

# Improving understanding of patterns and trends in child marriage

UNFPA is taking a fresh approach to analysing data that can help countries better target action to eliminate child marriage. The key is combining age-specific risks of child marriage with population age structure.



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## MEASURING THIS HARMFUL PRACTICE



### Child marriage is a human rights violation.

Despite laws against it, the practice remains widespread: Globally, one in every five girls is formally married or in an informal union, before reaching age 18. For a girl, marriage can mean the end of her education, derail her chances of a vocation or career, expose her to violence and steal from her the chance to make foundational life choices. Girls pressed into child marriage often become pregnant while still adolescents, increasing the risk of complications in pregnancy or childbirth. These complications are the leading cause of death among older adolescent girls. Ending child marriage is a priority for many governments, civil society organizations and activists across the world.



### Measuring child marriage is essential to our efforts to end this harmful practice.

UNFPA has applied a research method that breaks down child marriage incidence by age, resulting in more sensitive and specific information than the summary measures yielded by the traditional approach used to measure progress towards Target 5.3 of the Sustainable Development Goals.<sup>1</sup> The research is based on Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) from 98 low- and middle-income countries (LMICs), with most data collected between 2015 and 2020.

<sup>1</sup> Liang M, Simelane S, Chalasani S, Snow R. 2021. New estimations of child marriage: Evidence from 98 low- and middle-income countries. PLoS ONE 16(10):e0258378. <https://doi.org/10.1371/journal.pone.0258378>

**Why an alternative measure?** More precise estimates of the incidence of marriage at different agencies and the numbers of girls at risk allows for more efficient resource allocation for effective action to end child marriage.

- Analysis based on age-specific risks plus population age structure – known as survival analysis – allows for better understanding of trends in child marriage over time than the method associated with SDG Indicator 5.3.1, proportion of women aged 20–24 who were married or in a union before age 15 and before age 18.
- Survival analysis is sensitive enough to detect recent declines, both small and large, to provide information for impact measurement of programme interventions.
- Survival analysis provides a better understanding not only of the age patterns in child marriage rates, but potentially more precise estimates of the absolute numbers of girls at risk of child marriage. When policymakers and programme implementers can see at which ages child marriage accelerates, they can put in place preventive interventions before this time.



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**Child marriage** is defined as a formal marriage or informal union in which one or both of the parties are under 18 years of age. Child marriage is a harmful practice rooted in gender inequality and primarily affecting girls, with negative impacts on their health and education, circumscribing their opportunities and their potential.

## METHODOLOGY



### Objectives of the UNFPA survival analysis to measure child marriage:

- Estimate age-specific marriage hazard rates among girls before age 18; and
- Estimate the number of girls that were married before age 18 in 2020.

The analysis starts with the latest available data on current marital status and age at first marriage among women aged 15–19 years in 98 countries to generate retrospective age-specific proportions of women who entered into marriage or consensual unions for the first time between age 0 to 17. The proportions of women marrying at a single age are then converted to age-specific probabilities and conditional age-specific marriage rates for the same age range. Survival time is assumed to begin at birth and ends when the individual gets married or in union before age 18 and it is assumed that observed rates of child marriage in a given country at the time of the survey that is included in the analysis remain constant until 2020.

The retrospective age-specific proportions of married women are applied to the 2019 World Population Prospects' (WPP)<sup>2</sup> estimates of the female population at single year ages (from age 0 to 17) in each country to derive expected numbers of women who were unmarried (at the risk of child marriage) in these countries in 2020. The age-specific marriage rates are applied to the estimated numbers of unmarried women to derive the number of women married at a given age, on the assumption that the age-specific marriage rates observed in the most recently available DHS or MICS would still apply in 2020.

The research is published in the journal PLoS ONE: [New estimations of child marriage: Evidence from 98 low- and middle-income countries](#) (2021).

2 United Nations Department of Economic and Social Affairs. 2019. World Population Prospects: The 2019 Revision [Internet]. New York. Available from: <https://population.un.org/wpp/>



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**Target 5.3 of the Sustainable Development Goals** calls for countries to eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation. Progress is measured using Indicator 5.3.1, proportion of women aged 20–24 who were married or in a union before age 15 and before age 18.

The new estimates using the survival analysis are also compared with the estimates using a widely adopted “direct method”. This direct method applies the SDG Indicator “proportion of women aged 20–24 marrying before age 18” directly to the appropriate population group, in this case, the estimated number of women aged 18 in 2020 from the 2019 WPP. The direct method is a summary statistic of the prevalence of child marriage and does not provide a detailed picture of the incidence of marriage and informal unions among girls at different ages of childhood.

## WHAT WE LEARNED

The disaggregation of incidence by age has revealed the extent of the problem among the younger girls, where action is the most urgent and impactful. In contrast to the traditional approach (direct method), survival analysis reveals higher estimates for countries with constant or slightly rising child marriage rates, especially in countries with rapid population growth. Survival analysis also reveals lower estimates for countries with a rapid decrease in child marriage.

- The vast majority of girls remain unmarried until age 10.
- Child marriage rates increase gradually until age 14 and accelerate significantly thereafter at ages 15, 16 and 17.
- The majority of child marriage occurs in middle adolescence, pointing to the need for intervention in early adolescence.
- Regional variations indicate that the rate of child marriage starts to escalate only at age 16 and beyond in European countries, while in some sub-Saharan countries the rate accelerates as early as age 12.
- Overall, in the 98 LMICs, the survival analysis method yields an estimated number of girls marrying before age 18 of 7.08 million in 2020, lower than the 9.78 million using the SDG measurement for the same year.
- Relative to the traditional method, estimates are higher in countries with constant or slightly rising child marriage rates, due in part to the increase in population size of younger cohorts in these countries.
- Relative to the traditional method, estimates are lower in countries where child marriage shows a rapid decrease, especially among younger cohorts.

For complete results, please see the full journal article:

Liang M, Simelane S, Chalasani S, Snow R (2021). New estimations of child marriage: Evidence from 98 low- and middle-income countries. PLOS ONE 16(10): e0258378.

Available from: <https://doi.org/10.1371/journal.pone.0258378>

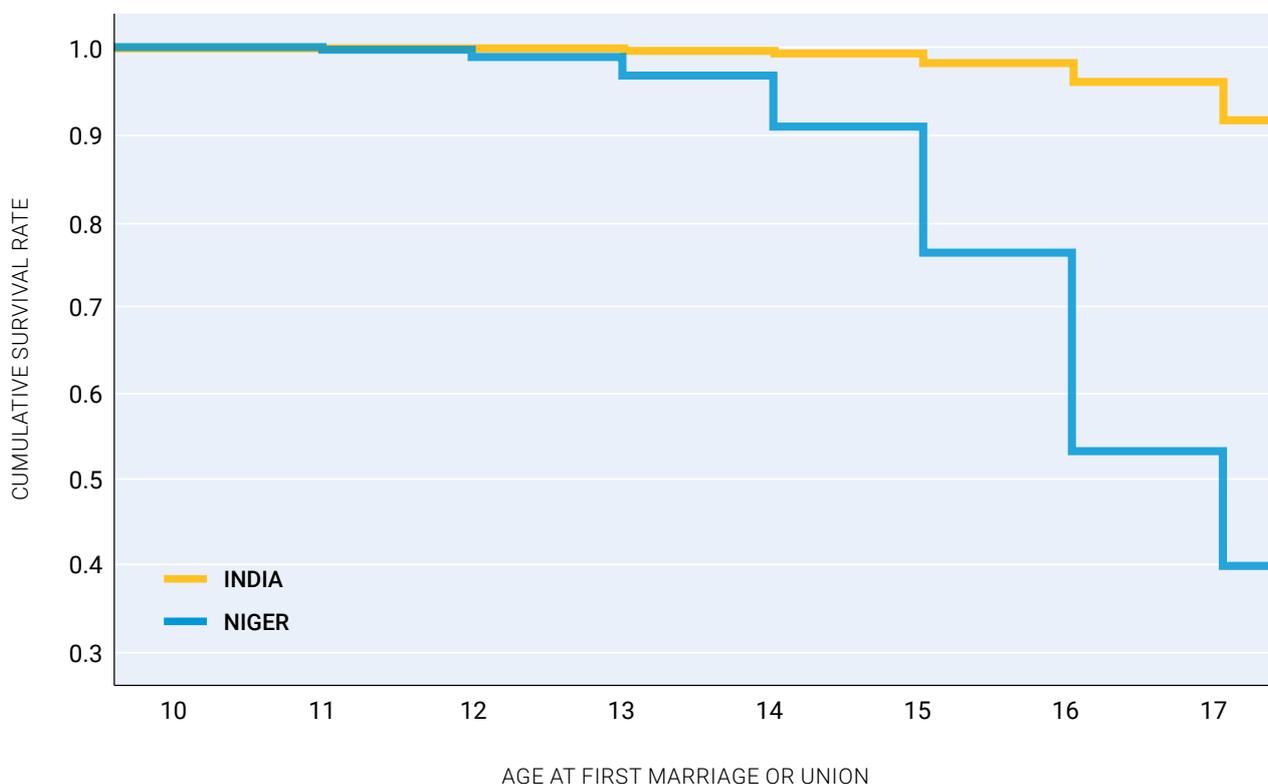
## A CLOSER LOOK AT THE RESULTS IN TWO COUNTRIES

Niger has the highest prevalence of child marriage, with more girls marrying and at younger ages than in any other of the 98 countries studied. India has the largest number of child brides due to the overall population size of young girls. Table 1 gives a snapshot of results from the two countries. Figure 1 provides a graphical representation of marriage survival curves.

Table 1: Child marriage in Niger and India	NIGER	INDIA
Percentage of girls who reach age 18 without being married	26%	84%
Age-specific marriage rate (out of every 100 girls)	17 marry between age 14 and 15 40 marry between age 17 and 18	1 marries between age 14 and 15 9 marry between age 17 and 18
Age at which number of child brides peaks	16.26 years	17 years
Data source	Demographic and Health Survey 2012	National Family Health Survey 2015–16

Figure 1: Observed marriage survival functions in Niger and India, latest data

A greater proportion of girls in Niger are married at each age than in India, with a widening gap across adolescence in the proportion of girls remaining unmarried.



Source: <https://doi.org/10.1371/journal.pone.0258378.g002>  
 Analysis based on weighted data (sample size ranged from 1,830 in Niger to 121,533 in India)

## MORE GRANULAR INFORMATION FOR POLICIES AND PROGRAMMES

The analytical power provided by survival analysis techniques in the study of child marriage equips policymakers and programme managers with granular information about age-specific risks in individual countries, and the changing numbers of girls at risk where population growth is especially high. The rising absolute numbers of girls at risk is of crucial importance to policymakers, highlighting where accelerated interventions are needed to eliminate these practices by 2030.

**From the results presented, it is clear that intervention around age 10, right before puberty, is critical in many high-prevalence countries. The majority of child marriage occurs in middle adolescence. Some relevant interventions include<sup>3</sup>:**

- Give girls critical life skills such as self-confidence and negotiation, provide comprehensive sexuality education and build their health, economic and social assets, e.g. through financial literacy.
- Improve access to and quality of health, education and protection services to support girls' transition to and completion of secondary school.
- Enhance interventions that target boys to build positive masculinities, reach parents and communities to transform unequal gender norms, and promote human rights-based legal and policy frameworks.

**From a methodological perspective, countries should take the following actions:**

- Strengthen national population data ecosystems to have fully functional civil registration and vital statistics (CRVS) systems (covering all marriage types) that are complemented by regular census and household survey undertakings, as part of efforts to track progress in achieving the Sustainable Development Goals.
- In censuses, adopt the more comprehensive household survey approach of measuring marital status. Specifically, informal unions should be recognized, and data on age at first informal union should be systematically collected.
- Adopt standard definitions of marriage and union across censuses and surveys.

For more information, visit the UNFPA website at [www.unfpa.org/child-marriage](http://www.unfpa.org/child-marriage).

The UNFPA Strategic Plan, 2022–2025, calls for urgent interventions to accelerate the implementation of the International Conference on Population and Development (ICPD) Programme of Action and the achievement of three transformative results: (a) ending the unmet need for family planning; (b) ending preventable maternal deaths; and **(c) ending gender-based violence and all harmful practices, including female genital mutilation and child, early and forced marriage.**



3 Malhotra A., Elnakib S. 2021. 20 years of the evidence base on what works to prevent child marriage: A systematic review. *Journal of Adolescent Health* 68:847–862. <https://doi.org/10.1016/j.jadohealth.2020.11.017>