·05 (−0·26 to 0·17)	−0·01 (−0·22 to 0·21)	0·01 (−0·22 to 0·23)
Access to justice for women	−0·32 (−0·62 to −0·14)	..	..	..
Women's economic rights				
Equal ownership rights to immovable property for men and women	−0·36 (−0·51 to −0·17)	−0·30 (−0·48 to −0·08)	−0·24 (−0·43 to −0·03)	−0·23 (−0·43 to −0·01)
Sons and daughters have equal rights to inherit assets	−0·12 (−0·30 to 0·08)	..	..	..
Prohibition of gender-based discrimination in employment	−0·13 (−0·32 to 0·06)	..	..	..
Legislative factors				
Criminal penalties for domestic violence	−0·05 (−0·24 to 0·14)	0·15 (−0·07 to 0·37)	0·13 (−0·10 to 0·35)	0·11 (−0·12 to 0·33)
Criminalisation of marital rape	−0·16 (−0·34 to 0·04)	−0·15 (−0·37 to 0·08)	-0·03 (−0·26 to 0·21)	−0·01 (−0·24 to 0·24)
Domestic violence-related protection orders	−0·27 (−0·44 to 0·08)	..	..	..
Harmful practices				
Prevalence of child marriage	0·30 (0·10 to 0·43)	0·21 (−0·01 to 0·36)	−0·03 (−0·25 to 0·20)	0·01 (−0·23 to 0·24)
Adjusted R^2	..	0·15	0·23	0·23

Data are coefficient (95% CI)—a negative coefficient indicates that an increase in the value of the explanatory variable is associated with a decrease in the value of the outcome variable and vice versa; a positive coefficient indicates that an increase in the value of the explanatory variable is associated with an increase in the value of the outcome variable and vice versa. The individual models contained the variables for which the estimates in each respective model column are shown. Sons' and daughters' equal rights to inherit assets, prohibition of discrimination in employment based on gender, domestic violence-related protection orders, tertiary education, primary education, and gross domestic product per capita were excluded from the model based on multicollinearity diagnostics. Two variables (the Gini index and equal access to justice for women variables) were omitted because they had more than 10% of missing values.

Table 3: **Country-level correlates of past-year prevalence of physical or sexual (or both) intimate partner violence against ever-partnered adolescent girls aged 15–19 years, bivariate associations and multivariable linear regression**

nine country-level factors were significantly associated with the prevalence of intimate partner violence against adolescent girls after accounting for other factors. Similar contextual factors were associated with the prevalence of both lifetime and past-year intimate partner violence. Model 1 (lifetime) and Model 4 (past-year) indicated that countries with a higher prevalence of child marriage (eg, sub-Saharan Africa, south Asia, and Latin America and the Caribbean) were also more likely to have higher lifetime and past-year prevalence of intimate partner violence against adolescent girls. There was strong evidence that the variable included in the model to represent women's economic rights, equal property rights for women and men, was associated with lower lifetime and past-year prevalence of intimate partner violence against adolescent girls in all six models. Of all the educational and employment, economic, political, and legislative factors considered, the proportion of female enrolment in secondary education in a country had the strongest association with both lifetime and past-year prevalence of intimate partner violence against adolescent girls (Models 2, 5 and 6). The addition of this educational variable in the model greatly reduced the coefficients of child marriage.

Discussion

We found a wide variation in the lifetime and past-year prevalence of physical or sexual intimate partner violence

against adolescent girls across countries and geographical regions. Nearly half of ever-partnered adolescent girls living in Oceania, central and eastern sub-Saharan Africa, and south Asia have been subjected to such violence at least once in their lives, and close to one in three adolescent girls have such experiences within the past 12 months. These findings show that, in many regions, adolescent girls could be at high risk of recently or currently experiencing physical or sexual violence by a husband or other intimate partner. Low-income and lower-middle-income countries had the highest lifetime and past-year prevalence of intimate partner violence against adolescent girls aged 15–19 years. This prevalence mirrors the geographical patterns in the prevalence of intimate partner violence among ever-partnered women aged 15–49 years, indicating that intimate partner violence starts early in the lives of women and girls.[1–3]

These differences between high-income and lower-income regions are starker in relation to intimate partner violence within the past year as compared with the lifetime prevalence. The relative differences between lifetime and past-year prevalence were smaller in low-income and middle-income countries and regions.

Our findings highlighted that, in most regions, the prevalence of intimate partner violence in the past 12 months was higher among adolescent girls compared with women aged 15–49 years. These findings probably reflect the challenges that adolescents could face in leaving abusive relationships in resource-constrained settings because of societal stigma and lack of resources, family support, and knowledge of or access to support services.[2–4,8–10] Although many women of all ages face these challenges, these factors are particularly relevant to, and exacerbate the vulnerability of, adolescent girls in abusive relationships. The findings can also be explained by the rate of partnership formation during those years, which is highly variable between countries.[17]

Adolescence is a crucial developmental phase when young people are exploring notions of healthy relationships and conflict resolution skills,[1,4,27–29] and when harmful gender stereotypes are either reinforced or challenged.[1,4,27–29] The substantial short-term and long-term problems associated with intimate partner violence—such as adolescent pregnancy, unsafe abortion, injuries, depression, and anxiety—have been well documented. These can also negatively affect educational and future employment opportunities.[5] The prevalence of this violence and its potential effects on the lives of adolescent girls emphasise the urgency of evidence-based early prevention interventions, strategies, and policies.

Our findings also indicate that contextual social, economic, and political factors are associated with the prevalence of intimate partner violence. Child marriage emerged as an important factor. Although, globally, the percentage of marriages before age 18 years among women has been gradually decreasing during the past decade, child marriage remains widespread in sub-Saharan Africa (35%), south Asia (30%), Latin America and the Caribbean (24%), the Middle East and north Africa (17%), and east and central Asia (12%).[17] These regions also have the highest lifetime and past-year prevalence of intimate partner violence. Child marriage—an important country-level indicator of gender inequality—is often underpinned by the same inequitable gender norms that perpetuate violence against women and girls.[4,21,30] The practice of child marriage often co-exists with other practices that discriminate against women and girls, such as dowry and bride price, which might be an additional incentive for poor families with no or little access to education to marry off their daughters early.[4,21,31] Child marriage is commonly characterised by spousal age gaps (girls married to older men), with power imbalances that can increase the likelihood of abuse.[10,21] All of these factors, in addition to leaving school early, pregnancy, being an adolescent mother, and taking on domestic responsibilities, exacerbate economic and social dependency and represent potential pathways for intimate partner violence. They are also barriers to adolescent girls and women leaving abusive relationships.[9,10]

National female secondary education enrolment rate, which is a measure of women's empowerment and indicative of gender equality in a country, was an important factor associated with a country's past-year prevalence of intimate partner violence against adolescent girls. Furthermore, our results indicate that the correlation between education and a lower prevalence of intimate partner violence also weakens the association between child marriage and intimate partner violence. This important finding indicates that, at the population level, in societies in which a larger proportion of women and girls have access to secondary education, the association of child marriage with intimate partner violence among adolescent girls could be reduced. Education is an essential tool for challenging the societal acceptance of intimate partner violence, equips girls with greater agency (including in decision-making), and provides greater opportunities for economic independence and autonomy, which are all factors that are associated with lower levels of intimate partner violence in adolescence and adulthood.[6] In addition, at both individual and societal levels, educated adolescent girls and young women could be more likely to recognise and label their experiences as abuse and more able to exit violent relationships. Further investigation and a more in-depth exploration of these associations and pathways are warranted to assess potential implications for policy and programming.

Lifetime and past-year prevalence of intimate partner violence was lower in countries with more gender-equitable rights for women to immovable property. These findings are consistent with those of other individual studies and ecological studies on the drivers of intimate partner violence against adult women.[6] The studies suggest that enabling women's equitable access

to economic resources and ensuring women's economic rights are likely to contribute to reducing intimate partner violence, including by giving them the ability to leave abusive relationships.[6,10,18]

Of the three legislative factors included in the model, domestic violence-related protection orders was the only factor that had a significant correlation with the prevalence of intimate partner violence in our study. However, having laws against violence against women and enacting minimum marriage age legislation is important in itself, including for raising awareness and showing a government's commitment to tackling violence against women and child marriage. However, the quality, comprehensiveness and, most importantly, implementation of the law is necessary to make it useful.[29,32,33] There are 39 countries where the legal age of marriage is over 18 years for both men and women and 155 countries with laws on domestic violence, and yet there is widespread prevalence of child marriage and of intimate partner violence, including against adolescent girls. This gap highlights the importance of enacting effective legislation alongside other interventions, including those challenging discriminatory gender norms, and ensuring access to education and economic opportunities to reduce and ultimately eliminate violence against women, including intimate partner violence.

Our analyses rely on existing data from violence against women surveys and on contextual factors with their accompanying limitations, including reliance on self-reporting. The modelled estimates and uncertainty intervals presented in this study are the most accurate that could be derived from the 2000–18 prevalence data available in the WHO Global Database on Prevalence of Violence Against Women.[1]

The robustness of the metadata was carefully assessed before deciding on the data source for the specific country-level contextual factors. Nonetheless, we were constrained by the reliability of existing metadata. We addressed this challenge by triangulating data sources and conducting rigorous scrutiny of coding procedures, decision trees, and technical papers preceding decisions to use indices and sub-indices.

Another limitation in the estimation of intimate partner violence prevalence is that the definition of partnership is particularly challenging for adolescent girls and young women and more likely to be variable across contexts. We relied on the definition used in the survey or study: all women, currently-partnered women, and ever-partnered or married women. Although most studies for both lifetime (85%) and past-year (80%) intimate partner violence used the appropriate denominator of ever-partnered or married women, the conceptualisation of what a partnership is (eg, living in a union) might still differ. Further, some studies might not have captured all partnership types, and this could have affected our prevalence estimates among adolescent and younger women.

Although we recognise that stratified analyses of the burden of intimate partner violence for the age groups of 15–17 years versus 18–19 years are important given the potential differential effects of age, the vast majority of surveys report information for 5-year age bands. Future studies should be encouraged to report intimate partner violence estimates at finer levels of age disaggregation, especially for younger age cohorts to further our understanding of violence during this rapidly changing period of young women's life.

As this study draws on country-level metadata and macro-level analyses to understand the contextual factors associated with intimate partner violence against adolescent girls, we do not present the multilevel analyses of the independent influence of individual-level and contextual-level factors. Results should be interpreted in light of limitations that could be related to ecological fallacy. The results do not establish causation or temporal associations between the factors and intimate partner violence, as the data used are cross-sectional and analyses are done at the macro level. However, the findings from these ecological analyses have identified country-level factors associated with intimate partner violence among adolescent girls, which can be useful as a starting point for generating hypotheses on potential mechanisms linking these factors to intimate partner violence.

Despite these limitations, these analyses are based on the largest study of the prevalence of intimate partner violence against adolescent girls to date. The surveys informing the estimates were standardised and mostly nationally representative and population-based, had high response rates, and used act-based measures in their questionnaires. This study is one of the first to establish the extent and prevalence of intimate partner violence against adolescent girls across 161 countries and covering all geographical regions. This is also, to our knowledge, the first study to date that examines the role of country-level contextual factors associated with the prevalence of intimate partner violence against adolescent girls across 105 countries.

The study highlights the alarming prevalence of violence against adolescent girls by male partners. The association of child marriage with physical or sexual intimate partner violence among adolescent girls underlines the urgent need to combat child marriage, implement programmes and policies to support girls who are married before age 18 years, and ensure that all adolescent girls and women have the resources to leave abusive relationships. These findings emphasise the need for strengthening national policies to protect and promote gender equality and economic and inheritance rights for women, expand educational opportunity through policies and programmes that support girls' secondary and higher education, and change harmful gender and other social norms that perpetuate the practice of child marriage and condone or reinforce violence against women and girls.

This study also highlighted some gaps in current evidence on intimate partner violence and adolescent girls that would benefit from further research. National data, although useful for global comparisons, often hide important within-country variations. Countries should conduct subnational analyses and identify modifiable factors that can be targeted at local levels to reduce intimate partner violence among adolescent girls. Future studies should further disaggregate and report data for this age group, given their rapidly changing circumstances and development. Analyses of the drivers of intimate partner violence among adolescent girls by geographical regions could help to better understand the differential impact of these macro-level factors between regions. Further in-depth investigations with rigorous study designs are warranted to robustly assess the effect of contextual and multilevel risk and protective factors, pathways, and causal mechanisms that can inform the development of more nuanced evidence-based prevention and response policy and programming. Finally, further methodological work on the conceptualisation and measurement of partnerships, beyond co-habitation, is warranted to address any under-estimation of the extent, experiences, and impact of intimate partner violence against adolescent girls.

It is evident that no country is on track to eliminate violence against women and girls or to end the harmful practice of child marriage by the 2030 Sustainable Development Goal target date. Political will and social investments into evidence-based prevention interventions and support services for women are essential to address and reduce violence against women and girls.

Contributors

LS and CG-M conceptualised the study and contributed to the study design. LS conducted the data extraction and curation, investigation, methodology, validation, formal analyses, visualisation, and writing of the original draft. IY-K contributed to the study design, data extraction, data curation, investigation, formal analysis, investigation, visualisation, and writing. MM-G contributed to the investigation, methodology, formal analysis of the intimate partner violence prevalence estimates. CG-M contributed to the funding acquisition and data validation. All authors reviewed and edited the manuscript, approved the final version, had full access to all the data in the study, and had final responsibility for the decision to submit for publication.

Declaration of interests

We declare no competing interests.

Data sharing

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Acknowledgments

IY-K is a consultant with the Department of Sexual and Reproductive Health and Research at WHO. MM-G's research programme is funded by a Tier 2 Canada Research Chair in Population Health Modelling, outside of the submitted work. We thank the UN Inter-Agency Working Group on Violence Against Women Estimation and Data, and the independent external Technical Advisory Group to the UN Inter-Agency Working Group on Violence Against Women Estimation and Data for reviewing and guiding the process of developing the 2018 violence against women global, regional, and national prevalence estimates. The authors alone are responsible for the views expressed in this Article, and they do not necessarily represent the views, decisions, or policies of Hacettepe University, McGill University, or WHO. This study was funded by the UK Department for International Development (now Foreign Commonwealth and Development Office) through the UN Women–WHO Joint Programme on Strengthening Violence Against Women Data and by the UNDP-UNFPA-UNICEF-WHO-World Bank Special Programme of Research, Development and Research Training in Human Reproduction, which is a co-sponsored programme executed by WHO.

References

1 WHO. Violence against women prevalence estimates, 2018. 2021. https://www.who.int/publications/i/item/9789240022256 (accessed Nov 4, 2023).
2 Sardinha L, García-Moreno C, Guthold R. Global estimated prevalence of physical and/or sexual intimate partner violence against ever-partnered women, by age, 2018. *J Adolesc Health* 2022; **70:** 846–47.
3 Sardinha L, Maheu-Giroux M, Stöckl H, Meyer SR, García-Moreno C. Global, regional, and national prevalence estimates of physical or sexual, or both, intimate partner violence against women in 2018. *Lancet* 2022; **399:** 803–13.
4 Stöckl H, March L, Pallitto C, Garcia-Moreno C. Intimate partner violence among adolescents and young women: prevalence and associated factors in nine countries: a cross-sectional study. *BMC Public Health* 2014; **14:** 751.
5 WHO. Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence. 2013. https://iris.who.int/bitstream/handle/10665/85239/9789241564625_eng.pdf?sequence=1 (accessed Nov 4, 2023).
6 Heise LL, Kotsadam A. Cross-national and multilevel correlates of partner violence: an analysis of data from population-based surveys. *Lancet Glob Health* 2015; **3:** e332–40.
7 Hindin MJ, Kishor S, Ansara DL. Intimate partner violence among couples in 10 DHS countries: predictors and health outcomes. DHS Analytical Studies No. 18. Calverton (MD): Macro International; 2008.
8 Capaldi DM, Knoble NB, Shortt JW, Kim HK. A systematic review of risk factors for intimate partner violence. *Partn Abus* 2012; **3:** 231–80.
9 Hayes BE, Protas ME. Child marriage and intimate partner violence: an examination of individual, community, and national factors. *J Interpers Violence* 2022; **37:** NP19664–87.
10 Kidman R, Kohler HP. Emerging partner violence among young adolescents in a low-income country: perpetration, victimization and adversity. *PLoS One* 2020; **15:** e0230085.
11 Heise LL. Violence against women: an integrated, ecological framework. *Violence Against Women* 1998; **4:** 262–90.
12 Hagemann-White C, Kavemann B, Kindler H, et al. Factors at play in the perpetration of violence against women, violence against children and sexual orientation violence. 2010. https://www.humanconsultancy.com/assets/factor-model-en/index.html (accessed Dec 29, 2024).
13 North DC. Institutions. *J Econ Perspect* 1991; **5:** 97–112.
14 Organisation for Economic Cooperation and Development (OECD). Social institutions and gender index. 2023. https://www.oecd.org/stories/gender/social-norms-and-gender-discrimination/sigi (accessed Dec 18, 2023).
15 UN Department of Economic and Social Affairs. Sustainable Development. The 17 Goals. 2024. https://sdgs.un.org/goals (accessed July 2, 2024).
16 United Nations Population Fund (UNFPA). Accelerating the promise: the report on the Nairobi summit on ICPD25. 2019. https://www.unfpa.org/publications/accelerating-promise-report-nairobi-summit-icpd25 (accessed Dec 29, 2022).
17 UNICEF. Child marriage. 2023. https://data.unicef.org/topic/child-protection/child-marriage (accessed Nov 4, 2023).

18 Silverman JG, Raj A, Clements K. Dating violence and associated sexual risk and pregnancy among adolescent girls in the United States. *Pediatrics* 2004; **114:** e220–25.

19 Stöckl H, Sardinha L, Maheu-Giroux M, Meyer SR, García-Moreno C. Physical, sexual and psychological intimate partner violence and non-partner sexual violence against women and girls: a systematic review protocol for producing global, regional and country estimates. *BMJ Open* 2021; **11:** e045574.

20 Maheu-Giroux M, Sardinha L, Stöckl H, et al. A framework to model global, regional, and national estimates of intimate partner violence. *BMC Med Res Methodol* 2022; **22:** 159.

21 Malhotra A, Elnakib S. Evolution in the evidence of base child marriage 2000–2019. https://www.unfpa.org/sites/default/files/resource-pdf/Child-marriage-evidence-report-2021.pdf (accessed March 23, 2022).

22 Council of Europe (CoE). *Forced marriages and child marriages*. 2005. https://rm.coe.int/090000168079eff8 (accessed Nov 4, 2023).

23 United Nations. Report of the special rapporteur on contemporary forms of slavery, including its causes and consequences, Gulnara Shahinian. Thematic report on servile marriage. 2012. https://www.ohchr.org/sites/default/files/Documents/HRBodies/HRCouncil/RegularSession/Session21/A-HRC-21-41_en.pdf (accessed Nov 4, 2023).

24 United Nations Fund for Population (UNFPA). Marrying too young end child marriage. 2012. https://www.unfpa.org/sites/default/files/pub-pdf/MarryingTooYoung.pdf (accessed Nov 4, 2023).

25 Sexual Rights Initiative (SRI). Analysis of the language of child, early and forced marriages. 2013. https://www.sexualrightsinitiative.org/sites/default/files/resources/files/2019-05/SRI-Analysis-of-the-Language-of-Child-Early-and-Forced-Marriages-Sep2013.pdf (accessed Nov 4, 2023).

26 IAPB Vision Atlas. About GBD regions and super regions. 2021. https://www.iapb.org/learn/vision-atlas/about/definitions-and-regions (accessed Nov 4, 2023).

27 Kågesten A, Gibbs S, Blum RW, et al. Understanding factors that shape gender attitudes in early adolescence globally: a mixed-methods systematic review. *PLoS One* 2016; **11:** e0157805.

28 WHO. Health for the world's adolescents: a second change in the second decade. 2014. https://www.who.int/publications/i/item/WHO-FWC-MCA-14.05 (accessed Nov 4, 2023).

29 Sardinha L, Nájera Catalán HE. Attitudes towards domestic violence in 49 low- and middle-income countries: a gendered analysis of prevalence and country-level correlates. *PLoS One* 2018; **13:** e0206101.

30 Equal Measures 2030. SDG gender index. https://www.equalmeasures2030.org/2022-sdg-gender-index/index-findings (accessed March 5, 2024).

31 Naved RT, Kalra S, Talukder A, et al. An exploration of social norms that restrict girls' sexuality and facilitate child marriage in Bangladesh to inform policies and programs. *J Adolesc Health* 2022; **70:** S17–21.

32 Women UN. Legislating and enforcing the minimum age of marriage: a comparative study of experiences and lessons learned in ending the legalization of child marriage. 2023. https://www.unwomen.org/sites/default/files/2023-09/legislating-and-enforcing-the-minimum-age-of-marriage-a-comparative-study-of-experiences-and-lessons-learned-en.pdf (accessed Nov 4, 2023).

33 Center for Global Development. Do age-of-marriage laws work? Evidence from a large sample of developing countries—working paper 458. 2023. https://www.cgdev.org/publication/do-age-marriage-laws-work-evidence-large-sample-developing-countries (accessed Nov 4, 2023).