Levels and trends in fertility rates among adolescents aged 10–14 and 15–19 in 201 countries and areas from 1950 to 2023

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Abstract

Background: Reducing adolescent childbearing and addressing the multiple factors underlying it are essential for improving sexual and reproductive health and the social and economic well-being of adolescents. Very early childbearing increases maternal and neonatal health risks and perpetuates educational and economic disparities. Adolescent birth rate (aged 10–14 years; aged 15–19 years) is an indicator to monitor progress towards Sustainable Development Goal (SDG) Target 3·7, by 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes. However, the availability and reliability of data on adolescent fertility rates is low.

Methods: We compiled a database with 36,682 observations from 236 countries and territories, integrating data from vital registration systems, sample registration systems, household surveys, and population censuses. We adjusted the incompleteness of birth registration and accounted for recall biases in birth histories recorded in surveys and censuses. Bayesian models estimated ASFR for ages 10–14 and 15–19, using covariates such as total fertility rates (TFR) and female educational attainment and adjusting for biases and underreporting. We calculate the number of births to adolescents by applying rates to the female population in the respective age groups. We present comprehensive annual estimates of age-specific fertility rates (ASFR) for girls aged 10–14 and 15–19 from 1950 to 2023 for the world, regions, and 201 countries and territories with a total population of at least 90,000 inhabitants as of mid-2024. Model performance was validated using out-of-sample testing.

Findings: Between 1990 and 2023, global ASFR for girls aged 10–14 decreased by 76%, from 4·5 [4·1; 5·2] to 1·1 [0·9; 1·4] births per 1,000, while ASFR for girls aged 15–19 fell by 48%, from 74·7 [72·5; 77·1] to 39·0 [36·8; 41·4] births per 1,000. Central and Southern Asia achieved the largest relative reductions (95% for ages 10–14; 80% for ages 15–19). Sub-Saharan Africa, with smaller relative decreases (76% for ages 10–14; 32% for ages 15–19), remains the region with the highest ASFR in 2023 at 3·2 [2·5; 4·2] per 1,000 for ages 10–14 and at 94·4 [86·3; 103·4] per 1,000 for ages 15–19. At the country level, the birth rates for girls under 15 decreased by at least two-thirds in 115 [102; 122] countries and for the age group 15–19 in 72 [67; 79] countries between 1990 and 2023. In 2023, births to mothers aged 10–14 years were estimated at 347 [285; 454] thousand, a decline from 1·15 [1·05; 1·34] million in 1990, and for those aged 15–19 years at 12·2 [11·5; 12·9] million, a decline from 18·9 [18·4; 19·5] million in 1990. The number of births among adolescents aged 15–19 in Sub-Saharan Africa increased from 3·6 [3·6; 3·7] million in 1990 to 6·2 [5·6; 6·7] million in 2023 due to population growth and slower fertility declines, representing increasing proportion of global births from 19·2% [18·5%; 19·9%] in 1990 to 50·6% [47·7%; 53·5%] in 2023.

Interpretation: Despite significant global progress in reducing adolescent fertility, regional and national disparities persist, with high adolescent birth rates in many countries of Sub-Saharan Africa, Oceania and Latin America and the Caribbean. Targeted interventions addressing child marriage, educational inequities and lack of access to reproductive health services, as well as strengthening data systems to monitor adolescent birth rate trends, will be critical for achieving SDG targets related to sexual and reproductive health and rights and ensuring gender equality and women's empowerment.

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Introduction

Early childbearing leads to significant adverse consequences for the health and well-being of both the young mothers and their children. Pregnancy complications and unsafe abortions are among the leading causes of death among girls aged 10–19 years. Adolescent mothers face higher risks of eclampsia, puerperal endometritis, and systemic infections compared to women aged 20–24 years, and babies of adolescent mothers face higher risks of low birth weight, preterm birth and severe neonatal conditions.[1,2] From a socio-economic standpoint, early childbearing often results in girls abandoning education, and later in life having fewer opportunities for decent work, experiencing lower lifetime earnings, and facing increased risks of intergenerational poverty. [3–6] Reducing adolescent fertility is therefore crucial to reducing maternal mortality and morbidity, relieving public health burden, ensuring that all women and girls are empowered to achieve their life goals, reducing poverty, and contributing to economic development at a societal level. In this context, Target 3·7 of the 2030 Agenda for Sustainable Development aims to "ensure universal access to sexual and reproductive health-care services, including for family planning, information and education" by 2030. To monitor progress towards this target, Sustainable Development Goal (SDG) indicator 3·7·2 measures the "Adolescent birth rate" among girls and young women aged 10–14 years and 15–19 years, respectively.[7,8] The adolescent birth rate for ages 15–19 was previously used to track progress towards the Millennium Development Goals between 2005 and 2015.

Monitoring trends and understanding the underlying factors of adolescent childbearing are essential to safeguarding girls' human rights, improving access to sexual and reproductive healthcare services and achieving gender equality and women's empowerment. However, monitoring is challenging due to the scarcity of high-quality data in many countries. While the contribution of the childbearing below age 15 to the overall fertility rates and the total number of births is minimal, it is a particularly grave violation of the human rights of girls, and, therefore, it is crucial to have comprehensive and comparable estimates over time and across countries. Vital statistics from registration systems for births by age of mother are particularly deficient in countries where early childbearing is the most common, and the reliability of adolescent fertility rates is often compromised due to the underreporting of births among the youngest mothers or the misreporting of their age.[9] Additionally, while some data exist for births by age of mother below age 15 from countries with complete vital registration systems, these data have been neglected in the past fertility analyses that generally considered the reproductive age of women starting at age 15. The estimates of childbearing among girls below age 15 for countries without high-quality vital registration systems have only recently been established based on the analysis of birth histories from surveys.[10,11] Previous estimates of childbearing among girls below age 15 have either relied on data in a limited number of countries,[12] or have used temporal correlation methods, in which fertility rates in the age group 10–14 were estimated from fertility rates in the 15–19 age group.[13] The use of indirect methods may lead to unrealistic estimates of early adolescent fertility and makes minimal use of available empirical data. Estimates for specific countries and limited periods give a partial picture of levels and trends of early adolescent fertility, which may vary widely across countries and over time.

This study provides annual estimates and uncertainty intervals of adolescent birth rates for the 10–14 and 15–19 age groups from 1950 to 2023 for 201 countries and territories with a total population of at least 90,000 inhabitants in 2024, along with 22 sub-regional, seven regional and global estimates. We compiled an extensive and comprehensive database with data for age-specific fertility rates for 236 countries and territories, which is used in the overall model implementation and the calculation of estimates for global and regional aggregates. For the age group 10–14, we included all newly available observations calculated from birth histories from household surveys using the methods developed by Schoumaker and Sánchez-Páez.[11] We developed a two-step Bayesian estimation process that integrates diverse data sources while accounting for potential biases. These data and methods enable a systematic analysis of fertility among girls and adolescents aged 10–14 and 15–19, filling gaps in missing data and reconciling discrepancies across data sources and estimation methods and provide an assessment of uncertainty intervals. This approach has improved international comparability of trends in adolescent childbearing across all countries since 1950. The methods, the full database with the data on age-specific fertility rates from various sources, including metadata, and the results of this study have all been incorporated into the 2024 revision of the United Nations (UN) World Population Prospects (WPP),[14] which includes global, regional, and national estimates of ASFRs for the 10–14 and 15–19 age groups.

Methods

Database construction

The age-specific fertility rates (ASFR) database for this study was compiled by the UN Department of Economic and Social Affairs, Population Division, encompassing a total of 36,702 observations in 236 countries or areas exceeding 1,000 inhabitants by 2024 July 1st, where 15,685 are for ages 10–14 and 21,017 for ages 15–19, respectively. All available nationally representative data on fertility were systematically assessed for quality.[15] The empirical databases and final estimates undergo biannual updates and are openly accessible to the public.

Data were sourced from vital registration systems, household surveys, and population censuses (reference years: 1950–2023). We extracted the fertility rates for 10–14 and 15–19 age groups, with results reported for these groups. Detailed data sources by country and age group and the extraction process are documented in the appendix (p 47–103). The majority of the available data come from household surveys (49·7% of data points for age group 10–14 and 38% for age group 15–19), in particular the Demographic Health Surveys (DHS) (67·1% of the total survey data for age group 10–14 and 58·7% for age group 15–19) and the Multiple Indicators Cluster Surveys (MICS) (17·6% for age group 10–14 and 17·3% for age group 15–19), followed by the World Fertility Surveys (WFS) and the Reproductive Health Surveys (RHS). The second primary data source is vital registration, with a total of 154 countries with registration data for age group 10–14 (32·8% of the available data for the age group) and 169 for age group 15–19 (36·7%).

Compared to all previous studies, we leveraged to the fullest extent the information on full birth histories from surveys to calculate birth rates among girls in the age group 10–14. The information from full birth histories, for which women of reproductive age (usually defined as 15 to 49 years) are asked to reconstruct the full list of live births they had, including information on the dates of birth, permits calculation of age-specific fertility rates by 3-year or 5-year for the periods before each survey.[10,16] This makes it possible to compute fertility rates in the age group 10–14 up to 35 years before each survey containing full birth histories (see appendix pp 4 for further details). This source of information was particularly important for assessing fertility rates for ages 10–14, as it provided estimates for countries and periods that were not otherwise covered by vital registration or censuses.

Ethics approval was not required for this secondary population-level data analysis.

Statistical analysis

Estimating ASFR for age groups 10–14 and 15–19 – A Bayesian estimation model integrated ASFR empirical data with national-level total fertility rate (TFR) estimates published by the UN WPP 2024 to derive robust fertility estimates.[14] The estimation models for the ASFR for the age groups 10–14 and 15–19 are summarised below. Full model specifications, implementation, and validation details are presented in the appendix (pp 3–13).

First, we apply country-specific regression functions to adjust data biases in age groups 10–14 and 15–19. Data source type, collection method, and recall lag are covariates to estimate and predict biases for all observations. Second, we estimated the ASFR for the age group 15–19. We modelled the ASFR for the age group 15–19 in a specific country and a particular year on the logit scale to constrain the ASFR between 0 and 1. The logit-transformed ASFR from a specific country-year was modelled by incorporating country-specific effects of female educational attainment,[13] regional TFR effects,[14] country-specific temporal effects, and country-specific offsets. Third, the ASFR for the 10–14 age group was derived by modelling the ratio of the logit-scaled ASFR for 10–14 to the logit-scaled ASFR for 15–19, accounting for correlations between these age groups. This approach allowed the limited data available for the 10–14 age group to benefit from the greater availability for the 15–19 age group. This ratio was modelled by combining the country-specific effects of female educational attainment and TFR, as well as global and country-specific temporal effects. Sampling and non-sampling variances were addressed within the Bayesian framework, with less informative observations appropriately downweighted.

Computation – We used the integrated nested Laplace approximation (INLA) algorithm to generate posterior parameter samples,[17] and compute trajectories of ASFR and corresponding number of births for all age groups and countries. Estimates of the final ASFR were combined with national-level TFR estimates to obtain country-year, age-specific fertility rates, accounting for the uncertainty in the national-level TFR.[14] Estimates for countries without data were imputed from the model assumptions and parameter estimates. They were based on the expected ASFR (global time trend), the uncertainty in country-specific deviations based on simulations of the

country-year-specific multiplier, country-specific female education and TFR effect, and the uncertainty in national-level TFR.

Post-modelling processing – We adjusted the median estimates and the 95% UIs of ASFR for each country-year for age groups 10–14 and 15–19 (appendix pp 14–15). We matched the sum of births across all age groups of mothers (based on the ASFR from all age groups) to the total number of births (based on the total fertility rate, TFR). Since the data availability and quality of the TFR are, on average, higher than those from ASFR, rescaling the ASFR to match the total births improved the ASFR model results.

Calculating number of adolescent births – The number of births by age of the mother is calculated by multiplying the age-specific fertility rates derived as described above by the number of women in the age group estimated in WPP.

Calculating regional and global estimates – Aggregated ASFRs were derived by dividing the number of births in the age group by the population of women in this age group in a region. We computed 95% UIs for all indicators of interest with the 2·5th and 97·5th percentiles of the posterior distributions. We used 'significantly' to refer to the 95% UI of an estimate above or below the reference level (with zero as the reference for difference and 1 for the ratio).

Model validation – Validation by age group involved out-of-sample testing, with model performance assessed using metrics such as mean absolute error (MAE) and the coverage of 90% uncertainty intervals (appendix pp 15–16). The validation results present reasonably good calibration with conservative UIs (i.e., wider than expected). All computations were conducted using the R-package INLA[18,19] and R,[20] with analysis scripts available upon request.

Role of the funding source

The study sponsors had no role in the study design, data collection, analysis, interpretation, or report writing. The corresponding author had full access to all data in the study and had final responsibility for the decision to submit for publication.

Results

We report ASFR for the age groups 10–14 and 15–19, with median estimates and 95% UIs for 201 countries or areas, 22 sub-regions, seven regions, and globally for 1990, 2015, and 2023. Year 2015 was chosen to signify the adoption of the 2030 Agenda for Sustainable Development to understand whether the trends has changed before and after the SDGs. Year 2023 was the most recent year of the estimates published in the UN WPP 2024 revision. Annual results since 1950 are presented in the appendix (pp 103–507). Table 1 and Figure 1 present the fertility rates for the age groups 10–14 and 15–19 in 1990, 2015, and 2023 for the world and seven regions (the regional classification is in the appendix, pp 23–24). In both age groups (Table 1), global fertility rates declined significantly between 1990 and 2023. For girls aged 10–14, fertility fell by 76% from 4·5 [4·1; 5·2] births per 1,000 girls in 1990 to 1·1 [0·9; 1·4] per 1,000 in 2023, with a significant total decline of -3·4 [-4·1; -2·9] per 1,000. While for those aged 15–19, there was 48% reduction from 74·7 [72·5; 77·1] births per 1,000 girls and young women in 1990 to 39·0 [36·8; 41·4] per 1,000 in 2023 with a significant total decline of -35·7 [-38·9; -32·4] per 1,000.

All regions experienced declines in adolescent birth rates, but progress was uneven. All seven regions were estimated to have significant reductions in fertility from 1990 to 2023 in both age groups, except for under-15 fertility in Oceania (excluding Australia and New Zealand). Sub-Saharan Africa achieved the largest regional absolute reduction among girls aged 10–14 with decreases of -8·4 [-9·6; -7·2] births per 1,000, and experienced the second largest regional absolute decline for age group 15–19 at -45·1 [-54·0; -35·4] births per 1,000, however making slow progress toward reducing the burden of early childbearing on the relative scale. The adolescent birth rates in Sub-Saharan Africa remained the highest globally for both age groups in 2023 (3·2 [2·5; 4·2] for ages 10–14 and 94·4 [86·3; 103·4] for ages 15–19). Central and Southern Asia achieved the most substantial relative declines, with fertility for girls aged 10–14 decreasing by 95% and for those aged 15–19 by 80%. In 1990, the region had the second-highest fertility rates globally, at 8·5 [7·2; 10·1] and 131·4 [123·1;

140·3] per 1,000 girls aged 10–14 and 15–19, respectively. By 2023, rates had fallen to 0·4 [0·2; 1·1] and 26·2 [22·6; 30·5] per 1,000.

Global declines in adolescent birth rates measured by the annual reduction rate (ARR; a positive ARR is equivalent to a decrease in the ASFR during the period) of 4·39% [3·52; 5·15] and 1·97% [1·77; 2·17] for age groups 10–14 and 15–19, respectively, indicate that fertility declined more than twice as fast for the younger girls than the older adolescents.

While ARRs were similar for both periods 1990–2015 and 2015–2023 at the global level, the declines differed by region and country for each period (Figure 2, appendix pp 25–36 for national ARRs). The ARRs for age group 10–14 were significant in all sub-regions of Sub-Saharan Africa in 1990–2015. Particularly, Western Africa had significant reductions in both periods, with ARR increasing from 4·20% [3·28; 5·11] in 1990–2015 to 6·84% [0·62; 11·88] in 2015–2023, showing an acceleration of the reduction. Overall, sub-regions in other parts of the world experienced larger, when significant, reductions compared to Sub-Saharan African subregions.

For age group 15–19, most sub-regions with ARR significantly different from zero had a faster decline in the most recent period 2015–2023, rather than in the earlier years (1990–2015). The one exception is Southern Asia, where countries like India and Bangladesh experienced high rates of reduction in the earlier period (8·01% [7·58; 8·65] and 3·17% [2·31; 3·19], respectively, between 1990 and 2015), but had no significant reductions since 2015. Since 2015, the highest rates of reduction were registered in the regions with low adolescent birth rates, with Eastern Asia, all European sub-regions, Northern America, Australia and New Zealand having an ARR larger than 5% over the period 2015–2023, suggesting that adolescent birth rates can continue to decline to very low levels. Additionally, South America experienced a steep increase in the rate of reduction from 1·17% [0·78; 1·58] in 1990–2015 to 4·31% [2·93; 5·73] in 2015–2023. In countries like Argentina and Uruguay, the ARR was not significant in the period 1990–2015 and then reached 10·89% [8·44; 13·62] and 9·50% [6·22; 12·81] in 2015–2023, respectively. In Chile, ARR increased from 2·38% [1·76; 2·77] in 1990–2015 to 22·80% [20·79; 24·10] in 2015–2023. The sub-regions in Sub-Saharan Africa, where adolescent fertility reaches the highest values, did experience either non-significant reductions (Eastern Africa, Middle Africa) or low reduction rates (Southern Africa, Western Africa) compared to other regions. Melanesia, Micronesia and Polynesia did not have significant reductions in 2015–2023, while they experienced a reduction of less than 2% in 1990–2015.

Due to the slower decline in the most subregions with the highest adolescent birth rates, the regional disparities increased over time. In 2023, the birth rate for girls under age 15 in Sub-Saharan Africa was 3·2 [2·5; 4·2] per 1,000, more than thirty times larger compared to 0·1 [0·1; 0·2] per 1,000 in Europe, Northern America, Australia and New Zealand. Birth rates for girls below age 15 were also higher than the global level in both Latin America and the Caribbean (LAC) (1·7 [1·3; 2·4] births per 1,000 girls aged 10 to 14 years) and in Oceania (excluding Australia and New Zealand) (1·4 [0·5; 4·4] births per 1,000 girls aged 10–14). The relative difference between the regions with the highest birth rates (Sub-Saharan Africa) and the lowest birth rate (Europe, Northern America, Australia and New Zealand) increased in the recent period: it was 23 times in 1990, 22 times in 2015, and increased to 32 times in 2023. The corresponding relative difference between the highest and the lowest regional fertility rates for ages 15–19 is narrower but increased over time: around four times, seven times, and ten times in 1990, 2015 and 2023, respectively.

In 2023, estimated global births to girls aged 10–14 totalled 347 [285; 454] thousand, down from 1,150 [1,050; 1,340] thousand in 1990 (Table 2, Figure 3). For girls and young women aged 15–19, births decreased from 18·9 [18·4; 19·5] million in 1990 to 12·2 [11·5; 12·9] million in 2023. The number of births decreased in all regions in both age groups, except the number of births to girls and young women aged 15–19 that rose in Sub-Saharan Africa (3·6 [3·6; 3·7] million births in 1990 to 6·2 [5·6; 6·7] million in 2023) and in Oceania (excluding Australia and New Zealand – 25 [22; 28] thousand births in 1990 and 32 [29; 37] thousand in 2023), driven by population growth and slow declines in birth rates in this age group. In 1990, Central and Southern Asia had the highest percentage of the world's adolescent births among all regions, with 592 [500; 704] thousand births age 10–14 (accounting for 51·3% [44·1%; 56·2%] of total births) and 8·0 [7·5; 8·6] million (42·4% [40·8%; 44·1%]) for age group 15–19, while in 2023, most of the births to adolescents occurred in Sub-Saharan African, accounting for 68·1% [53·9%; 77·6%] and 50·6% [47·7%; 53·5%] of total births for age 10–14 and 15–19, respectively.

In 2023, four countries (Angola, Equatorial Guinea, Mauritania, and South Sudan), all in Sub-Saharan Africa, had fertility rates greater than 10 births per 1,000 girls aged 10–14. Back in 1990, there were 29 countries with rates

greater than 10, 25 in Sub-Saharan Africa, two in Northern Africa and Western Asia, and two in Central and Southern Asia. The births by under-15 girls were also concentrated in a small number of countries—36% of all births worldwide born by under–15 girls in 2023 occurred in just five countries (in descending order of median estimates): Nigeria, Democratic Republic of the Congo, Angola, Madagascar, and Mozambique (appendix pp 25–30). Fertility rates for girls under 15 decreased by at least two-thirds in 115 [102; 122] countries; among them, 94 [84; 104] decreased by more than three-quarters (Figure 5). The country-level ARRs are significantly above zero in 88 countries over 1990–2023, 85 between 1990 and 2015 and 18 over 2015 and 2023 (appendix pp 25–30).

For girls and young women aged 15–19, fertility was above 150 births per 1,000 in 18 countries in 1990. Such number decreased to three countries (Equatorial Guinea, Central African Republic and Mozambique) in 2023. Of the 201 countries and areas, 72 [67; 79] saw their fertility in ages 15–19 decline by more than two-thirds between 1990 and 2023; of those, 44 [41; 51] had more than a 75% reduction since 1990. In Sub-Saharan Africa, most of the countries declined by less than half, while only nine experienced a more substantial decrease, with the highest registered for Cabo Verde whose fertility rates fell from 123·5 [107·0; 141·5] per 1,000 in 1990 to 38·8 [28·4; 53·0] per 1,000 in 2023, accounting for slightly more than two-thirds decline and a 3·64% [2·47; 4·54] significant ARR. Regarding ARR, 150 countries had significantly positive reduction rates between 1990 and 2023, 153 between 1990 and 2015 and 84 between 2015 and 2023.

Discussion

Our study provides annual estimates and uncertainty assessments of adolescent birth rates (ABR) for girls aged 10–14 and 15–19 across 201 countries or territories from 1950 to 2023 (see figures for estimates with UIs and underlying data from 1950 to 2023, appendix pp 104–505, and tables for estimates for 1990, 2015 and 2023, appendix pp 23–102). To our knowledge, we have compiled the most comprehensive publicly available global database for adolescent fertility, integrating diverse data sources and systematically adjusting for biases. Using a Bayesian statistical model, the ABR estimates for age groups 10–14 and 15–19 are more data-driven than estimates from the Global Burden of Disease (GBD)[13] and previous revisions of World Population Prospects estimates.[21] With the hierarchical structure in the Bayesian estimation model, we allow data sharing across all countries to better inform the levels and trends of ABR in country-periods with limited or no data. Doing so provides a clearer understanding of early childbearing trends, highlighting disparities and progress across different contexts and periods. After considering the female population sizes, we presented the distribution of births born to girls aged 15 to 19 and under 15 across countries over time.

Despite advances in data collection and estimation methods, substantial data gaps remain, and data availability, timeliness, and coverage remain a challenge for many countries, as discussed in the Methods section. These gaps, as well as potential biases, incomplete coverage, and discrepancies observed in specific data sources, can impact fertility estimates, and our statistical model reflects them in the results and uncertainty ranges. However, some of the discrepancies require additional in-depth country-specific research, for example, different data sources for the adolescent birth rate in India in 2019 suggest very different values (appendix pp 389): 43 births per 1,000 girls and young women aged 15–19 years[22] and 12 births per 1,000 girls and young women aged 15–19 years.[23] Various data sources all point to large decreases in ABR since 1990, yet at a different pace. Since India has the largest population of adolescents globally, its estimate greatly impacts the evaluation of progress made towards reducing adolescent childbearing, not only in the country but also in the region and globally. Addressing these gaps requires enhanced data collection systems, including evaluating the reporting for completeness of vital registration and detailed disaggregation by socioeconomic and geographic factors to identify vulnerable populations. Improving the reliability, coverage, timeliness and accessibility of demographic data should be a central focus of efforts to strengthen statistical systems for monitoring progress towards the Sustainable Development Goals, including for SDG indicator 3·7·2 on adolescent birth rates.

Our methodology demonstrates several improvements over previous studies. First, the database is much more extensive than the GBD database; it is 3·6 times the size of the GBD database. Specifically, the GBD study lacks birth history data for ages 10–14. Second, unlike GBD estimates, which rely on a six-step modelling process, this study relies on a neater three-step procedure and produces plausible results with good validation results. Third, our Bayesian models use the TFR as an external covariate to enhance the ASFR model results. This differs from the GBD 2021 study, where the TFR is calculated by summing up the ASFR. Generally, more observations are

available for TFR, including estimates from indirect methods from censuses and surveys that cannot be calculated for ASFRs. Hence, in the WPP approach, the TFR is modelled separately from the ASFR[24] and the ASFR across age groups are adjusted to be consistent with TFR estimates. Lastly, the regular biennial updates of the WPP will provide updated estimates of ABR 10–14 and 15–19 based on the most recent data at every revision.

Our study is subject to limitations regarding data and model assumptions. One limitation is the reliance on backwards projections for countries with limited historical data. We used total fertility and educational attainment as covariates in the model to assist backwards projection from the earliest available observation to 1950. The average backwards projection period is 14 years among countries and territories with data for ages 10–14, whereas the period exceeds 20 years for 29% of these locations. Therefore, estimates in the early period were more dependent on these auxiliary covariates. This is a less relevant limitation for the most recent periods. While the country figures provide estimates with underlying data for 1950–2023 (appendix pp 104–505), the main results are discussed from 1990 to 2023. Finally, while our model already includes the bias specific to the time elapsed between the event and interview date (i.e., the recall lag), no adjustment was applied to the empirical data, and further exploration in our model is needed to incorporate this potential bias.

Our findings show significant global reductions in adolescent fertility rates since 1990. The global progress in reducing adolescent childbearing since 2015, after adopting the Sustainable Development Goals, has remained similar to the period between 1990 and 2015 as measured by annual rates of change. While in the period 1990 to 2015, most of the global progress was driven by the declines in ABR in Southern Asia, since 2015, LAC, the region with previously stagnant ABR, and Europe, Northern America and Australia/New Zealand, the region with already low ABR, have seen an acceleration of the decline, showing that decline in ABR can accelerate in the regions with previously high and slow decline, and that rapid decline can happen also in countries with already low levels of ABR.

The greatest absolute and relative decreases were observed in Central and Southern Asia; within the region, the largest decline was observed in the region's largest country. In India, ABR is estimated to have declined between 1990 and 2023 from 8·8 [6·9; 11·2] per 1,000 to 0·2 [0·0; 1·6] per 1,000 for ages 10–14 and from 138·2 [126·4; 151·0] per 1,000 in 1990 to 14·1 [10·3; 19·5] per 1,000 for ages 15–19. These reductions are partially attributable to the decline in the incidence of child marriage from 26·1% of women married by age 15 and 54·2% married by age 18 to 4·8% married by age 15 and 23·3% married by age 18 between the early 1990s and the early 2020s.[22,25] Also, education expanded greatly among young adolescents in India. In the early 1990s, only 55% of girls aged 11–14 were attending school; by 2020, this percentage reached 91%. India implemented major adolescent health policies, namely the Adolescent Reproductive and Sexual Health (ARSH) Strategy in 2005, Rashtriya Kishor Swasthya Karyakram (RKSK) in 2014, and the School Health Program in 2020, providing a comprehensive framework for sexual and reproductive health services, and expanding the scope of adolescent health programming, and addressing various health aspects, leading to higher use of modern contraception among adolescents, decline in the incidence of violence and increase in positive health behaviours, such as condom use.[26] Challenges remain in limited access to health services, particularly in rural areas, low health insurance coverage, and persistent inequalities.

Compared to other regions, Sub-Saharan Africa experienced slower declines in adolescent fertility rates and remains the region with the highest fertility rates for both age groups 10–14 and 15–19. Higher levels of poverty, lower access to education, limited availability of sexual and reproductive healthcare services and the persistence of early and child marriage contribute to the region's slow progress in reducing adolescent fertility.[27–29] At the same time, sexual and reproductive healthcare services are often unavailable, unaffordable, or not designed to meet the needs of young people, especially if they are unmarried. Cultural stigma around adolescent sexuality and contraceptive use, and misconceptions about contraception further discourage access and use.[30,31]

After no or only small reductions from 1990 to 2015, several countries in LAC – such as Argentina, Chile, Costa Rica, and Uruguay – experienced a sharp decrease in adolescent birth rates after 2015. Chile registered the highest reductions with ARRs equal to 36·18% [26·80; 46·15] for age group 10–14 and 22·80% [20·79; 24·10] for age group 15–19 over the period 2015–2023. The reduction of the ABR in LAC as of 2015 is the result of public policies successfully implemented in the region, mainly after the common agreement reached at the Montevideo Consensus on Population and Development in 2013,[32–34] calling for reducing adolescent pregnancy through comprehensive public policies and programs that ensure access to high-quality, confidential and free sexual and reproductive health services for adolescents. This regional public policy framework fostered the

implementation of national policies to reduce adolescent childbearing. In Argentina, the National Plan for the Prevention of Unintended Adolescent Pregnancy (ENIA) contributed to lower ABR through comprehensive sexuality education, access to contraceptive methods, strengthening adolescent-friendly health services, communication campaigns and training of health and education teams.[35] Chile implemented the National Sexual and Reproductive Health Strategy for Adolescents, focused on family planning, healthcare rights, abortion, and health system innovation to safeguard adolescents' access to confidential sexual and reproductive healthcare services in Friendly Spaces.[36] In Uruguay, the National and Intersectoral Strategy for the Prevention of Unintended Pregnancy in Adolescents has contributed to reducing the incidence of adolescent pregnancy through intersectoral coordination, educational campaigns, access to health services and youth participation.[37] Of the 33 countries in LAC that committed to the Montevideo Consensus, 22 have reported progress regularly.[38]

Despite global progress, these results underscore the persistent burden of adolescent fertility in specific regions and show where more attention should be directed. In 1990, more than half (51·3%) of 1·15 million global births to mothers below age 15 were in Central and Southern Asia and less than a third (31·2%) in Sub-Saharan Africa. By 2023, it was one in ten (10·2%) and more than two-thirds (68·1%), respectively, of 347 million global births. Similarly, the contribution to 18·9 million global births to mothers aged 15–19 in 1990 and 12·2 million in 2023 halved in Central and Southern Asia (from 42·2% to 20·1%) and more than doubled in Sub-Saharan Africa (from 19·2% to 50·6%).

The stark regional disparities in adolescent fertility underscore the importance of targeted interventions that address the underlying drivers of early childbearing and the needs of groups of adolescents depending on their particular needs and circumstances, while meaningfully engaging adolescents in the design, implementation, monitoring and evaluation of efforts to address their needs and rights.[39]

Countries with the highest rates of child marriage are also those with high rates of early childbearing.[40] Globally, most births to adolescent mothers occur within marriage. Still, there are large regional differences, and early childbearing outside marriage remains rare in Central and Southern Asia, parts of South-Eastern Asia, and Northern Africa and Western Asia.[41] Over the past three decades, the incidence of child marriage has declined globally, driven predominantly by a decline in India, as well as in populous countries where the practice has historically been common, such as Bangladesh and Ethiopia. Levels of child marriage are highest in Western and Central Africa, where progress has stalled.[42] The recently updated recommendations from WHO for preventing child marriage and responding to the needs and rights of married girls include the implementation of interventions to empower girls by building their knowledge, skills, assets and social networks; engagement with parents/guardians, boys and men, and the broader community to create and sustain a gender-equitable and enabling environment; conditional incentives (conditioned on school attendance and/or remaining unmarried); the interventions to remove gender-related barriers to education and ensure girls' completion of 12 years of quality education and to support the economic empowerment of girls to improve their financial literacy, access to savings, and employment skills and prospects.[39] It is also crucial that countries not only implement laws forbidding child marriage but that they enforce them as well, as research has shown that the failure to enforce laws against child marriage has contributed to its persistence in many countries.[43]

In many contexts, adolescents face significant challenges related to their sexual and reproductive health and rights.[44] Early sexual activity, marriage, and pregnancy often occur in environments where gender-based violence and violations of sexual and reproductive health rights are prevalent.[45] These factors put adolescents, especially the youngest, at great risk. Adolescents, and particularly those unmarried, who are sexually active and do not desire to become pregnant soon, are known to have lower levels of contraceptive use compared to older women. This is particularly true in Sub-Saharan Africa, where only about half of girls and young women aged 15–19 who want to avoid pregnancy use a modern contraceptive method—the lowest share of any region.[21,46] The region's large and growing share of the population of girls at risk of early pregnancy will require substantial investments into family planning programs, especially in poor and rural areas where adolescent girls and young women are less likely to use modern contraception.[47] Increasing access to, uptake of, and continued use of contraception among adolescents requires the implementation of gender-transformative behaviour change interventions with adolescents to strengthen their ability to make decisions about their contraceptive use; interventions to shift gender and other social norms to support contraceptive decision-making; and interventions to improve the quality of health services.[39] Adolescents' access to and use of contraception can also be strengthened by enhancing access to self-administered injectable contraception, over-the-counter oral contraceptive pills and emergency contraceptive pills. It is estimated that annually, some 5·7 million adolescent

pregnancies end in abortions, the majority of which occur in unsafe conditions.[48] Therefore, successful policies to improve the health of adolescents also require interventions to reduce unsafe abortion among adolescents.

Especially in regions with high rates of adolescent pregnancies and childbearing, there should be more determined efforts to address the specific needs and rights of girls who are pregnant or are mothers. Providing high-quality care to pregnant adolescents and mothers should include age-appropriate antenatal, birth, and postnatal care that mitigates common health risks that affect pregnant and parenting adolescents and addresses adolescent-specific challenges and barriers to care.[49,50] Concurrently, they should receive developmentally appropriate programmes supporting further education, employment skills, and prospects.

In conclusion, our study provides insights into global, regional, and national levels and trends in adolescent fertility trends, offering robust evidence to inform policy and programmatic interventions. While substantial progress has been made since 1990, achieving the 2030 Sustainable Development Goals will require sustained efforts to address regional disparities, pursue data collection efforts, enhance data quality, and promote gender equality worldwide.

Research in context

Evidence before this study

We searched PubMed for papers published between Jan 1, 1970, and May 15, 2025, using the search terms "adolescent births + global", "age-specific fertility + global", and "adolescent pregnancies + global". The search returned several studies analysing adolescent fertility trends from existing data sources. Most relevant papers focused on specific regions and/or countries and did not provide a comprehensive overview of trends for all countries and regions worldwide. Other papers focused on new methods to predict future fertility trends rather than estimating what happened in the past, or focused on other measures such as the number of births. In many instances, studies aimed to describe the consequences of high adolescent birth rates and policy and programs to reduce such high rates. Adolescent fertility has been recognised as a critical global health and development challenge that requires monitoring progress towards the reduction of very early childbearing with timely, accurate and transparent estimates. Adolescent birth rate was included as an indicator in the Millennium Development Goals (for age group 15–19) and the Sustainable Development Goals (age groups 10–14 and 15–19). Data from a well-functioning vital registration system that covers the total population and delivers high-quality, timely data on births by mother age at regular intervals is the gold standard for monitoring adolescent birth rates and other fertility indicators. However, only about a third of the 201 countries under study have a system that can be relied upon as the sole source of information on adolescent birth rates. For the remaining countries, adolescent birth rates can be estimated from household surveys and census data, along with sample registration system data in a small number of countries.[51] Adding to the overall challenge of estimating fertility indicators, these data are not always timely and might have sampling and non-sampling errors. Additionally, data for the age group 10–14 were rarely available, compiled and analysed. First global estimates of adolescent birth rates for ages 10–14 were published only recently.[11,21] The World Population Prospects (WPP), including population estimates and projections for 236 countries and areas that cover the world population, updates its estimates of age-specific fertility estimates, including estimates for age groups 10–14 and 15–19, every two years based on these data. Other organisations also produce age-specific fertility estimates, such as those from the Global Burden of Disease Study 2021.[52] Additionally, previous studies, including the Global Burden of Disease (GBD) 2021, have highlighted trends in adolescent fertility, but relied on limited data without observations from birth histories, a major source of data for countries relying on survey data. GBD depends heavily on multi-step modelling processes, leading to substantial uncertainties. Other studies have focused on specific regional and country contexts, limiting cross-country comparability. There remains a paucity of comprehensive, high-quality, global datasets that integrate diverse sources and provide consistent, reproducible estimates of adolescent fertility rates.

The added value of this study

This study offers the most extensive adolescent birth rates dataset to date, with 36,682 observations (15,685 for age group 10–14 and 20,997 for age group 15–19) covering 236 countries and territories from 1950 to 2023. It employs a robust two-step Bayesian modelling approach that integrates multiple data sources, including vital statistics, sample registration systems, household surveys, and population censuses, while accounting for potential biases, filling gaps in missing data, reconciling discrepancies across data sources and estimation

methods and providing assessment of uncertainty intervals. Unlike previous efforts, our methodology directly links age-specific fertility rates (ASFR) to total fertility rates (TFR), improving the accuracy and consistency of estimates. We provide annual ASFR estimates for girls aged 10–14 and 15–19, highlighting global, regional, and national trends with enhanced granularity. Additionally, this study uses birth histories to estimate birth rates for the age group 10–14 in countries that rely on survey data. Compared to GBD estimates that do not include these observations, the GBD estimates for 10–14 in 1990 are lower than the WPP estimates in 78% of countries. The largest absolute and relative differences are observed in Sub-Saharan Africa (appendix pp 18–19), showing crucial importance of data from birth histories for estimating births rates in this age group. The dataset, methodology, and resulting estimates have been incorporated into the 2024 Revision of the United Nations World Population Prospects,[14] provide consistent, reproducible and transparent estimates of adolescent birth rates and other fertility indicators that will be updated every two years, providing the benefit of regular updates that other estimates do not have.

Implications of all available evidence

Global adolescent fertility rates have declined significantly since 1990, yet regional disparities persist; in Sub-Saharan Africa, after relatively slow declines compared to other regions, fertility among girls aged 10–14 and 15–19 remains high. The findings underscore the urgent need for targeted interventions addressing child marriage, lack of access to sexual and reproductive healthcare services and information, educational barriers, and socio-economic inequalities. Strengthened data collection systems are essential to improve monitoring and ensure progress toward Sustainable Development Goal (SDG) Target 3·7. The evidence provided by this study supports policy-making and programmatic efforts to reduce adolescent fertility and promote gender equality.

Data sharing

Empirical databases and final estimates are updated biannually and are available in the World Population Prospects (WPP) public domain (https://population.un.org/wpp/ and https://population.un.org/dataportal/home). The appendix contains final estimates and annual rates of reductions with uncertainty intervals (UIs) that are not part of the outputs for the WPP.

Conflicts of interest

We declare no competing interests.

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Contributors

FC conducted the analysis, developed the Bayesian statistical models, validated the Bayesian models, led the estimation of all indicators, and interpreted the results. VK proposed the study, oversaw the research, conducted the literature review, and interpreted the results. GG, VK, BS, DSP and PG collected, calculated, assessed and compiled the databases of underlying data. GG, VK, BS, and DSP provided policy implications. VK, GG, and FC drafted the initial manuscript and appendix. BS, DSP, and PG edited the manuscript and appendix. All authors reviewed the model results, edited the manuscript, read, and agreed on the final manuscript.

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Figures

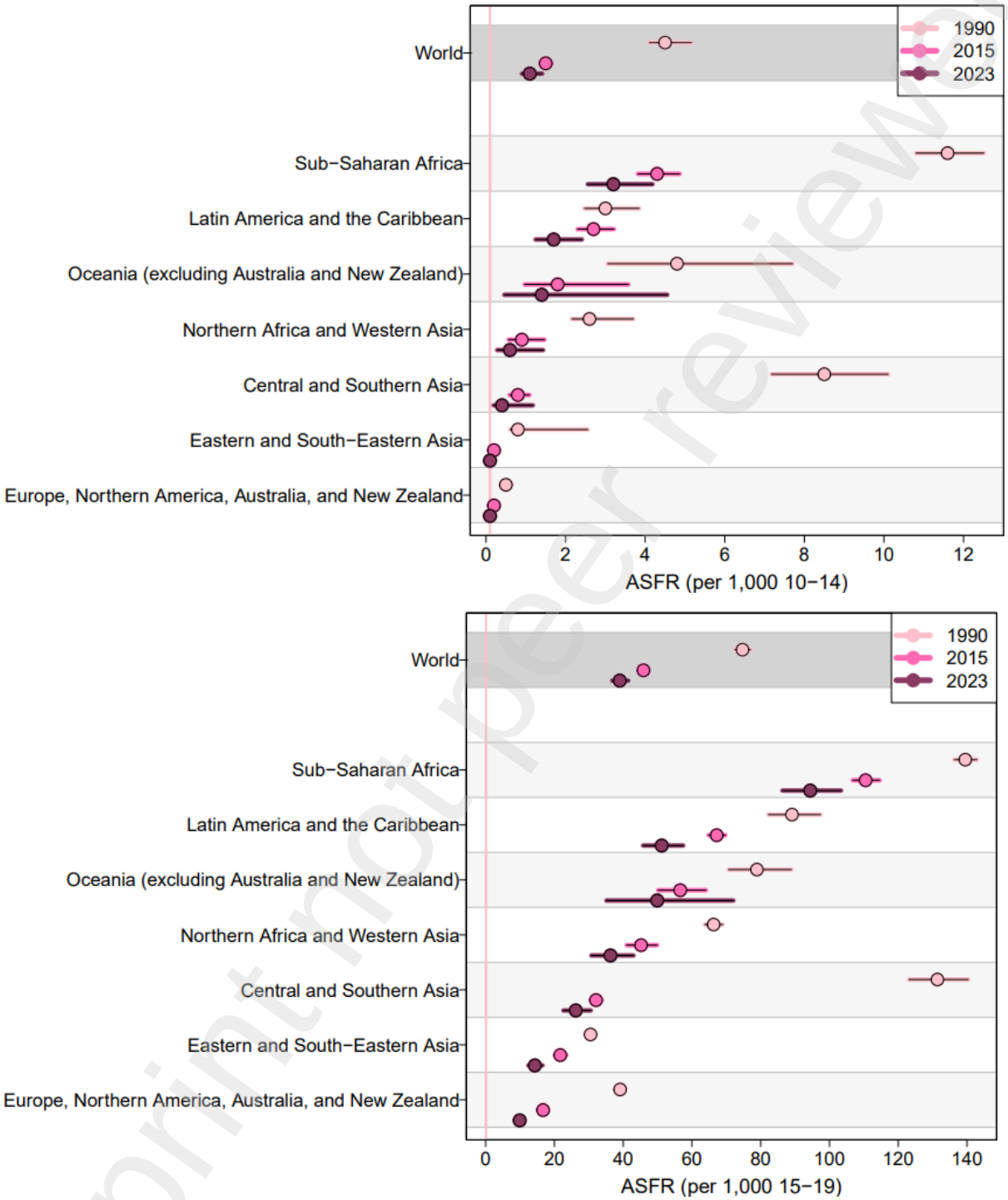


Figure 1. Adolescent fertility rate (aged 10–14 years; 15–19 years) per 1,000 girls and women in that age group, 1990 and 2023, for the world and SDG regions. Median estimates are shown in the plot.

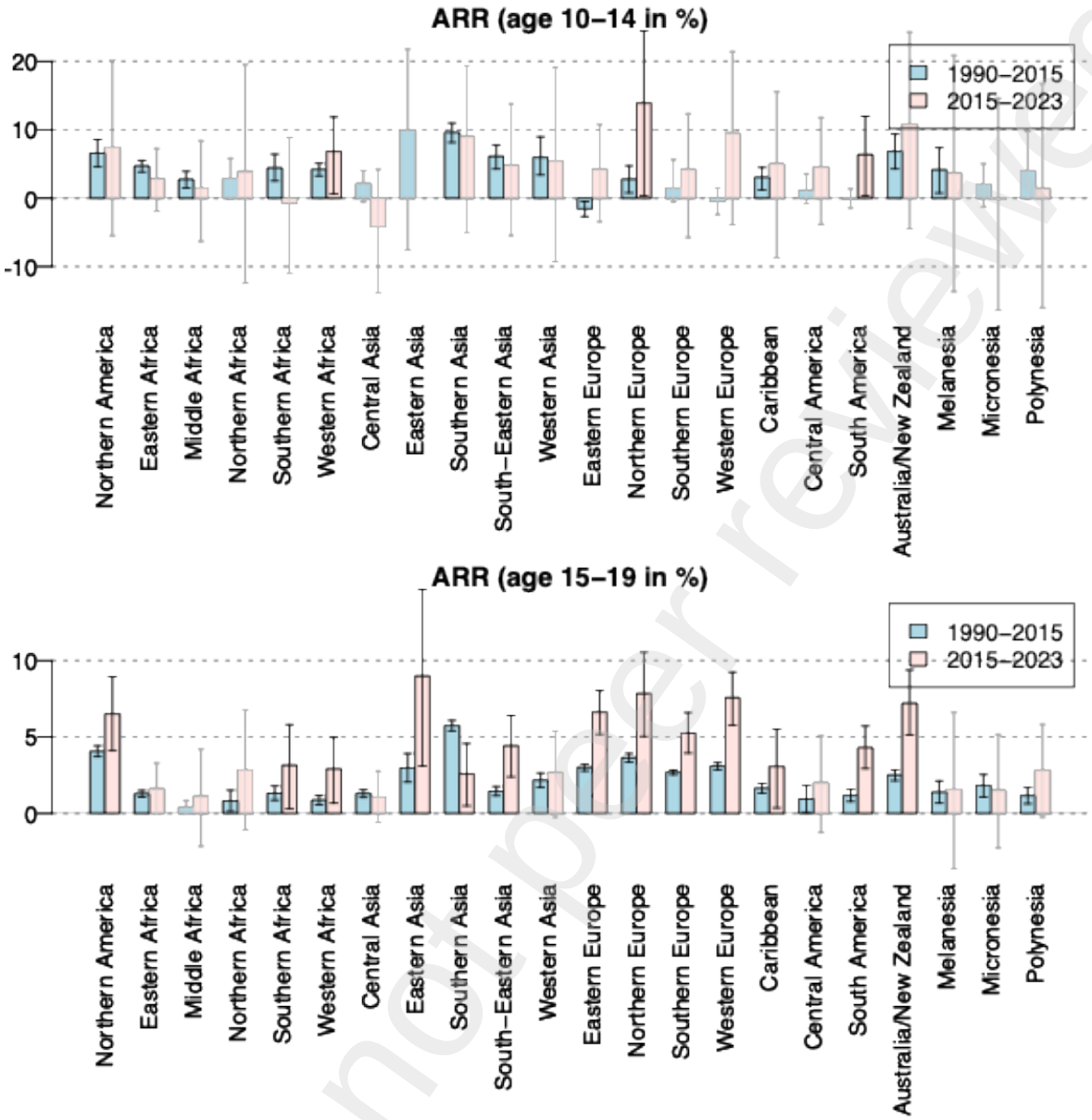


Figure 2. ARR by mothers aged 10–14 (top) and 15–19 (bottom), in 22 sub-regions. ARRs significantly different from zero are shown in black bars; otherwise, they are in grey. We do not report ARR if the age-specific fertility rates in both years are below 0.01 per 1,000. ARR=annual rates of reduction.

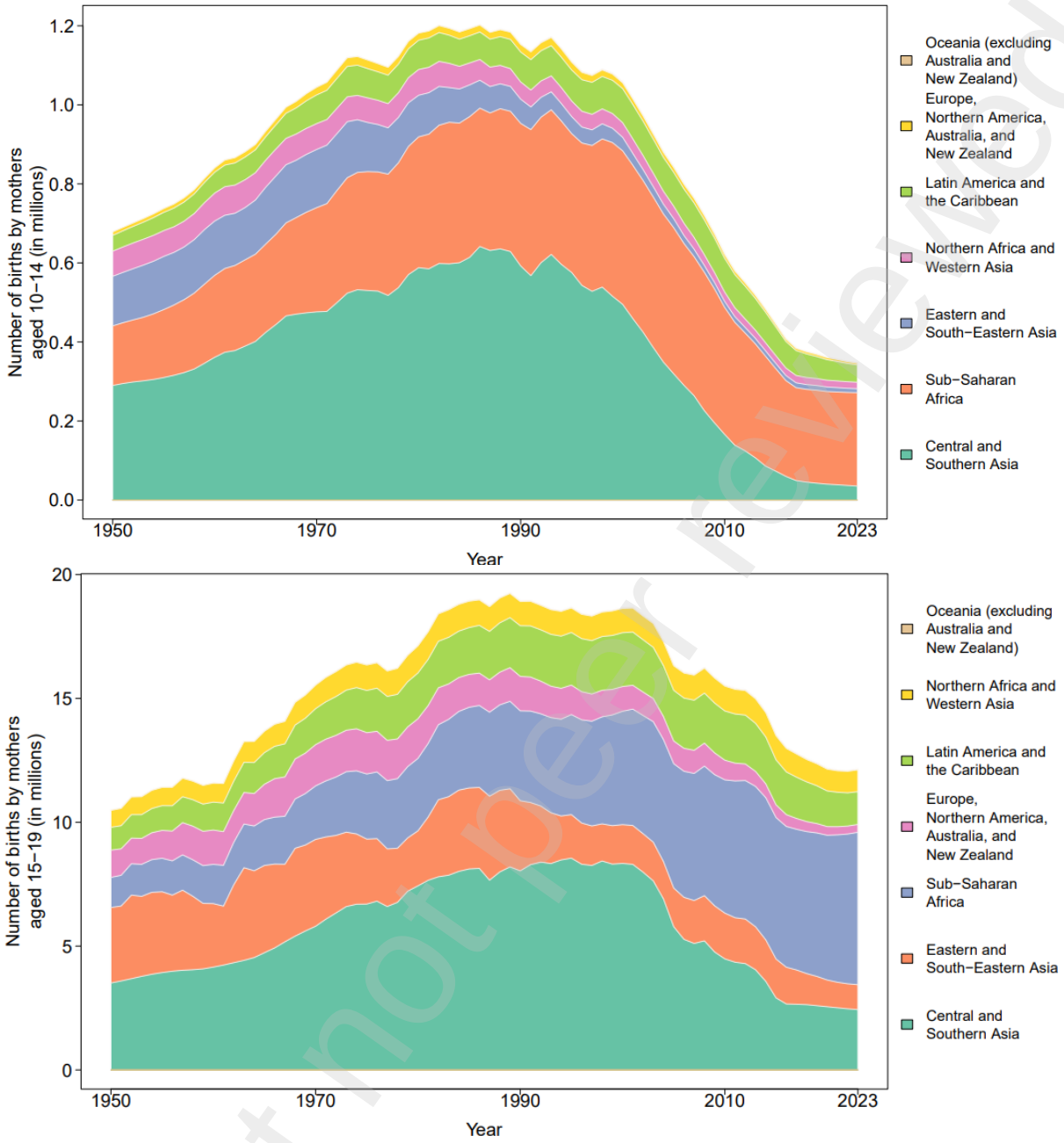
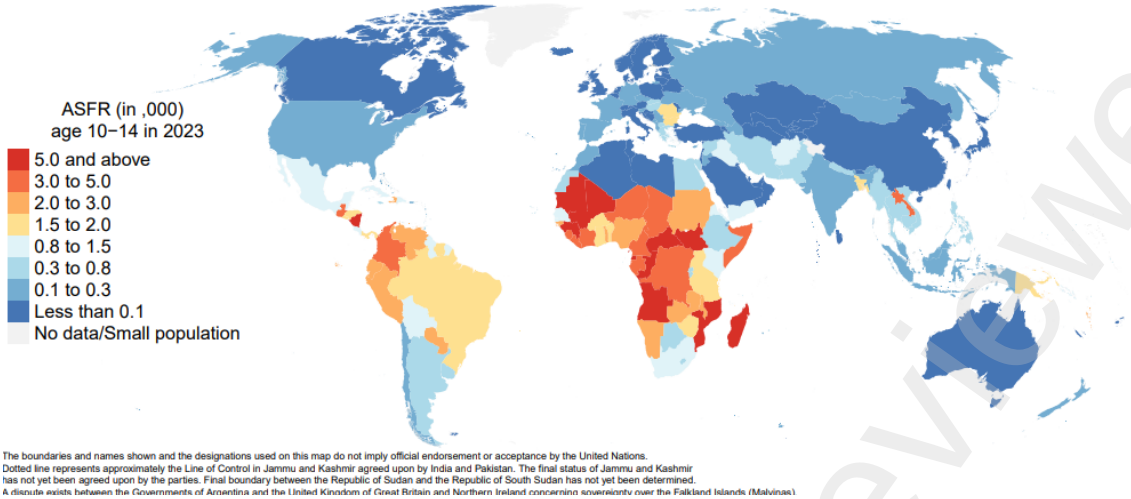


Figure 3. Number of births (in thousands) by mothers aged 10–14 (top) and 15–19 (bottom) from 1950 to 2023, by SDG regions.



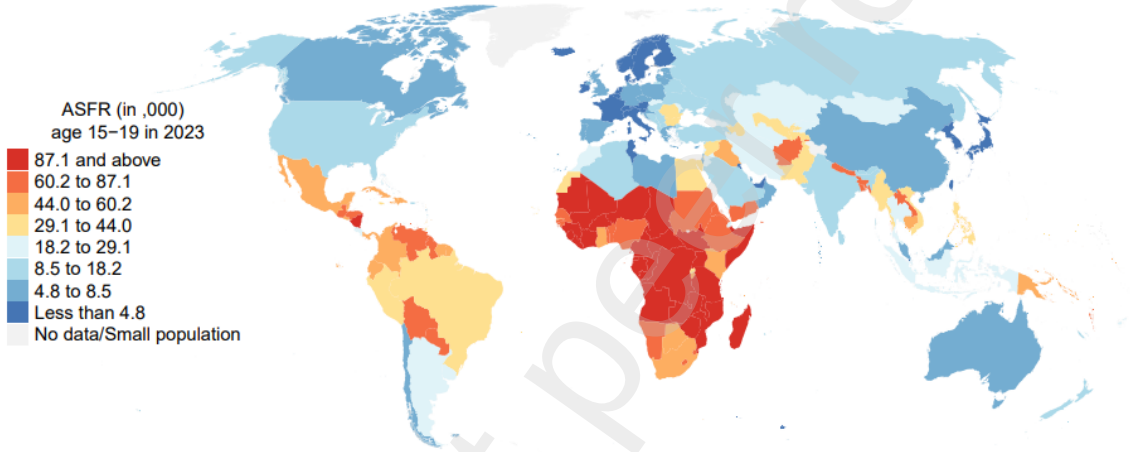


Figure 4. ASFR aged 10–14 (top) and 15–19 (bottom) in 2023. Median estimates are shown in the plot. Countries/areas in grey: estimates are not reported due to small populations or lack of data.

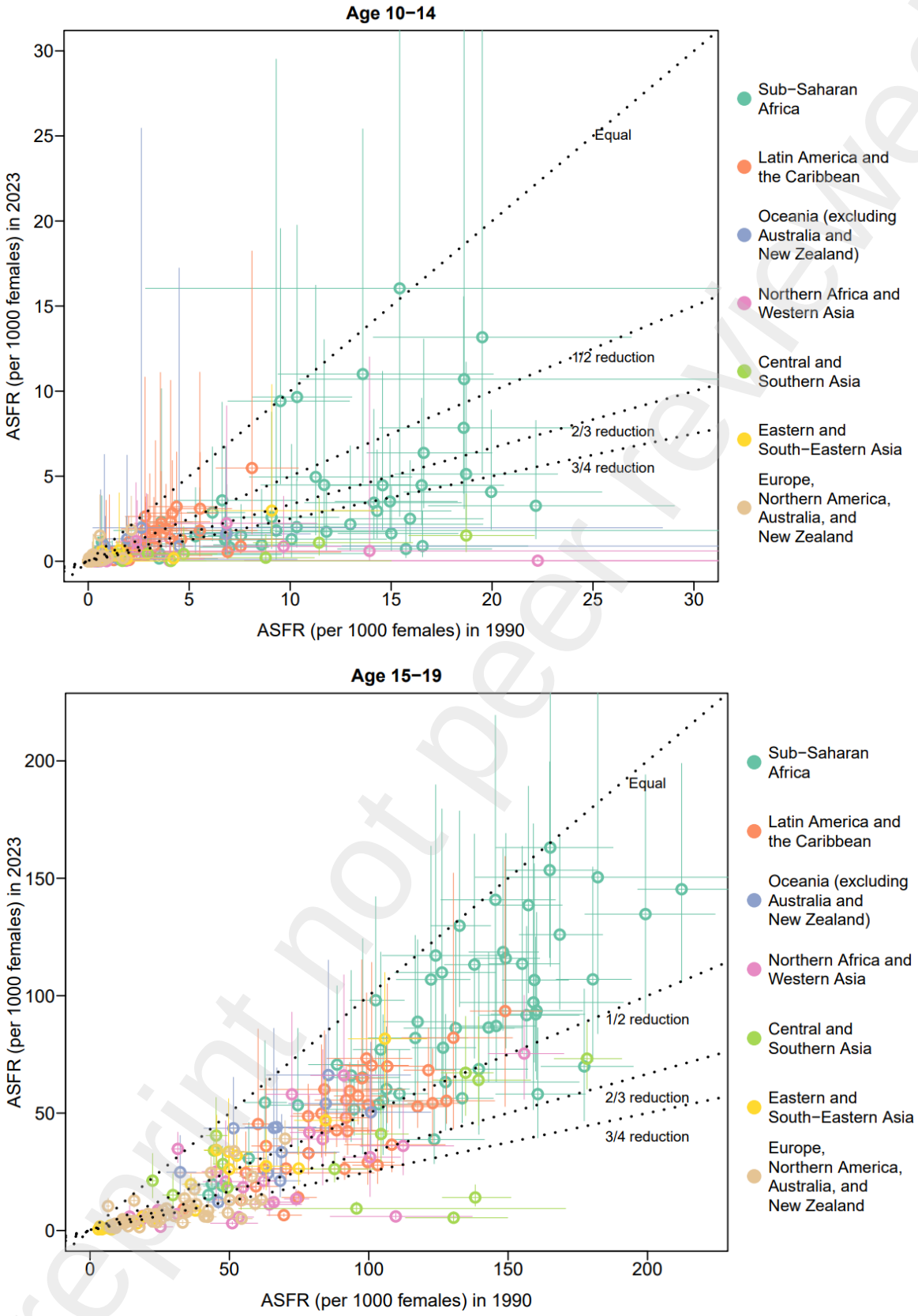


Figure 5. ASFR in 1990 and 2023 for age groups 10–14 (top) and 15–19 (bottom). Estimated rates are shown with 95% UI (vertical lines are 95% UI in 2023, and horizontal lines 95% UI in 1990), by country and SDG region (SDG region groupings can be found in the appendix table 10, pp 23–24). ASFR=age-specific fertility rate. UI=uncertainty interval.

	ASFR 10–14 (births per 1,000 girls aged 10–14)								
Indicator	ASFR			total change			annual rate of reduction (in %)		
Year	1990	2015	2023	1990–2015	2015–2023	1990–2023	1990–2015	2015–2023	1990–2023
World	4·5 [4·1; 5·2]	1·5 [1·3; 1·6]	1·1 [0·9; 1·4]	-3·0 [-3·8; -2·6]†	-0·4 [-0·7; -0·1]†	-3·4 [-4·2; -2·9]†	4·46 [3·86; 5·16]†	4·14 [0·65; 7·04]†	4·39 [3·52; 5·15]†
Sub-Saharan Africa	11·6 [10·8; 12·5]	4·3 [3·8; 4·9]	3·2 [2·5; 4·2]	-7·3 [-8·3; -6·4]†	-1·1 [-2·0; 0·0]†	-8·4 [-9·6; -7·2]†	3·98 [3·41; 4·55]†	3·73 [0·09; 6·96]†	3·92 [3·08; 4·65]†
Latin America and the Caribbean	3·0 [2·5; 3·9]	2·7 [2·3; 3·3]	1·7 [1·3; 2·4]	-0·3 [-1·3; 0·5]	-1·0 [-1·7; -0·2]†	-1·3 [-2·3; -0·4]†	0·42 [-0·63; 1·61]	5·88 [1·10; 10·30]†	1·74 [0·52; 2·94]†
Oceania (excluding Australia and New Zealand)	4·8 [3·0; 7·6]	1·8 [1·0; 3·6]	1·4 [0·5; 4·4]	-3·0 [-6·0; -0·5]†	-0·4 [-2·4; 2·7]	-3·4 [-6·4; 0·1]	3·90 [0·61; 7·03]†	3·47 [-13·43; 19·60]	3·79 [-0·07; 7·50]
Northern Africa and Western Asia	2·6 [2·1; 3·7]	0·9 [0·5; 1·4]	0·6 [0·3; 1·4]	-1·7 [-2·8; -1·0]†	-0·3 [-0·9; 0·6]	-2·0 [-3·1; -1·1]†	4·35 [2·18; 6·63]†	4·39 [-7·54; 15·75]	4·36 [1·68; 6·88]†
Central and Southern Asia	8·5 [7·2; 10·1]	0·8 [0·6; 1·1]	0·4 [0·2; 1·1]	-7·7 [-9·4; -6·4]†	-0·4 [-0·8; 0·4]	-8·1 [-9·7; -6·6]†	9·57 [8·11; 10·93]†	9·12 [-4·85; 19·42]	9·46 [6·18; 11·77]†
Eastern and South-Eastern Asia	0·8 [0·6; 2·9]	0·2 [0·1; 0·5]	0·1 [0·1; 0·4]	-0·6 [-2·6; -0·3]†	-0·1 [-0·4; 0·3]	-0·6 [-2·7; -0·3]†	5·50 [1·85; 10·81]†	5·04 [-11·37; 18·34]	5·39 [1·60; 9·63]†
Europe, Northern America, Australia, and New Zealand	0·5 [0·4; 0·7]	0·2 [0·2; 0·3]	0·1 [0·1; 0·2]	-0·3 [-0·5; -0·2]†	-0·1 [-0·2; 0·0]	-0·4 [-0·6; -0·3]†	3·72 [2·36; 4·99]†	6·26 [-0·95; 12·33]	4·33 [2·52; 5·82]†
	ASFR 15–19 (births per 1,000 girls aged 15–19)								
Indicator	ASFR			total change			annual rate of reduction (in %)		
Year	1990	2015	2023	1990–2015	2015–2023	1990–2023	1990–2015	2015–2023	1990–2023
World	74·7 [72·5; 77·1]	45·9 [44·9; 46·9]	39·0 [36·8; 41·4]	-28·8 [-31·3; -26·3]†	-6·9 [-9·3; -4·3]†	-35·7 [-38·9; -32·4]†	1·95 [1·80; 2·10]†	2·04 [1·23; 2·80]†	1·97 [1·77; 2·17]†
Sub-Saharan Africa	139·5 [136·3; 142·9]	110·5 [106·8; 114·6]	94·4 [86·3; 103·4]	-29·0 [-34·1; -23·9]†	-16·1 [-25·1; -6·3]†	-45·1 [-54·0; -35·4]†	0·93 [0·76; 1·10]†	1·97 [0·74; 3·17]†	1·18 [0·90; 1·47]†
Latin America and the Caribbean	89·1 [82·2; 97·4]	67·2 [64·8; 69·7]	51·2 [45·8; 57·5]	-21·9 [-30·5; -14·7]†	-16·0 [-21·8; -9·4]†	-37·9 [-47·5; -28·5]†	1·13 [0·78; 1·51]†	3·40 [1·90; 4·86]†	1·68 [1·24; 2·11]†
Oceania (excluding Australia and New Zealand)	78·9 [70·7; 89·0]	56·6 [50·2; 64·0]	49·9 [35·1; 72·0]	-22·3 [-34·2; -11·3]†	-6·7 [-23·5; 16·5]	-29·0 [-47·1; -5·4]†	1·33 [0·68; 1·99]†	1·57 [-3·27; 6·25]	1·39 [0·22; 2·54]†
Northern Africa and	66·3 [63·8; 68·9]	45·2 [41·1; 49·9]	36·3 [30·7; 43·0]	-21·1 [-26·0; -15·7]†	-8·9 [-16·1; -0·9]†	-30·0 [-36·2; -22·7]†	1·53 [1·10; 1·94]†	2·75 [0·27; 5·12]†	1·82 [1·29; 2·35]†

Western Asia									
Central and Southern Asia	131·4 [123·1; 140·3]	32·1 [30·5; 33·8]	26·2 [22·6; 30·5]	-99·3 [-108·4; -90·9]†	-5·9 [-9·8; -1·3]†	-105·2 [-114·6; -95·9]†	5·64 [5·31; 5·98]†	2·54 [0·50; 4·46]†	4·89 [4·39; 5·36]†
Eastern and South-Eastern Asia	30·5 [29·1; 32·1]	21·7 [20·2; 23·5]	14·3 [12·4; 16·5]	-8·8 [-11·0; -6·6]†	-7·4 [-10·0; -4·7]†	-16·2 [-18·6; -13·6]†	1·36 [1·00; 1·72]†	5·22 [3·17; 7·20]†	2·30 [1·84; 2·74]†
Europe, Northern America, Australia, and New Zealand	39·0 [37·9; 40·1]	16·6 [16·1; 17·2]	9·9 [9·0; 10·9]	-22·4 [-23·6; -21·2]†	-6·8 [-7·8; -5·7]†	-29·1 [-30·6; -27·7]†	3·41 [3·23; 3·58]†	6·51 [5·29; 7·72]†	4·16 [3·86; 4·45]†

Table 1: Estimates and 95% uncertainty intervals for age-specific fertility rate per 1,000 female population for age groups 10–14, and 15–19, for the world and regions, in 1990 and 2023, the change from 1990 to 2023, and the annual rate of reduction for periods 1990–2015, 2015–2023, and 1990–2023. †: Change is significantly different from zero. Total change: difference between values at period end and period start· Annual rate of reduction: $ln(ASFR_{t2}/ASFR_{t1})/(t1 - t2)$, where *t1* and *t2* refer to different years with *t1* smaller than *t2*.

Number of births (in thousands)						
Age group	10–14 years			15–19 years		
Year	1990	2015	2023	1990	2015	2023
World	1,150 [1,050; 1,340]	446 [407; 499]	347 [285; 454]	18,900 [18,400; 19,500]	13,500 [13,200; 13,800]	12,200 [11,500; 12,900]
Sub-Saharan Africa	361 [336; 389]	260 [231; 294]	236 [189; 309]	3,630 [3,550; 3,720]	5,710 [5,520; 5,920]	6,150 [5,620; 6,740]
Latin America and the Caribbean	76 [63; 97]	73 [62; 86]	44 [32; 62]	2,040 [1,890; 2,240]	1,810 [1,750; 1,880]	1,320 [1,180; 1,480]
Oceania (excluding Australia and New Zealand)	2 [1; 3]	1 [1; 2]	1 [0; 3]	25 [22; 28]	32 [29; 37]	32 [23; 47]
Northern Africa and Western Asia	44 [36; 62]	20 [13; 33]	17 [8; 39]	979 [942; 1,020]	974 [884; 1,080]	883 [748; 1,050]
Central and Southern Asia	592 [500; 704]	73 [54; 100]	35 [17; 104]	8,040 [7,530; 8,590]	2,910 [2,760; 3,070]	2,440 [2,100; 2,840]
Eastern and South-Eastern Asia	61 [46; 231]	13 [9; 35]	10 [5; 34]	2,830 [2,700; 2,980]	1,570 [1,460; 1,700]	1,000 [874; 1,160]
Europe, Northern America, Australia, and New Zealand	19 [15; 24]	7 [5; 8]	4 [3; 7]	1,390 [1,350; 1,430]	515 [499; 533]	319 [292; 350]
Proportion of births among total births						
Age group	10–14 years			15–19 years		
Year	1990	2015	2023	1990	2015	2023
World	100%	100%	100%	100%	100%	100%
Sub-Saharan Africa	31·2% [26·6%; 34·7%]	58·2% [52·6%; 63·0%]	68·1% [53·9%; 77·6%]	19·2% [18·5%; 19·9%]	42·2% [41·1%; 43·4%]	50·6% [47·7%; 53·5%]
Latin America and the Caribbean	6·6% [5·2%; 8·4%]	16·3% [13·6%; 19·3%]	12·6% [8·7%; 17·9%]	10·8% [10·0%; 11·7%]	13·4% [12·9%; 13·9%]	10·9% [9·7%; 12·2%]
Oceania (excluding Australia and New Zealand)	0·1% [0·1%; 0·2%]	0·2% [0·1%; 0·5%]	0·3% [0·1%; 0·9%]	0·1% [0·1%; 0·1%]	0·2% [0·2%; 0·3%]	0·3% [0·2%; 0·4%]
Northern Africa and Western Asia	3·8% [3·0%; 5·3%]	4·4% [2·8%; 7·1%]	4·8% [2·2%; 10·8%]	5·2% [4·9%; 5·4%]	7·2% [6·6%; 7·9%]	7·3% [6·2%; 8·6%]

Central and Southern Asia	51·3% [44·1%; 56·2%]	16·4% [12·3%; 21·4%]	10·2% [4·9%; 25·4%]	42·4% [40·8%; 44·1%]	21·5% [20·5%; 22·5%]	20·1% [17·6%; 22·8%]
Eastern and South-Eastern Asia	5·3% [4·0%; 17·2%]	3·0% [2·1%; 7·5%]	2·8% [1·5%; 9·2%]	15·0% [14·2%; 15·7%]	11·6% [10·9%; 12·5%]	8·3% [7·2%; 9·6%]
Europe, Northern America, Australia, and New Zealand	1·6% [1·2%; 2·1%]	1·5% [1·2%; 1·9%]	1·2% [0·7%; 2·2%]	7·3% [7·1%; 7·7%]	3·8% [3·7%; 4·0%]	2·6% [2·4%; 2·9%]

Table 2: Estimates and 95% uncertainty intervals for the number of birth (in thousands) for mothers from age groups 10–14, 15–19, for the world and regions, in 1990, 2015, and 2023. The proportion of births among total births in an age group for the world and each region· Regional births and proportions may not sum up to the global births or 100% respectively due to rounding.