Supplemental Online Content

Lemp JM, De Neve JW, Bussmann H, et al. Lifetime prevalence of cervical cancer screening in 55 low- and middle-income countries. *JAMA*. doi:10.1001/jama.2020.16244

eFigure 7. Lifetime prevalence of cervical cancer screening among all women by HDI, GDI, GII, SIGI, and health worker density

eFigure 8. Lifetime prevalence of cervical cancer screening among all women by GDP and health expenditure per capita, adjusted for individual-level differences between countries

eFigure 9. Lifetime prevalence of cervical cancer screening among all women by HDI, GDI, GII, SIGI, and health worker density, adjusted for individual-level differences between countries

eFigure 10. Lifetime prevalence of cervical cancer screening among women aged 30 to 49 years by GDP and health expenditure per capita, adjusted for individual-level differences between countries

eFigure 11. Cervical cancer screening prevalence by HDI, GDI, GII, SIGI, and health worker density, adjusted for individual-level differences between countries among women aged 30 to 49 years

eFigure 12. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women aged 50 years and older compared to women aged 30 to 49 years (reference group)

eFigure 13. Relative and absolute differences in lifetime prevalence of cervical cancer screening comparing the top versus the bottom (reference group) household wealth quintile

eTable 6. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between urban and rural (reference group)

eTable 7. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women having completed high school or further and those who have completed primary school or less (reference group)

eTable 8. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women in the top two versus the bottom two (reference group) household wealth quintiles

eTable 9. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women in the top versus the bottom (reference group) household wealth quintile

eTable 10. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women aged 20 to 29 years compared to women aged 30 to 49 years (reference group)

eTable 11. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women aged 50 years and older and women aged 30 to 49 years (reference group)

eFigure 14. Country-level median lifetime cervical cancer screening prevalence by five-year age group, grouped by region

eFigure 15. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women who currently smoke and women who do not (reference group)

eTable 12. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women who currently smoke and women who do not (reference group)

eFigure 16. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women who are currently not married and women who are (reference group)

eTable 13. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women who are currently not married and women who are (reference group)

eTable 14. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Europe: Azerbaijan to Kyrgyzstan

eTable 15. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Europe: Moldova to Tajikistan

eTable 16. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Latin America and the Caribbean: Argentina to Chile

eTable 17. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Latin America and the Caribbean: Colombia to El Salvador

eTable 18. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Latin America and the Caribbean: Guatemala to Jamaica

eTable 19. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Latin America and the Caribbean: Mexico to St. Vincent & the Grenadines

eTable 20. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Middle East & Northern Africa

eTable 21. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in South Asia, East Asia, and Pacific: Bhutan to Indonesia

eTable 22. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in South Asia, East Asia, and Pacific: Nepal to Timor-Leste

eTable 23. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Sub-Saharan Africa: Benin to Kenya

eTable 24. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Sub-Saharan Africa: Lesotho to Zimbabwe

eFigure 17. Relative and absolute differences in lifetime prevalence of cervical cancer screening between urban and rural (reference group) areas (Poisson regression without sampling weights)

eFigure 18. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women having completed high school or further and those who have completed primary school or less (reference group) (Poisson regression without sampling weights)

eFigure 19. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women in the top two versus the bottom two (reference group) household wealth quintiles (Poisson regression without sampling weights)

eFigure 20. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women in the top versus the bottom (reference group) household wealth quintile (Poisson regression without sampling weights)

eFigure 21. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women who are currently not married and women who are (reference group) (Poisson regression without sampling weights)

eFigure 22. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women who currently smoke and women who do not (reference group) (Poisson regression without sampling weights)

eFigure 23. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women aged 20 to 29 years compared to women aged 30 to 49 years (reference group) (Poisson regression without sampling weights)

eFigure 24. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women aged 50 years and older and women aged 30 to 49 years (reference group) (Poisson regression without sampling weights)

eTable 25. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Europe: Azerbaijan to Kyrgyzstan

eTable 26. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Europe: Moldova to Tajikistan

eTable 27. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Latin America and the Caribbean: Argentina to Chile

eTable 28. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Latin America and the Caribbean: Colombia to El Salvador

eTable 29. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Latin America and the Caribbean: Guatemala to Jamaica

eTable 30. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Latin America and the Caribbean: Mexico to St. Vincent & the Grenadines

eTable 31. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Middle East & Northern Africa

eTable 32. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in South Asia, East Asia, and Pacific: Bhutan to Indonesia

eTable 33. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in South Asia, East Asia and Pacific: Nepal to Timor-Leste

eTable 34. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Sub-Saharan Africa: Benin to Kenya

eTable 35. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Sub-Saharan Africa: Lesotho to Zimbabwe

This supplemental material has been provided by the authors to give readers additional information about their work.

eMethods 1
Search method for eligible surveys in low- and middle-income countries for which we were unable to acquire a WHO-STEPS survey

Search engine

a. Google
b. International Household Survey Network Survey Catalog
c. Global Health Data Exchange (GHDx)

Search terms

a. "[country name]" AND ("population-based" OR household) AND ("cervical cancer" OR "pap smear" OR "HPV")
b. "[country name]" AND "cervical"
c. "[country name]" AND "cervical"

Number of hits reviewed

Hits reviewed until eligible survey identified, or, in the case of no eligible survey having been identified, first 500 hits.

Inclusion criteria for a survey

These were the same criteria as for WHO-STEPS surveys, namely the survey:

1. was population-based and nationally representative for at least three ten-year age groups above the age of 15 years;
2. asked if respondents had a screening test for cervical cancer or pre-cancerous lesions in the past;
3. was conducted in an upper-middle, lower-middle, or low-income country according to the World Bank at the time the data was collected;
4. had a response rate ≥50%;
5. was carried out during or after 2005 (in cases where two surveys were accessible for a particular country, the most recent was used);

Countries included in search

Afghanistan, Albania, American Samoa, Angola, Argentina, Armenia, Bangladesh, Belize, Bolivia, Bosnia and Herzegovina, Brazil, Bulgaria, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Cook Islands, Costa Rica, Côte d'Ivoire, Cuba, Democratic People's Republic of Korea, Democratic Republic of the Congo, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Ethiopia, Fiji, Gabon, Gambia, Ghana, Grenada, Guatemala, Guinea, Guinea-Bissau, Haiti, Honduras, India, Indonesia, Jamaica, Jordan, Kazakhstan, Kiribati, Lao People's Democratic Republic, Lesotho, Liberia, Libya, Macedonia, Madagascar, Malawi, Malaysia, Maldives, Mali, Marshall Islands, Mauritania, Mauritius, Mexico, Micronesia (Federated States of), Mongolia, Montenegro, Mozambique, Myanmar, Namibia, Nepal, Nicaragua, Niger, Nigeria, Occupied Palestinian Territory, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Romania, Russia, Rwanda, Saint Lucia, Samoa, São Tomé and Principe, Senegal, Serbia, Seychelles, Sierra Leone, Solomon Islands, Somalia, South Africa, South Sudan, Sri Lanka, Suriname, Syrian Arab Republic, Thailand, Togo, Tokelau, Tonga, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Republic of Tanzania, Uruguay, Uzbekistan, Vanuatu, Venezuela, Viet Nam, Yemen, Zambia, Zanzibar, Zimbabwe

Date of search

September 2019

eMethods 2
Country-specific sampling methods

We pasted sampling methods directly from the stated sources.

The STEPS survey reports from Algeria (2016), Azerbaijan (2017), Kyrgyzstan (2013), Sudan (2016), and Tajikistan (2016) were not available and we, thus, assumed that they used the STEPS sampling strategies provided on the official website of the World Health Organization.

Source

World Health Organization. STEPS Resources. 2019. https://www.who.int/ncds/surveillance/steps/resources/en/. Accessed December 11, 2019.

Argentina: ENFR 2013

The original report is in Spanish. We translated the sampling strategies using Google translate.

"**Target population and estimation domains**
The target population is people 18 years of age or older who live in private homes in locations with 5,000 or more inhabitants. The objective was to give estimates for the following domains:

- Total country.
- Four groupings according to size of the locality (number of inhabitants).
- Six regions:
    - GBA: Autonomous City of Buenos Aires and Parties of the Buenos Aires Conurbano.
    - Pampeana: La Pampa, Córdoba, Entre Ríos, Buenos Aires (not including the Buenos Aires Conurbano Parties) and Santa Fe or NOA: Catamarca, Jujuy, LaRioja, Salta, Santiago del Esteroy Tucumán or NEA: Corrientes, Chaco, Formosa y Misiones.
    - Whose: Mendoza, San Juan and San Luis
    - Patagónica: Chubut, Neuquén, Río Negro, Santa Cruz y Tierra del Fuego.
    - Political division (25 jurisdictions).
- Eight urban agglomerates of more than 500,000 inhabitants (GBA, Gran Rosario, Gran Córdoba, Gran La Plata, Mar del Plata-Batán, Gran Mendoza, Gran San Miguel de Tucumán and Gran Salta)

Sample selection methodology
For the National Survey of Risk Factors 2013, a probabilistic sample of people was carried out, through four stages of selection, with stratification and conglomeration in some of the stages carried out.

First stage of selection
In the first stage, census agglomerates were selected, hereinafter referred to as UPS (primary selection units). For the selection of the UPS, they were stratified according to their population size. The larger UPSs were selected with probability equal to 1 and the rest of the UPS were selected with probability proportional to their population size.

Second stage of selection
The second stage of selection consists in the probabilistic selection of areas (USS) in each of the UPS chosen in the first stage. In general, the areas are census radios or groups of census radios. The selection of the USS was carried out by means of a probabilistic sampling, stratified according to the educational level of the head of household.

Third stage of selection
The third stage consists of the selection of homes within each selected area. The houses were grouped into segments (set of 5 houses). Within the areas, segment selection was performed by systematic sampling.

Fourth stage of selection
In the homes selected in the third stage, all households are surveyed. In each household, a person 18 years of age or older is selected through a probabilistic procedure, known as the Kish chart.

Sample size
A sample of 46,555 homes was obtained nationwide. The distribution of the sample by province is detailed below in Table 1. […]"

Source
Instituto Nacional de Estadística y Censos (INDEC) & Ministerio de Salud de la Nación. Encuesta Nacional de Factores de Riesgo 2013. Documento para la utilización de la base de datos usuario. https://www.indec.gob.ar/ftp/cuadros/menusuperior/enfr/doc_base_usuario_enfr2013.pdf. Accessed December 11, 2019.

Belarus: STEPS 2016

The original report is in Russian. We translated the sampling strategies using Google translate.

"The main goal of the sample design for the STEPS study in the Republic of Belarus is that the sample should have a national character in terms of scale and coverage, the measured indicators should reflect the situation in the country as a whole. The main task of the sample is to obtain statistically reliable data at the national and subnational levels (for urban and rural areas), as well as for gender and age groups. The general population, information about which is supposed to be obtained during the study, or the target group of the study is the population of the Republic of Belarus aged 18-69 years, with the exception of:

- the population permanently residing (staying) in boarding schools, in specialized institutions for minors in need of social assistance and rehabilitation; in children's villages (towns); in social service institutions; in hospitals and other healthcare organizations; in the barracks; in buildings owned or transferred to use by religious organizations; as well as those in arrest houses, correctional institutions or medical labor dispensaries, and so on;
- homeless (persons without a permanent residence).

Sampling method

When forming the sampling frame for STEPS research, the method of two-stage probabilistic sampling using the stratification and selection procedures at each of the sampling stages was used. The selection is based on the territorial principle of sample formation. […]

Stratification

To increase the accuracy of the results of sample observation and to ensure the required sample size, the stratification method is used, the essence of which is to divide the sample into strata that are as homogeneous as possible according to the main characteristics. Given the differences in lifestyle and the incidence rate of the population living in cities, urban-type settlements and rural settlements, the following two strata were identified: urban area and rural area. To ensure uniform distribution of the sample across the republic, the selection was carried out separately by region: Brest, Vitebsk, Gomel, Grodno, Minsk, Mogilev regions and the city of Minsk, which corresponds to the national administrative-territorial division. When forming the primary sample array, to establish the geographical proximity of the selected units within each region, the principle of the serpentine arrangement of sample units from north to south was applied.

Sampling frame

[…] Census sites are on average approximately the same size. For each site there is a map-scheme providing a clear, non-overlapping delimitation of geographical areas, as well as information on the population and the number of households. The largest in size is the census site, which includes several instructor sites. The smallest unit in the hierarchical structure of census plots is enumeration plots. The positive point in using enumeration plots as primary sampling units (PSUs) is that they are small and approximately the same size (each of them includes an average of about 100 DX). As a consequence of this, PSU is a territory within which it is possible to effectively organize local work. For the census, the territory of the Republic of Belarus was divided into almost 32 thousand counting plots. Due to the fact that the last census in the Republic of Belarus was carried out in 2009, the current data from polyclinics, medical outpatient clinics, FAPs and rural Soviet counts were used to update the sample.

Sampling algorithm

The sampling algorithm for the STEPS study involves the use of a procedure for constructing a stratified multi-stage sampling. In each stratum, the selection is organized in two stages according to one scenario. At the first stage of constructing the sample, a systematic selection of PSUs was performed with a probability proportional to size. The indicator "population" was used as the size. Before the selection began, PSUs were geographically ordered along the serpentine line in order to provide implicit stratification and to obtain a sample that would be geographically representative. At the second stage, a standard systematic selection procedure was used to construct the sample, in which the start of the selection was determined randomly. At the third stage, during the field work, specific survey respondents are randomly determined from the total number of members of the selected household at the age of 18-69. […] In general, 5760 HHs were selected in the republic, including 2880 HHs for urban and 2880 HHs of rural type.

Calculation of the probability of inclusion in the sample
Based on the results of the first and second stages of sample formation, the probabilities of inclusion (occurrence) in the sample of the household are determined."

Source
РАСПРОСТРАНЕННОСТЬ ФАКТОРОВ РИСКА НЕИНФЕКЦИОННЫХ ЗАБОЛЕВАНИЙ В РЕСПУБЛИКЕ БЕЛАРУСЬ STEPS 2016. https://www.who.int/ncds/surveillance/steps/Belarus_2016-2017_STEPS_Report_RU.pdf. Accessed December 11, 2019.

"The STEPS survey of noncommunicable disease (NCD) risk factors in Belarus was carried out from 09.2016 to 03.2017. Belarus carried out Step 1, Step 2 and Step 3. Sociodemographic and behavioral information was collected in Step 1. Physical measurements such as height, weight and blood pressure were collected in Step 2. Biochemical measurements were collected to assess blood glucose and cholesterol levels and urinary sodium and creatinine in Step 3. The survey was a population-based survey of adults aged 18-69. A multistage cluster sample design was used to produce representative data for that age range in Belarus. A total of 5760 adults participated in the survey. The overall response rate was 87.1%."

Source
WHO STEPS noncommunicable disease risk factor surveillance. Belarus STEPS Survey 2016-2017 Fact Sheet. https://www.who.int/ncds/surveillance/steps/Belarus_2016-2017_STEPS_FactSheet.pdf?ua=1. Accessed December 11, 2019.

Belize: Central America Diabetes Initiative (CAMDI) 2010

"The CAMDI survey was a cross-sectional survey based on a probabilistic, stratified, multistage, cluster sampling design of the noninstitutionalized population of five Central American sites. The survey sampled included the entire national population in Belize; the overall metropolitan populations in San Jose, Costa Rica; Tegucigalpa, Honduras; and Managua, Nicaragua; and was restricted to the municipalities of Santa Tecla and Villa Nueva, which are part of the metropolitan areas of San Salvador and Guatemala City, respectively. In each city, the primary sampling unit was a cluster of independent households within predetermined geographic areas. The primary sampling units were grouped into geographic strata (sectors and compact segments or blocks). The sample was allocated proportionally to the size of the population within each geographic stratum of each city. All eligible individuals aged 20 years or older in the randomly selected households were invited to participate. Data were weighted to account for differential selection probabilities and survey nonresponse, and weights were post-stratified to the adult population of each site based on age group and sex. The total sample population was 10,822, of whom 7,234 (66.8%) underwent anthropometry measurement and laboratory tests. Data were weighted to represent the population of the sampled city, except in Belize, where data were weighted to the country's entire population."

Source

Barcelo A, Gregg EW, Gerzoff RB, et al. Prevalence of Diabetes and Intermediate Hyperglycemia Among Adults From the First Multinational Study of Noncommunicable Diseases in Six Central American Countries: The Central America Diabetes Initiative (CAMDI). *Diabetes Care*. 2012;35(4):738-740. doi:10.2337/dc11-1614. Accessed December 11, 2019.

Benin: STEPS 2015

The original report is in French. We translated the sampling strategies using Google translate.

“This survey was national in scope and integrated all of Benin's 12 departments while taking into account urban and rural areas. It was a cross-sectional, descriptive and analytical study.

Study population

The target population consisted of adults from the twelve departments of Benin.

Inclusion criteria

Participants in the survey included those aged 18 years or older and 69 years old or younger on the day of the survey who had been living in Benin for at least 6 months and had given informed consent.

Exclusion criteria

Were excluded from the study:

- Participants who have not given their consent to participate in the survey and / or those who have made 02 unsuccessful visits.
- People who were not able to answer questions;

Sampling

The sample size was estimated at 5123 participants. It has been calculated using the Schwartz formula […] and a spreadsheet developed by the WHO for the calculation of sample size in STEPS surveys […]. The study was conducted using a three-stage random probing technique. The sampling frame was provided by the National Institute of Statistics and Economic Analysis (INSAE) based on data from the Fourth General Population and Housing Census (RGPH4) in Benin in 2013.

- The first degree consisted of the random selection of 260 Enumeration Areas (DZ);
- The second degree consisted of drawing 20 households by DZ;
- The third degree consisted of randomly selecting one individual per household selected according to the Kish method recommended by WHO for STEPS.

Source

Ministère de la Santé, Direction Nationale de la Santé Publique, Programme National de Lutte contre les Maladies Non Transmissibles (PNLMNT). Rapport final de l’enquête pour la surveillance des facteurs de risque des maladies non transmissibles par l'approche ‘’STEPSwise’’ de l'OMS. Enquête “STEPS 2015” au Bénin. 2016. https://www.who.int/ncds/surveillance/steps/Benin_2015_STEPS_Report_FR.pdf. Accessed December 11, 2019.

Bhutan: STEPS 2014

"To achieve a nationally representative sample, a multistage sampling method was used to select enumeration areas, households and eligible participants at each of the selected households in three stages. The 2005 National Census was chosen as the basis for the sampling frame, with "Geogs" (blocks) in rural areas and towns in urban areas forming the primary sampling units (PSUs). Since the population distribution for urbanicity is 70:30 (rural:urban), 63 PSUs in rural and 14 PSUs in urban areas were chosen. PSUs were selected through the probability proportionate to size (PPS) sampling using the number of households in each PSU. Two secondary sampling units (SSUs) for every rural PSU and 4 SSUs for every urban PSU were selected. This led to the selection of 126 SSUs from rural and 56 SSUs from urban areas. This was also carried out by PPS sampling, using the number of households in each SSU. A total of 16 households from each SSU (both rural and urban) were selected using systematic random sampling. The sampling frame for this was the list of households with a unique identification number (ID) developed by the enumerators for the survey. At the household level, the Kish sampling method was used to randomly select one eligible member (aged 18–69 years) of the household for the survey. The Kish method ranks eligible household members in order of decreasing age, starting with males and then females, and randomly selects a respondent using the automated program for Kish selection in the handheld personal digital assistant (PDA)."

Source

World Health Organization, Regional Office for South-East Asia. (2016). National survey for noncommunicable disease risk factors and mental health using WHO STEPS approach in Bhutan - 2014. World Health Organization. https://apps.who.int/iris/handle/10665/204659. Accessed December 11, 2019.

Bolivia: DHS 2008

The original report is in Spanish. We translated the sampling strategies using Google translate.

"**Sample Design**
As in the previous ENDSAS, the sample design for the ENDSA 2008 provides a nationally probabilistic sample, which is stratified, by conglomerate and in two stages. In the first stage, 1,000 conglomerates of households were selected throughout the country - called Primary Sampling Units (UPM) - with probability proportional to their size. In a second stage, a fixed number of 20 households were selected within each UPM selected in the first stage. In each department, the UPMS of the sample framework were stratified according to the categorization of the population sizes. The urban residence area is defined as all the towns of 2,000 inhabitants and more. The stratification defined in the sample framework is also implicitly applied to ENDSA 2008. The units of analysis are women of childbearing age and their corresponding children under five years of age located in the selected households; in addition to men aged 15 to 64 found in a subsample of these same homes.

Objectives of the Sample Design
The 2008 ENDSA sample was designed to obtain estimates of the various indicators with acceptable levels of confidence at different levels of geographical disaggregation. These levels are:

- Country total
- Total for each of the two areas of residence: urban and rural
- Total for each of the three geographical regions: Altiplano, Valle and Llano
- Total for each of the nine departments

In relation to maternal mortality, the estimation of the maternal mortality ratio with the assigned size of 20,000 households is only presented for the total of the country and even in this case it is considered relatively inaccurate.

Sampling frame
The sample framework used for the design and selection of the ENDSA 2008 sample was provided by the National Statistics Institute, which has been prepared with information and material from the last National Population and Housing Census of 2001. The 1,000 Units Sampling Primary selected from this framework for ENDSA 2008 were updated in terms of the number and location of resident households. Each UPM has a complete identification by means of an assigned code, in addition to having a perfectly delimited map."

Source
Coa, R, Ochoa, LH & ICF International. Bolivia Encuesta Nacional de Demografía y Salud 2008. Published 2009. https://dhsprogram.com/pubs/pdf/FR228/FR228[08Feb2010].pdf. Accessed December 11, 2019.

Botswana: STEPS 2014

“Botswana has a population of over 2 million with 27 districts and 4,845 enumeration areas and sample size of 300 enumeration areas with a target population of 6,400 people was systematically drawn from a pool of the whole enumeration areas. Against the identified enumeration areas numbers of households were listed and proportion of participants was calculated from the total sample size required for the country. Finally a computer generated random number was drawn to go into specific households in that specific enumeration area and at the end eligible participants residing in the household were listed into the electronic hand held data assistant(PDA) and at the end a name was picked automatically to participate in the survey.”

Source

Ministry of Health Republic of Botswana, WHO. Botswana STEPS Survey Report on Non-communicable Disease Risk Factors. Published 2015. https://www.who.int/ncds/surveillance/steps/STEPS_BOTSWANA_2014_Report_Final.pdf?ua=1. Accessed December 11, 2019.

Brazil: Pesquisa Nacional de Saúde 2013

The text below was translated from: https://www.pns.icict.fiocruz.br/index.php?pag=planoamostragem

"The Master Sample is a set of units of areas that are selected to meet various surveys of the IBGE Integrated System of Household Searches (SIPD). These units are considered primary sampling units (PSUs) in the sample planning of each of the surveys that use the Master Sample, such as PNS. The sampling plan consists of the stratification of the UPAs and selection of these units with probability proportional to the size, given by the number of permanent private households (DPPs).

The register for selection of the Master Sample was a file containing information from the Demographic Census 2010 on the census tracts of the geographic scope, whose limits are defined in the Operational Geographic Base 2010, totaling 316574 sectors. A sector or set of sectors with at least 60 DPPs was defined as UPA, with the exception of a few units, because it was not possible to aggregate sectors in some municipalities.

The stratification of the UPAs obeys four different criteria: administrative, including the division of the UF into capital, rest of the Metropolitan Region (RM) or Integrated Region of Economic Development - RIDE, and rest of the UF; geographical subdivision, which subdivides capitals and other large municipalities into more strata; situation that involves rural / urban categorization; and the statistician in order to improve the accuracy of the estimates.

As part of the SIPD, the sampling design of the PNS followed, in part, the sampling design of the Master Sample, especially with regard to the stratification of the UPAs.

The PNS sample is by clusters in three stages of selection:

- 1st stage: selection with probability proportional to the size (given by the number of DPPs in each unit) of the UPAs sub-sample in each stratum of the Master Sample;
- 2nd stage: selection by simple random sample of households in each UPA selected in the first stage;
- 3rd stage: selection by simple random sampling of the adult (person aged 18 years or older) among all adult residents of the household.

The PNS will integrate the SIPD, which will make it possible to relate the information collected with other researches, such as the PNAD and the Household Budget Survey (POF) at different levels of geographic aggregation."

Sources

Pesquisa Nacional de Saúde. Plano de Amostragem. Published 2010. https://www.pns.icict.fiocruz.br/index.php?pag=planoamostragem. Accessed December 11, 2019.

Instituto Brasileiro de Geografia e Estatística (IBGE). Pesquisa Nacional de Saúde 2013. ftp://ftp.ibge.gov.br/PNS/2013/pns2013.pdf. Published 2014. Accessed December 11, 2019.

Bulgaria: EHIS wave 2 - 2014

„Sampling frame
The Census 2011 DataBase is used. The sampling frame is updated annually based on current demographic statistics as of 31.12. 2014 data are used.

Survey population

A) Total coverage	6204002
B) Estimate (in %) of the resulting percentage of under-coverage (a proportion of units not accessible via the sampling frame that belong to the target population)	0.5%
C) Estimate (in %) of the resulting percentage of over-coverage (a proportion of units accessible via the sampling frame that do not belong to the target population)	0.0%
D) Population groups that may be excluded even though they belong to sampling frame (e.g. people with hearing problems in case of CATI)	None
E) Non-target population - population (number of individuals) younger than 15 years	998 196 (as of 31.12.2014)

Sampling design
A two-stage stratified cluster sample on national and regional level is used. The sample is stratified by using the administrative regions in the country and persons' place of residence (town, village). As a result of the stratification 56 strata are designed. At the first stage clusters are selected with a probability proportional to their size, separately for 28 districts and for urban and village population. At the second stage, through a systematic selection 5 households are identified. All persons aged 15 and over in selected households were interviewed. […]

The survey applies the principle of the voluntary participation. A substitution is not allowed. By face to face interview (PAPI) 6 410 persons from 8 839 are interviewed. The response rate is 72.5%. […]

EHIS Wave 2
The survey applies the principle of the voluntary participation. A substitution is not allowed. By face to face interview (PAPI) 6 410 persons from 8 839 are interviewed. The response rate is 72.5%. “

Source
Bulgaria National Statistical Institute. European health interview survey. https://www.nsi.bg/en/content/5630/european-health-interview-survey. Accessed December 11, 2019.

Chile: National Health Survey 2009-2010

The text below was translated from: http://epi.minsal.cl/encuesta-ens-anteriores/

"The sampling frame was constituted from the Population and Housing Census 2002. The design of the study was transversal, with a random sample of complex type households (stratified and multi-stage by clusters) with national, regional and area representation rural / urban. The target population was adults older than or equal to 15 years. The survey had a response rate in the eligible population of 85%. The refusal rate was of 12%. 5,434 people were interviewed. A nurse performed clinical and examinations to 5,043 participants and 4,956 accepted laboratory tests (blood and urine). The total sample loss of the oversized sample was 28% (this including rejection, non-contact and other causes of random loss). The raw sample was designed with overrepresentation of some population groups (older adults, regions other than the Metropolitan Region and rural areas) to increase sample efficiency and homogenize the accuracy of the estimators. The expansion of the sample data is because it grants each participant the weight that corresponds to it according to the design sample and at the same time corrects the distortion of the raw sample, making it coincide with the census population projection for January 2010 for Chilean adults over 15 years of age."

Source

Ministerio de Salud de Chile & Departamento de Salud Pública de la Facultad de Medicina de la Pontificia Universidad Católica de Chile. Resumen Ejecutivo: Encuesta Nacional de Salud ENS Chile 2009-10. http://epi.minsal.cl/wp-content/uploads/2016/06/InformeENS_2009-2010_CAP1.pdf. Accessed December 11, 2019.

China: SAGE wave 1 – 2008-2010

"**2.1 Sampling design, implementation and size**

2.1.1 National sampling plan
In SAGE-China, the total target sample was 9,600 households, including 8,000 households with respondents aged 50 years and older (50-plus) and 1,600 households aged 18 to 49 years. The goal was to get a study population that was a nationally representative sample of respondents aged 50-plus, their spouses and other persons over 50 years in the household, and a smaller sample of persons aged 18 to 49 years as a comparator population. Selection of the sampling strata consisted of three steps. Firstly, the 31 provinces in China were divided into three areas (eastern, middle and western) according to geographic area and socioeconomic level. Secondly, four provinces were randomly selected from the eastern, two from the central and two from the western areas (Shanghai, Zhejiang, Guangdong and Shandong; Hubei and Jilin; and, Yunnan and Shaanxi, respectively). Thirdly, one county from rural DSPs (national Death Surveillance Points) and one district from urban DSPs in each province were selected. In total, eight provinces and 16 strata were selected for SAGE-China. […]

Three principles were used for the sampling design: A probability sampling design was employed, meaning that every individual in the sampling frame has a known and non-zero chance of being selected into the survey sample. A multi-stage cluster sampling strategy was used. An adequate number of persons must be drawn from the sampling frame to account for an estimated amount of non-response (refusal to participate, empty houses). The highest estimate of potential non-response and empty households was used to ensure that the desired sample size was reached at the end of the survey period. However, efforts were made to ensure a response rate of at least 80%. In addition, all households that were drawn into the sample must be approached for the survey even if response rates turn out to be higher than initially anticipated. If at the end of data collection the required sample size of 8,000 respondents aged 50+ years and 1,600 respondents aged 18-49 years has not been reached, additional persons must be selected randomly into the survey sample from the sampling frame. 10% was added to the original sample size to account for non-response. All steps of sampling, including justification for stratification, cluster sizes, probabilities of selection, and weights at each stage of selection, and the computer program used for randomization, were communicated to WHO. The procedure of sampling was divided into five stages after demographic information was collected by survey provincial teams:

- Stage 1 (PSU): Four townships in urban or rural communities per county/district using PPS method, for a total of 64 PSUs sampled. Table 2.1 shows the number of sample PSUs in SAGE-China;
- Stage 2 (SSU): Two villages/enumeration areas (EAs) per township/community using PPS method, for a total of 128 SSUs sampled;
- Stage 3 (TSU): Two residential blocks (RB) per village/EA using random cluster sampling method, for a total of 256 TSUs sampled;
- Stage 4: Forty-two households per RB using randomized sampling method (SRS), including:
  a) 50+ (older) household: sampling 35 households from households that have person(s) for interview aged 50+ in each village using simple randomized sample (SRS) method.
  b) 18-49 (younger) household: sampling seven households that have person(s) for interview aged 18-49. In total, 10,752 households were sampled, which included a 10% oversample to account for anticipated non-response.
- Stage 5: Selection of individuals. All persons aged 50+ in these 35 households were invited to participate and be interviewed. Using KISH grid methodology assigned by WHO Geneva, one respondent aged 18-49 was selected in each younger household."

Source
Shanghai Municipal Center For Disease Control & Prevention (SCDC). China Study on global AGEing and adult health (SAGE), Wave 1. Published 2012.
http://apps.who.int/healthinfo/systems/surveydata/index.php/ddibrowser/13/download/1874. Accessed December 11, 2019.

Colombia: ENDS 2015

The original report is in Spanish. We translated the sampling strategies using Google translate.

"The National Demographic and Health Survey (ENDS) 2015 was developed in a subsample of the Master Sample of Households for Health Studies that was designed by the Ministry of Health and Social Protection to ensure a comprehensive and complementary approach from the thematic point of view and the populations under investigation, in terms of representativeness and similar disaggregation of the results of the studies of the National System of Population Studies and Surveys for Health.

The Master Sample, configured according to the requirements of the set of population studies in health, is probabilistic, of conglomerates, stratified and polythetic, and from it the probabilistic subsamples required by the different studies are selected.

The universe of study for the ENDS consists of the non-institutionalized civil population, aged 13 to 69, from urban and rural areas of 1,122 municipalities in 32 departments of Colombia and Bogotá D.C.; The 2005 Population and Housing Census was used as a sample framework for its selection. The effective survey was carried out in a probabilistic subsample of households in which 92,799 people eligible for individual surveys were identified (52,479 women aged 13 to 69 years and 40,300 men from 13 to 69 years old), from 44,614 urban and rural households of the different socioeconomic strata, concentrated in 295 municipalities grouped in 258 Primary Sampling Units (UPM), of the 32 departments of the country and Bogotá.

The total number of segments actually worked was 4,878, of which 74% belong to the capital and 26% are rural. The detailed description of the Master Health Sample and the subsample selection procedures for the ENDS 2015 can be found in Appendix A. For comparison purposes with previous surveys, Table 1.1 shows the geographical disaggregation in which they appear the results of the ENDS 2015. […]

According to Table 1.2, it follows that in 12 percent of the homes visited, no home was found because the house was unoccupied, changed use or was demolished; In total, 51,983 occupied households were identified and in 44,614 the survey was conducted for a response rate of 85.8 percent. The lowest response rate was found in Bogotá (69.6%) and the highest in the Orinoquia and Amazon region (91.4%).

In the households surveyed, 44,733 eligible women aged 13 to 49 were found and the survey of 38,718 was achieved for a response rate of 86.6 percent; As in household surveys, the lowest response rate for women is in Bogotá (74.6%) and the highest in the region of Oronia and Amazonia (90.1%). 47,889 eligible men aged 13 to 59 were also found and the survey was conducted at 35,783 for a response rate of 74.7 percent; In accordance with the previous results, Bogotá presented the lower response rate of men (56.6%) and the Orinoquia and the Amazon the highest (81.4%).

In the sample of households, 14,741 women were identified between 50 and 69 years of whom it was possible to interview 13,761 for a response rate of 93.4 percent. On the other hand, 5,147 men between 60 and 69 years old were identified in the sample and it was possible to do the individual survey at 4,517, for a response rate of 87.3.

Of the 5,000 planned segments, in the implementation of the sample it was not possible to carry out the surveys for various reasons in 122 segments: in 42, because the initially estimated population was smaller than the one found; in 41, because the administrations of the closed sets did not give permission to do the survey; in 27, in public order; in 7, because no habitual residents were found, and in 5, due to rejection of indigenous communities."

Source

Ministerio de Salud y Protección Social & Profamilia. Encuesta Nacional de Demografía y Salud. ENDS Colombia 2015. https://www.dhsprogram.com/pubs/pdf/FR334/FR334.pdf. Accessed December 11, 2019.

Costa Rica: ENSA 2006

The original report is in Spanish. We translated the sampling strategies using Google translate.

"Sample Design

The sample design of the ENSA corresponds to a probabilistic design of areas, two-stage with replacement, where the last unit of selection was the dwelling and the observation unit were all the habitual or permanent residents of the selected dwelling at the time of the interview.

Sampling frame

The sample was selected from the INEC Housing Sample Framework 2000 (MMV-00) of the INEC and was constructed from the National Census of 2000. This framework is called the Area Framework since its sampling units (segments) are geographical areas that in On average, they have 60 homes in the urban area and 40 homes in the rural area.

Sample size

To determine the sample size of a study, we must consider different situations (Dawson-Saunders; 1996.). […]

- Studies to determine parameters. It is intended to make inferences to population values (proportions, means) from a sample
- Studies for hypothesis contrast. Try to compare if the means or proportions of the samples are different.
- Estimate a proportion. To estimate a proportion, the following values must be known:

[...]

In this way, a size of 2004 homes and 167 segments were obtained. Table 16 reflects the way in which the sample was distributed according to the planning region."

Source

Centro Centroamericano de Población. Manual del Encuestador. Encuesta Nacional de Salud 2006. https://ccp.ucr.ac.cr/farmacoeconomia/documentos/ENSA/ManualdelEntrevistador.pdf. Accessed December 11, 2019.

Cote d'Ivoire: DHS 2011-12

The original report is in French. We translated the sampling strategies using Google translate.

“Sampling

The 2011-2012 EDS-MICS targets the population of individuals residing in ordinary households across the country. A national sample of 10,413 households was selected. The sample was stratified so as to provide an adequate representation of the urban and rural areas as well as of the eleven fields of study, corresponding to the ten former administrative regions and to the city of Abidjan, for which we have an estimate for all key indicators.

The EDS-MICS 2011-2012 sample was a two-stage stratified area sample. In the first stage, census clusters or districts (CD) were drawn throughout the national territory from the list of CDs from the 1998 General Census of Population and Housing (RGPH). the age of this database, a complete update of the clusters, was carried out. This updating made it possible to obtain a complete list of households residing in the cluster and this list served as a sampling frame to draw households in the second degree. Overall, 352 clusters, including 161 in urban areas and 191 in rural areas, were selected by carrying out a systematic draw with probability proportional to size; the size of the CD being the number of households.

In the second degree of drawing and according to the place of residence, a fixed number of households was drawn in each cluster counted by a systematic drawing with equal probability. The average number of households drawn from a cluster is 27 in urban areas and 32 in rural areas.

All women aged 15-49 usually living in selected households, or present the night before the survey, were eligible to be surveyed. In addition, in a subsample of one in two households, all men aged 15-59 were also surveyed. In this subsample, all women and men eligible for the individual survey were also eligible for the HIV test. In addition, in this sub-sample of households, all women and men eligible for the survey and all children aged 6-59 months were offered an anemia test. In addition, in this sub-sample of households, all women eligible for the survey as well as all children under the age of 5 were eligible to be measured and weighed to determine their nutritional status. Finally, in households in the same sub-sample, all children under the age of five and all pregnant women were eligible for the parasitaemia test.

Table 1.2 summarizes the results of the collection. It appears that out of the 352 clusters selected in the 2011-2012 EDS-MICS, 351 could have been investigated, one being inaccessible. A total of 10,413 households were selected and, among them, 9,873 occupied households were identified at the time of the survey. Among these 9,873 households, 9,686 could be successfully surveyed, representing a response rate of 98% (Table 1). The household response rate is slightly higher in rural areas (99%) than in urban areas (97%).

In the 9,686 households surveyed, 10,848 women aged 15-49 were identified as being eligible for the individual survey, and for 10,060 of them, the interview was successfully conducted, representing a rate of 93% response. The men's survey was carried out in every second household: 5,677 men were eligible and 5,135 were interviewed (response rate of 91%). The response rates observed in rural areas are significantly higher than those obtained in urban areas for both women (95% versus 91%) and men (94% versus 86%). [...] However, whatever the place of residence, the response rates of households, women and men are clearly higher than those of the survey on AIDS indicators (EIS 2005), used in the design of the sampling plan, which indicates the good quality of the collection operations.”

Source

Institut National de la Statistique – Cote d’Ivoire & ICF International. Enquête Démographique et de Santé et à Indicateurs Multiples 2011-2012. Published 2013. https://dhsprogram.com/pubs/pdf/FR272/FR272.pdf. Accessed December 11, 2019

Dominican Republic: DHS 2013

The original report is in Spanish. We translated the sampling strategies using Google translate.

"1.2.1 Objectives of the sample design

ENDESA 2013 was designed to obtain reliable estimates on a series of indicators relevant for the country as a whole, by urban and rural area as independent domains, and for each of the nine health regions of the country. However, depending on the indicator, analysis domains apply more restricted, especially the case of HIV prevalence. The study universes are made up of homes, women aged 15-49, their children under 5 years old, and by men 15-59 years old.

Sample Design

The sample design implemented by ENDESA-2013 was probabilistic, by conglomerate, stratified and bi-etipaic. The set of census supervision areas was used as a sample framework extracted from the Population and Housing Census of 2010, prepared by the National Statistics Office (ONE). These areas constitute the Primary Sampling Units (UPMs) (see Appendix A for more details). As a first stage in the design, the UPMs were stratified by province and area of residence. In this stage, 524 UPMs were selected, with probability proportional to their size (PPT). In the map 1.1 the geographical distribution of the selected UPMs is presented. These areas were subjected to a cartographic update process, in order to take into account possible changes within the same. In the second stage, 25 households were selected in each of the updated UPMs, following a random-systematic process. In each of the selected households, they were considered eligible for the survey all women aged 15 to 49 years and all men aged 15 to 59 years regulars of those homes or who slept in them the night before. For the application of the Questionnaire of Morbidity and Health Expenditures, a subsample was taken, randomly taking one in two homes already selected in the second stage. [...]

To ensure that the level of accuracy of the survey is comparable between regions, the sample considers a 'power' affixation between regions and between areas of residence within each region. On the base from a sample of 25 households within each cluster, the sample selected 524 Enumeration Areas (AE), 364 in urban areas and 160 in rural areas. The sample was selected so as to guarantee a sufficient number of cases in each domain, ranging from 1,150 households in region IV to 2,000 households in the region 0, as shown in Table A.3 of Annex A. This sample allocation would result in a number enough of women and men aged 15-49 in each region, as shown in Table A.4 of the Annex TO. It should be noted that the new health regionalization that includes the Azua province in region VI and not in region I as in ENDESA-2007. The rest of the regions did not undergo changes."

Source

Centro de Estudios Sociales y Demográficos (CESDEM) & ICF International. República Dominicana Encuesta Demográfica y de Salud 2013. Published 2014. https://dhsprogram.com/publications/publication-FR292-DHS-Final-Reports.cfm. Accessed December 11, 2019.

Ecuador: La Encuesta Nacional de Salud y Nutrición (ENSANUT) 2012
The text below was translated from: http://www.ecuadorencifras.gob.ec/documentos/web-inec/Estadisticas_Sociales/ENSANUT/MSP_ENSANUT-ECU_06-10-2014.pdf

"Each province is divided into rural and urban strata and, additionally, two only urban strata were defined for Quito and Guayaquil. This results in 50 territories. As a first step, in each province 64 census blocks in rural and urban areas were chosen with probability proportional to size according to the number of households. In each block, 19 households were preselected of which 12 were finally selected. Finally, in each of the selected households, depending on the household composition, one woman in childbearing age was randomly selected as well as one person of each age group with adjustments according to the administration of the questionnaires. General household information and anthropometric measurements were taken from each household member. For a subsample of 50% biochemical measurements were taken and consumption information using a 24h recall diary was collected. The sample for the biochemical analysis consists of individuals aged 6 months to 59 years as well as pregnant women. However, there only were 231 pregnant women which is why they were dropped from the analysis of the report. The samples were collected by the Instituto Nacional de Estadística y Censos during 10 working days in different census zones. In total, samples of 21,520 individuals were collected which are 107.6% of the calculated subsample of 19,040 individuals."

Source
Freire WB., Ramírez-Luzuriaga MJ., Belmont P., Mendieta MJ., Silva-Jaramillo MK., Romero N., Sáenz K., Piñeiros P., Gómez LF., Monge R. (2014). Tomo I: Encuesta Nacional de Salud y Nutrición de la población ecuatoriana de cero a 59 años. ENSANUT-ECU 2012. Ministerio de Salud Pública/Instituto Nacional de Estadísticas y Censos. Quito-Ecuador. Available at: http://www.ecuadorencifras.gob.ec/documentos/web-inec/Estadisticas_Sociales/ENSANUT/MSP_ENSANUT-ECU_06-10-2014.pdf. Accessed December 11, 2019.

Egypt: Health Issues Survey 2015

"The 2015 EHIS took advantage of the sample developed for the ever-married women survey component of the 2014 EDHS. The 2014 EDHS was implemented in a total of 842 primary sampling units (PSUs) selected from 25 governorates. The frame for selection of these units was a list of all shiakhas and villages in Egypt. This list was obtained from the Central Agency for Public Mobilization and Statistics (CAPMAS) and updated as necessary to reflect any recent changes. For the EHIS, a sub-sample of 614 PSUs (shiakhas/villages) was selected from the 842 PSUs included in the 2014 EDHS sample. The household listing prepared during the 2014 EDHS for these PSUs was used to select the household sample for the 2015 EHIS. The selection was conducted in such a way that the EHIS household sample was totally independent of the 2014 EDHS sample, i.e., no household was included in both samples. It was expected that approximately 28,500 individuals age 6 months to 59 years, eligible for the 2015 EHIS testing and interviews, would be identified in the selected households. The sample for the 2015 EHIS was designed to provide estimates of the key health indicators that the survey was designed to measure including the prevalence of hepatitis B and C for the country as a whole and for six major subdivisions (Urban Governorates, urban Lower Egypt, rural Lower Egypt, urban Upper Egypt, rural Upper Egypt, and Frontier Governorates). The sample also allows for estimates of some key indicators at the governorate level. […]

The 2015 EHIS involved a systematic random selection of a subsample of 614 shiakhas/villages out of the 884 shiakhas/villages that had been chosen as Primary Sampling Units in the 2014 Egypt Demographic and Health Survey.1 A full description of the 2014 Egypt DHS sample design is included in the final report for the survey (Ministry of Health and Population et al. 2015). The first three columns in Table A.1 show the allocation of EHIS clusters by governorate and urban-rural residence. The household listings prepared during the 2014 EDHS were used to select the household sample for the EHIS. A total of 7,656 households were chosen from the EDHS listings in such manner the EHIS household sample was totally independent of the household sample selected for the EDHS, i.e., there were no households included in both surveys. The last three columns in Table A.1 show the distribution of the households selected for the 2015 EHIS by governorate and urban-rural residence. During the fieldwork, the EHIS teams found two rather than one household when they visited 175 of the originally selected households. As is DHS policy, the additional households were interviewed and added to the EHIS sample. In the Red Sea governorate, three clusters were dropped from the EHIS sample because the distance that the field teams needed to travel to the clusters (300 kilometers) made it problematic for the teams to preserve the venous blood samples. The exclusion of the 18 households in these governorates had no effect on the overall EHIS estimates. The 2015 EHIS was designed to provide estimates of the key health indicators including the prevalence of hepatitis B and C for the country as a whole and for six major subdivisions (Urban Governorates, urban Lower Egypt, rural Lower Egypt, urban Upper Egypt, rural Upper Egypt, and Frontier Governorates). Because the household sample for the 2015 EHIS is much smaller than the household sample for the 2014 EDHS, which included more than 29,000 households, the EHIS sample allows for estimates of only key indicators at the governorate level.

During the EHIS, usual household members and visitors who were present in the household during the night before the survey visit were identified and listed in the household questionnaire. All individuals 1-59 included in that list were eligible for the individual survey interview and for the hepatitis B and C testing. In addition, children 6-59 months were eligible for the special study on aflatoxin."

Footnote 1: "A total of 926 PSUs were originally selected for the 2014 EDHS. However, 42 PSUs selected in North and South Sinai governorates were not included due to security reasons."

Source

Ministry of Health and Population, El-Zanaty and Associates & ICF International. Egypt Health Issues Survey 2015. Published 2015. https://dhsprogram.com/pubs/pdf/FR313/FR313.pdf. Accessed December 11, 2019.

El Salvador: FESAL 2008

The original report is in Spanish. We translated the sampling strategies using Google translate.

"The sample design for the FESAL-2008 survey was probabilistic, stratified and multistage, as for previous FESAL surveys. The sample selection was stratified by department and urban residence area and rural Because the Ministry of Health maintains a technical-administrative division of the department of San Salvador in 4 geographical areas of influence called "Basic systems of integral health (SIBASI)", the sample for this department it was designed looking for representativeness by SIBASI. Sample selection was done in three stages.

The first stage consisted of randomly taking the census segments of each stratum, systematically applying a sampling interval from a random start, with a probability of selection proportional to the number of existing homes in each segment, according to the sample framework of the 2007 Census. For this purpose the list of dwellings by segment was used with basis in the precensal mapping that the DIGESTYC updated in 2006 for the lifting of the National Censuses Population VI and Housing V of 2007. In this way, selected 617 census segments for the FESAL survey-2008.

Prior to the second stage the cartographic update was performed of each of the 617 census segments selected in the first stage. For this process we had the support DIGESTYC technician, through training in use and management of the Global Satellite Positioning tool (GPS) and verification of points or geographical coordinates of the updated segments, for guarantee their geographical position. I also know received technical support from the National Records Center (CNR), for the initial reproduction and digitalization of the plans updated in the field. In this way it was guaranteed that in each one of the segments of the sample would have the location and correct enumeration of the houses. In the calculation of analysis weights or weighting factors were taken into account the variation in the number of homes per segment between the 2006 precensal mapping and cartographic update 2007. The detailed calculation information is presented in Annex C of the analysis weights that were used.

The second stage of selection consisted of selecting 35 dwellings within each census segment at random, in order to ensure that all homes in each segment. They had equal probability of selection. For the selection of housing the following procedure was used: First the correlative numbering of the dwellings was requested from the CNR in each digitized plane, by using the ArtMap software that It is an application of Artgis. Subsequently, it was randomly selected a starting home between the number 1 and the "n", being "n" the total number of homes in the segment, to start visits for interview until completing the 35 homes. The selection of the dwellings for interview starting from the beginning dwelling it was done in ascending order until 35 was completed. In three of the selected segments that had less than 35 homes it was necessary to complement the 35 homes for an interview with dwellings of the subsequent segment, according to the correlative order within the sample frame. Both in the urban area and in the rural, uninhabited homes were considered eligible for visit, but not those that were destroyed or under construction. For the purposes of this survey, it was defined as eligible housing, that building or property that had independent access and, when they were inhabited by more than one person, that they shared the same food, and whether the families were nuclear or large. Thus, the buildings or buildings used were not numbered exclusively for productive, commercial or office purposes or collective housing as convents, boarding schools, military garrisons and hotels, among others.

The third stage of selection consisted of taking shape randomized only one woman of childbearing age (MEF) of 15 to 49 years of age for each home. First the information regarding the total number of people (men and women, including children) who habitually resided in the living place. Immediately after he listed all the women of 15 to 49 years old, starting with the oldest and continuing in descending order. The probability of selection of each MEF was inversely proportional to the number of them in housing, which is why, for the analysis of the results applied as a weighting factor, the number of MEFs in housing, to compensate for this unequal probability of selection.

For the women interviewed who had at least one child born alive as of April 2003, was selected randomly one to manage questions about health issues and early stimulation, prevalence and treatment of diarrhea and respiratory infections, immunization levels and micronutrient administration, among others. For analysis of these topics, the respective weighting factor was applied to compensate for the unequal probability of selection of y children. This factor is the number of children that each woman interviewed had from April 2003, multiplied by the number of MEFs in the house. With the exception of Table 2.1 which contains data on the sample performance, in all the tables presented In this report, rates, proportions and averages are based on weighted case numbers, but also on The generality of the tables shows the case numbers unweighted or observations that make up the denominator of each indicator or estimate."

Source
Asociación Demográfica Salvadoreña (ADS), Comité Consultivo Interinstitucional (CCI), Centros para el Control y Prevención de Enfermedades (CDC). Encuesta Nacional de Salud Familiar. FESAL-2008. http://ghdx.healthdata.org/sites/default/files/record-attached-files/SLV_RHS_2008_REPORT_0.zip. Accessed December 11, 2019.

Eswatini (formerly Swaziland): STEPS 2014

"A multi-stage cluster sampling design was applied. The survey covered all the four regions of the country. The size of the country and the distances between the regions and communities made it possible for the survey to sample a population representing all the 4 regions. The multi-stage sampling procedure was implemented in the following procedural steps:

Stage 1

All four regions were included as a sampling frame of our Primary Sampling Unit (PSU).The number of the PSUs at this stage ensured precision in the survey estimates and as a result 216 PSUs were selected using probability proportional to size sampling.

Stage 2

The second stage of cluster sampling procedure entailed listing, sorting and random systematic sampling of the Secondary Sampling Units (Households) within the PSUs selected in stage1 where 20 households were selected from each PSU. Based on census data, only households with eligible participants were systematically sampled through random systematic sampling.

Stage 3

At this level, all the eligible participants within a household were sequentially listed into the PDAs and only one participant per household was randomly sampled using KISH method built into the PDAs. The KISH method is a widely used technique that uses a pre-assigned table of random numbers to identify the person to be interviewed."

Source

Ministry of Health Swaziland & WHO STEPS noncommunicable disease risk factor surveillance. WHO STEPS: Noncommunicable Disease Risk Factor Surveillance Report Swaziland 2014.
http://www.who.int/chp/steps/swaziland/en/. Accessed December 11, 2019.

Georgia: STEPS 2016

"The STEPS survey of non-communicable disease (NCD) risk factors in Georgia was carried out from June 2016 to September 2016. Georgia carried out Step 1, Step 2 and Step 3. Socio demographic and behavioural information was collected in Step 1. Physical measurements such as height, weight and blood pressure were collected in Step 2. Biochemical measurements were collected to assess blood glucose and cholesterol levels in Step 3. The survey was a population-based survey of adults aged 18-69. A Multi-stage cluster sampling design was used to produce representative data for that age range in Georgia. A total of 5554 adults participated in the survey. The overall response rate was 75.7%. The following equipment was used for the biological measurements: Samsung Galaxy Tab 4OS; Cardiochek PA; Growth Management Scale (330 HRS BMI); BMI calculator Seca 491; ergonomic Seca 201; test panels (Chol/HDL/Glu for Cardiocheck PA); and the blood pressure monitor Bosch Sohn Medicus UNO."

Source

WHO STEPS noncommunicable disease risk factor surveillance. Georgia STEPS Survey 2016 Fact Sheet. http://www.who.int/chp/steps/georgia/en/. Accessed December 11, 2019.

Ghana: Study on global AGEing and adult health (SAGE) 2008-9

"The sampling method used for the Ghana SAGE Wave 1 was based on the design for the World Health Survey, 2003, in which the primary sampling units (PSUs) were stratified by region and location (urban/rural). Selection of the PSUs was based on proportional allocation by size. Each enumeration area (EA) was selected independently within each stratum. In the WHS/SAGE Wave 0, a total of 6 000 households were to be interviewed and therefore 300 EAs were selected nationwide. Twenty households were to be randomly selected in each EA using systematic sampling. The number of EAs per region was based on the population size of the region. For SAGE Wave 1, a total of 5 000 50+ respondents and 1 000 18–49-year-old respondents were required and therefore 250 EAs out of the 298 EAs of the WHS/ SAGE Wave 0 were used based on the availability of respondents aged 50+ years within the EAs.

Enumeration areas with no 50+ individuals were not included. Within each EA, 20 households with one or more 50+ individuals and four households with members aged 18–49 were to be selected. All respondents aged 50+ within households with over 50s from the WHS were automatically selected and additional households with members aged 50+ years were randomly selected to make a total of 20 households for each EA. The four households of the 18–49 years age group were randomly selected from the WHS/SAGE Wave 0 households list per EA. All the 50+ year olds within the selected households were to be interviewed together with the four identified under-50 respondents. Field work and data entry were undertaken between May 2007 and June 2008."

Source

Richard Biritwum, George Mensah, Alfred Yawson and Nadia Minicuci. Study on global AGEing and adult health (SAGE) -Wave 1: The Ghana National Report. University of Ghana Medical School, Department of Community Health. July 2013. Accessed December 11, 2019.

Guatemala: DHS 2014-15

The original report is in Spanish. We translated the sampling strategies using Google translate.

“Guatemala is divided into 22 departments that constitute the main domains of study and analysis of the survey. Each department is divided into rural and urban strata, although these are considered as domains of analysis only at the national level. The sampling frame of the survey is based on the INE master sample, drawn from the data and cartographic material of the 2002 census, the most recent.

Since the objectives of the survey are similar to those of the ENSMI 2008-2009, the initial budget was based on the selection of a sample of around 22,000 households. As the results of the survey would be tabulated at the departmental level, it was decided to select a minimum of 900 households in each department. In the ENSMI 2008-2009, 30 households were selected in each sector of the sample, but in this survey the number was reduced to 26 households and the number of sectors of the sample of each department was increased to make the sample more efficient. For each department, except Guatemala, the number of sectors in the sample was increased to 36, distributed proportionally in the urban and rural strata of the department. With the selection of 26 households for each sector of the sample, a sample of 936 households resulted for the majority of departments, which is slightly larger than the ENSMI 2008-2009 sample (900 households). For the department of Guatemala the number of sectors was increased to 48 for the municipality of Guatemala and 60 for the rest of the department, with a corresponding increase in the number of households in the sample to 1,248 and 1,560 respectively.

A multi-stage stratified selection procedure was used with the sectors as primary units. In the first stage, the INE selected the sectors of the master sample in a systematic way and with proportional probabilities to its size within each department, rural and urban area, and socioeconomic level (NSE). For the second stage, the 4,020 sectors of the INE master sample were explicitly stratified by department and rural and urban area, and an implicit stratification was used by socio-economic level. Given the sample size of the ENSMI 2014-2015 (864 sectors), it was not possible to consider these three stratification variables and only the first two variables (area and department) were considered. To somehow include stratification by socioeconomic stratum (NSE), before making the selection of the sectors of the sample, within each area and department the sectors were ordered according to this variable by NSE, and then a procedure was applied of systematic sampling with equal probability of selection. In each of the 864 sectors selected, the list of their homes and the cartographic material that place them were updated. Then, in the last stage of sampling, this information was used to systematically and with equal probability select 26 households from the updated list of households for interviews of women aged 15 to 49 years. Finally, one of every two households (13 households) were randomly and systematically selected from these households, where interviews of men aged 15 to 59 years were conducted. These then constitute a subsample of households of half of the total selected households.

In order for the estimates of the survey to be representative of the entire population and its different strata, a weighting of the data was necessary. Weights were calculated for the total number of households surveyed, which were adjusted according to the response rate. Specific weights were also calculated for the subsample of households in which the men's interviews were conducted. For the data collected in the women's questionnaire specific weights were calculated based on household weights, according to the response rate of women. In the case of men, specific weights were calculated that consider the total household weights, the subsample household weights and the response rate of men. Additionally, since a module of domestic violence was added that was applied to a single man in each of the subsample households, and to a single woman in the rest of the homes, specific weights for women and men were also calculated. separately, those that should be applied when calculating indicators on domestic violence. […]

Table 1.2 shows the results of the sample implementation for households and eligible people. It is observed that, of a total of 22,308 selected households, 21,662 were employed and of these 21,383 were interviewed successfully, which gives a response rate of 99 percent. In this group of households interviewed, 26,767 eligible women were found, of which 97 percent were interviewed. In the case of men, interviews were conducted in one in two households, 11,930 were found eligible, 93 percent of them were interviewed. The response rates are slightly higher in rural areas than in urban areas, 98 and 96 percent respectively in the case of women and 95 and 92 percent, respectively in the case of men.”

Source
Ministerio de Salud Pública y Asistencia Social – MSPAS/Guatemala, Instituto Nacional de Estadística – INE/Guatemala, Secretarío de Planificación y Programación del la Presidencia & ICF international. VI Encuesta Nacional de Salud Materno Infantil 2014-2015. Published 2017. https://dhsprogram.com/pubs/pdf/FR318/FR318.pdf. Accessed December 11, 2019.

Guyana: STEPS 2016

“A response rate of 66.68% will be selected based on the experience and response rates of other surveys over the years such as the recent Demographic Health Survey 2009. [...] STEPS 3 involve taking blood samples from a proportion of the sample, in this case 50% of the sample, in order to measure raised blood glucose levels and abnormal blood lipids. [...] The STEPS sample will be prepared by the Bureau of Statistics Guyana following the recommended STEPS sample methodology. A multi-stage cluster sampling design will be used. Guyana is divided into 10 administrative regions and within the administrative regions there are seven towns and each region is further divided into enumeration districts. For the STEPS survey 288 enumeration districts will be selected using the population probability sampling method and from each enumeration district 12 households will be selected giving a total sample size of 3456. Further at the household level each participant will be randomly selected by the electronic tablet. For STEP 3 50% of the sample will be randomly selected to participate. A re-listing of some households may also be necessary, such as those interior region locations, in which case in addition to household listings, enumeration districts maps will also be provided so that a re-listing can be done where required.”

Source

Ministry of Public Health Guayana. STEPwise Approach to Chronic Disease risk factor surveillance (STEPS): Guyana’s Implementation Plan. Published 2016.

Haiti: DHS 2016-17

The original report is in French. We translated the sampling strategies using Google translate.

"EMMUS-VI targets the population of individuals living in households across the country. A national sample of 13,546 households was selected, of which 13,405 were interviewed. The sample is stratified to provide an adequate representation of urban and rural environments as well as of the 11 fields of study, corresponding to the 10 departments, and to the Metropolitan Area. The EMMUS-VI sample is a stratified area sample, drawn in two stages.

At first stage, 450 Sections of Enumeration (SDE) or clusters were drawn on the whole national territory, with a systematic drawing with probability proportional to the size. The size of an EDS is the number of households residing in the SDE. The frame used for EMMUS-VI is the General Census of the Population, and of the Housing of 2003 (RGPH 2003), with a partial update in 2011 by the IHSI. After the drawing of the SDE and before the main survey, a household count, and an update of the map of each selected EDS were carried out. In the second stage, a sample of households was drawn with a systematic draw with equal probability from the newly established list in the enumeration. All women aged 15-49 usually living in selected households, or present the night before the investigation, were eligible to be investigated. In two thirds of households, the survey also carried out with men aged 15-64. In a third of households, women aged 50-64 and men aged 35-64 were also eligible, but only for certain aspects of the survey."

Source

Institut Haitien de l'Enfance (IHE) & ICF International. Enquête Mortalité, Morbidité et Utilisation des Services (EMMUS-VI) 2016-2017. Published 2018. https://dhsprogram.com/pubs/pdf/FR326/FR326.pdf. Accessed December 11, 2019.

Honduras: DHS 2011-12

The original report is in Spanish. We translated the sampling strategies using Google translate.

“For the design and selection of the ENDESA 2011-2012 sample, a computerized archive of the sectors and segments for each department prepared with information from the last National Census of Population and Housing of the year 2001. Each segment and / or sector has a complete identification that corresponds to the department and municipality codes where they are located. Also took I finished a cartographic survey of each unit, which allowed a quick update of homes in the segments that were selected for the sample. Sample design provides a sample probabilistic nationwide, which is stratified and two-stages. Within each department the sectors censuses were stratified in areas of urban and rural residence, and additionally in each department They were stratified according to their municipalities.

With the objective of selecting a total of 23,000 households, survey information was used ENDESA 2005-2006, as an aid instrument to estimate certain design parameters. With this Information was estimated that there would be a total of approximately 23,468 full interviews of women. The total of selected households was distributed by departments but not proportionally to their size population but to be able to meet the required objectives of the survey. The final number of households is adjusted to have a minimum of 1,100 homes per department except for Bay Islands and Thanks to God, in which a size of 600 homes was determined. As the allocation of households by department does not it was made proportionally to its corresponding percentage of population within the country, the total sample it is not self-weighted and therefore weighting factors were needed in the final elaboration of the tabulations These factors carry the sample not proportional to the estimated participation of the departments within the total population. The units of analysis are women of childbearing age from 15 to 49 years and children under five years; and men of childbearing age 15 to 59 years located in the households interviewed. [...]

The ENDESA 2011-2012 sample was designed to provide analysis at different levels of geographical disaggregation, such as the area of residence of the population (urban or rural); of the regions Departmental health and metropolitan areas of the departments of Cortés and Francisco Morazán. The Population universe for the individual women questionnaire of ENDESA 2011-2012 was defined as the Female population 15 to 49 years of age from across the country. The population interviewed with the individual questionnaire was identified in 21,362 selected occupied households, where the household questionnaire and the men's questionnaire were also applied in a subsample.”

Source

Secretaría de Salud, Instituto Nacional de Estadística & ICF International. Honduras Encuesta Nacional de Salud y Demografía y Salud - ENDESA 2011-2012. Published 2013. https://dhsprogram.com/pubs/pdf/FR274/FR274.pdf. Accessed December 11, 2019.

India: National Family and Health Survey (NFHS-4, also India DHS) 2015-16

“Decisions about the overall sample size required for NFHS-4 were guided by several considerations, paramount among which was the need to produce indicators at the district, state/union territory (UT), and national levels, as well as separate estimates for urban and rural areas in the 157 districts that have 30-70 percent of the population living in urban areas as per the 2011 census, with a reasonable level of precision. In addition, the NFHS-4 sample was designed to be able to produce separate estimates for slum and non-slum areas in eight cities (Chennai, Delhi, Hyderabad, Indore, Kolkata, Meerut, Mumbai, and Nagpur), and to provide general population estimates of HIV prevalence for women and men for India as a whole, for urban and rural areas of India, and for 11 groups of states/union territories. NFHS-4 was designed to provide information on sexual behaviour; husband’s background and women’s work; HIV/AIDS knowledge, attitudes, and behaviour; and domestic violence only at the state level (in the state module), while most indicators in the district module are reported at the district level. A subsample of 15 percent of households was selected for the implementation of the state module, in addition to the district module. In the 15 percent of households selected for the state module, a long questionnaire was administered that included all the questions needed for district-level estimates plus additional questions for the topics listed above. To achieve a representative sample of 15 percent of households, NFHS-4 conducted interviews in every alternate selected household in 30 percent of the selected clusters. In all, 28,586 Primary Sampling Units (PSUs) were selected across the country in NFHS-4, of which fieldwork was completed in 28,522 clusters. The NFHS-4 sample is a stratified two-stage sample. The 2011 census served as the sampling frame for the selection of PSUs. PSUs were villages in rural areas and Census Enumeration Blocks (CEBs) in urban areas. PSUs with fewer than 40 households were linked to the nearest PSU. Within each rural stratum, villages were selected from the sampling frame with probability proportional to size (PPS). In each stratum, six approximately equal substrata were created by crossing three substrata, each created based on the estimated number of households in each village, with two substrata, each created based on the percentage of the population belonging to scheduled castes and scheduled tribes (SCs/STs).

Within each explicit sampling stratum, PSUs were sorted according to the literacy rate of women age 6+ years. The final sample PSUs were selected with PPS sampling. In urban areas, CEB information was obtained from the Office of the Registrar General and Census Commissioner, New Delhi. CEBs were sorted according to the percentage of the SC/ST population in each CEB, and sample CEBs were selected with PPS sampling. In every selected rural and urban PSU, a complete household mapping and listing operation was conducted prior to the main survey. Selected PSUs with an estimated number of at least 300 households were segmented into segments of approximately 100-150 households. Two of the segments were randomly selected for the survey using systematic sampling with probability proportional to segment size. Therefore, an NFHS-4 cluster is either a PSU or a segment of a PSU. In the second stage, in every selected rural and urban cluster, 22 households were randomly selected with systematic sampling.“

Source

International Institute for Population Sciences & ICF International. National Family and Health Survey (NFHS-4) 2015-16. Published 2017. https://dhsprogram.com/pubs/pdf/FR339/FR339.pdf. Accessed December 11, 2019.

Indonesia: Indonesia Family Life Survey 2014-15

"Because it is a longitudinal survey, IFLS5 drew its sample from IFLS1, IFLS2, IFLS2+, IFLS3 and IFLS4. The IFLS1 sampling scheme stratified on provinces and urban/rural location, then randomly sampled within these strata (see Frankenberg and Karoly, 1995, for a detailed description). Provinces were selected to maximize representation of the population, capture the cultural and socioeconomic diversity of Indonesia, and be cost-effective to survey given the size and terrain of the country. For mainly cost-effectiveness reasons, 14 of the then existing 27 provinces were excluded. The resulting sample included 13 of Indonesia's 27 provinces containing 83% of the population: four provinces on Sumatra (North Sumatra, West Sumatra, South Sumatra, and Lampung), all five of the Javanese provinces (DKI Jakarta, West Java, Central Java, DI Yogyakarta, and East Java), and four provinces covering the remaining major island groups (Bali, West Nusa Tenggara, South Kalimantan, and South Sulawesi).

Within each of the 13 provinces, enumeration areas (EAs) were randomly chosen from a nationally representative sample frame used in the 1993 SUSENAS, a socioeconomic survey of about 60,000 households. The IFLS randomly selected 321 enumeration areas in the 13 provinces, over-sampling urban EAs and EAs in smaller provinces to facilitate urban-rural and Javanese–non-Javanese comparisons.

Within a selected EA, households were randomly selected based upon 1993 SUSENAS listings obtained from regional BPS office. A household was defined as a group of people whose members reside in the same dwelling and share food from the same cooking pot (the standard BPS definition). Twenty households were selected from each urban EA, and 30 households were selected from each rural EA. This strategy minimized expensive travel between rural EAs while balancing the costs of correlations among households. For IFLS1 a total of 7,730 households were sampled to obtain a final sample size goal of 7,000 completed households. This strategy was based on BPS experience of about 90% completion rates. In fact, IFLS1 exceeded that target and interviews were conducted with 7,224 households in late 1993 and early 1994.

In IFLS1 it was determined to be too costly to interview all household members, so a sampling scheme was used to randomly select several members within a household to provide detailed individual information."

Source

Strauss, J, Witoelar F, and Sikoki, B. The Fifth Wave of the Indonesia Family Life Survey (IFLS5): Overview and Field Report. Published March 2016. WR-1143/1-NIA/NICHD. Accessed December 11, 2019.

Iran: STEPS 2016

“For proportional to size sampling, we designed a systematic cluster random sampling frame through which 31,050 participants (3105 clusters) were selected from urban and rural areas of 31 provinces of Iran. To estimate the minimum sample at the 95% country with 384 samples (Ilam) was considered as the basis of calculations. The sample size of other provinces was calculated according to the population ratio of each to the referenced province. To consider the effect of sampling design and to control non–response error, 10% was added to the estimated samples of each province. With a view to reducing costs and increasing productivity, it was decided that for provinces with 800 or more samples through weighting methods, half of calculated sample size taken along with the twice weight in estimating. In this regard, national individual ID and postal code were used as part of individual characteristics in the questionnaire that has to be validated by interviewer through seeing national ID card.

The eligible population for study was defined according to the criteria of being among 18 ≤ years old Iranian adults that resided in Iran at the time of data collection. The first and second steps of study have been run for all selected samples and the third step was considered for those who were 25 ≤ years of age. Data were collected from individuals who agreed to participate and completed inform consent forms. The software features enabled us to analyze non–participation in each of study steps.”

Source

Djalalinia S, Modirian M, Sheidaei A, et al. Protocol Design for Large-Scale Cross-Sectional Studies of Surveillance of Risk Factors of Non-Communicable Diseases in Iran: STEPs 2016. *Arch Iran Med*. 2017;20(9):608-616.

Iraq: STEPS 2015

„Sample frame
The sample frame consisted of the population of Iraq of (18+) years for both sexes residing in the urban and rural area. It was based on the results of listing and numbering operation for the year 2009 that covered all governorates. Due to the unstable conditions at the time of the survey three governorates (Naynawa, Salahaddin and Al-Anbar) were excluded. A major challenge confronted was the late demographic change due to population movement, displacement and migration.

- Inclusion criteria. All permanent residents of (18+) years of age, who were resident in Iraq within one month at the time of implementation of the survey were considered eligible.
- Exclusion criteria. Temporary residents in Iraq, displaced individuals and those living in institutionalized settings. […]

Sampling design
A cross-sectional community based survey covering 15 governorates in Iraq. A Multi-stage cluster sampling technique was depended to select the minimum representative sample size to estimate the prevalence of the risk factors of noncommunicable disease through direct interview, physical examination and laboratory examination of blood samples of study participants. A total of 412 clusters were randomly selected each contain ten households. One subject from each household was randomly selected using KISH table to participate in the survey with a total sample size of 4120. […]

Primary sampling units
The Sample was designed to provide estimates on a number of indicators on the situation of Noncommunicable diseases risk factors in Iraq at the national level. A national based rather than a governorate based sample is selected. A multi stage cluster sampling was used with stratification to urban and rural areas. Primary sampling units (PSUs) were the blocks, which consisted of 70 households or more before selection."

Source
Ministry of Health Iraq & WHO STEPS noncommunicable disease risk factor surveillance. WHO Noncommunicable Diseases Risk Factors STEPS Survey Iraq 2015. https://www.who.int/ncds/surveillance/steps/Iraq_2015_STEPS_Report.pdf. Accessed December 11, 2019.

Jamaica: RHS 2008

„The survey was designed to collect information from a representative sample of approximately 8,200 women of reproductive age and 2,500 young adult men throughout Jamaica. The universe from which the respondents were selected included all females between the ages of 15 and 49 years and all males aged 15-24 years, regardless of marital status, who were living in households in Jamaica when the survey was carried out. The female and male samples were selected independently. The sampling frame was the 2001 census. The sampling design is a three-stage stratified sampling with the first stage being the selection of 628 areas (enumeration districts (ED). This selection was done with probability proportionate to number of households in the ED. Each ED needed to have at least 80 households to allow the selection of contiguous but independent clusters (one for the female and one for the male sample). In the second stage, clusters of households were randomly selected. In the third stage, in each of the households in the female sample a woman aged 15-49 years was selected at random; in the male sample, one man aged 15-24 years was randomly selected in each of the male sampled households. The survey used a stratified multistage sampling design based on the 2001 Census Enumeration Districts as the sampling frame. “

Source

Jamaica - Jamaica Reproductive Health Survey 2008.
http://www.uwi.edu/salises/databank/catalog/index.php/ddibrowser/27/export/?format=pdf&generate=yes. Accessed December 11, 2019.

Kenya: STEPS 2015

"The 2015 Kenya STEPs survey was a national cross-sectional household survey designed to provide estimates for indicators on risk factors for non-communicable diseases for persons age 18 – 69 years. The sample was designed with a sample size of 6,000 individuals to allow national estimates by sex (male and female) and residence (urban and rural areas). The survey used the fifth National Sample Surveys and Evaluation Programme (NASSEP V) master sample frame that was developed and maintained by KNBS. The frame was developed using the Enumeration Areas (EAs) generated from the 2009 Kenya Population and Housing Census to form 5,360 clusters split into four equal sub-samples. A three-stage cluster sample design was adopted for the survey involving selection of clusters, households and eligible individuals. In the first stage, 200 clusters (100 urban and 100 rural) were selected from one sub-sample of NASSEP V frame. A uniform sample of 30 households from the listed households in each cluster was selected in the second stage of sampling. The last stage of sampling was done using Personal Digital Assistants (PDAs) at the time of survey, where one individual was randomly selected from all eligible listed household members using a programmed KISH method of sampling."

Source

Ministry of Health Kenya, Division of Noncommunicable Diseases, Kenya National Bureau of Statistics, & World Health Organization. WHO: Kenya STEPwise Survey for Non Communicable Diseases Risk Factors 2015 Report. http://www.who.int/chp/steps/Kenya_2015_STEPS_Report.pdf?ua=1. Accessed December 11, 2019.

Lebanon: STEPS 2016-2017

"This study is a national study that targeted all 8 governorates of Lebanon. The survey targeted the Lebanese population and Syrian refugees residing in communities across Lebanon, aged 18 to 69 years. Steps 1, 2, and 3 were administered on all participants who consented. Inclusion and exclusion criteria were set as presented in Table 1.

Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
• Lebanese population and Syrian refugees (both registered and non-registered residing in Lebanon) • Males and females • Aged 18 to 69 years old	• Pregnant women (from the weight, height, waist and hip circumferences measurement in Step 2 and all of Step 3)

Sample Size

The calculation of sample size was based on the recommended values for the STEPS survey (WHO, 2016). Two samples were collected for each of the Lebanese population and Syrian refugees. For the Lebanese sample, the initial sample size was determined by assuming a level of confidence measure of 1.96, a margin of error of 0.05, a risk factor prevalence of 0.5, and a design effect of 1.5. p=0.5 (50%) was chosen to produce the largest sample size, thus allowing us to account for all possibilities without relying on previous data, leading to a needed sample size of 576. The calculated sample size was multiplied by 4 (number of age-sex groups) and divided by 0.8 to account for an anticipated response rate of 80%. The final sample size was 2880 (720 participants for each of the 4 age-sex groups).

The size of the Syrian sample was calculated using the same parameters listed above, and was determined at 2880 target participants, 720 participants for each of the 4 age-sex groups. The 4 age-sex groups were: Females 18 - 44 years, Females 45 - 69 years, Males 18 - 44 years, Males 45 - 69 years The total sample size was 5760.

[…] A national cross-sectional survey adopting a two-stage cluster sampling design was conducted for Steps 1, 2 and 3. […]

The sampling frames references used were the population distribution in Lebanon 2014, retrieved from the Central Administration for Statistics (CAS) and the Syrian population distribution data 2015, retrieved from UNHCR. 144 clusters were selected for the Lebanese sample and 144 clusters for the Syrian sample. The Primary Sampling Units (PSUs) were cadastral areas (cadasters) and the Secondary Sampling Units (SSUs) were the households. Twenty participants were recruited from each cluster. The latest available population estimates (cadastral data) were used, to randomly recruit PSUs by Probability Proportionate to Size (PPS). To account for the issue of the variability in the cadasters' sizes, very small cadasters (<200 individuals) were combined with neighboring PSUs before selecting the sample, to enhance the likelihood of finding 20 target participants. On the other hand, cadasters with a large population size that were guaranteed to be sampled at least twice were handled as strata and each stratum were assigned a fixed number of random starting points based on how often it was selected with certainty. This was done using satellite images divided into grids, previously obtained from the Centers for Disease Control and Prevention (CDC)1 for all Lebanese cadasters.

For the Lebanese sample, the research team relied on the standard Expanded Program for Immunization (EPI) method for a systematic random selection of the households. Accordingly, within each selected PSU, households were identified using a systematic random approach following the WHO-UNICEF-EPI cluster method. The fieldworkers started with the highest floor on the right side of a building. If the household hosted an eligible participant, they proceeded with data collection, if not, they visited a second household which is selected by skipping 5 households. If during sampling, non-Lebanese households were selected, the fieldworker skipped them in a straight line until a Lebanese household was identified. This method has been previously used for national surveys in Lebanon. One participant was randomly selected within each household, using the eSTEPS application. Households were chosen until the target of 20 participants was reached.

The PSUs for the Syrian refugees' sample were identified, using the most recent available refugee estimates to randomly recruit PSUs by PPS. The same measures aforementioned were done to account for the variation in the

cadasters' sizes. The WHO-UNICEF- EPI cluster method was employed to select households. The fieldworkers targeted Syrian households; accordingly, when during sampling, non-Syrian households were selected, the fieldworker skipped them in a straight line until a Syrian household was identified. One participant was randomly selected within each household, using the eSTEPS application.

For both samples, following STEPS' team recommendations, sampling of participants was done without replacement, i.e. once a person was selected that person was not replaced with another one. Efforts were made to include all selected households. If the house was unoccupied at the time of the visit or if an adult was not available for an interview at the time of the visit, that house was revisited up to 4 times, with different visiting times. The number of refusals and non-responses was recorded."

Source

Republic of Lebanon, Ministry of Public Health & World Health Organization. WHO Stepwise Approach for Non-communicable Diseases Risk Factor Surveillance. Lebanon, 2016-2017. https://www.who.int/ncds/surveillance/steps/Lebanon_STEPS_report_2016-2017.pdf?ua=1. Accessed December 11, 2019.

Lesotho: Demographic and Health Survey 2014

"The sampling frame used for the 2014 LDHS is an updated frame from the 2006 Lesotho Population and Housing Census (PHC) provided by the Lesotho Bureau of Statistics (BOS). The sampling frame excluded nomadic and institutional populations such as persons in hotels, barracks, and prisons. The 2014 LDHS followed a two-stage sample design and was intended to allow estimates of key indicators at the national level as well as in urban and rural areas, four ecological zones,[1] and each of Lesotho's 10 districts. The first stage involved selecting sample points (clusters) consisting of enumeration areas (EAs) delineated for the 2006 PHC. A total of 400 clusters were selected, 118 in urban areas and 282 in rural areas. The second stage involved systematic sampling of households. A household listing operation was undertaken in all of the selected EAs in July 2014, and households to be included in the survey were randomly selected from these lists. About 25 households were selected from each sample point, for a total sample size of 9,942 households. Because of the approximately equal sample sizes in each district, the sample is not self-weighting at the national level, and weighting factors have been added to the data file so that the results will be proportional at the national level. All women age 15-49 who were either permanent residents of the selected households or visitors who stayed in the household the night before the survey were eligible to be interviewed. In half of the households, all men age 15-59 who were either permanent residents of the selected households or visitors who stayed in the household the night before the survey were eligible to be interviewed. In the subsample of households selected for the male survey, blood pressure measurements and anaemia testing were performed among eligible women and men who consented to being tested. With the parent's or guardian's consent, children age 6-59 months were also tested for anaemia. In the same subsample of households, blood specimens were collected for laboratory testing of HIV from eligible women and men who consented; height and weight were measured for eligible women, men, and children age 0-59 months; and mid-upper-arm circumference (MUAC) measurements were collected for children age 6-59 months."

Footnotes: "1 Lowlands, Foothills, Mountains, and Senqu River Valley. 2 Butha-Buthe, Leribe, Berea, Maseru, Mafeteng, Mohale's Hoek, Quthing, Qacha's Nek, Mokhotlong, and Thaba-Tseka. 3 One rural EA was inadvertently dropped from the sample. After the fieldwork was completed, it was determined that the EA had not been visited."

Source

Ministry of Health, The DHS Program & ICF International. 2016. Lesotho Demographic and Health Survey 2014. Published 2016. https://www.dhsprogram.com/pubs/pdf/FR309/FR309.pdf. Accessed December 11, 2019.

Mexico: SAGE Wave 2-2014

“In Mexico strata were defined by locality (metropolitan, urban, rural). All 211 PSUs selected for wave 1 were included in the wave 2 sample. A sub-sample of 211 PSUs was selected from the 797 WHS PSUs for the wave 1 sample. The Basic Geo-Statistical Areas (AGEB) defined by the National Institute of Statistics (INEGI) constitutes a PSU. PSUs were selected probability proportional to three factors:

a) (WHS/SAGE Wave 0 50plus): number of WHS/SAGE Wave 0 50-plus interviewed at the PSU,
b) (State Population): population of the state to which the PSU belongs,
c) (WHS/SAGE Wave 0 PSU at county): number of PSUs selected from the county to which the PSU belongs for the WHS/SAGE Wave 0;

The first and third factors were included to reduce geographic dispersion. Factor two affords states with larger populations a greater chance of selection. All WHS/SAGE Wave 0 individuals aged 50 years or older in the selected rural or urban PSUs and a random sample 90% of individuals aged 50 years or older in metropolitan PSUs who had been interviewed for the WHS/SAGE Wave 0 were included in the SAGE Wave 1 "primary" sample. The remaining 10% of WHS/SAGE Wave 0 individuals aged 50 years or older in metropolitan areas were then allocated as a "replacement" sample for individuals who could not be contacted or did not consent to participate in SAGE Wave 1. A systematic sample of 1000 WHS/SAGE Wave 0 individuals aged 18-49 across all selected PSUs was selected as the "primary" sample and 500 as a "replacement" sample. This selection process resulted in a sample which had an over-representation of individuals from metropolitan strata; therefore, it was decided to increase the number of individuals aged 50 years or older from rural and urban strata. This was achieved by including individuals who had not been part of WHS/SAGE Wave 0 (which became a "supplementary" sample), although the household in which they lived included an individual from WHS/SAGE Wave 0. All individuals aged 50 or over were included from rural and urban "18-49 households" (that is, where an individual aged 18-49 was included in WHS/SAGE Wave 0) as part of the "primary supplementary" sample. A systematic random sample of individuals aged 50 years or older was then obtained from urban and rural households where an individual had already been selected as part of the 50 years and older or 18-49 samples. These individuals then formed part of the "primary supplementary" sample and the remainder (that is, those not systematically selected) were allocated to the "replacement supplementary" sample. Thus, all individuals aged 50 years or older who lived in households in urban and rural PSUs obtained for SAGE Wave 1 were selected as either a primary or replacement participant. A final "replacement" sample for the 50 and over age group was obtained from a systematic sample of all individuals aged 50 or over from households which included the individuals already selected for either the 50 and over or 18-49. This sampling strategy also provided participants who had not been included in WHS/SAGE Wave 0, but lived in a household where an individual had been part of WHS/SAGE Wave 0 (that is, the "supplementary" sample), in addition to follow-up of individuals who had been included in the WHS/SAGE Wave 0 sample.

Strata: Locality = 3
PSU: AGEBs = 211
SSU: Households = 6549 surveyed
TSU: Individual = 6342 surveyed”

Source

Instituto Nacional de Salud Pública (INSP) & World Health Organization. Mexico - Study on Global Ageing and Adult Health-2014, Wave 2. http://apps.who.int/healthinfo/systems/surveydata/index.php/ddibrowser/212/export/?format=pdf&generate=yes. Accessed December 11, 2019.

Moldova: STEPS 2013

"A total of 4807 randomly selected respondents participated in the survey. They were all aged 18–69 years, and the group comprised both sexes, as well as residents of all districts and the territorial-administrative unit "Gagauz-Yeri", along with Chişinău and Balti municipalities. The survey did not cover the districts from the left bank of the Nistru River and the municipality of Bender. For calculating the survey size, the prevalence of overweight and obesity (P=50.0%) identified during the previous survey on the health status of the population was used […], assuming a 95% confidence interval (CI) (Z=1.96), a 5% acceptable margin of error, a complex sampling design effect coefficient of 1.5, and equal representation of sexes in each age group (four age groups for each sex or a total of eight groups). Calculations resulted in a sample size of 4608 individuals, which was further increased by 20% (5760) to account for contingencies such as non-response and recording errors […]. A two-stage cluster sampling procedure was carried out to select randomly participants from among the target population. Cluster sectors from the 2004 Moldova Population Census were used as a basic unit […]. Given the differences in lifestyle and disease status between populations in urban and rural areas, the target population was stratified into urban and rural areas of residence for the STEPS survey. At the first stage, within each stratum, primary sampling units (PSUs) (enumeration areas (EAs)) were selected systematically with probability proportional to the 2004 Population Census EAs (measure of size equal to the number of population in the EAs, provided by the census). Before selection, the census sectors were sorted geographically from north to south within each stratum, in order to ensure additional implicit stratification according to geographical criteria.

A total of 400 clusters representing 400 EAs were selected from the 10 991 census EAs. These probabilistically selected clusters were used also in Moldova's DHS conducted in 2005, and the Multiple Indicator Cluster Surveys (MICS) conducted in 2012 […].

Cartographic materials from the Population Census conducted in Moldova in 2004 were not available, thus it was not possible to use them for the STEPS survey. Therefore, for the first stage the probabilistic samples from the above-mentioned surveys were used. Out of the 400 selected clusters, 167 were rural and 233 were urban. The distribution of the sample of 400 PSUs (EAs) for the DHS/MICS surveys was inversely proportional to the number of population within each stratum, taking into account that the response rate is lower in urban areas than rural owing to the smaller average size of the households in urban areas compared with rural areas. Thus, disproportional allocation with oversampling for urban areas was applied in the STEPS survey. A final weighting adjustment procedure was carried out to enable estimates at national and urban/rural levels.

At the second stage, 15 households (secondary sampling units (SSUs)) were selected within each of the 400 PSUs. From the updated list of households used for the MICS 2012 survey, 15 households were selected randomly per cluster, using the Microsoft Excel® random sample tool. A total of 6000 individuals were selected from among the 400 clusters. The Kish method […] was applied for the random selection of one individual aged 18–69 years from each household."

Source

Ministry of Health Moldova, National Center for Pubilic Health & WHO Regional Office for Europe. Prevalence of Noncommunicable Disease Risk Factors in the Republic of Moldova. STEPS 2013. Published 2014. https://www.who.int/ncds/surveillance/steps/Moldova_2013_STEPS_Report.pdf. Accessed December 11, 2019.

Mongolia: SISS 2018

"The Mongolia Social Indicator Sample Survey (SISS) is household based, and the last-stage sample units are individual households. The sample for the SISS 2018 was designed to provide estimates for a large number of indicators on the situation of children and women and men at the national, urban and rural areas, five regions (Eastern, Western, Central, Khangai and Ulaanbaatar) and eight target provinces/ districts (provinces of Bayan-Ulgii, Bayankhongor, Gobi-Altai, Zavkhan, Umnugovi, Khuvsgul and districts of Bayanzurkh and Nalaikh).

A sample of 14,500 households were selected country-wide. The sample size (number of households) within each region was first determined by applying the square root allocation. The sample size was then adjusted for individual provinces and districts that are domains.

A two-stage, stratified cluster sampling approach was used for the selection of the survey sample. The sampling frame was based on the 2017 Population and Household Database (PHDB). The primary sampling units (PSUs) selected at the first stage were the enumeration areas (EAs) defined for this survey. The EAs were selected systematically with probability proportional to size within each stratum, from the full list of EAs in the frame. After a household listing was carried out in the sampled EAs during the period of August - September 2018, a systematic sample of 25 households was selected from each PSU."

Source

National Statistical Office Mongolia. Mongolia – SISS 2018. http://web.nso.mn/nada/index.php/catalog/119/study-description#page=sampling&tab=study-desc. Accessed December 11, 2019.

Morocco: STEPS 2017

The sampling methods of the Morocco STEPS survey 2017 were translated into English from https://www.who.int/ncds/surveillance/steps/STEPS-REPORT-2017-2018-Morocco-final.pdf?ua=1

"Inclusion criteria

- Men and women aged 18 and over on the day of the survey, who are living in ordinary households (defined as a group of people living in the same residence and sharing their consumption expenses).

Exclusion criteria

- Those who did not give their consent to participate in the survey.
- Those to whom three (03) unsuccessful visits of the same household at three different times in two days were made.
- People who were unable to answer questions.
- People not living in ordinary, but collective or nomadic households.

Sampling

[…] The sample frame used was based on the master survey 2014, which was elaborated by the HCP, basing on population and housing census data. The results of the sample are extrapolated to the target population and estimations have the desired accuracy.

Stratification Criteria

Stratification in Morocco, where cities contain several social categories with people of different demographic and socioeconomic backgrounds make stratification difficult. Therefore, the sample was stratified by geographic region for two milieus:

The stratification adopted was of geographical order for the two mediums according to the weight in terms of households, each of which has a specific stratification:

- For urban units, the criterion used was an administrative division into regions, provinces/prefectures and the type of habitats.
- For rural areas, the primary sampling units were stratified according the dominating type at the communal level. […]

Stages of stratifications

First degree (primary units PU): 244 (158 Urban Primary units: UPU and 86 Primary rural units: PRU) primary units were drawn from the 4500 PUs constituting the master sample. Each PU is a geographical area with clear boundaries and contains 300 households on average.

Second degree (secondary units (SU) or clusters): Primary units were clustered in 50 households each, resulting in 6 SU per PU on average. To conform to the STEPS survey design, only one secondary unit or cluster was selected for each sample PU.

Third degree (households): Based on the secondary units (cluster), starting from the point mentioned on the SU limit sheet, and in a clockwise direction, we selected households to be surveyed by applying a two-household step.

Fourth degree (individuals): From all individuals meeting the selection criteria, a random sample was drawn, and only one participant of each household was randomly selected via the e-Steps application."

Source

Ministry of Health Morocco & World Health Organization. Enquête Nationale sur les Facteurs de Risque communs des Maladies Non Transmissibles 2017 – 2018: Rapport. Available at: https://www.who.int/ncds/surveillance/steps/STEPS-REPORT-2017-2018-Morocco-final.pdf?ua=1. Accessed December 11, 2019.

Namibia: Demographic and Health Survey 2013

"The sample for the 2013 NDHS was a stratified sample selected in two stages. In the first stage, 554 EAs were selected with a stratified probability proportional to size within the sampling frame. The EA size is the number of households residing in the EA and recorded in the 2011 NPHC. Stratification was achieved by separating each region into urban and rural areas. Therefore, the 13 regions were stratified into 26 sampling strata: 13 rural strata, and 13 urban strata. Samples were selected independently in each stratum, with a predetermined number of EAs selected as shown in Table A.3. Implicit stratification with proportional allocation was achieved at each of the lower administrative unit levels by sorting the sampling frame before the sample selection. Sorting was done according to the constituency and the EA code within a sampling stratum, and by using a probability proportional-to-size selection procedure.

After the selection of EAs and before the main survey, a household listing operation was carried out in all selected EAs, and the resulting lists of households served as a sampling frame for the selection of households in the second stage. Some of the selected EAs may large. To limit the amount of work done to list each household, selected EAs with more than 200 households were segmented by the listing team in the field before the household listing. Only one segment was selected for the survey, with probability proportional to the segment size. Household listing was conducted only in the selected segment (see detailed instructions for segmentation in the DHS Manual for Household Listing). So a 2013 NDHS cluster is either an EA or a segment of an EA. In the second-stage selection, a fixed number of 20 households was selected in every urban cluster and rural cluster, by equal probability systematic sampling. A spreadsheet indicating the selected household numbers for each cluster was prepared. The survey interviewers interviewed only the pre-selected households. To prevent bias, no replacements and no changes of the pre-selected households were allowed in the implementing stages. In half of the selected households where there was no male survey, all women age 15-49 were interviewed; in the other half of the selected households where there was a male survey, all males and females age 15-64 were interviewed."

Source

The Nambia Ministry of Health and Social Services (MoHSS) & ICF International. 2014. The Namibia Demographic and Health Survey 2013. Published 2014. https://dhsprogram.com/pubs/pdf/fr298/fr298.pdf. December 11, 2019.

Nepal: SOSAS 2014

„Two-stage cluster sampling was performed, whereby 15districts were selected randomly proportional to population and then 45 VDCs (3 per district), also selected randomly after stratification for urban and rural population distribution (Fig. 1). The methodology was similar to that used by the Demographic and Health Surveys17. In each selected VDC, interviewers began at an agreed central location and sampled every fifth household, sampling 30households per VDC. Sample size estimation was established during a pilot study in which the prevalence of unmet surgical need was 5 per cent12.For the full-country study, all household members were included, except those noted to be disabled mentally or impaired cognitively. If a person was selected randomly but not available, an appointment was made for later that the following day.“

Source

Gupta S, Shrestha S, Ranjit A, et al. Conditions, preventable deaths, procedures and validation of a countrywide survey of surgical care in Nepal. *Br J Surg*. 2015;102(6):700-707. doi:10.1002/bjs.9807

Nicaragua: ENDESA 2011-12

The original report is in Spanish. We translated the sampling strategies using Google translate.

"The design of the ENDESA 2011/12 sample was carried out to meet the objectives of the survey, obtain estimates of the main demographic and maternal and child health indicators, at national level, area of residence (urban and rural), departments and natural regions (Pacific, Central-North and Caribbean).

In general, the design retains the same characteristics of the previous surveys, probabilistic, multi-stage, by conglomerate and stratified by urban and rural residence area. Census segments are considered as the primary sampling units (UPM's) and the households within each selected segment are the secondary units. The sample frame used is the list of segments of the 2004 census mapping.

The census segments were updated, with the interest of updating the selection probabilities of each census segment in the sample. Likewise, the population investigated in the survey was reached, using the cartographic material (plans and maps) of the segments, where households were identified for interviews. […]

The sample design for ENDESA 2011/12, provides a probabilistic sample at the national level that is stratified, bi-stage and by clusters, the stratification was carried out at the level of different geographical subdivisions (by natural regions, by department within each region and by place of urban-rural residence within each department). In a first stage, areas called census segments were considered as the primary sampling units (UPM's) and the private households listed in the UPM's were established as the secondary sampling units (USM's). The sample framework of the ENDESA 2011/12, is based on the segments of the census cartography taken for the VIII Population Census and IV Housing 2005.

A slight modification of the sample size was made in some departments to ensure representativeness and provide estimates with indicators consistent at different levels of geographic subdivision. The total number of census segments selected for ENDESA 2011/12 was 732 throughout the country. Table 2.1 includes the distribution of the number of census segments for each department and for each level of residence. The objective of the sample is to provide estimates and analysis at national, regional, residential and departmental areas.

The sample selection was carried out in three stages:

a. The first stage of selection consisted of randomly taking the segments of each stratum or department, and in the two autonomous regions of the Caribbean Coast, systematically applying a sampling interval from a random start, with a probability of selection proportional to the number of existing homes in each segment, according to the pre-census map update.

b. The second stage of selection consisted of selecting 30 dwellings within each census segment at random, in order to ensure that all dwellings in each segment were equally likely to be selected. Like ENDESA 2006/07, the strategy of compact segments was used to conduct the interviews (household, women of childbearing age or MEF and men or HEF). The procedure consisted of randomly taking a dwelling as a starting point between dwelling number 1 and n; where n is the total number of dwellings in the segment; in such a way that the dwellings included in the sample are the beginning and consecutive dwellings in the list, until reaching 30 dwellings. For interviews with men of childbearing age (HEF), 10 homes were selected within the compact segment, defined for household and MEF interviews.

c. Finally, in the third stage, only one woman of childbearing age (MEF) aged 15 to 49 years was selected per household, using a random "Kish" 6 selection table, (the intersection between the number of the Pre-listed Household Questionnaire and the number of women in the household, sorted by age).

In both urban and rural areas, uninhabited homes were considered eligible for the visit, but not those that were destroyed or under construction. For the purpose of the survey was defined as housing, that building or property that had independent access and, when it was inhabited by one person or more and that they shared the same food, whether the families were nuclear or large. Therefore, buildings or buildings used exclusively for productive, commercial or office purposes, or collective dwellings such as convents, boarding schools, military garrisons and hotels, among others, were not listed.

The advantages and disadvantages associated with the use of one or another way of selecting housing or homes to conduct interviews are diverse, for example: the use of a constant sampling fraction within each stratum keeps the probability of selection for all households in The same stratum. Variability within the conglomerate or census segment is also increased. Likewise, the selection interval varies between the census segments depending on the size of the census segment. Likewise, with these advantages the method can introduce non-statistical errors (not sampling) and complicate field logistics. As it is a dispersed selection, interviewers and supervisors have to disperse to distant areas within the census segment and that makes supervision within the conglomerate difficult and facilitates the wrong identification of the selected dwelling, especially if there was construction or destruction of homes since the last update cartographic

In order to reduce the time in each segment, minimize the wrong substitution (or intentional by interviewer) and ensure greater supervision in the field and increase the quality of interviews and supervision by field editors, the method of selection of compact conglomerates. This procedure implies an increase in the design effects that can be measured (they will be presented later), although the “non-sampling” errors associated with the quality of the information obtained are substantially reduced.

The third stage of selection consisted of randomly taking only one woman of childbearing age (MEF) from 15 to 49 years of age per household, first recording the information regarding the total number of people (men and women) who habitually resided in home. As in ENDESA 2006/07, only one woman was interviewed per household. To guarantee a random selection, a “Kish” selection table was used, using the number of the pre-listed questionnaire and the number of women in the household, sorted by age, to select a woman in a random way. The probability of selection of each interviewee was inversely proportional to the number of MEF in the household, which is why in the analysis of the results the number of MEF in the household was applied as a weighting factor, to compensate for said equal selection probabilities.

The main reason for not interviewing all eligible women is to avoid contamination and biases that occur when very close people answer the same questions. For example; A mother or mother-in-law wants to know the answers of a daughter or daughter-in-law because she already knows the content of the interview. In this case, the young woman can hide or divert her answers to avoid distrust. Issues and questions about sexual activity and domestic violence are susceptible to this type of contamination or bias. It is easier to guarantee confidential interviews if only one eligible woman is interviewing in each household. On the other hand, a good justification for not interviewing two or more women in the same household is that the answers tend to be correlated (especially if they are sisters). Interviewing the same number of eligible women in different homes reduces the correlation and thus reduces the confidence intervals for some estimates (especially those related to family planning). Finally, interviews with more than one woman in the same household may represent a time overload of household members and consequently increase the likelihood of rejection. An interview with only one woman eligible per household reduces the time that should be in the home. In the case of women who had live children who were born from January 2006 and January 2007, a child was randomly selected to administer questions related to puerperal care, consumption of micronutrients and dewormers, most common childhood diseases (acute diarrheal and respiratory) and its treatment, as well as the development of the child. This selection is motivated to reduce the interview time for the selected woman.

The representative estimates for children under five years of age at the national level for the aforementioned topics constitute a fourth stage of selection and equal to the choice of a woman in the home, the questionnaire number and the order of the children were used, according to age from least to greatest, plus the random selection table. In this analysis it was necessary to apply weighting factors to compensate for the equal probabilities of children's selection. This weighting factor is the number of children that each elected woman had as of January 2006 and January 2007, multiplied by the number of MEF in the home.

With the exception of the tables in this chapter, which contain data on the performance of the survey sample, in all the tables presented in this report, the proportions and averages are based on the number of weighted cases, but also on The generality of these shows the numbers of unweighted cases or observations that make up the denominator of each indicator.”

Source

Instituto Nacional de Información de Desarrollo (INIDE). Encuesta Nicaragüense de Demografía y Salud. ENDESA 2011/12. https://nicaragua.unfpa.org/sites/default/files/pub-pdf/ENDESA-2011-12-completa.pdf. Published 2013. Accessed December 11, 2019.

Paraguay: ENDSSR 2008

The original report is in Spanish. We translated the sampling strategies using Google translate.

"The survey sample was designed to produce approximately 7,000 complete interviews of women 15 to 44 years old. It is probabilistic, self-represented at the level of four Regions: Asunción and Metropolitan Area (Greater Asunción), North, South Central and East. It also allows obtaining representative estimates of urban and rural areas at the country level. The Chaco or the Western Region was excluded due to the low density and its high degree of dispersion population, since only about 3 percent of the total population is concentrated in this region, including only the district of Villa Hayes. The statistical sampling scheme used consists of a three-stage probabilistic design and conglomerates Probabilistic because all the women who make up the universe have a probability known, different from zero, if selected. The primary sampling unit (UPM) it is the census sector, the secondary sampling unit (USM) is the housing and sampling unit. The third stage is the woman of childbearing age (MEF). This scheme is common for the previous four Surveys, EPF 1987, ENDSR 1995/6, ENSMI 1998 and ENDSSR 2004. The selection of census sectors (UPM), was carried out in a systematic way, with random start, based on probabilities proportional to its size (PPT), measured by the number of dwellings existing individuals according to the information of the CEPEP master sample.

The selection was independent for each region; consequently, the probability of selection of the UPM is different for each domain in the sample. Therefore, a weighting factor is applied for each domain. The factor is proportional to the inverse of the probability of selecting a domain housing. The weighting factors for each domain (region) are as follows:

- The North region has a weighting of less than 1.0 (0.397), reflecting oversampling in this region, to allow estimates with the same precision as the other regions.
- In the others, the weighting factors are slightly higher than 1.0, reflecting sub sampling, as follows: Grand Assumption: 1,268; South Center: 1,126 and East: 1,212.

In the second stage of selection, a fixed number of homes were chosen within each sector of the sample, randomly to ensure that all homes by sector had the same probability of being selected. In this stage the updated housing listings were used product of the cartographic update carried out in field work between February and April of 2008. Next, a starting home was randomly selected between number 1 and n; n being the total number of homes in the sector. The dwellings included in the sample are those of Start and consecutive n-1.

For the third stage of selection, a list of all household items was included in the household questionnaire women of childbearing age (MEF), aged 15 to 44, who were registered starting with the older and going down. Then a single MEF was randomly selected for each household, using the questionnaire from home a table that allows such selection according to the last digit of the questionnaire and the number of MEF at home (Kish selection chart). The probability of selection of each interviewee was inversely proportional to the number of women 15 to 44 years at home. Therefore, the MEF number is applied as a weighting factor at home to compensate for this uneven probability of selection. For women who had children born alive between June 2003 until May 2008 also a random selection of a child was made to apply additional questions about childbirth, control of a healthy child, symptoms or discomfort related to Acute Respiratory Infections (ARI), incidence of diarrhea and immunization rates. For the analysis of these issues weighting factors are applied with the same methodology mentioned above, in order to compensate for the unequal probability of children's selection. At the end of each chapter, the tables with the results of the main variables are included and show percentages based on weighted numbers. Absolute numbers refer to number of unweighted cases. Note that some tables with percentage distribution may do not add 100 percent due to rounding. As can be seen in the next section (sample coverage), the rate of interviews not complete It was 6.4 percent. Comparing the distribution of women by five-year age groups and area of residence (urban and rural) of the 2008 survey with DGEEC projections for In 2008, an over-representation was found in the sample of adolescents and young adults (15 to 24 years old) in urban areas and a slight under-representation in rural areas, case opposite for women 30 to 44 years of age in urban areas, where a sub-representative was found.

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Source

Centro Paraguayo de Estudios de Población (CEPEP). Encuesta Nacional De Demografía Y Salud Sexual Y Reproductiva 2008. ENDSSR 2008. https://microdata.worldbank.org/index.php/catalog/991/download/20553. Published 2009. Accessed December 11, 2019.

Peru: DHS 2013

The original report is in Spanish. We translated the sampling strategies using Google translate.

"Since the design for the ENDES Continuous Survey 2012 - 2014 is two-stage, a framework is used sample in each of the stages of the selection of sampling units.

For the first stage: selection of UPM (conglomerates), Census information is used Population and Housing 2007. For the second stage: USM (housing) selection, the framework is used sample from the cartographic update and registration of buildings and homes previously made to the interviews, with the objective of identifying and registering changes in the selected areas. Product of this process has an updated registry of homes that at that time existed in the area, which it will constitute the sampling frame for housing selection. In practice, an update process should be considered periodically because over time the number of homes contained in each of the areas may change. Each update system allows periodically incorporating the sampling frame in the second stage new homes that appear in the urban expansion process and assign a non-zero probability of belonging to the sample. […]

Sampling Units

Urban Area, the sampling units are:

- The Primary Sampling Unit (UPM), represented by the conglomerate which is the geographical area formed by one or several apples that together have 120 private homes, on average.
- The Secondary Sampling Unit (USM), is the private home that integrates the selected UPM.
- The Primary Sampling Unit (UPM) is of two types:
    - The conglomerate which is made up of one or several apples that together have 120 private homes, on average,
    - The AER (rural registration area) which is made up of one or more populated centers rural that together have 120 private homes (usually scattered on the ground).
- The Secondary Sampling Unit (USM), is the private home that integrates the UPM (selected AER).

The initial objective was to obtain approximately 24,200 full interviews of eligible women. We used information from ENDES 2000 to estimate certain design parameters, especially the rates of reply. Therefore, a total of 27 945 homes have been estimated to be selected to obtain the number above mentioned full interviews.

The sample resulting from ENDES 2012 was obtained in two stages: The first stage consists in the systematic selection of the UPM (conglomerates) with probability proportional to its size. Each UPM has an average size of 120 private homes. Immediately after the first stage of selection, the update and exhaustive registration of homes was implemented in the selected areas. […]

- The number of conglomerates to be selected in each department (Lima includes the Province Constitutional Callao) was calculated as the division of the expected sample size in the department Enter the expected average sample size within the cluster.
- The estimated total sample in each department was distributed proportionally among its substrates (urban, semi-rural and rural) according to the census population, and also within each substratum, the conglomerates were ordered according to the geographic continuity in coil.
- For each substratum, a list of clusters with their corresponding population totals was prepared (housing) and also of their respective partial population accumulations.
- In each substratum, the selection was made (systematic and with probability proportional to its size population) of the number of clusters required for ENDES Continuous, say, in the total of they of said substratum. […]

In the second stage, a number of dwellings (USM) in each UPM of the sample is chosen using the Systematic selection for each selected cluster. Before the second selection stage, there was a cartographic update and registration of homes of each conglomerate."

Source

Instituto Nacional de Estadística e Informática & ICF International.La Encuesta Demográfica y de Salud Familiar - ENDES 2013. Published 2014. https://dhsprogram.com/pubs/pdf/FR299/FR299.pdf. Accessed December 11, 2019.

Philippines: DHS 2013

"The sample selection methodology for the 2013 NDHS is based on a stratified two-stage sample design, using the 2010 Census of Population and Housing (CPH) as a frame. The first stage involved a systematic selection of 800 sample enumeration areas (EAs) distributed by stratum (region, urban/rural). In the second stage, 20 sample housing units were selected from each sample EA, using systematic random sampling. All households in the sampled housing units were interviewed. An EA is defined as an area with discernable boundaries consisting of contiguous households. The sample was designed to provide data representative of the country and its 17 administrative regions.

For the 2013 NDHS sample, 16,732 households were selected, of which 14,893 were occupied (Table 1.1). Of these households, 14,804 were successfully interviewed, yielding a household response rate of 99.4 percent. The household response rates in urban and rural areas are almost identical. Among the households interviewed, 16,437 women were identified as eligible respondents, and the interviews were completed for 16,155 women, yielding a response rate of 98.3 percent. On the other hand, for the women's safety module, from a total of 11,373 eligible women, 10,963 were interviewed with privacy, translating to a 96.4 percent response rate. At the individual level, urban and rural response rates showed no difference. The principal reason for non-response among women was the failure to find individuals at home, despite interviewers' repeated visits to the household. Further details on the sample design and implementation are given in Appendix A."

Source

Philippine Statistics Authority & ICF International. Philippines National Demographic and Health Survey 2013. Published 2014. https://dhsprogram.com/pubs/pdf/FR294/FR294.pdf. Accessed December 11, 2019.

Romania: EHS 2014

For the European Health Survey Wave 2 conducted in Romania (2014), there is no separate country-specific survey report available. We, thus, gathered all information which was provided on the official website of the European Union.

"Sampling frame

[…] **Romania**: for all household surveys a master sample is used, namely the Multifunctional Sample of Territorial Areas (EMZOT), which is derived as a sample of geographical areas. EMZOT was built based on the Population and Housing Census in March 2002, was operational in early 2004 and was updated in 2006 and 2015. […]

Sampling units

In accordance with the methodological guidelines, the statistical unit in EHIS is the individual. In practice, the sampling unit was the dwelling, the household or the individual, depending on the design chosen by the country and the sampling frame used for selecting the sample.

As shown in Table 3, in 21 out of 30 countries the ultimate sampling unit(10) is the individual. Additional five countries selected a sample of households while another four countries selected a sample of dwellings. The sampling unit used by countries relies heavily on the frame used for selecting the sample. For instance, in all countries that used a population register as a sampling frame (see Table 2), except for Belgium and Italy, a sampling of persons of age 15 and over was selected at the final stage of sampling (regardless of its number). Instead, in countries where the population census results were used as a data source for the sampling frame, dwellings or households were selected (Bulgaria, the Czech Republic, Greece, Cyprus and Croatia). Similarly, Poland, Portugal, **Romania** and Slovakia selected a sample of dwellings since the sampling frame was the dwelling register. […] The national sampling designs in the EHIS wave 2 implementation varied (see Table 4).

The most common design was a two or three stage stratified or systematic (cluster) sampling, selecting more frequently in the first stage census enumeration areas, or otherwise municipalities, blocks of households or administrative districts:

- Two-stage sampling (Bulgaria, Germany, Croatia, Italy, Latvia (CAPI data collection mode), Hungary, the Netherlands, Poland, **Romania** and Slovenia), […]

Source

Eurostat. Quality report of the second wave of the European Health Interview survey. https://ec.europa.eu/eurostat/documents/7870049/8920155/KS-FT-18-003-EN-N.pdf/eb85522d-bd6d-460d-b830-4b2b49ac9b03. Published 2018. Accessed December 11, 2019.

Russian Federation: Study on global AGEing and adult health, Wave 1 (2007-2008)

"The SAGE Russian national sample was constructed using data from two sources:

- The sample for the 2003 World Health Survey (WHS)
- The 2002 All-Russia Population Census

In constructing the SAGE Russian national sample, efforts were made to ensure even representation across administrative units. The largest administrative unit in the Russian Federation is the Federal District (FD). In 2007, there were seven FDs: Central, Southern, Northwestern, Urals, Volga, Siberian, and Far Eastern. Each FD is made up of federal subjects, administrative divisions which have varying levels of autonomy, but equal representation in the federal government; these include republics, krais, oblasts, federal cities, autonomous oblasts and autonomous okrugs. In 2007, there were 86 federal subjects. For the purpose of SAGE, federal subjects with particularly low population densities (making up 0.2% of the total population of Russia) were excluded: these included the Yamal-Nenets, Taimyr, Evenki, Koryak, and Chutkhotka autonomous okrugs, the republic of Sakha (Yakutia), Khabarovsk krai, and Magadan oblast.

2.1.1 First stage

The first stage of sample design was the definition of strata for selection. The sample was initially stratified by FDs, according to the distribution of population.

2.1.2 Second stage

The second stage of the sample design was selection of primary sampling units (PSUs), mainly according to the data from the 2002 Russian Census. For the selection of PSUs, first, all households which had participated in the WHS and which had a member aged 50-plus were listed again, as well as some WHS households with a member aged 18-49. These households were drawn from the three FDs that were included in the WHS: Central, Northwestern, and Volga.

Next, PSUs were selected for the remaining four FDs (Southern, Siberian, Urals and Far Eastern). Within FDs, administrative and territorial formations (ATF) constituted the primary sampling units (PSU). The population distribution within the four districts was used to determine the number of sample localities in each district, which were then weighted to reflect their representation in the four districts.

A computer program (according to the PPS method) was then used to select specific settlements in each district from the total number of ATFs, according to census data. ATFs were selected randomly and proportionally to the size of federal districts' population. This resulted in 39 ATFs from the Southern FD, 34 from the Siberian FD, 20 from the Urals FD and 7 from the Far Eastern FD. From each ATF, households, which constituted the study's secondary sampling units (SSU), were chosen at random, using a special formula for each territory sample. The probability of being including in the sample was equal for all households (0.00247). Between 1 and 551 households were selected from each ATF. Address lists for all selected households (including house and apartment numbers) were compiled with the help of out-patient clinic staff. In each territory, the sample was based on a household listing and enumeration, randomly selecting houses/ apartments until the desired sample size was reached. All members of each household selected for the survey sample were enumerated on the household roster and all eligible people aged 50-plus were invited to participate in the survey. If a household had at least one person aged 50 or older, then that household was included in the 50-plus sample. In the remaining households (that is, with no member aged 50 or older) one respondent aged 18–49 was randomly selected using Kish tables (Kish, 1965; Kish, 1987).

In selected households, the individuals eligible for interview formed the ultimate sampling unit. The total sample size of individuals was targeted to be 1000 people in the age group 18–49 years old and 5000 people aged 50 or older.

2.1.3 Stratification and allocation of enumeration areas

From a total of 288 enumeration areas, 176 ATFs were visited: the coverage was 61.1% of the targeted ATFs, with the highest percent of visited enumeration areas in the Southern FD (71.8%). Of 7,200 eligible households, 4,644 HHs were included in the final sample and visited (both in urban and rural territories. 1,407 of them took part in the WHS survey."

Source
National Research Institute of Public Health & Russian Academy of Medical Sciences (RAMS). Study on global AGEing and adult health (SAGE) Wave 1 Study Report. Published December 2013. https://apps.who.int/healthinfo/systems/surveydata/index.php/catalog/68/download/2042. Accessed December 11, 2019.

South Africa: DHS 2016

"[A] nationally representative sample of 15,000 dwelling units (DUs) was selected; all residential households in the selected DUs were eligible to be included in the survey. In all sampled households, all women age 15-49 who are usual members of the households or who stayed in the households on the night before the interview were eligible for interviews. In addition, in a subsample of the DUs (every second DU), all men age 15-59 who are usual members of the households or who stayed in the households on the night before the interview were eligible for interviews. In this same subsample, all women and men age 15 and older who are usual members of the selected households and those who spent the night before the survey in the selected households were eligible to complete a module on adult health and to have biomarker measurements and tests. […]

The sampling frame used for the SADHS 2016 is the Master Sample Frame (MSF) prepared by Statistics South Africa (Stats SA); the MSF was compiled from the Census 2011 frame. The latter is a list of 103,576 enumeration areas (EAs) that cover the whole country. An EA is a geographic area consisting of a convenient number of DUs that serve as counting units for the census. The MSF is a list of 71,241 primary sampling units (PSUs). For each PSU, the MSF contains information about location (province, district, and municipality), type of residence (urban, traditional, or farm), and estimated number of residential households.

An MSF PSU can be an EA, a group of small EAs, or part of an EA. In preparation for the MSF, out-of- scope EAs were removed from the frame. These out-of-scope areas were defined as institutional EAs and EAs that had zero DU counts at the time of the Census 2011. Furthermore, EAs with a very small number of households were excluded from the frame, which has been adjusted for during the sampling weight adjustment for under-coverage. Households in the excluded EAs accounted for less than 1% of households in the population. Moreover, all of the identified large EAs were conceptually split into one or more PSUs of equal size depending on the number of DUs in the EA. Finally, small EAs with DU counts of between 20 and 99 were pooled with neighbouring EAs that had the same geographical characteristics to form a new PSU.

Administratively, South Africa is divided into nine provinces; each province is subdivided into districts, and each district is subdivided into municipalities. […] In South Africa, about 68.3% of households are in urban areas and 31.7% in non-urban areas. […]

There are a total of 71,241 PSUs in the MSF, 45,651 in urban areas, 22,214 in traditional areas, and 3,376 in farms. The average PSU size is 210 households; urban and farm PSUs are larger in size (averages of 224 and 237 households, respectively), whereas traditional PSUs have a smaller size (an average of 178 households).

The sample for the SADHS 2016 is a stratified sample selected in two stages from the MSF. Stratification was achieved by separating each province into urban, traditional, and farm areas. In total, 26 sampling strata were created (since there are no traditional areas in Western Cape). Samples were selected independently in each sampling stratum by a two-stage selection. Implicit stratification and proportional allocation were achieved at each of the lower administrative levels within a given sampling stratum by sorting the sampling frame according to administrative units at different levels in each stratum and using probability proportional to size selection at the first stage of sampling.

In the first stage, 750 PSUs were selected (468 in urban areas, 224 in traditional areas, and 58 in farm areas) with probability proportional to PSU size and with independent selection in each sampling stratum […]. A listing operation was carried out in all of the selected PSUs, and the resulting lists of DUs served as a sampling frame for the selection of DUs in the second stage. Before the listing activities, informal or congested PSUs were identified so that a segmentation process could be administered. These PSUs were divided into segments of about 20 DUs each, with only one segment selected at random for the survey. Therefore, a cluster in the SADHS 2016 was either a PSU or a segment of a PSU.

In the second stage of selection, a fixed number of 20 DUs per cluster was selected with an equal probability systematic selection from the newly created household listing. In segmented PSUs, if the segment contained 20 DUs or fewer, all DUs in the selected segment were eligible for the survey. In segments with more than 20 DUs, 20 DUs were randomly selected and were eligible for the survey. The survey interviewer interviewed only the households in the pre-selected DUs. No replacements and no changes of the pre-selected DUs were allowed in the implementing stages in order to prevent bias.

[…] To ensure that the survey precision is comparable across provinces, a power allocation was used to allocate between provinces and between different types of residence within each province. The survey was expected to be conducted in about 15,000 residential households, 9,360 in urban areas, 4,480 in traditional areas, and 1,160 in farms. The sample was expected to result in about 10,335 completed interviews with women age 15-49 and about 4,573 completed interviews with men age 15-59."

Source

National Department of Health & ICF International. South Africa Demographic and Health Survey 2016. Published January 2019. https://www.dhsprogram.com/publications/publication-fr337-dhs-final-reports.cfm. Accessed December 11, 2019.

Sri Lanka: DHS 2016

"As in many other household surveys, the Demographic and Health Survey 2016, uses a multistage stratified area probability sample design. The survey uses a two-stage stratified sampling design. At the first stage, 2500 Census Blocks were selected as primary sampling units (PSUs). At the second stage, 12 housing units were selected from each selected PSU as the secondary sampling unit (SSU) from all strata except from the strata of the districts in Western Province (i.e., Colombo, Gampaha and Kalutara). In these districts, 10 housing units were selected from each selected PSU. A total of 28,800 housing units were selected for the survey.

A sampling frame is the complete list of all sampling units that entirely covers the target population. For the SLDHS 2016 the frame consisted of the Enumeration Areas (EAs) that were prepared for the Census of Population and Housing 2012. These EAs are also called Census Blocks. A Census Block is a subdivision of a Grama Niladhari division, which consists of about 150 building units. The Census Frame covers about 65,000 Census Blocks.

Stratification is the process by which the survey population is divided into subgroups or strata that are as homogeneous as possible using certain criteria. Two- stage stratification was utilized for this survey, which involves stratifying the population by district at the first level and then by Urban, Rural and Estate within each district. The total sample of 2500 Census Blocks (PSUs) were allocated by districts and then by sectors using the proportional allocation method and some adjustments considering the proportion of eligible respondents by each district. All the selected PSUs were updated and separate lists of housing units were pre- pared to be used for SSUs. This procedure is important for correcting errors existing in the sampling frame, and it provides an updated sampling frame for household selection.

At the first stage, a stratified sample of PSUs was selected with probability proportional to size (PPS): in each stratum, a sample of Census Blocks was selected independently with probability proportional to the measure of size of the Census Block. In the selected PSUs, the list of households was updated making sure that all and each household/dwelling were listed separately. At the second stage, a fixed number of households was selected by equal probability systematic sampling in the selected PSUs. In each selected household, a household questionnaire was completed to list all usual residents and visitors who stayed in that household the night before the day of interview. During the planning stage, it had been decided to identify ever-married women aged as eligible women for the interviews of individual women. Every eligible woman was interviewed with an individual questionnaire."

Source

Department of Census and Statistics**,** Ministry of National Policies and Economic Affairs **&** Health Sector Development Project**,** Ministry of Health, Nutrition and Indigenous Medicine**.** Sri Lanka Demographic and Health Survey 2016. Published 2017. https://www.aidsdatahub.org/sites/default/files/publication/SriLanka_DHS_2016.pdf. Accessed December 11, 2019.

St. Vincent and the Grenadines: STEPS 2013

“The sample size was proportionately divided between the three main reporting strata (St.Vincent/Northern Grenadines/Southern Grenadines). The country’s most recent age breakdown is based on the 2001 national census, and was used to approximate the adult population 18-69 years by Island grouping. The survey was stratified by sex, age group (18-29, 30-44 and 45-69 years) and geographical location (St. Vincent/Northern Grenadines/Southern Grenadines). A three stage cluster sampling approach was used. Enumeration districts were randomly selected using Probability Proportional to Size (PPS) from the sampling frame. A total of 199 enumeration districts were selected. The sampling frame was developed using the number of households per enumeration district taken from the 2012 preliminary census report; enumeration districts had been subsequently revised (2010-2011) so that no enumeration district containing more than 150 Households would be randomly selected from the selected enumeration districts. Twenty-six (26) households per enumeration district were selected. Where an enumeration district had been split into 2 or more new enumeration districts the number of households in the previously defined enumeration district was divided equally between the newly revised enumeration districts. The household list for each selected enumeration district was updated prior to selection of households during a re-listing exercise.

Eligible persons at the household level were randomly selected using the Kish method. If no one is present in the selected household, a notification of visit card was left and the interviewer revisited at a later time. There were a total of three visits to a household before it was listed as non-response (i.e., one initial recruitment visit and two call backs). The person selected for interview must be at least 18 years on the last birthday but not older than 69 years old. The collection of blood samples and the nutrition intake (24 hour recall) were also conducted at participants' homes. Collection of these data was completed during a morning revisit, during which participants were fasting.”

Source

Ministry of Health, Wellness & the Environment. Implementation Plan: National Health & Nutrition Survey (NHNS). Published 2015. http://stats.gov.vc/stats/wp-content/uploads/2018/10/2015-National-Health-and-Nutrition-Survey.pdf. Accessed December 11, 2019.

Timor-Leste: STEPS 2014

"Note: Data from Census 2010 were used for all sampling considerations. Even though planning and mapping for 2015 Census is ongoing, data from the Census will only be available after July 2015.

STEP 1: Selection of Enumeration Area

1. List of EA with number of HH by district for Census 2010 was obtained from the Directorate of Statistics. There are 1826 EAs in Timor-Leste. Out of these, 150 EAs were selected.
2. The number of EAs to be selected from each district was based on their proportion in the country's population as per Census 2010.
3. The numbers of Households (HH) per EAs varied from 0 to more than 300. Therefore, probability proportion to size (PPS) was used.
4. For each district, the EAs were arranged in ascending order of HH size.
5. Sampling interval was obtained by dividing the total number of HH in the district by the number of EA to be selected from that district.
6. A random number was generated between one and the sampling interval for that district, using tools available at random.org.
7. The EA where that random number fell was the first EA to be selected.
8. Subsequently, the sampling interval was added to the random number and the EA where this new number fell was selected. For the next number, the sampling interval was added to the number and so on, till the population of HH was exhausted or target number of EA achieved.
9. This was done separately for each district.
10. The final list was compiled and had 150 EAs. These are spread over about 125 sucos.

STEP 2. Selection of Households in an Enumeration Area

Listing the house numbers to be visited

1. It was decided to use the 2010 HH size of each EA. Based on past experience, it was expected that the increase would be on an average about 4–5%.
2. The list of households to be selected by enumerators was decided centrally.
3. Sampling interval was calculated by dividing the total number of households in the EA by 18.
4. The first HH number was selected randomly by reading the last two digits of a currency note. If the number represented by the two digits was more than 18, the last digit was taken into consideration. For each EA, a different currency note was used. This could also be done it by using the tool at random.org. or by draw of lots.
5. The subsequent HH are identified by adding the sampling interval as was done for selection of EA."

Source

Ministry of Health Timor-Leste & World Health Organization Regional Office for South-East Asia. National Survey for Non-Communicable Disease Risk Factors and Injuries: Using WHO STEPS approach in Timor-Leste – 2014. https://www.who.int/ncds/surveillance/steps/Timor-Leste_2014_STEPS_Report.pdf. Accessed December 11, 2019.

Zimbabwe: DHS 2015

"The 2015 ZDHS sample was designed to yield representative information for most indicators for the country as a whole, for urban and rural areas, and for each of Zimbabwe's ten provinces: Manicaland, Mashonaland Central, Mashonaland East, Mashonaland West, Matabeleland North, Matabeleland South, Midlands, Masvingo, Harare, and Bulawayo. The 2012 Zimbabwe Population Census was used as the sampling frame for the 2015 ZDHS.

Administratively, each province in Zimbabwe is divided into districts, and each district is divided into smaller administrative units called wards. During the 2012 Zimbabwe Population Census, each ward was subdivided into convenient areas, which are called census enumeration areas (EAs). The 2015 ZDHS sample was selected with a stratified, two-stage cluster design, with EAs as the sampling units for the first stage. The 2015 ZDHS sample included 400 EAs—166 in urban areas and 234 in rural areas.

The second stage of sampling included the listing exercises for all households in the survey sample. A complete listing of households was conducted for each of the 400 selected EAs in March 2015. Maps were drawn for each of the clusters and all private households were listed. The listing excluded institutional living arrangements such as army barracks, hospitals, police camps, and boarding schools. A representative sample of 11,196 households was selected for the 2015 ZDHS.

Women age 15-49 and men age 15-54 who were either permanent residents of the selected households or visitors who stayed in the household the night before the survey were eligible for interviewing. Anaemia testing was performed in all households among eligible women age 15-49 and men age 15-54 who consented to testing. With the parent's or guardian's consent, children age 6-59 months were also tested for anaemia in these households. With consent from the respondent or parental or guardian consent for minors, blood samples were collected in all households for HIV testing in the laboratory for females age 0- 49 and males age 0-54. In addition, a sub-sample of one eligible woman in each household was randomly selected to be asked additional questions about domestic violence."

Source

Zimbabwe National Statistics Agency & ICF International. Zimbabwe Demographic and Health Survey 2015. Published 2016. https://dhsprogram.com/pubs/pdf/FR322/FR322.pdf. Accessed December 11, 2019.

eMethods 3
Response rates

Summary of the response rate definition for each survey

Country	Survey	Year	Response rate (%)	AAPOR definition[a]			
				RR1	*RR2*	*RR5*	*COOP1*
Algeria	STEPS	2016-17	93.2	✓			
Argentina	ENFR	2013	70.7	✓			
Azerbaijan	STEPS	2017	97.3	✓			
Belarus	STEPS	2016-17	87.1	✓			
Belize	CAMDI	2005-6	92.7	✓			
Benin	STEPS	2015	98.6	✓			
Bhutan	STEPS	2014	96.9	✓			
Bolivia	DHS	2008	95.9			✓	
Botswana	STEPS	2014	64.0	✓			
Brazil	PNS	2013	86.0	✓			
Bulgaria	EHS	2014	72.5		✓		
Chile	ENS	2009-10	85.0			✓	
China	SAGE	2008-10	98.9			✓	
Colombia	DHS	2015	86.6			✓	
Costa Rica	ENSA	2006	95.0		✓		
Cote d'Ivoire	DHS	2011-12	93.0			✓	
Dominican Republic	DHS	2013	94.1			✓	
Ecuador	ENSANUT	2012	NA				
Egypt	DHS	2015	98.9			✓	
El Salvador	FESAL	2008	90.0				✓
Eswatini	STEPS	2014	76.0	✓			
Georgia	STEPS	2016	75.7	✓			
Ghana	SAGE	2008-09	92.1			✓	
Guatemala	DHS	2014-15	96.8			✓	
Guyana	STEPS	2016	66.7	✓			
Haiti	DHS	2016-17	99.3			✓	
Honduras	DHS	2011-12	93.2			✓	
India	DHS	2015-16	96.7			✓	
Indonesia	IFLS	2014-15	90.5			✓	
Iran	STEPS	2016	98.4	✓			
Iraq	STEPS	2017	98.8	✓			
Jamaica	RHS	2008	96.7			✓	
Kenya	STEPS	2015	95.0	✓			
Kyrgyzstan	STEPS	2013	NA				
Lebanon	STEPS	2017	69.9	✓			
Lesotho	DHS	2014	97.1			✓	
Mexico	SAGE	2014	81.0			✓	
Moldova	STEPS	2013	83.5	✓			
Mongolia	SISS	2018	92.0			✓	
Morocco	STEPS	2017	89.0	✓			
Namibia	DHS	2013	93.8			✓	
Nepal	SOSAS	2014	97.0	insufficient information			

Summary of the response rate definition for each survey (continued)

Country	Survey	Year	Response rate (%)	AAPOR definition[a]			
				RR1	*RR2*	*RR5*	*COOP1*
Nicaragua	ENDESA	2011	93.8				✓
Paraguay	ENDSSR	2008	95.1				✓
Peru	DHS	2013	97.3			✓	
Philippines	DHS	2013	98.3			✓	
Romania	EHS	2014	NA				
Russia	SAGE	2007-10	87.7			✓	
South Africa	DHS	2016	83.1			✓	
Sri Lanka	DHS	2016	98.9			✓	
SVG	STEPS	2013	67.8	✓			
Sudan	STEPS	2016	95.0	✓			
Tajikistan	STEPS	2016-17	94.4	✓			
Timor-Leste	STEPS	2014	96.3	✓			
Zimbabwe	DHS	2015	96.2			✓	

Abbreviations: AAPOR, American Association for Public Opinion Research; SVG, St. Vincent & the Grenadines; CAMDI, Central America Diabetes Initiative; DHS, Demographic Health and Surveillance; EHS, European Health Survey; ENFR, Encuesta Nacional de Factores de Riesgo; ENS, Encuesta Nacional de Salud; ENSA, Encuesta Nacional de Salud; FESAL, Encuesta Nacional de Salud Familiar; ENSANUT, Encuesta Nacional de Salud y Nutrición; ENDSSR, Encuesta Nacional de Demografía y Salud Sexual y Reproductiva; ENDESA, Encuesta Nicargaüense de Demografía y Salud; IFLS-5, Indonesia Family Life Survey Wave 5; NA, not available; PNS, Pesquisa Nacional de Saúde; RHS, Reproductive Health Survey; SAGE, Study on global AGEing and adult health; SISS, Social Indicator Sample Survey; SOSAS, Surgeons OverSeas Assessment of Surgical Need; STEPS, STEPwise approach to Surveillance.

[a] AAPOR definitions:

RR1 = number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others) plus all cases of unknown eligibility (unknown if housing unit plus unknown other).

RR2 = number of complete and partial interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others) plus all cases of unknown eligibility (unknown if housing unit plus unknown other.

RR5 = the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others), neglecting all cases of unknown eligibility, i.e., it assumes that that there are no eligible cases among the cases of unknown eligibility or the rare case in which there are no cases of unknown eligibility.

COOP1 = number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews that involve the identification of and contact with an eligible respondent (refusal and break-off plus other).

WHO STEPwise approach to Surveillance (STEPS) surveys

Countries
Algeria, Azerbaijan, Belarus, Benin, Bhutan, Botswana, Eswatini, Georgia, Guyana, Iran, Iraq, Kenya, Kyrgyzstan, Lebanon, Morocco, Moldova, St. Vincent & the Grenadines, Sudan, Tajikistan, Timor-Leste

Source of response rate numbers
Response rates were taken from a country's publicly available national report or fact sheet, which are published on the WHO's webpage (World Health Organization, 2020). For three countries (Algeria, Azerbaijan, and Tajikistan) we obtained response rates through personal communication with the Surveillance, Monitoring and Reporting Unit at the WHO because these countries did not publish a national report or fact sheet. It should be noted that STEPS surveys consist of three distinct parts: behavioral measurements, physical measurements, and biochemical measurements. Response rates are calculated by WHO STEPS teams separately for each part. In our manuscript, we consistently present the response rate from STEPS part 1 as this is the STEPS part that asked about cervical cancer screening.

Sampling details that are relevant to the response rate calculation
In all STEPS survey designs, sampling was conducted without replacement, meaning that once a household or person within a household was selected, they were not replaced with another household nor a different household member. If nobody was at home in a selected unit, the interviewer left a notification with contact information for the survey team and the time of the next visit. If household members were not available for an interview at the first visit, the data collector made at least two additional visits at two different times (e.g., early morning or late afternoon) to reach the selected person for an interview. Data collectors in the WHO STEPS surveys were assisted by a mobile-based application to help them sample participants within selected household and keep track of who has been contacted but was not yet interviewed. Specifically, the data collector entered all eligible household members into a mobile-based application and the device then randomly selected one person from this list to participate in the survey. The application showed a listing of all selected households as well as all selected household members. For each selected household member, the application indicated whether or not the interview had been completed, deferred, or partially completed.

Correspondence to the AAPOR definitions
The STEPS surveys' individual response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of response rates as suggested by AAPOR for RR1, i.e., the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others) plus all cases of unknown eligibility (unknown if housing unit plus unknown other; AAPOR, 2016). In the STEPS survey manual, the response rate is defined as "the proportion or percentage of the eligible individuals who did participate" (WHO STEPS Surveillance, 2017), which is in accordance with the general definition suggested by the American Association of Public Opinion Research (AAPOR, 2016, p. 7). The manual further defines that one instrument is to be completed for each participant who is interviewed and measured. Apart from questions that should be skipped depending on the response given to other questions, all items on the instrument must be completed for the response to be valid. An interview tracking form was used to track whether selected participants were at home, refused participation, or did not participate for any other reason. When calculating the response rate, it was thus assumed that each household with unknown eligibility would have included at least one eligible non-respondent. No other strategies to account for unknown eligibility are reported the WHO STEPS survey manuals.

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WHO STEPS Surveillance. WHO STEPS Survey Manual 2017. https://www.who.int/ncds/surveillance/steps/STEPS_Manual.pdf?ua=1. Published 2017. Accessed April 14, 2020.

World Health Organization. STEPS Country Reports. https://www.who.int/ncds/surveillance/steps/reports/en. Accessed April 14, 2020.

Demographic Health and Surveillance (DHS) surveys

Countries
Bolivia, Colombia, Cote d'Ivoire, Dominican Republic, Egypt, Guatemala, Haiti, Honduras, India, Lesotho, Namibia, Peru, Philippines, Sri Lanka, South Africa, Zimbabwe

Source of response rate numbers
Response rates were taken from a country's publicly available national report, which are published on the DHS program's webpage (DHS, 2020). The response rate for Sri Lanka was obtained through personal communication with the Sri Lankan Department of Census and Statistics.

Sampling details that are relevant to the response rate calculation
Responses in DHS surveys were collected at two levels: households and individuals. A complete listing of dwelling units/households in the selected enumeration areas was conducted prior to the selection of households. Selection of households was done through systematic selection (from a random starting point selecting every n^{th} household). After locating a selected household, the data collector began with a brief household interview, listing household members and visitors, and identifying among them all eligible women and men for the individual interview. Eligible individuals were defined as those who were in the specified age group (aged 15 to 49 years) and were either usual members of the selected household or who slept in the household the night prior to the data collector's visit. Eligible individuals were mostly women of childbearing ages, but in some countries men between the ages of 15 and 59 years were also interviewed. Only individuals who were eligible for the survey were assigned an individual questionnaire. In the event of failure to contact a household or an eligible person at the first visit, the interviewer was required to make at least two additional visits, or call backs via phone, on different days and at different times of the day before the interview was abandoned. Survey teams stayed in a selected village or neighborhood (primary sampling unit) for at least two to three days.

Correspondence to the AAPOR definitions
The DHS survey's individual response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of response rates as suggested by AAPOR for RR5, i.e., the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others), neglecting all cases of unknown eligibility. In the DHS, non-response refers to the failure to interview households or individuals selected for the sample. At the individual level, the following response categories were used: completed, not at home, postponed, refused, partly completed, incapacitated, and other. The individual response rate was the number of completed interviews divided by all other categories. The sampling manual notes that whenever the 'other' code is used, the interviewers should specify the reason for non-response. The manual further specifies that any questionnaire in which the household or the woman was deemed ineligible should be clearly marked as ineligible and removed from the data file.

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United Nations. Household Sample Surveys in Developing and Transition. Chapter XXII - The Demographic and Health Surveys. https://unstats.un.org/unsd/hhsurveys/pdf/Chapter_22.pdf. Published 2005. Accessed April 14, 2020.

WHO Study on global AGEing and adult health (SAGE)

Countries
China, Ghana, Mexico, Russia

Source of response rate numbers
Response rates were taken from a country's publicly available national report, which are published on the WHO's Multi-Country Sites Data Archive (WHO, 2019). Reports provide information on response rate by sex and age group. Documentation on the WHO's website (WHO, 2020) states that the SAGE survey methods relied on those used by the World Health Survey.

Sampling details that are relevant to the response rate calculation
SAGE surveys implemented a multistage cluster sampling design resulting in nationally representative cohorts. Within each enumeration area, 20 households with one or more
individuals aged 50 and older and four households with members aged 18–49 were selected. A household questionnaire was administered to all households eligible for a study. Data collection was done through face-to-face interviews in respondents' homes. In Russia and Ghana, respondents were contacted by telephone for establishing a first contact or re-contacts. In cases for which the selected respondent was unavailable during the first visit, at least two additional visits were attempted to interview respondents. In all countries, proxy interviews were done on behalf of individuals found to be incapable of comprehending the questions, for example, as a result of dementia.

Correspondence to the AAPOR definitions
The SAGE survey's individual response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of response rates as suggested by AAPOR for RR5, i.e., the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others), neglecting all cases of unknown eligibility (unknown if housing unit plus unknown other). The World Health Survey documentation states that the response rate includes both individual and proxy interviews. No strategies to account for unknown eligibility are reported in any relevant documentation.

References
World Health Organization. WHO Multi-Country Studies Data Archive. https://apps.who.int/healthinfo/systems/surveydata/index.php/catalog. Last updated 2019. Accessed April 14, 2020.

World Health Organization. SAGE Waves 0, 1, 2 & 3. https://www.who.int/healthinfo/sage/cohorts/en/index2.html. Accessed April 14, 2020.

United Nations. Household Sample Surveys in Developing and Transition. Chapter X - Quality assurance in surveys: standards, guidelines and procedures. https://unstats.un.org/unsd/hhsurveys/pdf/Chapter_10.pdf. Published 2005. Accessed April 14, 2020.

European Health Survey (EHS) 2014

Countries
Bulgaria, Romania

Source of response rate numbers
For Romania, no response rate was available. For Bulgaria, details about the response rates are provided on the National Statistical Institute's website (NSI, 2020).

Sampling details that are relevant to the response rate calculation
In preparation of data collection, household invitation letters were prepared and signed by the President of the NSI. The households were informed by letter that the data collection staff of the regional statistical offices will identify themselves by an identity card. All persons aged 15 and over in selected households were interviewed. Substitution was not allowed. Data collection was conducted by face-to-face interviews. Proxy interviews were allowed only if health problems of the respondent made it impossible for him/her to comprehend or answer to the questions. In cases where the selected respondent was unavailable at the first household visit, one to four additional visits were attempted.

Correspondence to the AAPOR definitions
The Bulgaria EHS survey's individual response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of response rates as suggested by AAPOR for RR2, which is akin to the definition of RR1 but with partial interviews being counted as responses (AAPOR, 2016). Eligible cases include non-response cases (including non-contact, refusal, inability to respond, rejected interviews, and other) and response cases (fully completed interviews and partially completed interviews). However, the Bulgaria EHS survey had no partial interviews in 2014. Correspondingly, the quality report of the second wave of the EHS states that the unweighted unit response rate was computed as the number of respondents to the sum of the number of eligible sample population and unresolved units.

References
Bulgaria National Statistical Institute. European health interview survey. https://www.nsi.bg/en/content/5630/european-health-interview-survey. Accessed April 20, 2020.

Eurostat. Quality report of the second wave of the European Health Interview survey. https://ec.europa.eu/eurostat/documents/7870049/8920155/KS-FT-18-003-EN-N.pdf/eb85522d-bd6d-460d-b830-4b2b49ac9b03. Published 2018. Accessed April 20, 2020.

Central America Diabetes Initiative (CAMDI) 2005-6

Country
Belize

Source of response rate number
The response rate was taken from the publicly available survey report (CAMDI, 2012).

Sampling details that are relevant to the response rate calculation
The CAMDI surveys used a multi-stage stratified cluster sampling strategy. All eligible individuals aged 20 years or older in the randomly selected households were included in the sample and invited to participate, independent of whether or not the dwelling was inhabited by more than one family. For the purpose of the study, a family was defined as the group of cohabitants who eat at the same table. All family members were visited to be informed about the survey and the importance of participating. No substitutions of any dwelling or interviewee were allowed. The interview was conducted at home during the first visit. On the same visit, the person was scheduled for another visit (usually the next day or within the next seven days) for biochemical measurements. The documentation provided no information on whether revisits were done in case a selected person could not be reached at the first household visit.

Correspondence to the AAPOR definitions
The CAMDI survey's individual response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of response rates as suggested by AAPOR for RR1, i.e., the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others) plus all cases of unknown eligibility (unknown if housing unit plus unknown other; AAPOR, 2016). It is the number of complete interviews divided by the number of eligible respondents who were randomly pre-selected from census segments. No strategies to account for unknown eligibility are reported in the CAMDI documentation.

Reference
The Central America Diabetes Initiative. Survey of Diabetes, Hypertension, and Chronic disease risk factors. https://www.paho.org/hq/dmdocuments/2012/PAHO-CAMDI-English2-2012.pdf. Published 2012. Accessed April 14, 2020.

Encuesta Nacional de Factores de Riesgo (ENFR) 2013

Country
Argentina

Source of response rate numbers
The response rate was taken from the publicly available documentation report for the ENFR (INDEC, 2013).

Sampling details that are relevant to the response rate calculation
The ENFR applied a four-stage stratified cluster sampling strategy. In each selected enumeration area, segments of five households were identified through systematic random sampling. In the selected segments, all households were surveyed. In each household, one person aged 18 years or older was selected through a Kish chart. The documentation provided no information on whether revisits were done in case a selected person could not be reached at the first household visit.

Correspondence to the AAPOR definitions
The ENFR survey's individual response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of response rates as suggested by AAPOR for RR1, i.e., the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others) plus all cases of unknown eligibility (unknown if housing unit plus unknown other; AAPOR, 2016). The survey documentation specifies that the denominator for the response rate calculation includes both non-response cases for whom eligibility could be ascertained and non-response cases for whom survey eligibility could be not be confirmed. When calculating the response rate, it is thus assumed that each household with unknown eligibility would have included at least one eligible non-respondent. No other strategies to account for unknown eligibility are reported in the survey documentation.

Reference
Instituto Nacional de Estadística y Censos (INDEC). Encuesta Nacional de Factores de Riesgo 2013. Documento para la utilización de la base de datos usuario.
https://www.indec.gob.ar/ftp/cuadros/menusuperior/enfr/doc_base_usuario_enfr2013.pdf. Accessed April 13, 2020.

Encuesta Nacional de Salud (ENS) 2009-10

Country
Chile

Source of response rate numbers
The response rate was taken from the publicly available survey report (Ministerio de Salud de Chile, 2010).

Sampling details that are relevant to the response rate calculation
The ENS survey applied a multi-stage stratified cluster sampling strategy. As part of an enumeration prior to the survey, each household in the selected areas was visited to obtain initial information on household members (e.g., age, sex, and relationship status) and to update census information for these households. In each household, one person aged 15 years and older was then randomly selected using a Kish chart prior to data collection. During data collection, each selected person was visited in their home for a face-to-face interview. Households were revisited up to three times if the selected person could not be reached at the first household visit.

Correspondence to the AAPOR definitions
The ENS survey's individual response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of response rates as suggested by AAPOR for RR5, i.e., the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others), neglecting all cases of unknown eligibility (unknown if housing unit, plus unknown, other). This is the case since the sample was only drawn from households which were considered eligible based on the updated census information.

References
Ministerio de Salud de Chile. Resumen Ejecutivo: Encuesta Nacional de Salud ENS Chile 2009-10. http://epi.minsal.cl/wp-content/uploads/2016/06/InformeENS_2009-2010_CAP1.pdf. Published 2010. Accessed April 14, 2020.

Ministerio de Salud de Chile. Manual del Encuestador. http://epi.minsal.cl/wp-content/uploads/2018/08/Manual-del-encuestador-ENS-2009-2010.pdf. Published 2009. Accessed April 14, 2020.

Encuesta Nacional de Salud (ENSA) 2006

Country
Costa Rica

Source of response rate numbers
The response rate was taken from the survey documentation section on the website of the *Centro Centroamericano de Población* (2020).

Sampling details that are relevant to the response rate calculation
The ENSA survey applied a two-stage cluster sampling strategy with replacement, whereby the last unit of selection was the dwelling/household and the observation unit were all the habitual or permanent residents of the selected dwelling/household at the time of the interview. All eligible adult household members were interviewed through face-to-face interviews, which could be supplemented by a telephone interview when necessary. If an interview was pending (i.e., the respondent was not present or available at the time of the first visit), up to one re-visit was scheduled to reach the respondent.

Correspondence to the AAPOR definitions
The ENSA survey's household response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of response rates as suggested by AAPOR for RR2, which is akin to the definition of RR1 but with partial interviews being counted as responses (AAPOR, 2016). The interviewer manual details the following response code categories: complete, incomplete, absent home, pending, rejected, housing abandoned, housing destroyed, housing not found, and other.

References
Centro Centroamericano de Población. Primera Encuesta Nacional en Salud. https://ccp.ucr.ac.cr/farmacoeconomia/ensa.html. Accessed April 14, 2020.

Centro Centroamericano de Población. Manual del Encuestador. Encuesta Nacional de Salud 2006. https://ccp.ucr.ac.cr/farmacoeconomia/documentos/ENSA/ManualdelEntrevistador.pdf. Accessed April 14, 2020.

Encuesta Nacional de Salud Familiar (FESAL) 2008

Country
El Salvador

Source of response rate numbers
The response rate was taken from the publicly available survey report (Asociación Demográfica Salvadoreña, 2009).

Sampling details that are relevant to the response rate calculation
The FESAL survey applied a multi-stage stratified cluster sampling strategy. In each enumeration area, a starting household between the number 1 and "n", "n" being the total number of homes in the enumeration area, were randomly selected to start visits for interviews until completion of 35 households. Uninhabited homes were considered eligible for visit, but not those that were destroyed or under construction. For the purposes of this survey, a household was defined as eligible when the building or property had an independent access and when it was inhabited by more than one person who shared the same food. In each household, one woman aged between 15 and 49 years was randomly selected among all eligible women. The documentation provided no information on whether revisits were done in case a selected woman could not be reached at the first household visit.

Correspondence to the AAPOR definitions
The FESAL survey's individual response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of cooperation rates as suggested by AAPOR for COOP1, i.e., the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews that involve the identification of and contact with an eligible respondent (refusal and break-off plus other). The survey report details that the response rate is the number of complete interviews divided by the number of eligible respondents, i.e., households with at least one eligible woman. However, this does not include households that were unoccupied and with absent residents at the time of the initial visit or of any revisits.

Reference
Asociación Demográfica Salvadoreña and Centers for Disease Control and Prevention, Division of Reproductive Health. Encuesta Nacional de Salud Familiar. FESAL-2008. http://ghdx.healthdata.org/sites/default/files/record-attached-files/SLV_RHS_2008_REPORT_0.zip. Published 2009. Accessed April 14, 2020.

Encuesta Nacional de Salud y Nutrición (ENSANUT) 2012

Country
Ecuador

Source of response rate numbers
The ENSANUT survey report did not provide a survey response rate.

Encuesta Nacional de Demografía y Salud Sexual y Reproductiva (ENDSSR) 2008

Country
Paraguay

Source of response rate numbers
The individual response rate was taken from the publicly available survey report (CEPEP, 2009).

Sampling details that are relevant to the response rate calculation
The ENDSSR survey applied a multi-stage stratified cluster sampling strategy. In each enumeration area, a starting household between the number 1 and "n", "n" being the total number of homes in the enumeration area, was randomly selected to start visits for interviews until a prespecified number of households was reached. In each household, one woman aged 15 to 44 years was randomly selected among all eligible women through a Kish chart. The documentation provided no information on whether revisits were done in case a selected woman could not be reached at the first household visit.

Correspondence to the AAPOR definitions
The ENDSSR survey's individual response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of response rates as suggested by AAPOR for RR5, i.e., the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others), neglecting all cases of unknown eligibility (unknown if housing unit, plus unknown, other). It is the number of complete interviews divided by the number of eligible respondents, i.e., woman of childbearing age. The ENDSSR survey documentation specifies that eligible cases include complete interviews, rejected interviews, and absent women.

Reference
Centro Paraguayo de Estudios de Población (CEPEP). Encuesta Nacional De Demografía Y Salud Sexual Y Reproductiva 2008. ENDSSR 2008. https://microdata.worldbank.org/index.php/catalog/991/download/20553. Published 2009. Accessed April 14, 2020.

Encuesta Nicaragüense de Demografía y Salud (ENDESA) 2011-12

Country
Nicaragua

Source of response rate numbers
The individual response rate was taken from the publicly available survey report (INIDE, 2013).

Sampling details that are relevant to the response rate calculation
The ENDESA survey applied a two-stage cluster sampling strategy. In each selected enumeration area, 30 households were identified through systematic random sampling (i.e., selecting the first household at random and then visiting every n^{th} household). In the selected enumeration areas, all households were surveyed. Uninhabited homes were considered eligible for visit, but not those that were destroyed or under construction. For the purposes of this survey, a household was defined as eligible when the building or property had an independent access and when it was inhabited by more than one person, who shared the same food. In each household, one woman aged 15 to 49 years was randomly selected among all eligible women through a Kish chart. The documentation provided no information on whether revisits were done in case a selected woman could not be reached at the first household visit.

Correspondence to the AAPOR definitions
The ENDESA survey's individual response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of response rates as suggested by AAPOR for RR5, i.e., the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others), neglecting all cases of unknown eligibility (unknown if housing unit, plus unknown, other). It is the number of complete interviews divided by the number of eligible respondents, i.e., woman of childbearing age. The survey documentation specifies that eligible cases include complete interviews, partially answered interviews, postponed interviews, rejected interviews, absent women, disabled women, and non-response for any other reason.

Reference
Instituto Nacional de Información de Desarrollo (INIDE). Encuesta Nicaragüense de Demografía y Salud. ENDESA 2011/12. https://nicaragua.unfpa.org/sites/default/files/pub-pdf/ENDESA-2011-12-completa.pdf. Published 2013. Accessed April 14, 2020.

Indonesia Family Life Survey Wave 5 (IFLS-5) 2014-15

Country
Indonesia

Source of response rate numbers
The household response rate was taken from the publicly available survey report (Strauss, Witoelar, & Sikoki, 2016).

Sampling details that are relevant to the response rate calculation
Because it is a longitudinal survey, IFLS5 drew its sample from IFLS1, IFLS2, IFLS2+, IFLS3 and IFLS4. IFLS1 applied a multi-stage stratified cluster sampling strategy (Frankenberg & Karoly, 1995). Households were randomly selected within a selected enumeration area (EA). Twenty households were selected from each urban EA, and 30 households were selected from each rural EA using systematic random sampling (i.e., the first household was selected at random and then every n^{th} household was selected). Within each household, due to budget constraints, a maximum of four eligible household members were interviewed per household. Eligible members were the household head and their spouse, two randomly selected children aged 0 to 14 years, an individual aged 50 years and above (randomly selected from the remaining members), and, for a randomly selected 25 percent of the households, an individual aged 15 to 49 years (randomly selected from the remaining members). When the number of selected household members exceeded four, selection rules that ensured a random sample determined which four selected household members proceeded with the interview. Households were revisited up to three times if not all selected participants could be reached at the first household visit.

Correspondence to the AAPOR definitions
The IFLS5 survey's household response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of response rates as suggested by AAPOR for RR5, i.e., the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others), assuming that there are no cases of unknown eligibility (unknown if housing unit, plus unknown, other). All households who participated in the preceding IFLS surveys were eligible to be interviewed in the IFLS5 survey. Thus, the target households for IFLS5 were the original IFLS1 households, minus all of those whose members had died by 2007, plus any households that split off from the households sampled in the IFLS1 at any time between the time of the IFLS1 and the IFLS5. The IFLS5 survey documentation reports that 90.5% of households in the IFLS1 were successfully recontacted for an interview after excluding those who died between the time of the IFLS1 and the IFLS5.

References
Frankenberg, E. and L. Karoly. "The 1993 Indonesian Family Life Survey: Overview and Field Report." November, 1995. RAND, Santa Monica, CA. https://www.rand.org/well-being/social-and-behavioral-policy/data/FLS/IFLS/download.html. Accessed April 14, 2020.

Strauss, J., F. Witoelar, and B. Sikoki. "The Fifth Wave of the Indonesia Family Life Survey (IFLS5): Overview and Field Report". March 2016. WR-1143/1-NIA/NICHD. Published 2016. https://www.rand.org/well-being/social-and-behavioral-policy/data/FLS/IFLS/download.html Accessed April 14, 2020.

Pesquisa Nacional de Saúde (PNS) 2013

Country
Brazil

Source of response rate numbers
The response rate was taken from the publicly available survey report (IBGE, 2014).

Sampling details that are relevant to the response rate calculation
The PNS survey applied a three-stage stratified cluster sampling strategy. Households were selected through simple random sampling of households in each of the enumeration areas that were selected in the first stage.

Correspondence to the AAPOR definitions
The PNS survey's individual response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of response rates as suggested by AAPOR for RR1, i.e., the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others) plus all cases of unknown eligibility (unknown if housing unit plus unknown other; AAPOR, 2016). It is the number of completed interviews divided by the number of selected households based on the sampling frame. The survey documentation specifies that households that could not be reached were included in the denominator for the response rate calculation. When calculating the response rate, it is thus assumed that each household with unknown eligibility would have included at least one eligible non-respondent. No other strategies to account for unknown eligibility are reported in the survey documentation.

Reference
Instituto Brasileiro de Geografia e Estatística (IBGE). Pesquisa Nacional de Saúde 2013. ftp://ftp.ibge.gov.br/PNS/2013/pns2013.pdf. Published 2014. Accessed April 14, 2020.

Reproductive Health Survey (RHS) 2008

Country
Jamaica

Source of response rate numbers
The response rate was taken from the databank's survey documentation webpage (University of the West Indies, 2019). It also included in the publicly available survey report (National Family Planning Board, 2010).

Sampling details that are relevant to the response rate calculation
The RHS survey applied a three-stage stratified sampling design with the first stage being the selection of 628 enumeration areas (EA). Each EA needed to have at least 80 households to allow the selection of contiguous but independent clusters (one for the female and one for the male sample). In the second stage, clusters of households were selected using simple random sampling. In the third stage, one woman aged 15-49 years was selected at random in each of the households in the female sample using a Kish chart. The survey report details that up to four visits were made to each household with eligible respondents who were not at home during the initial household visit.

Correspondence to the AAPOR definitions
The RHS survey's individual response rate that we provide in Table 1 in our manuscript corresponds to the standard definition of response rates as suggested by AAPOR for RR5, i.e., the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others), neglecting all cases of unknown eligibility (unknown if housing unit, plus unknown, other). The documentation details that it is the number of complete interviews divided by the number of eligible respondents. No strategies to account for unknown eligibility are reported in the survey documentation. The survey documentation specifies that almost all respondents who were selected to participate and who could be reached agreed to be interviewed. Less than one percent of eligible women and 2.5% of eligible men refused to be interviewed, and 2.5% of women and 3.2% of men could not be located.

References
University of the West Indies (UWI). Jamaica - Jamaica Reproductive Health Survey 2008. http://www.uwi.edu/salises/databank/catalog/index.php/ddibrowser/27/export/?format=pdf&generate=yes. Accessed December 10, 2019 [Website is no longer available as of April 14, 2020. Authors have an electronic copy].

National Family Planning Board. Reproductive Health Survey, Jamaica 2008. Final report. https://stacks.cdc.gov/view/cdc/8254/cdc_8254_DS1.pdf. Published 2010. Accessed April 14, 2020.

Social Indicator Sample Survey (SISS) 2018

Country
Mongolia

Source of response rate numbers
The response rate was taken from the publicly available survey report (NSO, 2019).

Sampling details that are relevant to the response rate calculation
The Mongolia SISS survey applied a two-stage, stratified cluster sampling strategy. Procedures and standard programs developed under the global MICS programme were adapted to the SISS 2018 final questionnaires and used throughout. The survey documentation reports that 459 households were found unoccupied. No strategies for household revisits are reported in the survey documentation.

Correspondence to the AAPOR definitions
The Mongolia SISS survey's individual response rate that we provide in Table 1 corresponds to the standard definition of response rates as suggested by AAPOR for RR5, i.e., the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others), neglecting all cases of unknown eligibility (unknown if housing unit, plus unknown, other). The report details that it is the number of complete interviews divided by the number of eligible women, i.e., among households that provided a household listing to determine eligibility of household members. However, this does not include households that were unoccupied or had absent residents at the time of the initial visit. The documentation provided no information on whether revisits were done in case a selected woman could not be reached at the first household visit.

Reference
National Statistical Office of Mongolia (NSO). Mongolia Social Indicators Survey 2018. Survey findings. https://www.washdata.org/sites/default/files/documents/reports/2019-10/Mongolia-2018-MICS-report.pdf. Published 2019. Accessed April 14, 2020.

Surgeons OverSeas Assessment of Surgical Need (SOSAS) 2014

Country
Nepal

Source of response rate numbers
The response rate was taken from an article published by Gupta and colleagues (2015).

Sampling details that are relevant to the response rate calculation
The Nepal SOSAS survey applied a two-stage cluster sampling strategy. Gupta et al. state that in each selected primary sampling unit, interviewers began at the center of the area and sampled every 5th household walking in a randomly selected direction. Interviewers sampled thirty households per primary sampling unit, with a total sample size of 1350 households countrywide. In each selected household, two household members were randomly selected using a Kish chart to participate in the individual interview. The article provided no information on whether revisits were done in case a selected woman could not be reached at the first household visit.

Correspondence to the AAPOR definitions
We were unable to determine the definition of the response rate from any of the available survey documentation.

Reference
Gupta, S., Mahmood, U., Gurung, S., Shrestha, S., Kushner, A. L., Nwomeh, B. C., & Charles, A. G. (2015). Burns in Nepal: a population based national assessment. *Burns*, *41*(5), 1126-1132.

eMethods 4
Survey questions on cervical cancer screening

With the exception of Bhutan, all STEPS surveys used the same question to assess self-reported cervical cancer screening among women. However, among the remaining surveys, there were differences in regard to whether a screening modality was specified or not, and if yes, which screening modalities were specifically named.

In the standardized STEPS instrument, the question on cervical cancer screening is introduced as follows:

"The next question asks about cervical cancer prevention. Screening tests for cervical cancer prevention can be done in different ways, including Visual Inspection with Acetic Acid/vinegar (VIA), pap smear and Human Papillomavirus (HPV) test. VIA is an inspection of the surface of the uterine cervix after acetic acid (or vinegar) has been applied to it. For both pap smear and HPV test, a doctor or nurse uses a swab to wipe from inside your vagina, take a sample and send it to a laboratory. It is even possible that you were given the swab yourself and asked to swab the inside of your vagina. The laboratory checks for abnormal cell changes if a pap smear is done, and for the HP virus if an HPV test is done.

Question: Have you ever had a screening test for cervical cancer, using any of these methods described above?"

The table below shows which question was used in each survey.

Question[a]	**Country**
[See paragraph above] Have you ever had a screening test for cervical cancer, using any of these methods described above?	All STEPS surveys except Bhutan: Algeria, Azerbaijan, Belarus, Benin, Botswana, Eswatini, Georgia, Guyana, Iraq, Iran, Kenya, Kyrgyzstan, Lebanon, Moldova, Morocco, St. Vincent & the Grenadines, Sudan, Tajikistan, Timor-Leste
Have you ever had a Pap smear test?	Argentina, Bhutan[b], Bolivia, Chile, Ecuador, Lesotho, Nicaragua, Paraguay, South Africa[c], Sri Lanka
A pap smear or cytological test is an exam to screen for cervical cancer. Have you ever had one? [When was the last time?] (yes [with number of years ago], no, does not know / not sure)	Belize
When was the last time a cervical cancer screening was performed? (yes [with number of years ago], no, don't know)	Brazil
Have you ever had a cervical smear test?	Bulgaria, Romania
Only for women who ever had a pelvic exam: The last time you had the pelvic examination, did you have a PAP smear test?) (By PAP smear test, I mean did a doctor or nurse use a swab or stick to wipe from inside your vagina, take a sample and send it to a laboratory?)	China, Ghana, Mexico, Russia
Have you ever had a vaginal cytology?	Colombia, El Salvador

Question	Country
[Previous question: Have you ever seen an obstetrician-gynecologist?] Have you ever had a vaginal cytology (Pap smear)?	Costa Rica
Have you ever had a test for cervical cancer?	Côte d'Ivoire
A Pap smear is a test to detect cancer at the neck of the uterus. When was the last time you had a Pap smear test? (yes [with number of years ago], no, don't know)	Dominican Republic
[Previous question: Have you ever heard of a pap smear, that is, an exam that consists of removing cells from the cervix to detect changes that can suggest the presence of cancer in a woman's womb?] Have you ever had such an exam at any time?	Egypt
Have you ever had an exam (Pap smear test) to find out if you had cancer in the womb?	Guatemala
[Explanatory paragraph about how to detect cervical cancer and the procedure of a vaginal cytology and VIA] Has a doctor or other healthcare professional ever tested you for cervical cancer?	Haiti
Have you ever had a vaginal cytology or cervical cancer screening test?	Honduras
Have you ever undergone a cervix examination? [c]	India[d]
When did you last have Pap smear?	Indonesia
A Pap Smear is a test for cancer of the cervix which is done during a pelvic examination by a doctor or nurse. How long has it been since your last Pap smear, if ever? (yes [with number of years ago], no, don't know)	Jamaica
Have you ever had any cervical cancer screening for early detection/Pap smear test?	Mongolia
Have you ever had a test or exam to see if you have cervical cancer?	Namibia

Question	Country
Have you had a Pap test in the last five years?	Peru
Have you ever been screened / examined for cancer? (Option: Cervix)	Philippines
Have you ever been screened for cervical cancer?	Zimbabwe

[a] If not indicated otherwise, the response options were "yes", "no", and "don't know / no response".
[b] For Bhutan, there was a probe for this question: "The next question asks about cervical cancer prevention. A screening test for cervical cancer prevention is done by a doctor or nurse taking a swab to wipe from inside your vagina. This is sent to a laboratory where they check for abnormal cell changes."
[c] For South Africa, there was a probe for this question: "When visiting a doctor or nurse, have you ever been asked to lie on your back with your legs apart so they could use a stick to take a sample from your vagina? The sample would have been sent to a laboratory for testing."
[d] According to Van Dyne and colleagues[l] the NFHS-4 survey question was intended to serve as an indicator for cervical cancer screening. However, the Hindi translation of cervical examinations is not unambiguous.

eMethods 5
Calculation of household wealth quintiles

The majority of STEPS surveys collected information on household income in the year preceding the survey. If the participant was not able to provide a number for the household income, data collectors asked participants into which category of a pre-coded scale of five income categories the participant's household income falls. We assumed that national incomes follow a log-normal distribution and calculated unweighted household wealth quintiles using both information about the exact household income, and information about the classification of household income into pre-coded categories using the procedure developed by Harttgen and Vollmer[2].

Whenever a survey provided information about dwelling characteristics and household ownership of durable goods, we used the standard approach of the Demographic and Health Surveys to calculate a household wealth index[3,4]. That is, we created a binary indicator for each asset and dwelling characteristic. We then ran a principal component analysis (PCA) on these binary indicator variables and used the first (unrotated) principal component as the continuous household wealth index variable, which was then used to create the household wealth quintiles.

The table below shows which household wealth measure was available in each survey.

Wealth measure	Country
Asset index	Argentina, Bolivia, Colombia, Cote d'Ivoire, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, India, Lesotho, Mongolia, Namibia, Peru, Philippines, Russian Federation, South Africa, Sri Lanka, Zimbabwe
Continuous income	Bhutan, Timor-Leste
Continuous income and quintiles	Botswana, Georgia
Continuous income and categories	Algeria, Azerbaijan, Benin, Eswatini, Guyana, Kyrgyzstan, Lebanon, Moldova, Morocco, Tajikistan
Income categories only	Bulgaria, China, Ghana, Iran, Romania, St. Vincent and the Grenadines, Sudan
No income or asset data	Belarus, Belize, Brazil, Chile, Costa Rica, Egypt, Indonesia, Iraq, Lebanon, Mexico, Nepal, Nicaragua, Paraguay, Tajikistan

eMethods 6
Supplementary information on the statistical analysis

This section details the analytical methods used to produce each of the figures and tables shown in this Supplement. The methods used for each table and figure in the main manuscript is described in the statistical analysis section of the main manuscript.

In eFigure 1 and eFigure 2 in this Supplement, we present the process of survey identification, inclusion, and exclusion of surveys for our study with flowcharts. Specifically, we requested access to the most recent nationally representative STEPwise approach to Surveillance (STEPS) survey conducted since 2005 for all countries that the World Bank categorized as low-income, lower middle-income, or upper middle-income at any time since 2005 (eFigure 1). To be included in our study, a country must have been an LMIC (as per the World Bank categorization) at the time of the survey's data collection (see eMethods 1 in this Supplement).[5] If an eligible STEPS dataset was not available for a country that was an LMIC at any time since 2005, or we could not gain access to it, we conducted a systematic search in September 2019 using the Google search engine, the International Household Survey Network (IHSN) central data catalogue, and the Global Health Data Exchange (GHDx) to identify the most recent nationally representative household survey with data on cervical cancer screening prevalence for that country (eFigure 2). The systematic search followed the strategy and inclusion and exclusion criteria detailed in eMethods 1 in this Supplement.

Akin to Table 1, in eTable 1 in this Supplement, we provide detailed characteristics for each country and survey included in our study. However, as opposed to Table 1, we restricted the presented survey population and the respective reference population to women aged 30 to 49 years.

In eTable 2 in this Supplement, we provide descriptive sample characteristics by individual-level variables (10-year age group, educational attainment, wealth quintile, relationship status, self-reported current tobacco smoking, and place of residence) and compare the total survey population (women across all ages) with the restricted survey population (women aged 30 to 49 years). In eTable 3 in this Supplement, we then compare sample characteristics of all women aged 30 to 49 years to those women who had to be excluded due to a missing response to the question whether they have ever had a cervical cancer screening test in the past (i.e., our outcome).

In eTable 4 in this Supplement, we show for how many and what proportion of women, responses are missing for each individual-level variable by country.

Akin to Figure 1, in eFigure 3 in this Supplement, we estimated lifetime prevalence of self-reported cervical cancer screening by country for women aged 30 to 49 years (using sampling weights as provided by the respective nationally representative country survey dataset). As opposed to Figure 1, we age-standardized the prevalence estimates by weighting observations to the age distribution of the WHO standard population. Both figures display the estimates on a world map in which the countries are color-coded from light yellow to dark green corresponding with increasing screening prevalence.

In eFigure 4 in this Supplement, we show lifetime prevalence estimates (left panel) as well as age-standardized lifetime prevalence estimates (right panel) with 95% confidence intervals among all surveyed women by country, ordered by increasing lifetime prevalence and graphically clustered within regions. For each region, we show the median lifetime prevalence estimate (bar chart). In eFigure 5 in this Supplement, we show the same estimates as in eFigure 4 but restricted the sample to women aged 30 to 49 years.

In eTable 5, we estimated lifetime prevalence of self-reported cervical cancer screening by country for women aged 15 to 25 years, 25 to 34 years, 35 to 44 years, 45 to 54 years, 55 to 64 years, older than 65 years, 30 to 49 years, and across the total age range of the respective country survey. All estimates used survey weights and are presented with 95% confidence intervals. In addition, we calculated the median and interquartile range of lifetime prevalence of self-reported cervical cancer screening for each region and across all included countries.

Akin to Figure 2, in eFigure 6 in this Supplement, we plotted the point estimate of lifetime prevalence of self-reported cervical cancer screening with 95% confidence intervals for each country against the country's gross domestic product per capita (GDP per capita, left panel) as well as the country's health expenditure per capita (in constant 2011 international dollars,[6] right panel). We added an ordinary least squares regression through these point estimates, weighting each country equally, for visual orientation only as opposed to statistical inference. As opposed

to Figure 2 (which is restricted to women aged 30 to 49 years), eFigure 6 displays the lifetime screening prevalence for all women included in the respective country survey.

Akin to Figure 3, in eFigure 7 in this Supplement, we plotted the lifetime prevalence point estimate of self-reported cervical cancer screening with 95% confidence intervals for each country against the country's Human Development Index (HDI), Gender Related Development Index (GDI), Social Institutions and Gender Index (SIGI, 2014), health worker density, density of medical nurses and midwives, and Gender Inequality Index (GDI) in clockwise order starting from the upper left panel. We added an ordinary least squares regression through these point estimates, weighting each country equally, for visual orientation only as opposed to statistical inference. As opposed to Figure 3 (which is restricted to women aged 30 to 49 years), eFigure 7 displays the lifetime screening prevalence for all women included in the respective country survey.

In eFigure 8-11 in this Supplement, we plotted lifetime prevalence of self-reported cervical cancer screening among all women (eFigure 8-9 in this Supplement) and among women aged 30 to 49 years (eFigure 10-11 in this Supplement) against the same country-level indices as in Figure 3-4 and eFigure 6-7, but this time we adjusted the lifetime prevalence estimates for individual-level characteristics between countries. We did this by computing the proportion of all women in our data that is in each category of our individual-level variables (ten-year age group, educational attainment, relationship status, rural versus urban residency, and self-reported tobacco smoking) when weighting each country proportionally to its adult female population size. Akin to weighting observations to the age distribution of the WHO standard population when computing age-standardized prevalence estimates, we then weighted the prevalence of lifetime cervical cancer screening to the distribution of individual-level variables in this hypothetical country (which, thus, has the average distribution of individual-level variables across all countries included in our study).

In eFigure 14 in this Supplement, we plotted – separately for each World Bank Region – the country-level median lifetime prevalence of self-reported cervical cancer screening by five-year age group. Specifically, we used all study countries in a region, calculated the lifetime prevalence of self-reported cervical cancer screening separately for each five-year age group in each country, and then (separately for each five-year age group) summarized these country-level prevalence estimates using the median. In addition, using the same method, we show the country-level interquartile range (depicted as thick lines) and range (minimum to maximum; depicted as thin lines with whiskers) of lifetime prevalence of self-reported cervical cancer screening separately for each five-year age group.

Akin to Figure 4, in eFigure 12-13 and eFigure 15-16 in this Supplement, we plotted Risk Ratios (RR) and average marginal effect estimates (in percentage points) with 95% confidence intervals to show relative and absolute differences in lifetime prevalence of self-reported cervical cancer screening by individual-level variables in each country. The average marginal effect represents the average absolute change in prevalence when the predictor increases by one unit (e.g., when comparing urban versus rural residence). These estimates stem from Poisson regression models which regressed self-report of ever having had a cervical cancer screening test on one individual-level variable at a time (rural versus urban residence, primary school or less versus secondary education or further, top [or top two] versus bottom [or bottom two] wealth quintile, currently smoking versus not currently smoking tobacco, currently married versus not currently married, aged 30 to 49 years versus aged 20 to 29 years, and aged 30 to 49 years versus aged 50 years or older). For regressions (that did not estimate differences between age groups), we adjusted the regressions for continuous age by placing restricted cubic splines with five knots at the fifth, 27.5th, 50th, 72.5th and 95th percentiles). Poisson regression models accounted for the multi-stage random sampling of the surveys by use of sampling weights and cluster-robust standard errors (using the sandwich estimator of variance) that were adjusted for clustering at the level of the primary sampling unit. The exact estimates from these regressions with 95% confidence intervals are provided in eTable 6-13 in this Supplement.

We decided to use Poisson regression with a robust error structure instead of logistic regression because these models are a valid regression approach for binary outcomes but have the advantage that they yield a more easily interpretable Risk Ratio rather than an Odds Ratio, which is usually shown to summarize findings from logistic regressions.[7–9]

In eTable 14-24 in this Supplement, we show the results from covariate-unadjusted (only one individual-level variable) and covariate-adjusted (including all individual-level variables) Poisson regressions separately for each country. The individual-level variables included all variables which were available for the respective country (10-year age group, household wealth quintile, relationship status, place of residence, and a binary indicator for self-

reported tobacco smoking). Poisson regression models accounted for the multi-stage random sampling of the surveys by use of sampling weights and cluster-robust standard errors (using the sandwich estimator of variance) that were adjusted for clustering at the level of the primary sampling unit. The country results are presented alphabetically by World Bank region.

In eTable 25-35 in this Supplement, as a robustness check for our regression approach, we additionally show results from the same Poisson regressions when not using any sampling weights given the ongoing debate as to whether regression in survey data should account for sampling weights.[10] While these Poisson regression models do not use sampling weights, they still use cluster-robust standard errors (using the sandwich estimator of variance) that were adjusted for clustering at the level of the primary sampling unit.

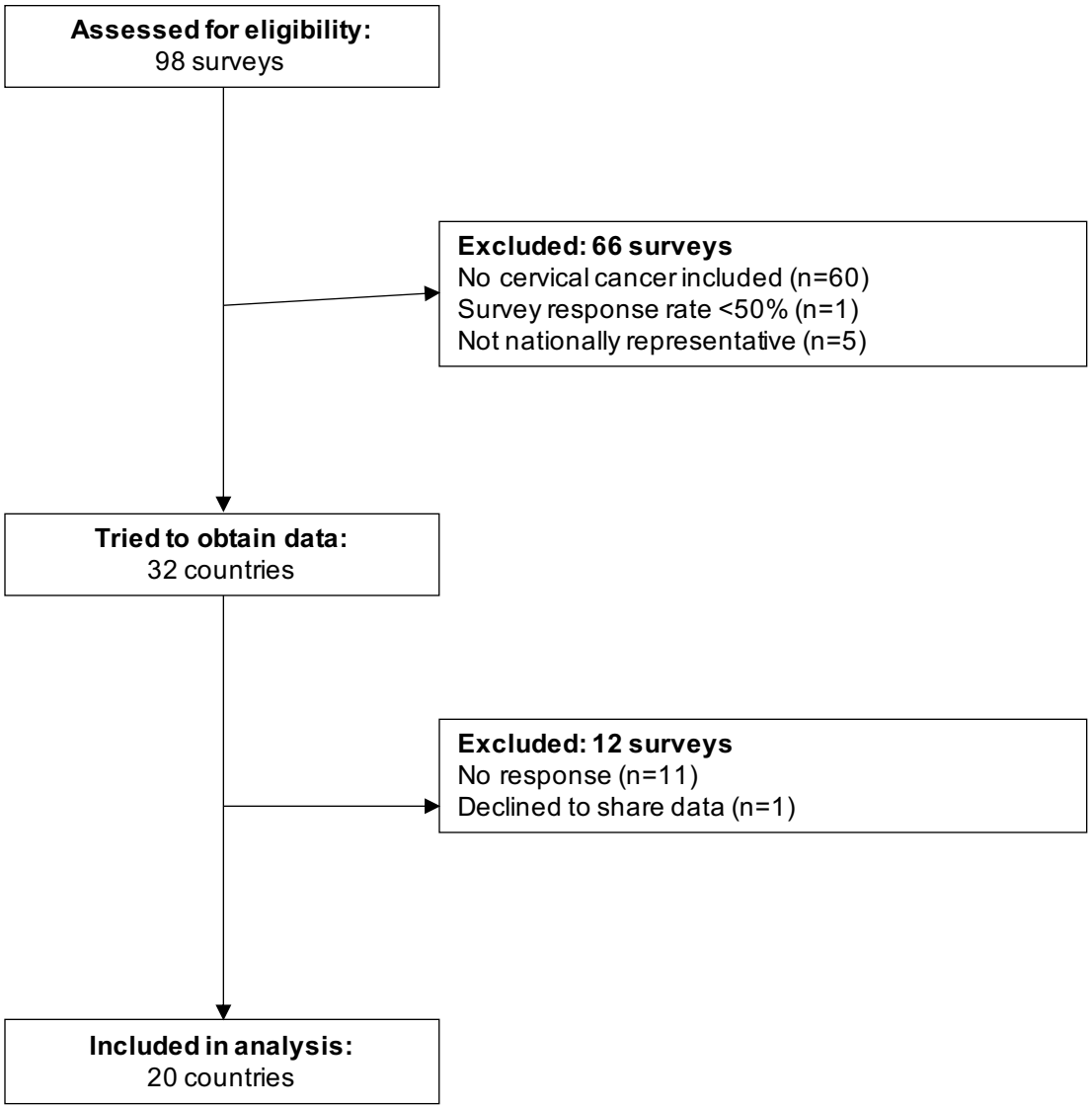
In eFigure 15-22 in this Supplement, we provide the same robustness check as described in the previous paragraph to show relative and absolute differences in lifetime prevalence of cervical cancer screening by individual-level variables in each country (with the same graphical approach as in Figure 4, eFigure 10-11, and eFigure 13-14 in this Supplement).

In eFigure 23-31 in this Supplement, we visualize the interaction between GDP per capita and within-country socioeconomic differences in lifetime prevalence of self-reported cervical cancer screening. We do this by plotting a country's GDP per capita against each country's Risk Ratios and average marginal effects (obtained from the Poisson regression models with sampling weights also used for Figure 4) comparing lifetime prevalence of self-reported cervical cancer screening among those in the top two versus bottom two household wealth quintiles, those with secondary education or more versus primary school education or less, and those in rural versus urban areas. We show the same plots with results from Poisson regression models that do not use sampling weights.

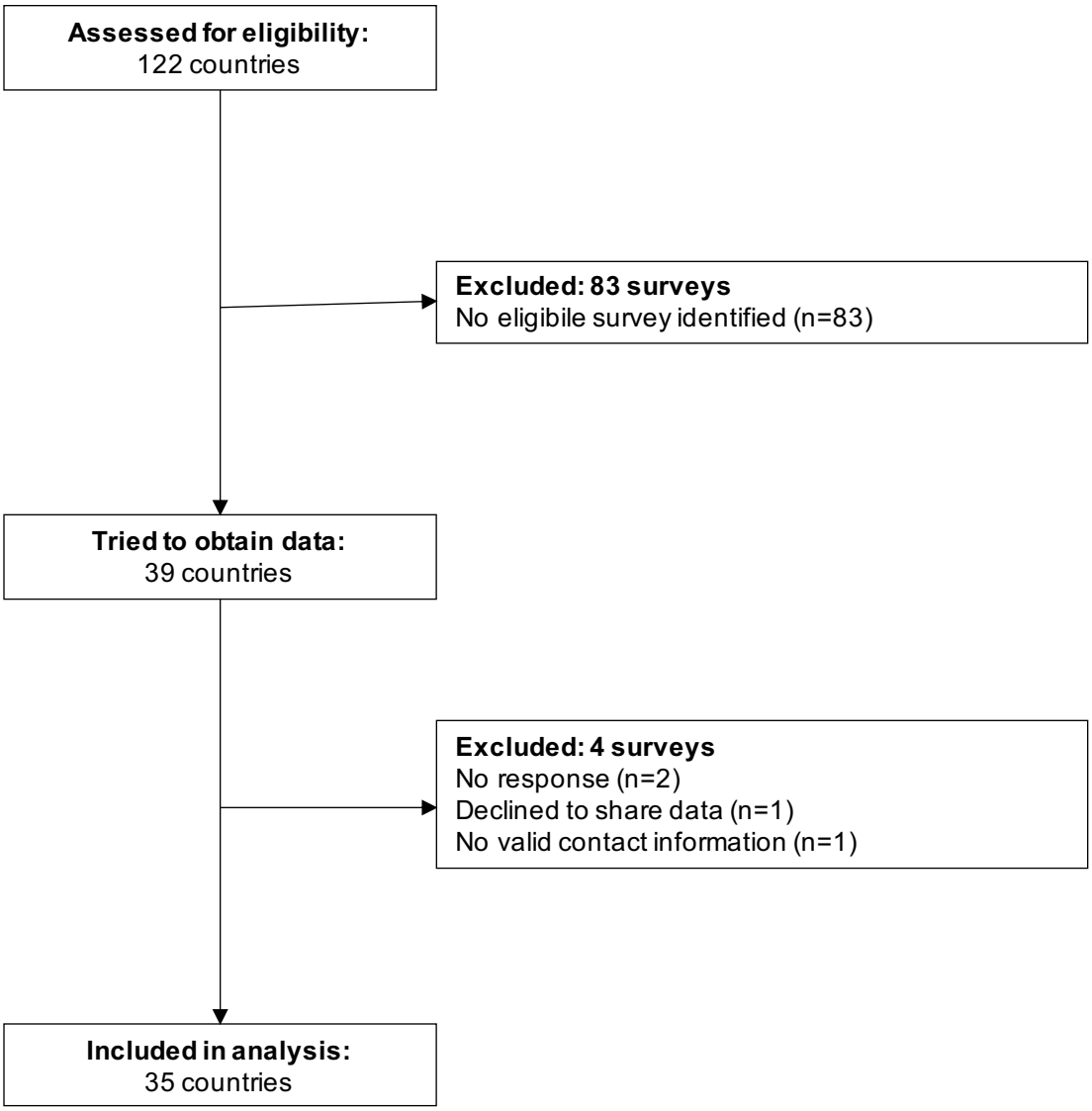
In eMethods 7 in this Supplement, we present the summary of a detailed review of all available documentation on cervical cancer screening practices in the 28 countries that asked about Pap smear testing only (as opposed to cervical cancer screening through any screening modality). We first determined whether a country currently has, or has had in the past, any programs on visual inspection of the cervix with acetic acid (VIA) and testing for high-risk types of the human papilloma virus (HPV testing), which are the only other two common cervical cancer screening modalities that are (or have been in use) apart from Pap smear testing. We did so by verifying if any of the following three sources recorded VIA or HPV testing for the country in question: the WHO cancer country profile,[11] the country report by the HPV Information Centre,[12] and the report card by the Cervical Cancer Action (CCA) organization.[13] For countries for which at least one of these resources indicated VIA or HPV testing activities (whether at the national or subnational level), we reviewed when implementation of these screening modalities had started by searching peer-reviewed scientific publications, documents published by the country's government, and any documents published by multi- or bi-lateral organizations and local non-governmental organizations. The search engines that we used to identify these documents were Pubmed/MEDLINE, Google, and Google Scholar. We provide the general conclusion of our review in eTable 36 in this Supplement.

As an additional robustness check, in eTable 37 in this Supplement, we compare the results of covariate-unadjusted and covariate-adjusted regressions which regressed self-reported of ever having had a cervical cancer screening test on individual-level variables separately for countries which asked about Pap smear only, for countries which asked specifically for any of the common screening modalities (Pap smear, VIA, or HPV testing), and for countries which did not specify any screening modality. Poisson regression models accounted for the multi-stage random sampling of the surveys by use of sampling weights and cluster-robust standard errors (using the sandwich estimator of variance) that were adjusted for clustering at the level of the primary sampling unit and included a binary indicator variable for each country.

eFigure 1. Flowchart for inclusion of STEPS surveys



eFigure 2. Flowchart for inclusion of non-STEPS surveys



eTable 1. Survey characteristics by region and country for women aged 30 to 49 years[a,b]

Country	ISO code	Survey	Year[c]	Women's response rate[d] (%)	Missing outcome[e] (%)	Sample size	Median age	Age range	GDP per capita[f]	Female population[g] (thousands)
Latin America and the Caribbean										
Belize	BLZ	CAMDI	2005-6	92.7	1.4	562	40	30-49	7,924	52
Costa Rica	CRI	ENSA	2006	95.0	11.9	772	40	30-49	11,558	724
Bolivia	BOL	DHS	2008	95.9	0.5	7,782	38	30-49	5,525	1,405
El Salvador	SLV	FESAL	2008	90.0	0.1	6,094	37	30-49	6,309	891
Jamaica	JAM	RHS	2008	96.7	0.7	4,532	39	30-49	8,593	408
Paraguay	PRY	ENDSSR	2008	95.1	0.1	2,666	36	30-44	9,028	873
Chile	CHL	ENS	2009-10	85.0	6.5	1,036	40	30-49	18,924	2,708
Honduras	HND	DHS	2011-12	93.2	0.0	9,677	38	30-49	4,028	1,236
Nicaragua	NIC	ENDESA	2011	93.8	0.0	7,183	37	30-49	4,163	922
Ecuador	ECU	ENSANUT	2012	NA	0.1	10,121	38	30-49	10,634	2,304
Argentina	ARG	ENFR	2013	70.7	0.4	6,891	38	30-49	19,638	6,082
Brazil	BRA	PNS	2013	86.0	0.0	14,546	38	30-49	15,062	32,064
Dominican Republic	DOM	DHS	2013	94.1	0.6	4,347	39	30-49	12,183	1,405
Peru	PER	DHS	2013	97.3	4.0	11,398	39	30-49	11,734	4,546
SVG	VCT	STEPS	2013	67.8	0.1	902	39	30-49	10,259	15
Guatemala	GTM	DHS	2014-15	96.8	0.1	11,224	38	30-49	7,220	2,144
Mexico	MEX	SAGE	2014	81.0	0.0	368	40	30-49	17,150	18,309
Colombia	COL	DHS	2015	86.6	0.0	17,235	38	30-49	13,115	7,198
Guyana	GUY	STEPS	2016	66.7	0.0	690	39	30-49	7,285	93
Haiti	HTI	DHS	2016-17	99.3	0.0	1,368	41	35-49	1,654	1,424
Europe and Central Asia										
Russia	RUS	SAGE	2007-10	87.7	0.5	215	41	30-49	23,063	22,642
Kyrgyzstan	KGZ	STEPS	2013	NA	0.5	840	40	30-49	3,117	834
Moldova	MDA	STEPS	2013	83.5	10.1	939	39	30-49	5,638	655
Bulgaria	BGR	EHS	2014	72.5	12.6	802	40	30-45	16,324	984
Romania	ROU	EHS	2014	NA	0.0	2,616	40	30-45	19,802	2,779
Belarus	BLR	STEPS	2016-17	87.1	5.3	1,095	41	30-49	16,978	1,406
Georgia	GEO	STEPS	2016	75.7	2.0	1,000	40	30-49	9,256	552
Tajikistan	TJK	STEPS	2016-17	94.4	4.3	773	39	30-49	2,854	1,106
Azerbaijan	AZE	STEPS	2017	97.3	4.5	632	40	30-49	15,929	1,518
Mongolia	MNG	SISS	2018	92.0	0.2	6,764	39	30-49	12,209	486
Middle East and Northern Africa										
Egypt	EGY	DHS	2015	98.9	0.0	3,653	38	30-49	10,243	12,654
Iraq	IRQ	STEPS	2015	98.8	2.4	1,148	39	30-49	14,964	4,477
Algeria	DZA	STEPS	2016-17	93.2	2.0	1,928	39	30-49	13,908	6,201

eTable 1. Survey characteristics by region and country for women aged 30 to 49 years[a,b] (continued)

Country		Survey	Year[c]	Response rate[d] (%)	Missing outcome[e] (%)	Sample size	Median age	Age range	GDP per capita[f]	Female population[g] (thousands)
Middle East and Northern Africa (continued)										
Iran	IRN	STEPS	2016	98.4	3.4	6,712	38	30-49	18,664	13,876
Lebanon	LBN	STEPS	2017	69.9	8.7	1,022	39	30-49	11,647	967[h]
Morocco	MAR	STEPS	2017	89.0	3.1	1,535	39	30-49	7,509	5,159
South Asia, East Asia, and Pacific										
China	CHN	STEPS	2008-10	98.9	2.5	785	42	30-49	8,683	217,8
Philippines	PHL	SAGE	2013	98.3	0.0	12,269	39	30-49	6,282	13,544
Bhutan	BTN	DHS	2014	96.9	1.3	887	38	30-49	7,954	100
Indonesia	IDN	IFLS	2014-15	90.5	0.0	7,151	37	30-49	10,181	39,21
Nepal	NPL	SOSAS	2014	97.0	1.0	394	38	30-49	2,385	4,079
Timor-Leste	TLS	DHS	2014	96.3	5.9	668	39	30-49	6,467	124
India	IND	DHS	2015-16	96.7	0.0	331,512	38	30-49	5,944	181,794
Sri Lanka	LKA	STEPS	2016	98.9	0.1	13,968	39	30-49	11,447	3,011
Sub-Saharan Africa										
Ghana	GHA	SAGE	2008-09	92.1	3.3	294	40	30-49	2,729	3,468
Cote d'Ivoire	CIV	DHS	2011-12	93.0	0.1	4,13	37	30-49	5,192	2,534
Namibia	NAM	DHS	2013	93.8	0.8	3,969	38	30-49	9,600	297
Botswana	BWA	STEPS	2014	64.0	1.7	1,125	38	30-49	16,175	323
Eswatini	SWZ	STEPS	2014	76.0	6.3	821	38	30-49	9,309	142
Lesotho	LSO	DHS	2014	97.1	0.0	2,596	37	30-49	2,811	253
Benin	BEN	STEPS	2015	98.6	4.6	1,273	36	30-49	1,987	1,183
Kenya	KEN	STEPS	2015	95.0	0.3	1,197	37	30-49	2,798	6,053
Zimbabwe	ZWE	DHS	2015	96.2	0.0	4,211	37	30-49	2,509	1,689
South Africa	ZAF	DHS	2016	83.1	0.1	2,014	38	30-49	12,246	8,412
Sudan	SDN	STEPS	2016	95.0	8.6	2,143	37	30-49	4,357	4,438
Total				93.8 (86.5 – 96.8)[i]	0.5 (0.1 – 3.4)[i]	542,475[j]	39 (38 – 39.5)[9]	30 – 49	9,256 (5,581 –12,681)[i]	680,540[j]

Abbreviations: y, years; GDP, Gross Domestic Product; int. $, constant 2011 international dollars; NA, not available; SVG, St. Vincent & the Grenadines.

[a] Values are unweighted (i.e., do not account for the multi-stage cluster sampling used by the included surveys).

[b] Sample size, median age, and age range are shown for those with a non-missing outcome variable.

[c] Year(s) in which the data collection for the survey was carried out.

[d] If the women's response rate was unavailable, this shows the combined response rate for both men and women in the survey. This applies to Algeria, Argentina, Azerbaijan, Belarus, Belize, Benin, Bhutan, Botswana, Brazil, Bulgaria, Chile, Eswatini, Georgia, Guyana, Iran, Iraq, Kenya, Lebanon, Mexico, Moldova, Morocco, Nepal, St. Vincent & the Grenadines, Sudan, Tajikistan, and Timor-Leste. For Costa Rica and Indonesia, only the household response rate was available.

[e] Percent of female participants who had a missing response for the survey question assessing whether she had ever undergone a screening test for cervical cancer.

[f] This is GDP per capita in constant 2011 international dollars (as estimated by the World Bank[6]) for the year of the survey's data collection. In case of a multiyear data collection period, we calculated the mean GDP per capita in constant 2011 international dollars across years.

[g] This is the female population in 2019 as estimated by United Nations, Population Division, Department of Economic and Social Affairs (2019).[14]

[h] Combined number of Lebanese citizens and Syrian refugees living in Lebanon in 2017 as estimated by the United Nations Refugee Agency.[15]

[i] This is the median value and interquartile range with each country having the same weight.

[j] This is the sum across all countries.

eTable 2. Sample characteristics across all countries among (1) all women, and (2) women aged 30 to 49 years

	All women		**Age 30-49**
	n=1,129,404		***n=542,475***
Characteristic	**Percent**		**Percent**
Age			
15-24 years	30.54		
25-34 years	29.10	30-39 years	55.71
35-44 years	23.96	40-49 years	44.29
45-54 years	11.72		
55-64 years	2.45		
65+ years	2.23		
NA	0.00		0.00
Relationship status			
Never married	24.80		6.06
Married	60.84		78.02
Separated	2.94		3.77
Divorced	1.01		1.17
Widowed	4.21		4.65
Cohabitating	6.01		6.29
NA	0.20		0.04
Smoking			
Current smoker	2.58		2.55
Not a current smoker	91.47		89.85
NA	5.95		7.60
Household Wealth Quintile			
1	18.77		18.77
2	18.32		18.02
3	17.95		17.66
4	17.70		18.08
5	17.50		18.93
NA	9.76		8.52
Educational Attainment			
No formal schooling	21.21		30.01
Primary school	19.16		21.32
High school or above	58.83		48.06
NA	0.80		0.61
Place of residence			
Rural	57.57		56.91
Urban	37.88		38.70
NA	5.04		5.43

eTable 3. Sample characteristics across all countries among women aged 30 to 49 years who were (1) included in the analysis, and (2) excluded due to a missing outcome variable

Characteristic	Women (30 to 49 years) Included in analysis *n=542,475*	Women (30 to 49 years) Excluded due to missing outcome *n=2,145*
	%	%
Age		
30-39 years	55.71	49.83
40-49 years	44.29	50.16
NA	0.00	0.00
Relationship status		
Never married	6.06	12.87
Married	78.02	55.48
Separated	3.77	4.90
Divorced	1.17	2.33
Widowed	4.65	2.98
Cohabitating	6.29	13.80
NA	0.04	7.65
Smoking		
Current smoker	2.55	7.09
Not a current smoker	89.85	82.56
NA	7.60	10.35
Household Wealth Quintile		
1	18.77	26.12
2	18.02	14.83
3	17.66	9.56
4	18.08	8.07
5	18.93	4.62
NA	8.52	36.83
Educational Attainment		
No formal schooling	30.01	21.77
Primary school	21.32	26.67
High school or above	48.06	42.24
NA	0.61	9.32
Place of residence		
Rural	56.91	45.55
Urban	38.70	36.41
NA	5.43	18.04

eTable 4. Percent missing (among all those with non-missing data on cervical cancer screening) for each individual-level predictor, by country[a]

Country	Age		Education		Household wealth quintile		Place of residence		Smoking		Relation-ship status	
	n	%	n	%	n	%	n	%	n	%	n	%
Algeria	0	0	20	0.52	1133	29.64	0	0.00	0	0.00	2	0.05
Argentina	0	0	0	0.00	45	0.25	NA	NA	0	0.00	0	0.00
Azerbaijan	0	0	2	0.13	292	18.48	0	0.00	0	0.00	21	1.33
Belarus	0	0	1	0.04	NA	NA	0	0.00	0	0.00	19	0.71
Belize	0	0	1	0.07	NA	NA	NA	NA	263	18.46	0	0.00
Benin	0	0	70	2.59	90	3.33	0	0.00	0	0.00	0	0.00
Bhutan	0	0	1	0.06	58	3.39	0	0.00	0	0.00	0	0.00
Bolivia	0	0	0	0.00	0	0.00	0	0.00	13	0.08	0	0.00
Botswana	0	0	1	0.04	806	30.00	NA	NA	0	0.00	4	0.15
Brazil	0	0	0	0.00	NA	NA	0	0.00	0	0.00	0	0.00
Bulgaria	0	0	0	0.00	68	2.35	0	0.00	7	0.24	8	0.28
Chile	0	0	14	0.48	NA	NA	NA	NA	10	0.34	8	0.27
China	0	0	105	1.38	45	0.59	0	0.00	5	0.07	10	0.13
Colombia	0	0	0	0.00	0	0.00	0	0.00	NA	NA	0	0.00
Costa Rica	0	0	0	0.00	NA	NA	0	0.00	21	0.85	4	0.16
Cote d'Ivoire	0	0	6	0.06	0	0.00	0	0.00	22	0.22	0	0.00
Dominican Republic	0	0	0	0.00	0	0.00	0	0.00	7	0.08	0	0.00
Ecuador	0	0	0	0.00	2	0.01	0	0.00	0	0.00	0	0.00
Egypt	0	0	3	0.03	NA	NA	0	0.00	0	0.00	0	0.00
El Salvador	0	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Eswatini	0	0	1	0.00	745	0.35	NA	NA	0	0.00	1	0.00
Georgia	0	0	146	5.03	373	12.85	NA	NA	0	0.00	3	0.10
Ghana	0	0	24	1.00	3	0.12	0	0.00	0	0.00	14	0.58
Guatemala	0	0	0	0.00	0	0.00	0	0.00	2	0.01	0	0.00
Guyana	0	0	1	0.06	329	20.72	NA	NA	0	0.00	1	0.06
Haiti	0	0	0	0.00	0	0.00	0	0.00	0	0.00	1127	45.17[b]
Honduras	0	0	2	0.01	0	0.00	0	0.00	8	0.04	0	0.00
India	0	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Indonesia	0	0	883	5.35	NA	NA	0	0.00	0	0.00	0	0.00
Iran	0	0	320	2.10	4543	29.77	0	0.00	27	0.18	90	0.59
Iraq	0	0	46	1.95	NA	NA	0	0.00	0	0.00	4	0.17
Jamaica	0	0	3	0.04	0	0.00	0	0.00	0	0.00	750	9.13
Kenya	0	0	0	0.00	0	0.00	0	0.00	1	0.04	1	0.04
Kyrgyzstan	0	0	0	0.00	138	8.29	0	0.00	0	0.00	6	0.36

eTable 4. Percent missing (among all those with non-missing data on cervical cancer screening) for each individual-level predictor, by country[a] (continued)

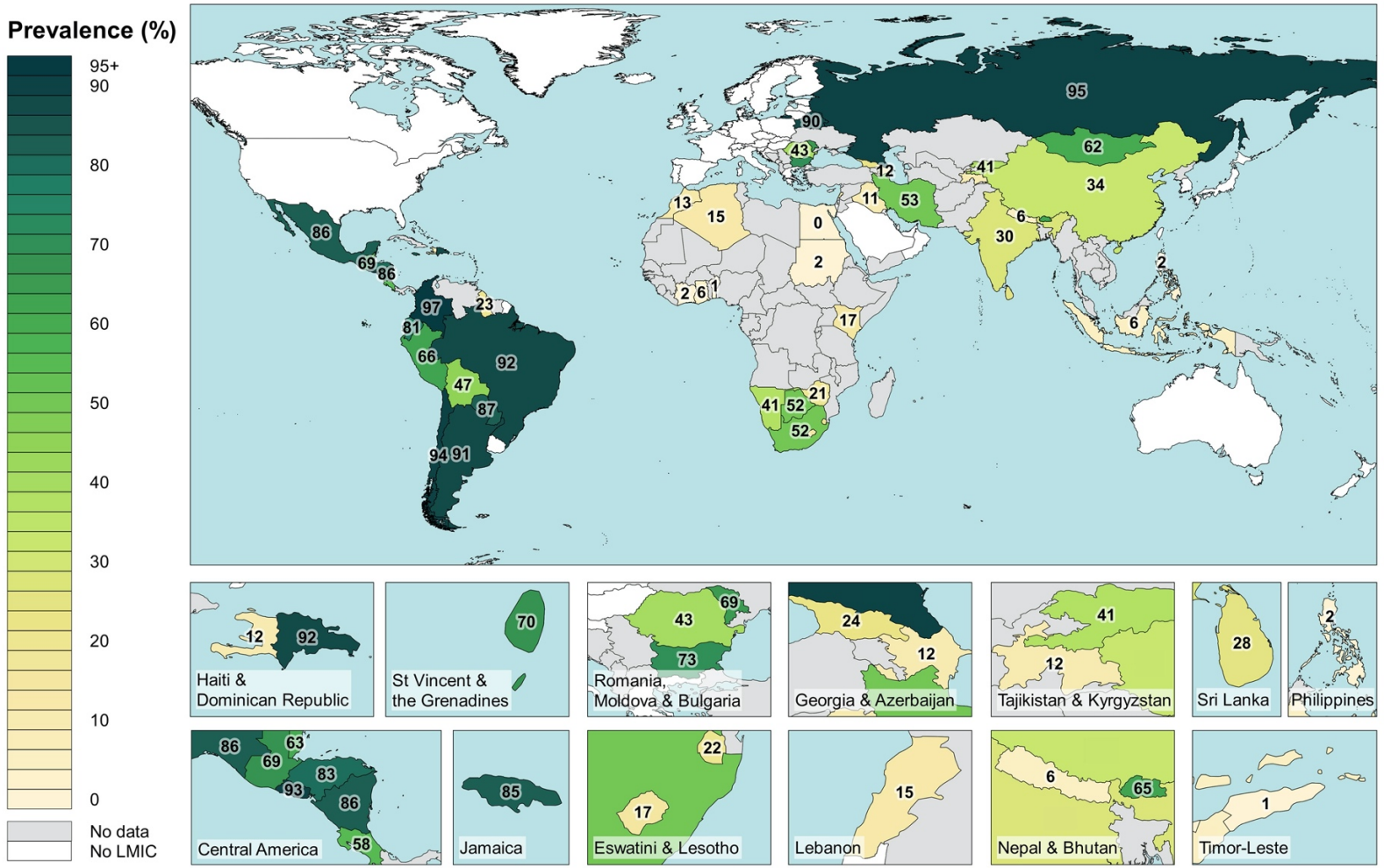
Country	Age		Education		Household wealth quintile		Place of residence		Smoking		Relation-ship status	
	n	%	n	%	n	%	n	%	n	%	n	%
Lebanon	0	0	404	18.64	1381	63.73	NA	NA	0	0.00	17	0.78
Lesotho	0	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Mexico	0	0	7	0.25	NA	NA	0	0.00	0	0.00	0	0.00
Moldova	0	0	5	0.19	305	11.57	0	0.00	0	0.00	20	0.76
Mongolia	0	0	363	3.37	0	0.00	0	0.00	33	0.31	7	0.07
Morocco	0	0	9	0.26	539	15.86	0	0.00	0	0.00	3	0.09
Namibia	0	0	4	0.04	0	0.00	0	0.00	2	0.02	0	0.00
Nepal	0	0	1	0.10	NA	NA	0	0.00	2	0.20	7	0.70
Nicaragua	0	0	0	0.00	NA	NA	0	0.00	NA	NA	0	0.00
Paraguay	0	0	NA	NA	NA	NA	0	0.00	NA	NA	0	0.00
Peru	0	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Philippines	0	0	1	0.00	0	0.00	0	0,00	0	0.00	0	0.00
Romania	0	0	0	0.00	0	0.00	0	0,00	75	0.01	0	0.00
Russia	0	0	62	0.02	3	0.00	0	0,00	0	0.00	6	0.00
South Africa	0	0	0	0.00	0	0.00	0	0,00	0	0.00	0	0.00
Sri Lanka	0	0	0	0.00	0	0.00	NA	NA	NA	NA	0	0.00
St. Vincent & the Grenadines	0	0	1	0.00	547	0.28	NA	NA	0	0.00	1	0.00
Sudan	0	0	11	0.00	558	0.12	0	0.00	0	0.00	8	0.00
Tajikistan	0	0	2	0.00	855	0.56	NA	NA	0	0.00	3	0.00
Timor-Leste	0	0	32	0.02	372	0.26	NA	NA	0	0.00	2	0.00
Zimbabwe	0	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00

Abbreviations: NA, not included in the survey for the given country.

[a] Countries with predictors with a missing percent above 50 percent were excluded from those regressions that included this predictor as an independent variable (this only applies to household wealth quintile for Lebanon and Tajikistan).

[b] For Haiti, relationship status was not available for women aged 55 to 64 years.

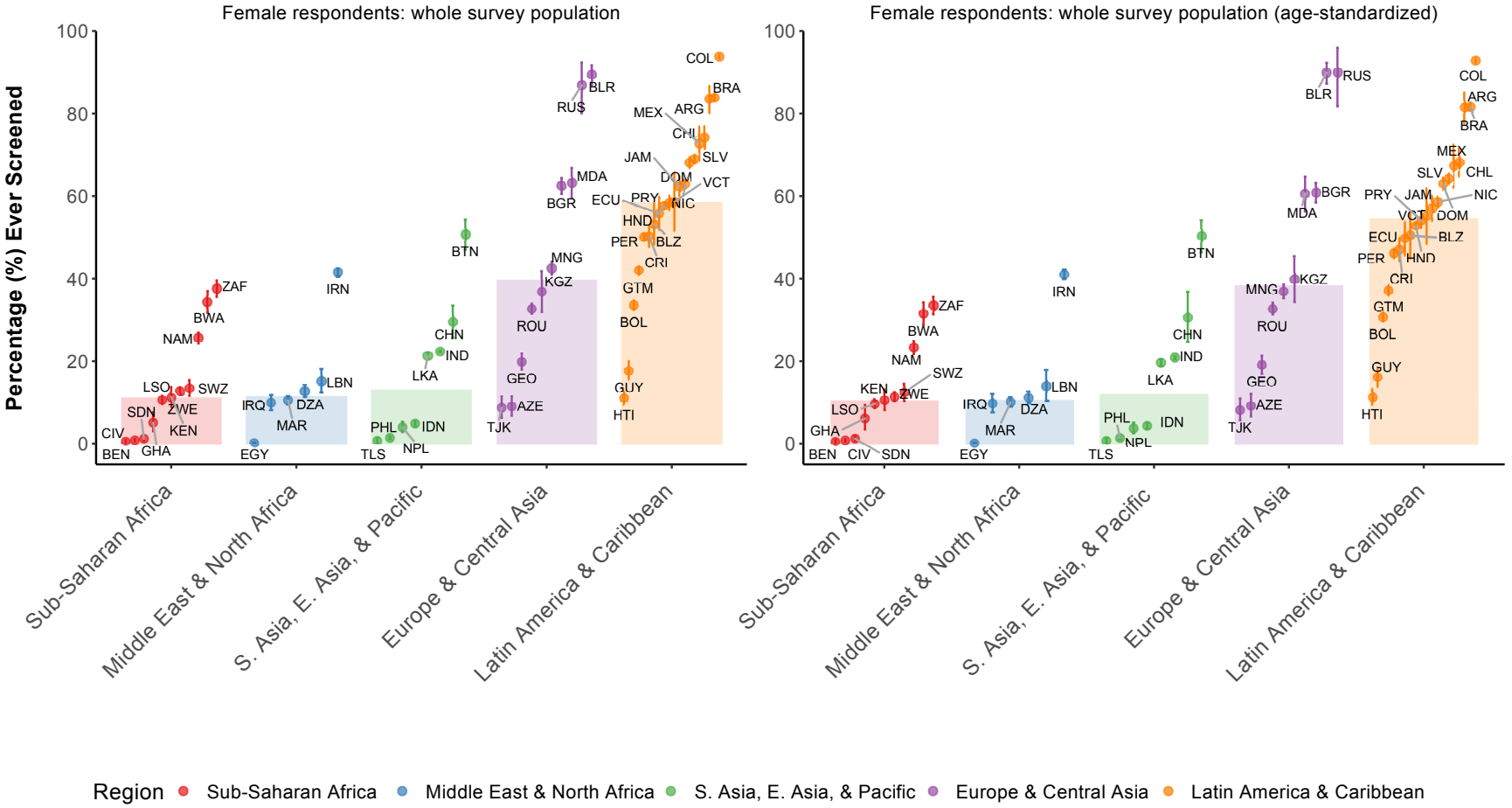
eFigure 3. Age-standardized lifetime prevalence of cervical cancer screening by country



Abbreviations: LMIC, low- or middle-income country at the time of the survey year

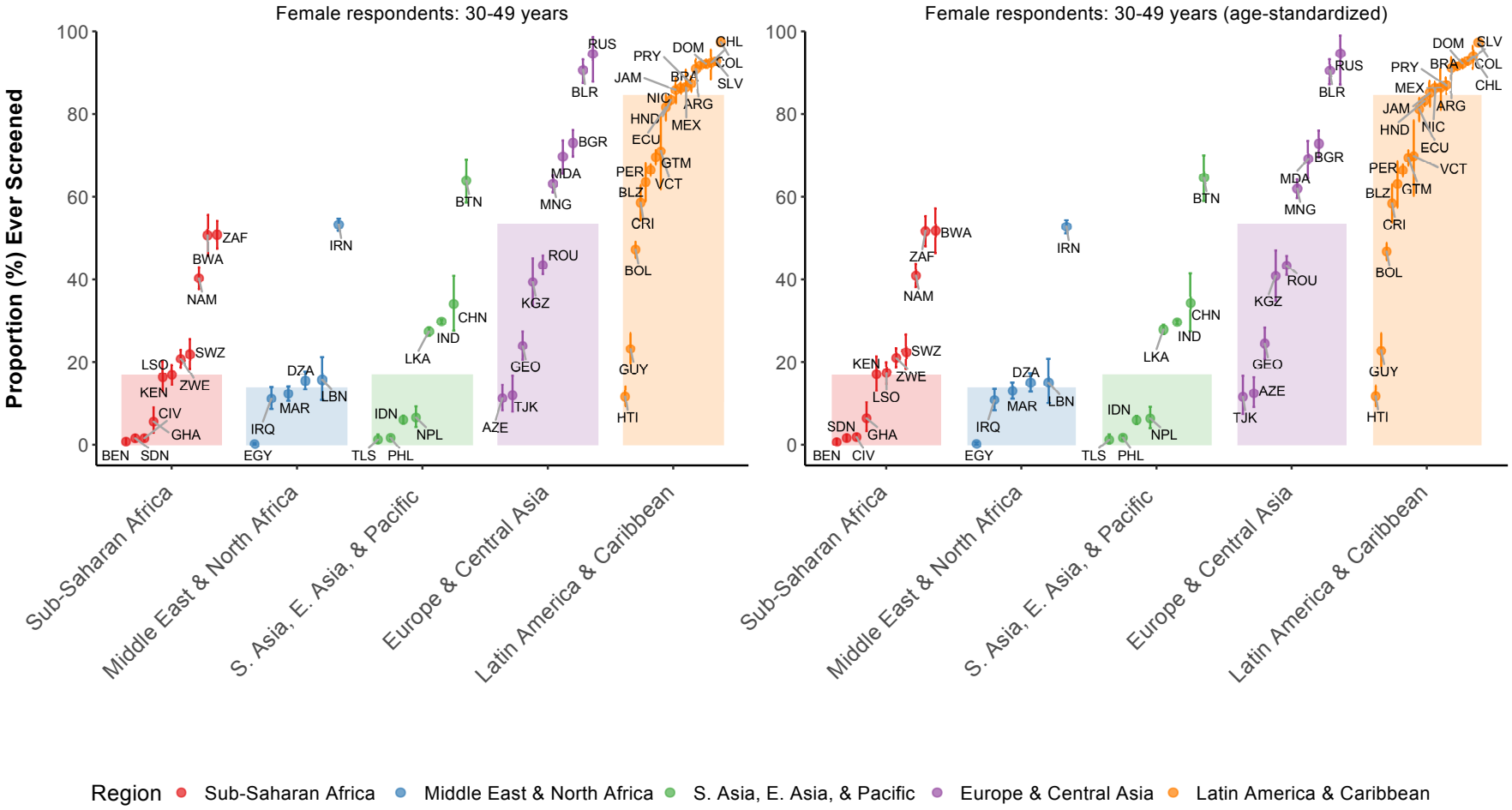
The numbers show the percent of women aged 30 to 49 years in each country who reported to have ever had a cervical cancer screening test. Solid grey coloring indicates that there was no eligible survey or we could not obtain access to the dataset. Prevalence estimates are shown for the following countries and survey years: Algeria (2016-17), Argentina (2013), Azerbaijan (2017), Belarus (2016-17), Belize (2005-6), Benin (2015), Bhutan (2014), Bolivia (2008), Botswana (2014), Brazil (2013), Bulgaria (2014), Chile (2009-10), China (2008-10), Colombia (2015), Costa Rica (2006), Cote d'Ivoire (2011-12), Dominican Republic (2013), Ecuador (2012), Egypt (2015), El Salvador (2008), Eswatini (2014), Georgia (2016), Ghana (2008-09), Guatemala (2014-15), Guyana (2016), Haiti (2016-17), Honduras (2011-12), India (2015-16), Indonesia (2014-15), Iran (2016), Iraq (2015), Jamaica (2008), Kenya (2015), Kyrgyzstan (2013), Lebanon (2017), Lesotho (2014), Mexico (2014), Moldova (2013), Mongolia (2018), Morocco (2017), Namibia (2013), Nepal (2014), Nicaragua (2011), Paraguay (2008), Peru (2013), Philippines (2013), Romania (2014), Russia (2007-10), South Africa (2016), Sri Lanka (2016), St. Vincent & the Grenadines (2013), Sudan (2016), Tajikistan (2016-17), Timor-Leste (2014), and Zimbabwe (2015).

eFigure 4. Lifetime prevalence of cervical cancer screening among all women



Lifetime prevalence for cervical cancer screening for each country among all women included in the analysis (1) without and (2) with age-standardization according to the WHO standard world population. Individual data points are percentages with 95% CIs. Bar charts depict the median prevalence by region.

eFigure 5. Lifetime prevalence of cervical cancer screening among women aged 30 to 49 years



Lifetime prevalence for cervical cancer screening for each country among women aged 30 to 49 years included in the analysis (1) without and (2) with age-standardization according to the WHO standard world population. Individual data points are percentages with 95% CIs. Bar charts depict the median prevalence by region.

eTable 5. Estimates of lifetime cervical cancer screening prevalence by 10-year age group for each country, region, and overall[a]

Country	Survey	Year[3]	Age range (y)	15-25 Prevalence (95% CI)	25-34 Prevalence (95% CI)	35-44 Prevalence (95% CI)	45-54 Prevalence (95% CI)	55-64 Prevalence (95% CI)	65+ Prevalence (95% CI)	30-49 Prevalence (95% CI)	Total range Prevalence (95% CI)
Latin America and the Caribbean: median (IQR)				24.98 (19.28-31.72)	75.06 (57.00-82.80)	85.80 (68.29-91.3)	85.71 (64.30-92.68)	67.62 (58.17-89.68)	63.96 (49.35-78.64)	84.63 (65.71-91.12)	58.49 (50.13-69.94)
Argentina	ENFR	2013	18-98	58.80 (53.27-64.21)	86.24 (82.68-89.44)	91.04 (87.45-94.08)	92.82 (89.97-95.23)	89.68 (87.61-91.59)	82.18 (78.99-85.17)	90.90 (88.14-93.33)	83.53 (80.14-86.65)
Belize	CAMDI	2005-6	19-94	24.98 (16.81-34.17)	52.48 (47.03-57.90)	68.49 (62.78-73.93)	63.56 (49.39-76.63)	63.07 (53.40-72.23)	46.93 (39.27-54.67)	63.53 (58.81-68.12)	53.20 (48.19-58.19)
Bolivia	DHS	2008	15-49	12.24 (11.20-13.32)	45.77 (43.76-47.79)	47.82 (45.52-50.13)	41.99 (38.34-45.69)	NA	NA	47.24 (45.29-49.19)	33.53 (32.28-34.80)
Brazil	PNS	2013	18-101	53.85 (51.06-56.62)	86.13 (84.57-87.62)	92.09 (90.86-93.24)	93.59 (92.36-94.72)	90.17 (88.51-91.71)	78.31 (75.85-80.66)	91.79 (90.94-92.59)	83.78 (82.91-84.64)
Chile	ENS	2009-10	15-100	18.71 (13.86-24.11)	78.42 (69.95-85.82)	95.46 (93.07-97.37)	96.16 (93.90-97.92)	94.08 (90.70-96.74)	79.65 (75.01-83.92)	92.37 (88.36-95.59)	74.24 (71.52-76.88)
Colombia	DHS	2015	21-49	80.90 (79.10-82.63)	94.66 (93.97-95.31)	97.75 (97.26-98.19)	97.82 (97.27-98.32)	NA	NA	97.40 (97.00-97.77)	93.84 (93.37-94.30)
Costa Rica	ENSA	2006	18-101	27.36 (22.32-32.71)	47.69 (40.87-54.56)	60.26 (54.07-66.28)	61.11 (56.42-65.69)	58.17 (52.29-63.93)	50.33 (45.57-55.09)	58.52 (54.19-62.79)	50.17 (47.77-52.56)
Dominican Republic	DHS	2013	15-49	31.61 (29.26-34.01)	83.82 (81.65-85.88)	93.09 (91.63-94.42)	92.55 (89.94-94.79)	NA	NA	92.09 (91.01-93.10)	68.06 (66.70-69.39)
Ecuador	ENSA	2013	15-50	17.20 (14.54-20.04)	66.39 (61.23-71.36)	82.76 (80.02-85.33)	85.71 (81.98-89.08)	NA	NA	81.69 (78.54-84.65)	55.81 (51.65-59.93)
El Salvador	FESAL	2008	15-49	32.76 (31.03-34.50)	84.80 (83.31-86.23)	94.25 (93.11-95.29)	94.91 (93.37-96.26)	NA	NA	92.70 (91.85-93.52)	68.99 (67.89-70.09)
Guatemala	DHS	2014-15	15-49	10.67 (9.90-11.47)	55.11 (53.20-57.01)	72.29 (70.33-74.21)	72.07 (69.27-74.78)	NA	NA	69.54 (67.69-71.36)	41.99 (40.67-43.32)
Guyana	STEPS	2016	18-69	4.14 (1.94-7.12)	16.71 (11.73-22.38)	23.20 (18.40-28.38)	28.37 (21.51-35.78)	18.19 (12.15-25.14)	17.99 (9.90-27.84)	23.21 (19.54-27.09)	17.68 (15.36-20.13)
Haiti	DHS	2016-17	35-64	NA	NA	10.95 (8.57-13.60)	12.54 (9.77-15.59)	9.19 (6.40-12.42)	NA	11.67 (9.30-14.27)	11.05 (9.26-12.97)
Honduras	DHS	2011-12	15-49	24.81 (23.61-26.04)	74.18 (72.81-75.53)	85.12 (83.63-86.56)	83.55 (81.51-85.50)	NA	NA	83.45 (82.31-84.56)	57.64 (56.70-58.58)
Jamaica	RHS	2008	15-49	77.89 (73.65-81.86)	46.80 (38.55-55.14)	46.10 (36.21-56.15)	40.57 (29.06-52.63)	NA	NA	85.80 (82.65-88.68)	62.24 (59.15-65.28)
Mexico	SAGE	2014	18-98	21.40 (10.27-35.23)	75.06 (64.49-84.31)	88.65 (81.33-94.34)	87.86 (80.40-93.72)	89.02 (85.24-92.30)	77.59 (73.29-81.60)	86.45 (81.47-90.77)	72.77 (68.49-76.84)
Nicaragua	ENDESA	2011	15-49	31.82 (30.18-33.49)	81.78 (80.08-83.42)	86.47 (84.59-88.25)	86.62 (84.17-88.89)	NA	NA	86.28 (84.91-87.60)	62.85 (61.57-64.13)

eTable 5. Estimates of lifetime cervical cancer screening prevalence by 10-year age group for each country, region, and overall[a] (continued)

Country	Survey	Year[3]	Age range (y)	15-25 Prevalence (95% CI)	25-34 Prevalence (95% CI)	35-44 Prevalence (95% CI)	45-54 Prevalence (95% CI)	55-64 Prevalence (95% CI)	65+ Prevalence (95% CI)	30-49 Prevalence (95% CI)	Total range Prevalence (95% CI)
Paraguay	ENDSSR	2008	15-44	26.71 (24.57-28.91)	79.63 (77.18-81.98)	88.17 (85.81-90.34)	NA	NA	NA	87.34 (85.45-89.12)	58.34 (56.46-60.20)
Peru	DHS	2013	15-49	19.85 (18.38-21.37)	58.88 (56.95-60.81)	67.68 (65.92-69.42)	65.03 (62.26-67.75)	NA	NA	66.43 (65.04-67.81)	50.03 (48.93-51.12)
SVG	STEPS	2013	18-69	30.51 (23.38-38.15)	63.50 (51.80-74.44)	71.01 (61.94-79.30)	73.18 (62.05-82.99)	67.62 (60.16-74.66)	50.16 (33.39-66.92)	71.01 (61.73-79.47)	58.64 (51.71-65.39)
Europe and Central Asia: median (IQR)				7.03 (5.75-42.13)	43.15 (21.18-62.77)	56.06 (28.82-72.24)	59.31 (26.59-75.82)	38.02 (20.06-71.89)	39.40 (12.15-60.14)	53.34 (27.77-72.14)	39.66 (23.07-63.02)
Azerbaijan	STEPS	2017	18-69	2.98 (0.40-7.82)	8.86 (5.03-13.64)	13.55 (8.91-18.98)	12.28 (8.28-16.93)	6.32 (3.73-9.52)	5.71 (1.73-11.81)	11.28 (8.34-14.60)	9.01 (6.66-11.67)
Belarus	STEPS	2016-17	18-69	87.65 (80.08-93.61)	93.06 (89.38-96.00)	90.70 (87.16-93.72)	91.11 (88.12-93.71)	86.55 (82.61-90.05)	81.89 (75.73-87.33)	90.60 (87.52-93.28)	89.41 (86.87-91.71)
Bulgaria	EHS	2014	15-85	17.71 (12.53-23.55)	63.53 (57.77-69.10)	72.63 (68.20-76.86)	76.34 (72.21-80.24)	71.89 (67.96-75.66)	56.14 (52.86-59.40)	72.97 (69.67-76.14)	62.47 (60.51-64.42)
Georgia	STEPS	2016	17-70	5.75 (2.38-10.45)	17.24 (13.12-21.80)	25.28 (20.79-30.06)	28.99 (24.83-33.35)	20.33 (16.78-24.12)	13.89 (10.32-17.89)	23.90 (20.56-27.42)	19.87 (17.91-21.90)
Kyrgyzstan	STEPS	2013	25-64	NA	48.93 (40.98-56.91)	39.42 (33.23-45.77)	25.79 (20.79-31.13)	20.06 (12.66-28.66)	NA	39.36 (33.70-45.18)	36.79 (31.66-42.07)
Moldova	STEPS	2013	18-69	42.13 (34.07-50.42)	60.48 (54.32-66.48)	71.07 (65.70-76.15)	73.34 (68.54-77.88)	70.48 (65.70-75.05)	56.22 (47.87-64.39)	69.68 (65.59-73.62)	63.21 (59.47-66.86)
Mongolia	MICS	2018	15-49	4.27 (3.19-5.48)	33.00 (30.80-35.24)	67.89 (65.36-70.37)	74.24 (70.72-77.62)	NA	NA	63.11 (61.02-65.19)	42.53 (40.96-44.10)
Romania	EHS	2014	15-85	6.83 (4.86-9.11)	37.36 (33.76-41.04)	44.24 (41.12-47.38)	45.28 (42.22-48.37)	38.02 (35.30-40.79)	22.65 (20.79-24.57)	43.56 (41.30-45.83)	32.66 (31.41-33.91)
Russia	SAGE	2007-10	19-99	64.73 (15.15-98.99)	93.44 (83.04-99.12)	96.06 (87.67-99.83)	90.66 (83.82-95.77)	87.74 (83.00-91.80)	71.91 (62.97-80.05)	94.52 (87.86-98.64)	86.84 (80.04-92.39)
Tajikistan	STEPS	2016-17	18-70	7.03 (3.47-11.71)	8.80 (4.73-13.96)	10.84 (7.41-14.83)	16.44 (11.16-22.52)	4.89 (2.02-8.92)	6.94 (2.25-13.94)	11.99 (8.05-16.59)	8.70 (6.30-11.44)
Middle East & Northern Africa: median (IQR)				3.32 (1.76-6.19)	9.99 (8.38-12.93)	14.49 (12.12-16.51)	18.56 (13.99-23.32)	15.53 (8.41-16.31)	13.66 (10.21-19.53)	13.93 (11.48-15.66)	11.59 (10.05-14.55)
Algeria	STEPS	2016-17	18-69	2.38 (1.20-3.93)	8.74 (6.86-10.82)	16.82 (14.25-19.55)	21.72 (18.08-25.60)	16.48 (13.06-20.22)	13.66 (8.83-19.35)	15.49 (13.42-17.68)	12.70 (11.22-14.25)
Egypt	DHS	2015	15-59	0	0.26 (0.02-0.74)	0.30 (0.08-0.67)	0.64 (0.18-1.37)	0.87 (0.24-1.88)	NA	0.27 (0.08-0.58)	0.29 (0.16-0.48)
Iran	STEPS	2016	18-100	14.27 (12.51-16.11)	40.08 (38.46-41.72)	56.39 (54.62-58.14)	53.1 (51.20-54.99)	43.19 (41.05-45.34)	21.39 (19.48-23.35)	53.22 (51.77-54.67)	41.53 (40.48-42.59)

eTable 5. Estimates of lifetime cervical cancer screening prevalence by 10-year age group for each country, region, and overall[a] (continued)

Country	Survey	Year[3]	Age range (y)	15-25 Prevalence (95% CI)	25-34 Prevalence (95% CI)	35-44 Prevalence (95% CI)	45-54 Prevalence (95% CI)	55-64 Prevalence (95% CI)	65+ Prevalence (95% CI)	30-49 Prevalence (95% CI)	Total range Prevalence (95% CI)
Iraq	STEPS	2017	18-102	6.84 (3.85-10.60)	11.25 (7.31-15.91)	11.69 (8.68-15.09)	13.52 (9.53-18.08)	6.12 (3.24-9.83)	10.21 (4.19-18.47)	11.18 (8.64-14.00)	9.91 (7.95-12.06)
Lebanon	STEPS	2017	16-70	1.56 (0.04-5.22)	13.49 (7.86-20.35)	15.57 (9.71-22.51)	23.85 (18.17-30.04)	15.26 (9.42-22.21)	19.53 (6.66-37.05)	15.72 (10.93-21.19)	15.16 (11.57-19.15)
Morocco	STEPS	2017	18-100	4.26 (2.43-6.57)	8.26 (6.25-10.53)	13.41 (11.08-15.92)	15.39 (12.74-18.25)	15.80 (12.60-19.28)	5.41 (3.37-7.90)	12.37 (10.73-14.11)	10.48 (9.45-11.56)
South Asia, East Asia, and Pacific: median (IQR)				1.41 (0.75-4.80)	4.66 (2.81-28.75)	18.13 (4.68-34.84)	18.63 (5.52-31.27)	7.59 (2.08-21.83)	3.05 (1.49-6.90)	17.01 (4.98-30.86)	13.12 (3.44-24.11)
Bhutan	STEPS	2014	17-69	20.67 (14.57-27.53)	58.78 (52.45-64.96)	66.04 (59.82-72.00)	55.83 (48.08-63.43)	33.34 (22.93-44.63)	6.90 (1.18-16.83)	63.85 (58.58-68.96)	50.68 (47.01-54.35)
China	SAGE	2008-10	18-93	3.11 (0.38-8.31)	33.30 (22.45-45.13)	34.00 (27.18-41.17)	32.95 (26.12-40.16)	21.83 (16.96-27.12)	16.19 (12.04-20.83)	34.08 (27.59-40.87)	29.50 (24.02-35.28)
India	DHS	2015-16	15-49	9.88 (9.61-10.14)	27.24 (26.71-27.77)	29.88 (29.33-30.43)	30.71 (30.02-31.41)	NA	NA	29.79 (29.28-30.29)	22.31 (21.94-22.69)
Indonesia	IFLS	2014-15	15-101	0.49 (0.26-0.80)	3.16 (2.46-3.94)	6.37 (5.22-7.62)	7.96 (6.50-9.55)	7.59 (5.75-9.65)	3.05 (1.84-4.54)	6.05 (5.12-7.05)	4.94 (4.20-5.74)
Nepal	SOSAS	2014	15-100	1.58 (0.41-3.49)	5.24 (2.72-8.51)	5.60 (3.01-8.94)	6.92 (3.21-11.91)	2.08 (0.19-5.94)	1.49 (0-5.86)	6.60 (4.36-9.26)	4.07 (2.95-5.37)
Philippines	DHS	2013	15-49	1.24 (0.85-1.69)	1.77 (1.25-2.38)	1.92 (1.36-2.57)	1.33 (0.76-2.04)	NA	NA	1.77 (1.39-2.19)	1.56 (1.23-1.93)
Sri Lanka	DHS	2016	15-49	0.39 (0.14-0.77)	4.09 (3.56-4.65)	37.37 (35.98-38.77)	29.30 (27.38-31.26)	NA	NA	27.42 (26.46-28.39)	21.30 (20.52-22.08)
Timor-Leste	STEPS	2014	18-69	0.83 (0.08-2.38)	0.55 (0.05-1.57)	1.70 (0.62-3.30)	0.45 (0-1.77)	0.74 (0-2.91)	0	1.35 (0.51-2.58)	0.85 (0.35-1.57)
Sub-Saharan Africa: median (IQR)				4.43 (2.05-7.93)	12.09 (4.99-24.98)	17.40 (3.68-32.80)	20.35 (2.90-34.03)	8.43 (1.69-25.88)	5.84 (2.52-15.58)	16.90 (3.65-31.03)	11.18 (3.27-19.51)
Benin	STEPS	2015	18-69	0.68 (0.08-1.87)	0.47 (0.13-1.03)	1.23 (0.36-2.62)	0.44 (0.04-1.29)	0.54 (0-2.13)	0	0.88 (0.36-1.62)	0.65 (0.33-1.08)
Botswana	STEPS	2014	18-69	11.55 (8.50-15.01)	39.03 (33.89-44.29)	55.08 (48.96-61.12)	53.09 (44.34-61.74)	39.16 (31.57-47.02)	20.69 (11.41-31.88)	50.66 (45.70-55.62)	34.31 (31.69-36.99)
Cote d'Ivoire	DHS	2011-12	15-49	0.38 (0.19-0.64)	0.80 (0.47-1.22)	2.06 (1.18-3.17)	2.16 (0.65-4.50)	NA	NA	1.69 (1.15-2.32)	0.97 (0.72-1.26)
Eswatini	STEPS	2014	15-70	3.73 (2.07-5.85)	19.39 (14.37-24.97)	23.02 (17.23-29.36)	21.12 (15.71-27.11)	12.61 (6.64-20.13)	10.46 (3.84-19.81)	21.81 (18.27-25.56)	13.41 (11.48-15.46)
Ghana	SAGE	2008-09	18-114	7.34 (0.53-20.98)	8.93 (3.53-16.48)	5.30 (1.95-10.18)	3.65 (0.98-7.91)	2.55 (1.34-4.12)	2.12 (1.30-3.13)	5.62 (2.99-9.01)	5.17 (3.12-7.69)

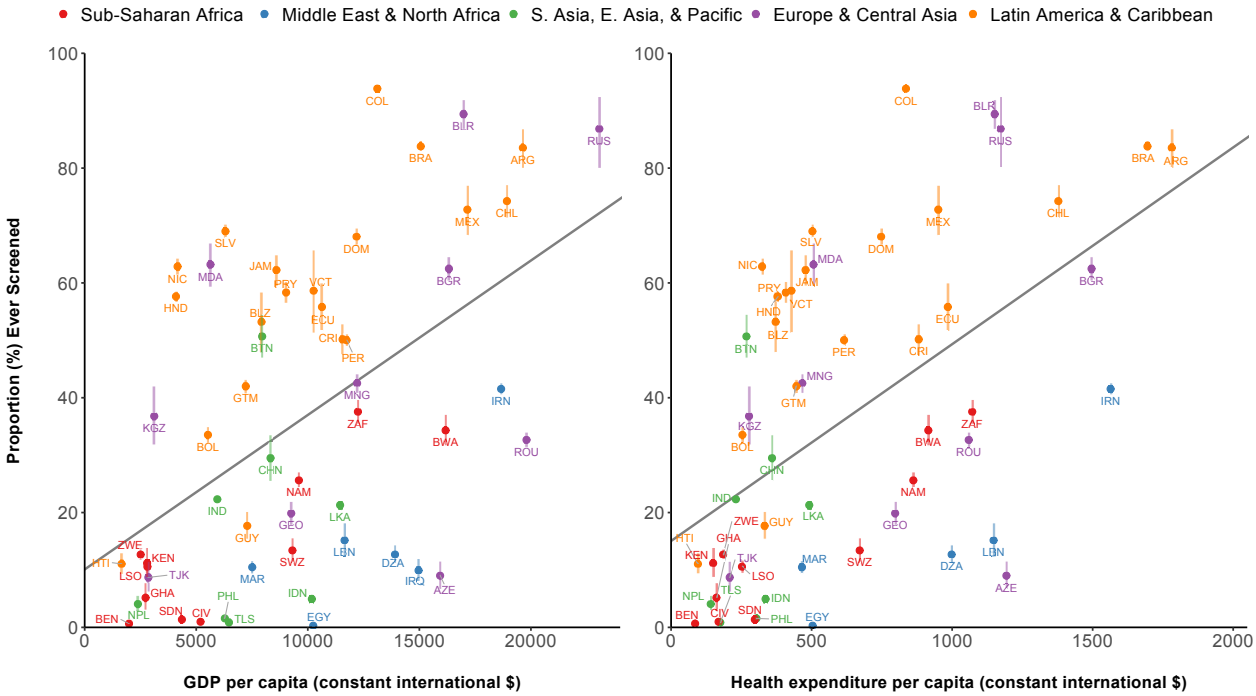
eTable 5. Estimates of lifetime cervical cancer screening prevalence by 10-year age group for each country, region, and overall[a] (continued)

Country	Survey	Year[3]	Age range (y)	15-25 Prevalence (95% CI)	25-34 Prevalence (95% CI)	35-44 Prevalence (95% CI)	45-54 Prevalence (95% CI)	55-64 Prevalence (95% CI)	65+ Prevalence (95% CI)	30-49 Prevalence (95% CI)	Total range Prevalence (95% CI)
Kenya	STEPS	2015	18-69	4.55 (1.74-8.61)	12.09 (8.66-16.00)	16.57 (12.63-20.92)	16.39 (10.36-23.49)	8.43 (4.77-13.00)	5.84 (1.98-11.58)	16.38 (12.88-20.21)	11.18 (8.84-13.74)
Lesotho	DHS	2014	15-49	4.43 (3.47-5.50)	11.83 (10.02-13.78)	17.40 (14.30-20.73)	20.35 (15.94-25.15)	NA	NA	16.90 (14.64-19.28)	10.57 (9.47-11.73)
Namibia	DHS	2013	15-64	8.84 (7.64-10.11)	30.57 (27.99-33.21)	42.57 (39.47-45.71)	43.84 (38.81-48.93)	NA	NA	40.26 (37.64-42.91)	25.62 (24.02-27.24)
South Africa	DHS	2016	15-95	8.52 (6.75-10.46)	35.09 (31.53-38.73)	53.42 (48.96-57.86)	56.79 (51.77-61.75)	52.34 (46.82-57.83)	38.86 (33.36-44.49)	50.78 (47.42-54.14)	37.57 (35.34-39.82)
Sudan	STEPS	2016	18-69	1.29 (0.56-2.30)	1.05 (0.46-1.87)	1.61 (0.86-2.60)	1.83 (0.77-3.32)	0.83 (0.21-1.83)	2.93 (0.55-7.11)	1.67 (0.99-2.52)	1.37 (0.88-1.96)
Zimbabwe	DHS	2015	15-49	2.80 (2.20-3.48)	16.53 (14.71-18.44)	20.98 (18.32-23.78)	24.22 (19.90-28.83)	NA	NA	20.74 (18.62-22.95)	12.68 (11.5-13.91)
Total: median (IQR)			15-114	8.84 (3.11-24.81)	36.23 (9.51-65.74)	44.24 (14.56-77.73)	42.92 (16.4-75.82)	20.19 (7.27-64.21)	17.99 (5.84-50.33)	43.56 (13.93-77.33)	31.34 (29.35-33.36)

Abbreviations: IQR, Interquartile Range; SVG, St. Vincent & the Grenadines; CAMDI, Central America Diabetes Initiative; DHS, Demographic Health and Surveillance Survey[16]; EHS, European Health Survey; ENFR, Encuesta Nacional de Factores de Riesgo; ENS, Encuesta Nacional de Salud; ENSA, Encuesta Nacional de Salud; FESAL, Encuesta Nacional de Salud Familiar; ENSANUT, Encuesta Nacional de Salud y Nutrición; ENDSSR, Encuesta Nacional de Demografía y Salud Sexual y Reproductiva; ENDESA, Encuesta Nicargaüense de Demografía y Salud; IFLS-5, Indonesia Family Life Survey Wave 5; PNS, Pesquisa Nacional de Saúde; RHS, Reproductive Health Survey; SAGE, Study on global AGEing and adult health; SISS, Social Indicator Sample Survey; SOSAS, Surgeons OverSeas Assessment of Surgical need; STEPS, STEPwise approach to Surveillance.

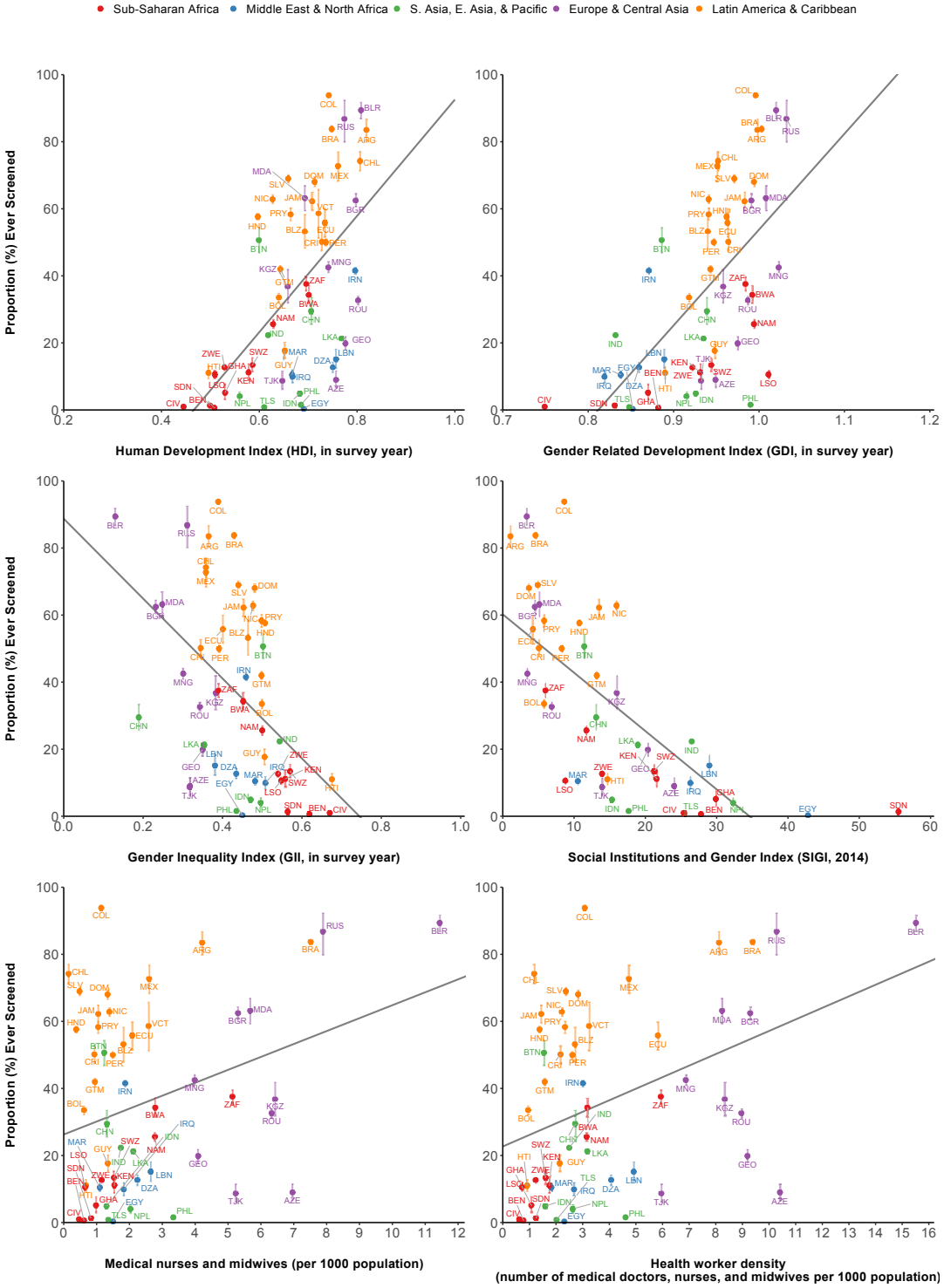
[a] All country prevalence estimates accounted for the multi-stage cluster random sampling of the surveys by use of sampling weights.

eFigure 6. Lifetime prevalence of cervical cancer screening among all women by GDP and health expenditure per capita



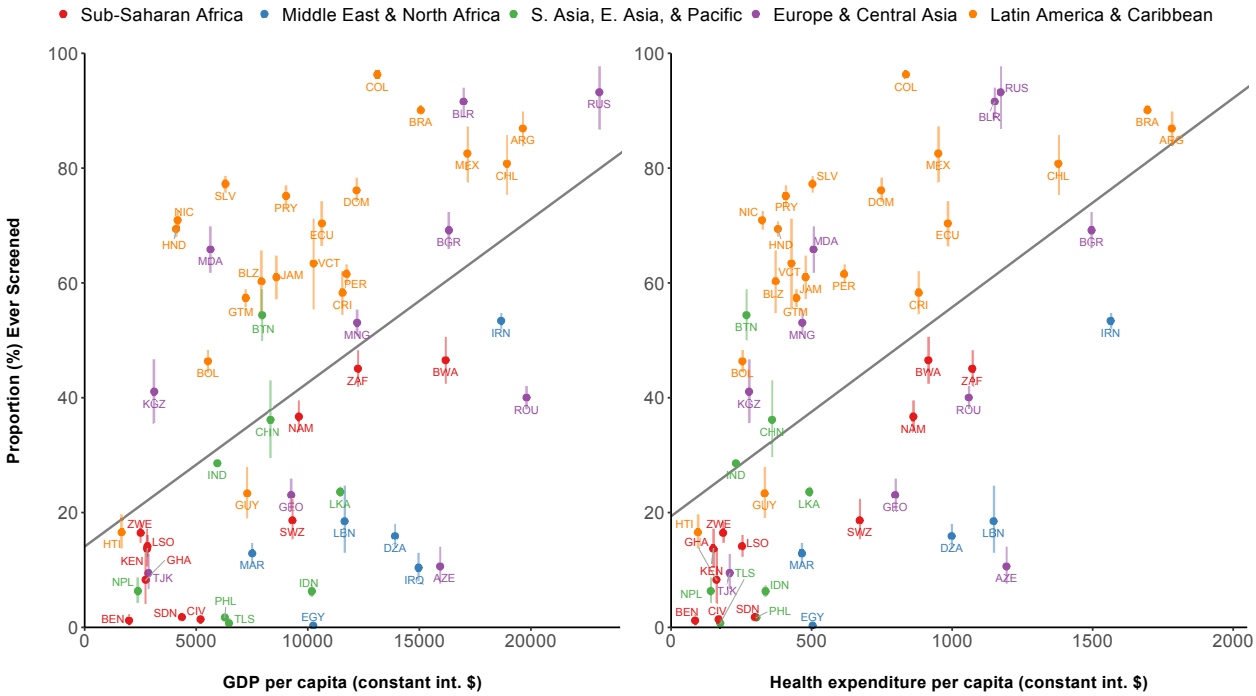
Countries are indicated by their ISO 3 code. GDP per capita and total health expenditure per capita is in constant 2011 international dollars for the year in which each survey was conducted. Health expenditure per capita was not available for Iraq. The vertical bars are 95% CIs around point estimates. Estimates are adjusted for differences in individual-level characteristics between countries by using weights. The grey line depicts an Ordinary Least Squares regression (with each country having the same weight) of cervical cancer screening prevalence onto GDP per capita or total health expenditure per capita. For GDP per capita, the standardized regression coefficient (β) was 0.52 (95% CI, 0.29-0.75) and the explained variability (R^2) was 0.27. For total health expenditure per capita, the standardized regression coefficient (β) was 0.55 (95% CI, 0.32-0.77) and the explained variability (R^2) was 0.30. The sample was not restricted to any age group.

eFigure 7. Lifetime prevalence of cervical cancer screening among all women by HDI, GDI, GII, SIGI, and health worker density



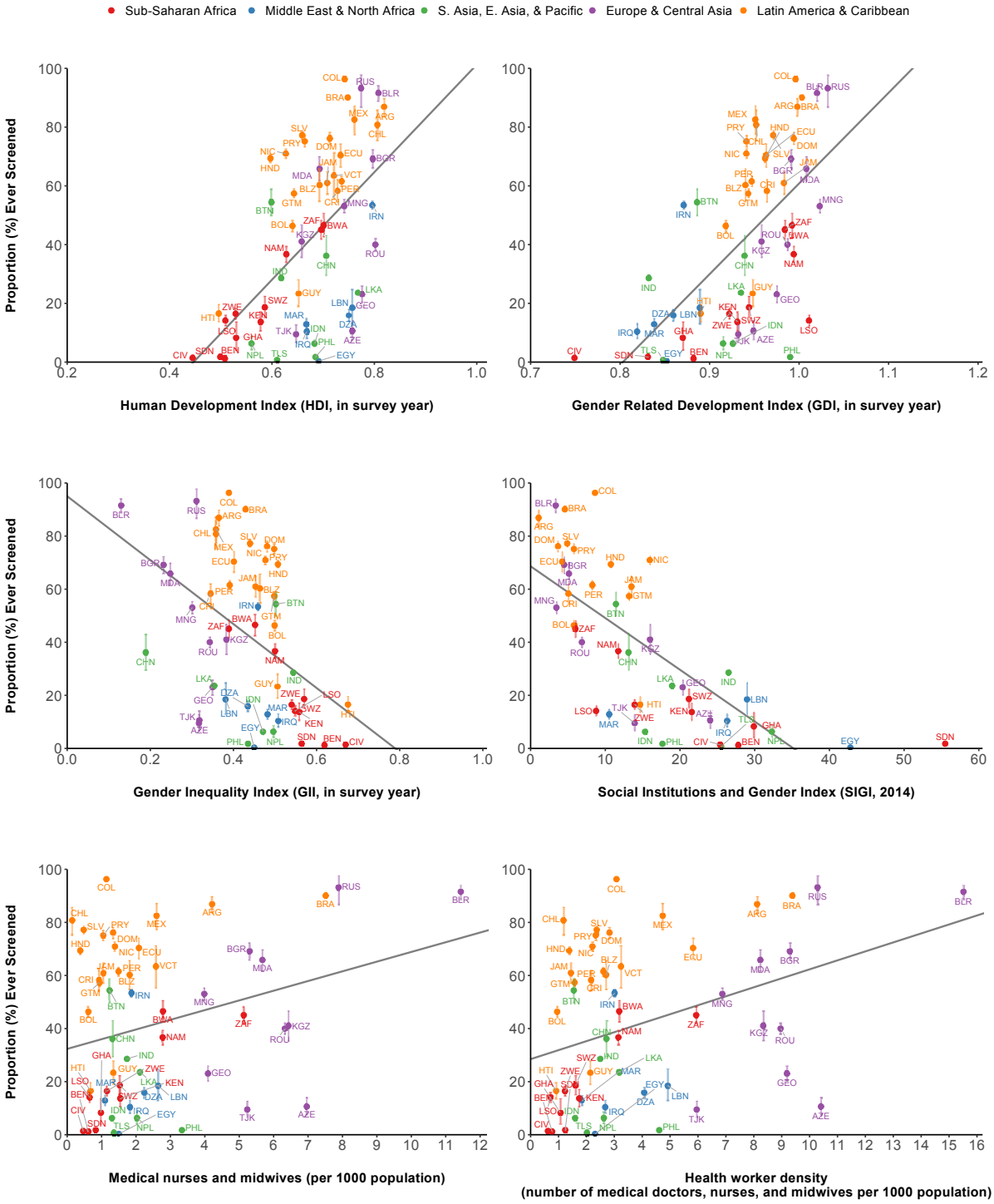
Countries are indicated by their ISO 3 code. GDI is missing for St. Vincent & the Grenadines. GII is missing for Ghana, St. Vincent & the Grenadines, and Timor-Leste. The vertical bars are 95% CIs around the point estimates. Estimates are adjusted for differences in individual-level characteristics between countries by using weights. Each grey line depicts a separate Ordinary Least Squares regression (with each country having the same weight) of cervical cancer screening prevalence onto HDI, GDI, GII, SIGI, density of medical nurses and midwives, and health worker density. The standardized regression coefficient (β) was 0.57 (95% CI, 0.35-0.79), 0.62 (95% CI, 0.41-0.83), -0.48 (95% CI, -0.23- -0.72), -0.71 (95% CI, -0.50- -0.92), 0.32 (95% CI, 0.07-0.58), and 0.40 (95% CI, 0.15-0.65), respectively, and the explained variability (R^2) was 0.33, 0.38, 0.23, 0.50, 0.10, and 0.16, respectively.

eFigure 8. Lifetime prevalence of cervical cancer screening among all women by GDP and health expenditure per capita, adjusted for individual-level differences between countries



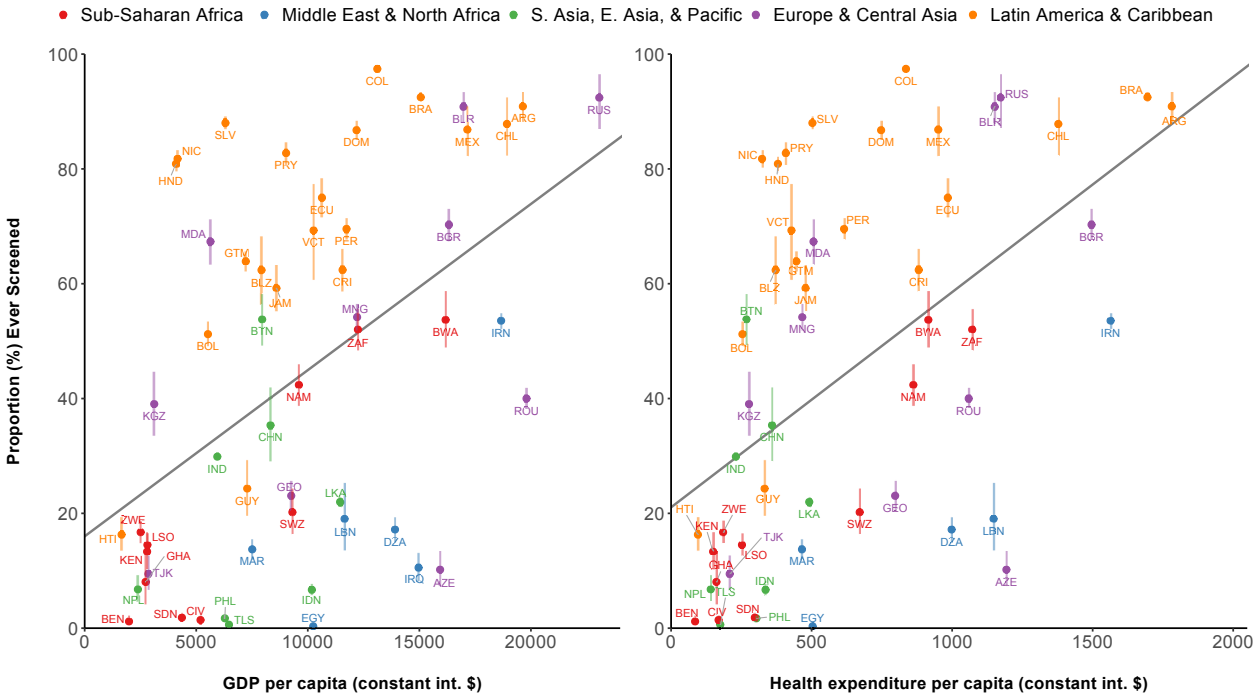
Countries are indicated by their ISO 3 code. GDP per capita and total health expenditure per capita is in constant 2011 international dollars for the year in which each survey was conducted. Health expenditure per capita was not available for Iraq. The vertical bars are 95% CIs around point estimates. Estimates are adjusted for differences in individual-level characteristics between countries by using weights. The grey line depicts an Ordinary Least Squares regression (with each country having the same weight) of cervical cancer screening prevalence onto GDP per capita or total health expenditure per capita. For GDP per capita, the standardized regression coefficient (β) was 0.51 (95% CI, 0.28-0.74) and the explained variability (R^2) was 0.26. For total health expenditure per capita, the standardized regression coefficient (β) was 0.54 (95% CI, 0.31-0.77) and the explained variability (R^2) was 0.29. The sample was not restricted to any age group.

eFigure 9. Lifetime prevalence of cervical cancer screening among all women by HDI, GDI, GII, SIGI, and health worker density, adjusted for individual-level differences between countries



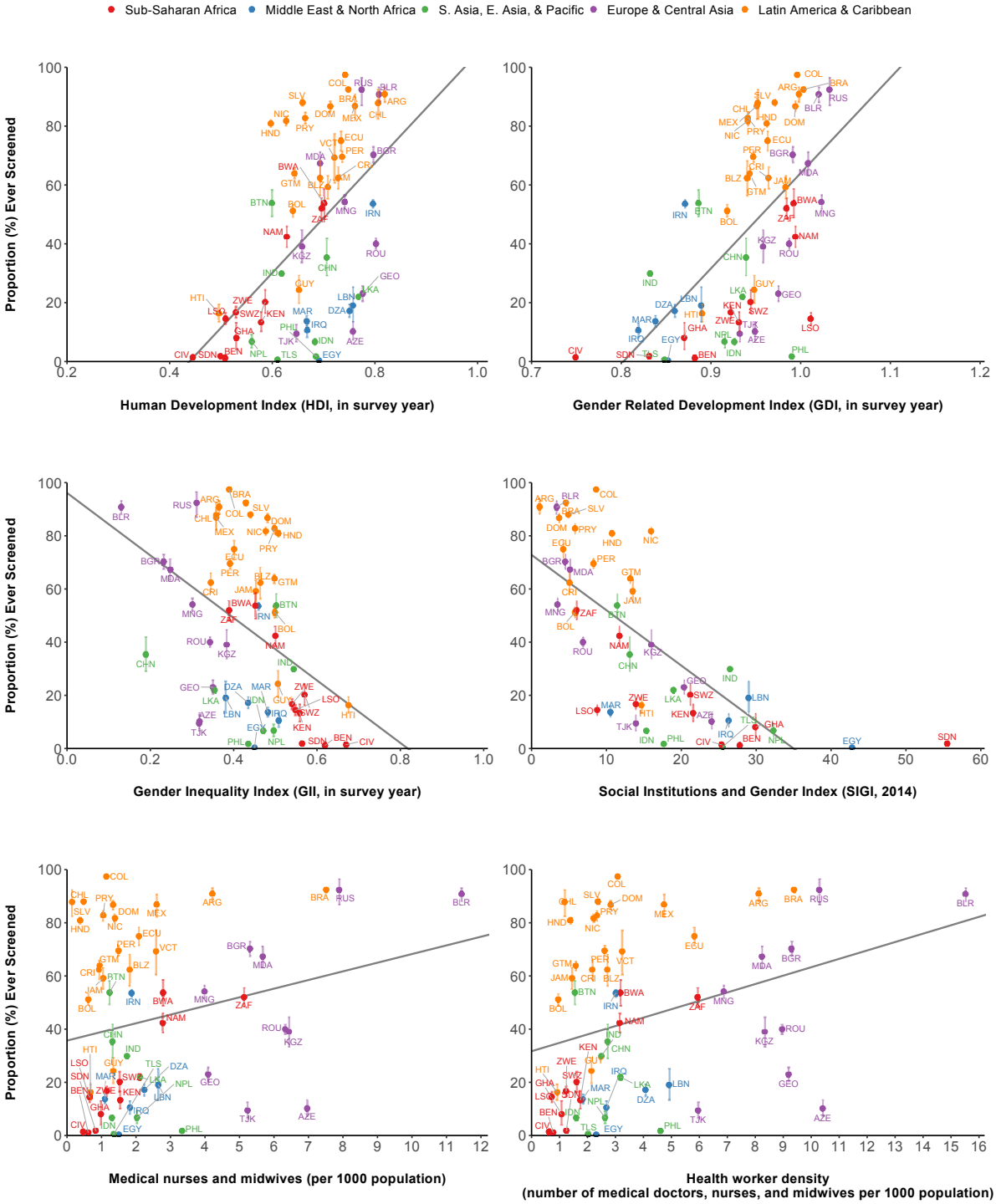
Countries are indicated by their ISO 3 code. GDI is missing for St. Vincent & the Grenadines. GII is missing for Ghana, St. Vincent & the Grenadines, and Timor-Leste. The vertical bars are 95% CIs around the point estimates. Estimates are adjusted for differences in individual-level characteristics between countries by using weights. Each grey line depicts a separate Ordinary Least Squares regression (with each country having the same weight) of cervical cancer screening prevalence onto HDI, GDI, GII, SIGI, density of medical nurses and midwives, and health worker density. The standardized regression coefficient (β) was 0.56 (95% CI, 0.34-0.79), 0.62 (95% CI, 0.41-0.84), -0.45 (95% CI, -0.20- -0.70), -0.73 (95% CI, -0.53- -0.93), 0.28 (95% CI, 0.02-0.54), and 0.36 (95% CI, 0.11-0.62), respectively, and the explained variability (R^2) was 0.32, 0.39, 0.20, 0.54, 0.08, and 0.13, respectively.

eFigure 10. Lifetime prevalence of cervical cancer screening among women aged 30 to 49 years by GDP and health expenditure per capita, adjusted for individual-level differences between countries



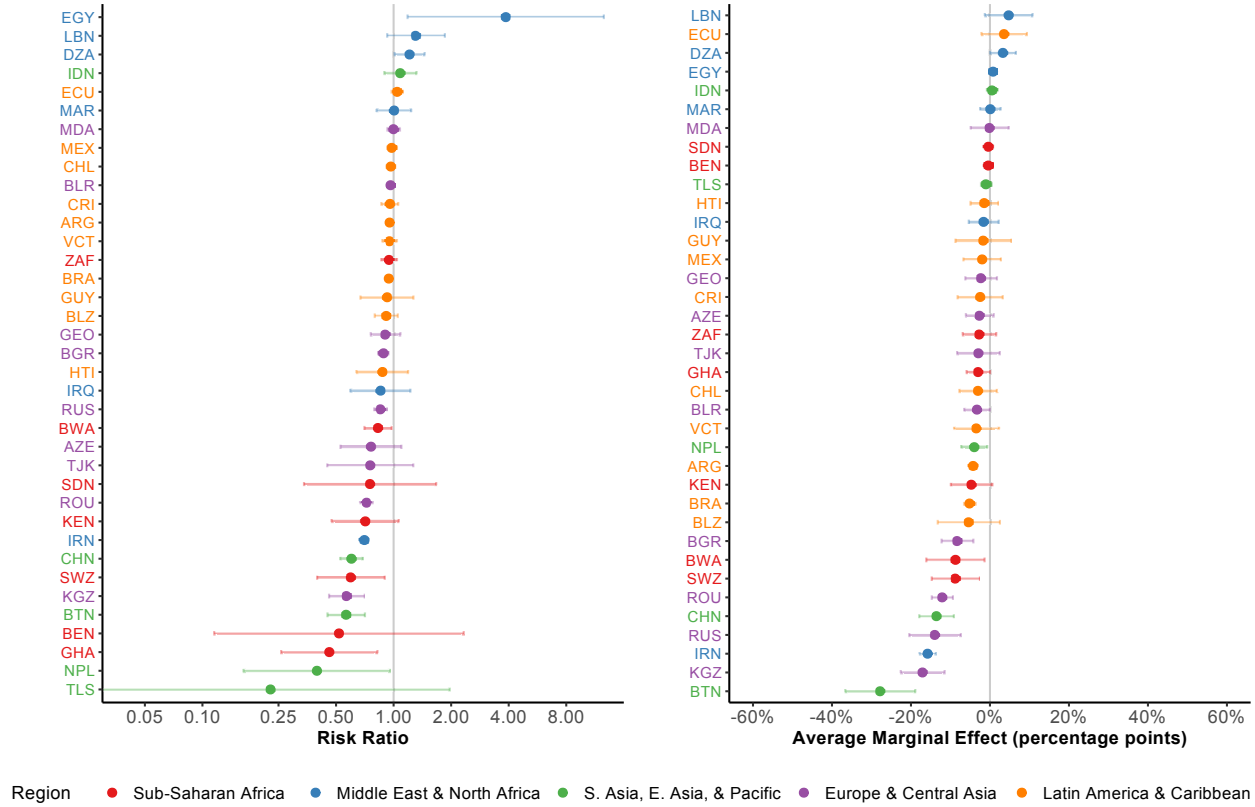
Countries are indicated by their ISO 3 code. GDP per capita and total health expenditure per capita is in constant 2011 international dollars for the year in which each survey was conducted. Health expenditure per capita was not available for Iraq. The vertical bars are 95% CIs around point estimates. Estimates are adjusted for differences in individual-level characteristics between countries by using weights. The grey line depicts an Ordinary Least Squares regression (with each country having the same weight) of cervical cancer screening prevalence onto GDP per capita or total health expenditure per capita. For GDP per capita, the standardized regression coefficient (β) was 0.49 (95% CI, 0.25-0.72) and the explained variability (R^2) was 0.24. For total health expenditure per capita, the standardized regression coefficient (β) was 0.52 (95% CI, 0.29-0.75) and the explained variability (R2) was 0.27. The sample was restricted to women aged 30 to 49 years.

eFigure 11. Cervical cancer screening prevalence by HDI, GDI, GII, SIGI, and health worker density, adjusted for individual-level differences between countries among women aged 30 to 49 years



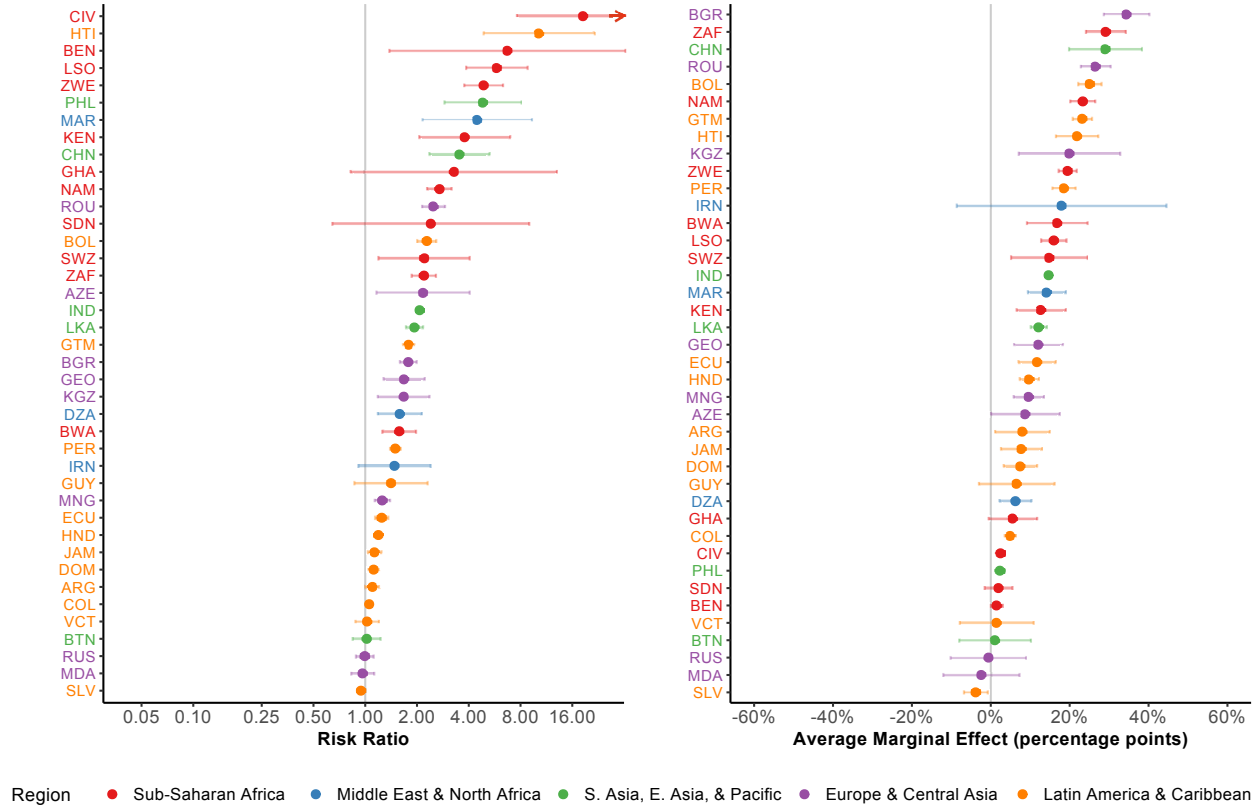
Countries are indicated by their ISO 3 code. GDI is missing for St. Vincent & the Grenadines. GII is missing for Ghana, St. Vincent & the Grenadines, and Timor-Leste. The vertical bars are 95% CIs around the point estimates. Estimates are adjusted for differences in individual-level characteristics between countries by using weights. Each grey line depicts a separate Ordinary Least Squares regression (with each country having the same weight) of cervical cancer screening prevalence onto HDI, GDI, GII, SIGI, density of medical nurses and midwives, and health worker density. The standardized regression coefficient (β) was 0.54 (95% CI, 0.31-0.76), 0.61 (95% CI, 0.40-0.83), -0.41 (95% CI, -0.16- -0.66), -0.73 (95% CI, -0.93- -0.53), 0.24 (95% CI, -0.02-0.50), and 0.32 (95% CI, 0.06-0.57), respectively, and the explained variability (R^2) was 0.29, 0.38, 0.17, 0.53, 0.06, and 0.10, respectively. The sample was restricted to women aged 30 to 49 years.

eFigure 12. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women aged 50 years and older compared to women aged 30 to 49 years (reference group)



Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence between countries by age group (women aged 30 to 49 years [reference category] vs. women aged 50 years or older). Countries are indicated by their ISO 3 code. Poisson regressions used sampling weights. The vertical bars are 95% CIs around point estimates. Lower confidence limits are truncated for risk ratios of Timor-Leste. Risk ratios are shown on a logarithmic scale.

eFigure 13. Relative and absolute differences in lifetime prevalence of cervical cancer screening comparing the top versus the bottom (reference group) household wealth quintile



Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by household wealth quintile (1st wealth quintile [reference category] vs. 5th wealth quintile). Countries are indicated by their ISO 3 code. Poisson regressions used sampling weights and were adjusted for age with restricted cubic splines with five knots. Household wealth quintiles were not available for Belarus, Belize, Brazil, Chile, Costa Rica, Egypt, Indonesia, Iraq, Lebanon, Mexico, Nepal, Nicaragua, Paraguay, and Tajikistan. Estimate for Timor-Leste is not shown due to the extremely low prevalence in each household wealth quintile. The vertical bars are 95% CIs around point estimates. Risk ratios are shown on a logarithmic scale.

eTable 6. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between urban and rural (reference group)[a]

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Algeria	1.48 (1.12-1.95)	0.05 (0.02-0.08)	1.49 (1.14-1.96)	0.05 (0.02-0.08)
Azerbaijan	2.02 (1.10-3.72)	0.06 (0.01-0.10)	1.90 (1.16-3.01)	0.06 (0.02-0.09)
Belarus	1.01 (0.96-1.07)	0.01 (-0.04-0.06)	1.00 (0.95-1.05)	0.00 (-0.05-0.04)
Benin	3.76 (1.13-12.52)	0.01 (0.00-0.01)	2.11 (0.71-6.30)	0.00 (0.00-0.01)
Bhutan	1.14 (0.99-1.31)	0.07 (-0.01-0.14)	1.21 (1.09-1.34)	0.10 (0.05-0.16)
Bolivia	1.51 (1.38-1.65)	0.13 (0.10-0.15)	1.30 (1.21-1.40)	0.09 (0.06-0.11)
Brazil	1.10 (1.07-1.14)	0.08 (0.06-0.10)	1.11 (1.09-1.12)	0.08 (0.07-0.10)
Bulgaria	1.35 (1.26-1.46)	0.18 (0.14-0.22)	1.39 (1.29-1.49)	0.19 (0.15-0.23)
China	2.18 (1.62-2.92)	0.21 (0.13-0.29)	2.09 (1.20-3.64)	0.16 (0.07-0.26)
Colombia	1.03 (1.02-1.04)	0.03 (0.02-0.04)	1.05 (1.04-1.06)	0.04 (0.03-0.05)
Costa Rica	1.12 (1.00-1.26)	0.06 (0.00-0.11)	1.15 (1.05-1.26)	0.07 (0.02-0.11)
Cote d'Ivoire	5.53 (3.08-9.91)	0.01 (0.01-0.02)	3.79 (2.25-6.38)	0.01 (0.01-0.02)
Dominican Republic	1.01 (0.98-1.05)	0.01 (-0.01-0.03)	1.03 (1.00-1.06)	0.02 (0.00-0.04)
Ecuador	1.17 (1.10-1.25)	0.09 (0.05-0.12)	1.16 (1.12-1.20)	0.10 (0.07-0.12)
Egypt	2.10 (0.74-5.94)	0.00 (0.00-0.01)	2.38 (1.01-5.62)	0.00 (0.00-0.00)
El Salvador	0.99 (0.96-1.01)	-0.01 (-0.03-0.01)	0.99 (0.97-1.01)	-0.01 (-0.02-0.01)
Ghana	3.36 (1.19-9.52)	0.06 (0.01-0.10)	1.92 (1.11-3.32)	0.02 (0.00-0.04)
Guatemala	1.21 (1.16-1.27)	0.08 (0.06-0.10)	1.18 (1.13-1.24)	0.07 (0.05-0.09)
Haiti	3.19 (2.31-4.40)	0.13 (0.09-0.17)	3.21 (2.46-4.19)	0.13 (0.10-0.15)
Honduras	1.06 (1.03-1.09)	0.03 (0.02-0.05)	1.06 (1.04-1.09)	0.03 (0.02-0.05)
India	1.17 (1.14-1.21)	0.04 (0.03-0.04)	1.16 (1.14-1.19)	0.03 (0.03-0.04)
Indonesia	3.87 (2.82-5.30)	0.06 (0.05-0.08)	3.66 (2.68-5.00)	0.05 (0.04-0.06)
Iran	1.28 (1.20-1.35)	0.10 (0.07-0.12)	1.26 (1.19-1.33)	0.09 (0.07-0.11)
Iraq	0.66 (0.43-1.01)	-0.05 (-0.1-0.01)	0.74 (0.50-1.10)	-0.04 (-0.09-0.02)
Jamaica	1.05 (0.96-1.15)	0.03 (-0.02-0.08)	1.05 (1.00-1.10)	0.03 (0.00-0.06)
Kenya	1.51 (0.97-2.35)	0.05 (-0.01-0.10)	1.79 (1.31-2.44)	0.07 (0.03-0.11)
Kyrgyzstan	1.63 (1.31-2.04)	0.19 (0.10-0.28)	1.47 (1.20-1.81)	0.13 (0.06-0.20)
Lesotho	1.80 (1.47-2.20)	0.06 (0.04-0.09)	2.06 (1.74-2.44)	0.07 (0.06-0.09)
Mexico	1.00 (0.89-1.13)	0.00 (-0.08-0.09)	0.98 (0.93-1.03)	-0.02 (-0.06-0.03)
Moldova	0.95 (0.85-1.06)	-0.03 (-0.10-0.03)	0.97 (0.89-1.07)	-0.02 (-0.08-0.04)
Mongolia	0.97 (0.92-1.04)	-0.01 (-0.04-0.02)	0.97 (0.92-1.02)	-0.01 (-0.04-0.01)

eTable 6. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between urban and rural (reference group)[a] (continued)

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Morocco	1.80 (1.40-2.31)	0.05 (0.03-0.08)	2.02 (1.59-2.56)	0.07 (0.05-0.09)
Namibia	1.49 (1.36-1.64)	0.10 (0.08-0.12)	1.59 (1.43-1.77)	0.12 (0.09-0.14)
Nepal	2.18 (1.20-3.94)	0.03 (0.01-0.06)	2.18 (1.20-3.94)	0.03 (0.01-0.06)
Nicaragua	1.06 (1.02-1.10)	0.04 (0.01-0.06)	1.04 (1.01-1.07)	0.03 (0.01-0.04)
Paraguay	1.08 (1.02-1.14)	0.04 (0.01-0.07)	1.12 (1.06-1.17)	0.07 (0.04-0.09)
Peru	1.25 (1.18-1.31)	0.10 (0.08-0.13)	1.19 (1.13-1.24)	0.08 (0.06-0.10)
Philippines	0.80 (0.52-1.23)	0.00 (-0.01-0.00)	0.85 (0.59-1.23)	0.00 (-0.01-0.00)
Romania	1.85 (1.69-2.01)	0.18 (0.16-0.21)	1.84 (1.71-1.98)	0.18 (0.16-0.20)
Russia	0.96 (0.87-1.06)	-0.03 (-0.12-0.05)	0.98 (0.90-1.06)	-0.02 (-0.09-0.05)
South Africa	1.58 (1.41-1.76)	0.16 (0.12-0.19)	1.55 (1.42-1.70)	0.15 (0.12-0.18)
Sudan	1.93 (0.89-4.20)	0.01 (0.00-0.02)	1.58 (0.76-3.30)	0.01 (0.00-0.02)
Zimbabwe	2.89 (2.46-3.39)	0.14 (0.12-0.16)	2.57 (2.23-2.96)	0.12 (0.11-0.14)

Abbreviations: p.p., percentage points; RR, risk ratio.

[a] Rural place of residence is the reference category. Regressions were adjusted for age as a continuous variable with restricted cubic splines with five knots. Standard errors were adjusted for clustering at the level of the primary sampling unit (PSU).

eTable 7. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women having completed high school or further and those who have completed primary school or less (reference group)[a]

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Algeria	1.44 (1.15-1.80)	0.04 (0.02-0.07)	1.48 (1.20-1.84)	0.05 (0.02-0.08)
Argentina	1.05 (0.99-1.12)	0.04 (0.00-0.09)	1.11 (1.07-1.15)	0.08 (0.06-0.11)
Azerbaijan	0.95 (0.37-2.41)	0.00 (-0.09-0.08)	1.01 (0.42-2.42)	0.00 (-0.08-0.08)
Belarus	1.32 (0.69-2.52)	0.22 (-0.22-0.65)	1.25 (0.83-1.87)	0.18 (-0.12-0.47)
Belize	1.07 (0.90-1.26)	0.03 (-0.05-0.12)	1.12 (1.00-1.24)	0.06 (0.00-0.12)
Benin	5.42 (1.93-15.17)	0.02 (0.00-0.03)	3.33 (1.40-7.93)	0.01 (0.00-0.02)
Bhutan	0.68 (0.55-0.83)	-0.17 (-0.25--0.09)	0.76 (0.64-0.90)	-0.13 (-0.20--0.06)
Bolivia	1.46 (1.37-1.56)	0.12 (0.1-0.14)	1.37 (1.30-1.45)	0.10 (0.09-0.12)
Botswana	1.96 (1.53-2.51)	0.18 (0.13-0.24)	1.79 (1.49-2.15)	0.18 (0.14-0.23)
Brazil	1.07 (1.05-1.08)	0.05 (0.04-0.07)	1.08 (1.07-1.09)	0.06 (0.05-0.07)
Bulgaria	1.84 (1.54-2.19)	0.30 (0.23-0.36)	1.89 (1.58-2.25)	0.30 (0.24-0.36)
Chile	1.04 (1.00-1.09)	0.03 (0.00-0.06)	1.03 (1.00-1.07)	0.02 (0.00-0.05)
China	1.88 (1.44-2.47)	0.17 (0.09-0.24)	2.02 (1.47-2.76)	0.17 (0.10-0.24)
Colombia	1.04 (1.03-1.05)	0.03 (0.03-0.04)	1.06 (1.04-1.07)	0.05 (0.04-0.06)
Costa Rica	1.14 (1.03-1.27)	0.07 (0.02-0.12)	1.10 (0.99-1.21)	0.05 (0.00-0.09)
Cote d'Ivoire	4.03 (2.44-6.65)	0.02 (0.01-0.03)	4.01 (2.46-6.52)	0.02 (0.01-0.03)
Dominican Republic	1.14 (1.10-1.18)	0.08 (0.06-0.11)	1.16 (1.12-1.19)	0.09 (0.07-0.11)
Ecuador	1.10 (1.07-1.14)	0.05 (0.03-0.07)	1.14 (1.11-1.17)	0.08 (0.07-0.10)
Egypt	1.74 (0.65-4.65)	0.00 (0.00-0.00)	0.82 (0.38-1.74)	0.00 (0.00-0.00)
El Salvador	0.93 (0.91-0.95)	-0.05 (-0.06--0.03)	0.95 (0.93-0.96)	-0.04 (-0.05--0.03)
Eswatini	1.87 (1.27-2.75)	0.07 (0.03-0.11)	2.08 (1.57-2.76)	0.09 (0.06-0.12)
Georgia	1.35 (0.66-2.75)	0.05 (-0.05-0.15)	1.79 (0.90-3.55)	0.09 (0.01-0.17)
Ghana	1.91 (0.81-4.52)	0.03 (-0.01-0.08)	2.36 (1.32-4.20)	0.03 (0.01-0.05)
Guatemala	1.24 (1.20-1.29)	0.10 (0.08-0.11)	1.25 (1.21-1.29)	0.10 (0.08-0.11)
Guyana	1.26 (0.95-1.67)	0.04 (-0.01-0.09)	1.40 (1.14-1.72)	0.06 (0.03-0.10)
Haiti	3.60 (2.57-5.03)	0.19 (0.13-0.24)	3.90 (2.98-5.09)	0.19 (0.14-0.23)
Honduras	1.03 (1.00-1.05)	0.01 (0.00-0.03)	1.04 (1.01-1.06)	0.02 (0.01-0.03)
India	1.30 (1.28-1.33)	0.06 (0.05-0.06)	1.23 (1.21-1.25)	0.04 (0.04-0.05)
Indonesia	8.71 (6.13-12.39)	0.09 (0.08-0.11)	8.68 (6.12-12.30)	0.07 (0.06-0.09)

eTable 7. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women having completed high school or further and those who have completed primary school or less (reference group)[a] (continued)

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Iran	1.38 (1.32-1.45)	0.13 (0.11-0.15)	1.36 (1.30-1.43)	0.13 (0.11-0.15)
Iraq	0.63 (0.43-0.93)	-0.04 (-0.08--0.01)	0.86 (0.65-1.12)	-0.02 (-0.05-0.01)
Jamaica	1.15 (1.06-1.26)	0.08 (0.04-0.13)	1.11 (1.03-1.19)	0.07 (0.02-0.11)
Kenya	1.92 (1.36-2.73)	0.08 (0.04-0.12)	2.14 (1.72-2.65)	0.11 (0.08-0.14)
Kyrgyzstan	0.94 (0.39-2.25)	-0.02 (-0.36-0.32)	1.14 (0.47-2.79)	0.04 (-0.22-0.30)
Lebanon	3.48 (1.90-6.38)	0.14 (0.08-0.20)	3.56 (2.43-5.21)	0.12 (0.08-0.15)
Lesotho	2.52 (1.87-3.39)	0.07 (0.06-0.09)	2.61 (2.04-3.34)	0.07 (0.06-0.08)
Mexico	1.05 (0.94-1.18)	0.04 (-0.05-0.12)	1.01 (0.97-1.05)	0.01 (-0.02-0.04)
Moldova	0.92 (0.61-1.38)	-0.06 (-0.34-0.23)	1.11 (0.82-1.52)	0.07 (-0.11-0.25)
Mongolia	1.54 (1.38-1.73)	0.16 (0.12-0.19)	1.52 (1.38-1.66)	0.16 (0.13-0.18)
Morocco	1.71 (1.37-2.15)	0.06 (0.03-0.09)	1.87 (1.52-2.31)	0.08 (0.05-0.12)
Namibia	1.86 (1.64-2.13)	0.13 (0.11-0.16)	1.96 (1.76-2.20)	0.15 (0.13-0.17)
Nepal	3.95 (1.66-9.36)	0.07 (0.01-0.12)	3.95 (1.67-9.35)	0.07 (0.01-0.12)
Nicaragua	0.99 (0.97-1.02)	0.00 (-0.02-0.01)	1.00 (0.98-1.02)	0.00 (-0.02-0.01)
Peru	1.26 (1.21-1.32)	0.11 (0.09-0.13)	1.24 (1.20-1.29)	0.10 (0.08-0.12)
Philippines	3.19 (1.56-6.51)	0.01 (0.01-0.02)	3.32 (1.80-6.11)	0.01 (0.01-0.02)
Romania	2.77 (2.25-3.40)	0.22 (0.20-0.25)	2.68 (2.24-3.20)	0.21 (0.19-0.24)
Russia	1.20 (1.01-1.42)	0.14 (0.02-0.27)	1.02 (0.94-1.10)	0.02 (-0.05-0.08)
South Africa	1.89 (1.66-2.16)	0.20 (0.17-0.23)	1.78 (1.59-1.99)	0.18 (0.15-0.21)
Sri Lanka	2.12 (1.88-2.41)	0.12 (0.11-0.14)	2.23 (1.97-2.53)	0.12 (0.10-0.13)
SVG	0.97 (0.88-1.06)	-0.02 (-0.07-0.04)	0.98 (0.91-1.05)	-0.01 (-0.06-0.03)
Sudan	1.89 (1.06-3.35)	0.01 (0.00-0.02)	2.17 (1.29-3.65)	0.01 (0.00-0.02)
Tajikistan	0.84 (0.34-2.07)	-0.02 (-0.11-0.07)	0.65 (0.34-1.26)	-0.06 (-0.17-0.05)
Timor-Leste	0.47 (0.10-2.13)	-0.01 (-0.02-0.00)	0.47 (0.11-2.11)	-0.01 (-0.02-0.00)
Zimbabwe	2.04 (1.55-2.70)	0.07 (0.05-0.09)	2.30 (1.79-2.95)	0.08 (0.06-0.10)

Abbreviations: p.p., percentage points; RR, risk ratio. SVG, St. Vincent & the Grenadines.

[a] Primary school or less is the reference category. Regressions were adjusted for age as a continuous variable with restricted cubic splines with five knots. Standard errors were adjusted for clustering at the level of the primary sampling unit (PSU).

eTable 8. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women in the top two versus the bottom two (reference group) household wealth quintiles[a]

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Algeria	1.38 (1.08-1.75)	0.04 (0.01-0.08)	1.41 (1.12-1.77)	0.05 (0.02-0.09)
Argentina	1.08 (1.01-1.15)	0.07 (0.01-0.12)	1.13 (1.09-1.17)	0.10 (0.07-0.13)
Azerbaijan	1.88 (1.20-2.95)	0.07 (0.02-0.12)	1.72 (1.19-2.49)	0.06 (0.02-0.11)
Benin	2.27 (0.74-6.94)	0.01 (0.00-0.01)	1.84 (0.69-4.93)	0.00 (0.00-0.01)
Bhutan	1.07 (0.92-1.24)	0.04 (-0.04-0.11)	1.15 (1.03-1.29)	0.07 (0.02-0.13)
Bolivia	1.74 (1.60-1.89)	0.18 (0.15-0.20)	1.52 (1.42-1.63)	0.14 (0.12-0.16)
Botswana	1.43 (1.19-1.73)	0.13 (0.06-0.19)	1.42 (1.25-1.61)	0.13 (0.09-0.18)
Bulgaria	1.50 (1.39-1.62)	0.24 (0.20-0.29)	1.53 (1.42-1.65)	0.25 (0.21-0.29)
China	2.14 (1.58-2.89)	0.19 (0.11-0.26)	2.67 (2.08-3.41)	0.21 (0.15-0.27)
Colombia	1.04 (1.03-1.05)	0.04 (0.03-0.05)	1.06 (1.05-1.07)	0.05 (0.05-0.06)
Cote d'Ivoire	11.03 (4.96-24.53)	0.02 (0.01-0.02)	5.31 (2.72-10.37)	0.01 (0.01-0.02)
Dominican Republic	1.06 (1.02-1.10)	0.04 (0.01-0.07)	1.09 (1.06-1.12)	0.06 (0.04-0.08)
Ecuador	1.17 (1.09-1.25)	0.09 (0.05-0.13)	1.19 (1.16-1.23)	0.12 (0.10-0.14)
El Salvador	0.98 (0.95-1.01)	-0.01 (-0.03-0.01)	0.99 (0.97-1.02)	0.00 (-0.02-0.01)
Eswatini	1.75 (1.19-2.58)	0.09 (0.03-0.15)	2.18 (1.57-3.04)	0.12 (0.07-0.18)
Georgia	1.65 (1.33-2.04)	0.11 (0.06-0.15)	1.58 (1.32-1.89)	0.10 (0.06-0.14)
Ghana	1.65 (0.63-4.32)	0.03 (-0.02-0.08)	2.72 (1.50-4.94)	0.03 (0.01-0.05)
Guatemala	1.54 (1.46-1.62)	0.18 (0.16-0.20)	1.51 (1.45-1.58)	0.17 (0.16-0.19)
Guyana	1.40 (1.00-1.95)	0.06 (0.00-0.12)	1.35 (1.04-1.76)	0.06 (0.01-0.11)
Haiti	5.86 (3.77-9.10)	0.15 (0.12-0.18)	5.15 (3.54-7.49)	0.14 (0.12-0.17)
Honduras	1.13 (1.09-1.16)	0.07 (0.05-0.08)	1.16 (1.12-1.19)	0.08 (0.06-0.10)
India	1.71 (1.67-1.75)	0.11 (0.11-0.12)	1.62 (1.59-1.66)	0.10 (0.10-0.10)
Iran	1.41 (1.13-1.76)	0.16 (0.04-0.29)	1.38 (1.11-1.71)	0.15 (0.03-0.27)
Jamaica	1.07 (1.00-1.14)	0.04 (0.00-0.08)	1.07 (1.00-1.13)	0.04 (0.00-0.08)
Kenya	2.69 (1.78-4.08)	0.11 (0.05-0.16)	3.45 (2.54-4.67)	0.14 (0.11-0.18)
Kyrgyzstan	1.58 (1.26-1.99)	0.16 (0.08-0.25)	1.50 (1.23-1.83)	0.13 (0.07-0.19)
Lesotho	2.94 (2.30-3.75)	0.10 (0.08-0.12)	3.23 (2.62-3.98)	0.10 (0.08-0.12)
Moldova	1.01 (0.91-1.11)	0.00 (-0.06-0.07)	1.01 (0.93-1.09)	0.01 (-0.05-0.06)

eTable 8. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women in the top two versus the bottom two (reference group) household wealth quintiles[a] (continued)

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Mongolia	1.18 (1.10-1.26)	0.07 (0.04-0.10)	1.20 (1.14-1.26)	0.08 (0.06-0.10)
Morocco	1.74 (1.38-2.19)	0.07 (0.04-0.10)	1.82 (1.47-2.26)	0.08 (0.05-0.11)
Namibia	1.90 (1.70-2.11)	0.16 (0.13-0.18)	2.16 (1.93-2.43)	0.19 (0.17-0.21)
Peru	1.31 (1.25-1.38)	0.13 (0.11-0.15)	1.27 (1.22-1.32)	0.11 (0.10-0.13)
Philippines	3.10 (2.06-4.65)	0.01 (0.01-0.02)	2.98 (2.17-4.10)	0.02 (0.01-0.02)
Romania	2.03 (1.85-2.23)	0.22 (0.19-0.24)	2.01 (1.86-2.18)	0.21 (0.18-0.23)
Russia	0.99 (0.93-1.07)	-0.01 (-0.07-0.06)	0.97 (0.91-1.03)	-0.02 (-0.07-0.03)
South Africa	1.83 (1.63-2.05)	0.22 (0.18-0.26)	1.82 (1.65-1.99)	0.21 (0.18-0.24)
Sri Lanka	1.43 (1.34-1.53)	0.07 (0.06-0.09)	1.62 (1.50-1.74)	0.09 (0.08-0.10)
SVG	1.07 (0.92-1.23)	0.04 (-0.04-0.12)	1.03 (0.94-1.12)	0.02 (-0.04-0.07)
Sudan	3.00 (1.52-5.90)	0.02 (0.00-0.04)	2.77 (1.27-6.07)	0.02 (0.00-0.04)
Timor-Leste	0.99 (0.21-4.68)	0.00 (-0.01-0.01)	0.99 (0.21-4.62)	0.00 (-0.01-0.01)
Zimbabwe	3.73 (3.19-4.38)	0.15 (0.14-0.17)	3.48 (2.98-4.08)	0.15 (0.13-0.16)

Abbreviations: p.p., percentage points; RR, risk ratio. SVG, St. Vincent & the Grenadines.

[a] Bottom 40% wealth is the reference category. Regressions were adjusted for age as a continuous variable with restricted cubic splines with five knots. Standard errors were adjusted for clustering at the level of the primary sampling unit (PSU).

eTable 9. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women in the top versus the bottom (reference group) household wealth quintile[a]

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Algeria	1.58 (1.19-2.11)	0.06 (0.02-0.10)	1.62 (1.23-2.14)	0.07 (0.03-0.12)
Argentina	1.10 (1.01-1.20)	0.08 (0.01-0.15)	1.17 (1.12-1.22)	0.13 (0.09-0.16)
Azerbaijan	2.17 (1.16-4.04)	0.09 (0.00-0.17)	1.86 (1.07-3.22)	0.07 (-0.01-0.15)
Benin	6.69 (1.38-32.33)	0.01 (0.00-0.03)	4.61 (1.16-18.32)	0.01 (0.00-0.03)
Bhutan	1.02 (0.85-1.22)	0.01 (-0.08-0.10)	1.12 (0.97-1.30)	0.06 (-0.01-0.14)
Bolivia	2.28 (2.02-2.58)	0.25 (0.22-0.28)	1.88 (1.70-2.09)	0.20 (0.17-0.23)
Botswana	1.58 (1.27-1.96)	0.17 (0.09-0.24)	1.62 (1.38-1.91)	0.19 (0.13-0.25)
Bulgaria	1.78 (1.59-1.99)	0.34 (0.29-0.40)	1.87 (1.68-2.08)	0.37 (0.31-0.42)
China	3.52 (2.37-5.24)	0.29 (0.20-0.38)	4.33 (3.27-5.73)	0.31 (0.24-0.38)
Colombia	1.05 (1.04-1.07)	0.05 (0.03-0.06)	1.09 (1.07-1.10)	0.08 (0.06-0.09)
Cote d'Ivoire	18.44 (7.69-44.21)	0.02 (0.02-0.03)	6.08 (2.49-14.85)	0.02 (0.01-0.03)
Dominican Republic	1.12 (1.05-1.19)	0.07 (0.03-0.12)	1.16 (1.11-1.21)	0.09 (0.07-0.12)
Ecuador	1.25 (1.15-1.35)	0.12 (0.07-0.16)	1.31 (1.25-1.36)	0.17 (0.14-0.20)
El Salvador	0.94 (0.90-0.98)	-0.04 (-0.07--0.01)	0.96 (0.93-0.99)	-0.03 (-0.05--0.01)
Eswatini	2.21 (1.21-4.04)	0.15 (0.05-0.24)	2.63 (1.59-4.33)	0.17 (0.09-0.25)
Georgia	1.68 (1.28-2.19)	0.12 (0.06-0.18)	1.71 (1.38-2.11)	0.13 (0.08-0.18)
Ghana	3.29 (0.83-12.99)	0.05 (-0.01-0.12)	4.22 (1.59-11.16)	0.04 (0.02-0.07)
Guatemala	1.79 (1.66-1.92)	0.23 (0.21-0.26)	1.74 (1.63-1.85)	0.22 (0.20-0.24)
Guyana	1.41 (0.87-2.30)	0.06 (-0.03-0.16)	1.18 (0.82-1.70)	0.03 (-0.04-0.10)
Haiti	10.19 (4.87-21.3)	0.22 (0.17-0.27)	8.28 (4.59-14.92)	0.21 (0.17-0.25)
Honduras	1.19 (1.14-1.25)	0.10 (0.07-0.12)	1.23 (1.18-1.29)	0.11 (0.09-0.13)
India	2.07 (2.00-2.14)	0.15 (0.14-0.15)	1.98 (1.92-2.03)	0.14 (0.13-0.14)
Iran	1.48 (0.91-2.39)	0.18 (-0.09-0.44)	1.34 (0.77-2.33)	0.13 (-0.15-0.41)
Jamaica	1.13 (1.04-1.23)	0.08 (0.03-0.13)	1.11 (1.02-1.21)	0.07 (0.02-0.13)
Kenya	3.78 (2.06-6.92)	0.13 (0.07-0.19)	6.65 (4.13-10.69)	0.20 (0.16-0.24)
Kyrgyzstan	1.67 (1.19-2.36)	0.20 (0.07-0.33)	1.71 (1.29-2.27)	0.18 (0.09-0.27)
Lesotho	5.79 (3.86-8.69)	0.16 (0.13-0.19)	6.26 (4.44-8.82)	0.16 (0.14-0.18)
Moldova	0.96 (0.83-1.11)	-0.02 (-0.12-0.07)	0.99 (0.88-1.11)	-0.01 (-0.08-0.06)

eTable 9. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women in the top versus the bottom (reference group) household wealth quintile[a] (continued)

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Mongolia	1.25 (1.14-1.38)	0.10 (0.06-0.13)	1.23 (1.15-1.32)	0.09 (0.06-0.12)
Morocco	4.46 (2.15-9.22)	0.14 (0.09-0.19)	4.05 (2.01-8.15)	0.15 (0.10-0.20)
Namibia	2.70 (2.31-3.17)	0.23 (0.20-0.26)	3.28 (2.75-3.91)	0.28 (0.25-0.31)
Peru	1.49 (1.39-1.60)	0.18 (0.16-0.21)	1.45 (1.36-1.54)	0.17 (0.14-0.20)
Philippines	4.81 (2.90-8.00)	0.02 (0.01-0.03)	5.56 (3.51-8.79)	0.03 (0.02-0.03)
Romania	2.48 (2.14-2.88)	0.26 (0.23-0.30)	2.61 (2.30-2.96)	0.26 (0.23-0.29)
Russia	0.99 (0.89-1.11)	-0.01 (-0.10-0.09)	0.97 (0.89-1.05)	-0.03 (-0.10-0.04)
South Africa	2.20 (1.88-2.57)	0.29 (0.24-0.34)	2.18 (1.91-2.49)	0.28 (0.24-0.32)
Sri Lanka	1.93 (1.72-2.16)	0.12 (0.10-0.14)	2.34 (2.09-2.61)	0.14 (0.12-0.15)
SVG	1.02 (0.88-1.19)	0.01 (-0.08-0.11)	0.99 (0.89-1.09)	-0.01 (-0.07-0.06)
Sudan	2.40 (0.65-8.91)	0.02 (-0.02-0.05)	2.12 (0.57-7.83)	0.02 (-0.02-0.05)
Zimbabwe	4.87 (3.79-6.27)	0.19 (0.17-0.22)	4.57 (3.66-5.71)	0.18 (0.16-0.20)

Abbreviations: p.p., percentage points; RR, risk ratio. SVG, St. Vincent & the Grenadines.

[a] 1st wealth quintile is the reference category. Regressions were adjusted for age as a continuous variable with restricted cubic splines with five knots. Standard errors were adjusted for clustering at the level of the primary sampling unit (PSU).

eTable 10. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women aged 20 to 29 years compared to women aged 30 to 49 years (reference group)[a]

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Algeria	0.31 (0.21-0.44)	-0.11 (-0.13--0.08)	0.30 (0.21-0.43)	-0.11 (-0.13--0.09)
Argentina	0.83 (0.79-0.87)	-0.16 (-0.19--0.12)	0.82 (0.78-0.85)	-0.16 (-0.19--0.14)
Azerbaijan	0.63 (0.36-1.11)	-0.04 (-0.09-0.00)	0.57 (0.34-0.93)	-0.05 (-0.09--0.02)
Belarus	1.01 (0.96-1.06)	0.01 (-0.03-0.05)	1.02 (0.98-1.06)	0.02 (-0.02-0.06)
Belize	0.58 (0.48-0.69)	-0.27 (-0.34--0.2)	0.61 (0.54-0.68)	-0.25 (-0.30--0.20)
Benin	0.66 (0.18-2.35)	0.00 (-0.01-0.01)	0.56 (0.19-1.63)	0.00 (-0.01-0.00)
Bhutan	0.67 (0.58-0.79)	-0.21 (-0.28--0.13)	0.63 (0.55-0.72)	-0.25 (-0.31--0.18)
Bolivia	0.70 (0.66-0.74)	-0.14 (-0.16--0.12)	0.69 (0.65-0.72)	-0.15 (-0.17--0.13)
Botswana	0.52 (0.44-0.62)	-0.24 (-0.31--0.18)	0.51 (0.45-0.59)	-0.25 (-0.29--0.20)
Brazil	0.78 (0.76-0.81)	-0.20 (-0.22--0.18)	0.82 (0.81-0.83)	-0.16 (-0.18--0.15)
Bulgaria	0.64 (0.55-0.74)	-0.26 (-0.34--0.19)	0.61 (0.52-0.70)	-0.28 (-0.35--0.21)
Chile	0.53 (0.44-0.64)	-0.43 (-0.53--0.34)	0.65 (0.59-0.72)	-0.33 (-0.39--0.26)
China	0.67 (0.42-1.05)	-0.11 (-0.22--0.01)	0.66 (0.46-0.93)	-0.11 (-0.20--0.03)
Colombia	0.90 (0.89-0.91)	-0.10 (-0.11--0.09)	0.89 (0.88-0.90)	-0.10 (-0.11--0.10)
Costa Rica	0.63 (0.54-0.73)	-0.22 (-0.28--0.15)	0.61 (0.53-0.71)	-0.22 (-0.28--0.16)
Cote d'Ivoire	0.37 (0.21-0.66)	-0.01 (-0.02-0.00)	0.50 (0.32-0.80)	-0.01 (-0.01-0.00)
Dominican Republic	0.68 (0.66-0.71)	-0.29 (-0.32--0.27)	0.67 (0.65-0.69)	-0.30 (-0.32--0.28)
Ecuador	0.51 (0.48-0.55)	-0.4 (-0.42--0.37)	0.62 (0.60-0.64)	-0.31 (-0.33--0.30)
Egypt	0.40 (0.05-3.44)	0.00 (0.00-0.00)	0.17 (0.02-1.32)	0.00 (0.00-0.00)
El Salvador	0.72 (0.70-0.74)	-0.26 (-0.28--0.24)	0.79 (0.77-0.80)	-0.20 (-0.21--0.18)
Eswatini	0.55 (0.42-0.73)	-0.10 (-0.14--0.06)	0.62 (0.49-0.80)	-0.07 (-0.11--0.04)
Georgia	0.51 (0.36-0.73)	-0.12 (-0.17--0.06)	0.54 (0.41-0.72)	-0.11 (-0.16--0.07)
Ghana	1.54 (0.51-4.62)	0.03 (-0.06-0.12)	1.33 (0.48-3.70)	0.02 (-0.06-0.09)
Guatemala	0.47 (0.45-0.49)	-0.37 (-0.39--0.35)	0.46 (0.45-0.48)	-0.37 (-0.39--0.36)
Guyana	0.44 (0.29-0.68)	-0.13 (-0.19--0.07)	0.42 (0.31-0.59)	-0.14 (-0.18--0.09)
Honduras	0.66 (0.64-0.67)	-0.29 (-0.30--0.27)	0.65 (0.64-0.67)	-0.28 (-0.30--0.27)
India	0.70 (0.69-0.71)	-0.09 (-0.09--0.08)	0.69 (0.69-0.70)	-0.09 (-0.09--0.08)
Indonesia	0.31 (0.23-0.41)	-0.04 (-0.05--0.03)	0.28 (0.21-0.36)	-0.04 (-0.05--0.04)
Iran	0.48 (0.45-0.52)	-0.28 (-0.30--0.25)	0.49 (0.46-0.53)	-0.27 (-0.29--0.25)
Iraq	0.87 (0.60-1.26)	-0.01 (-0.05-0.02)	0.80 (0.60-1.09)	-0.02 (-0.06-0.01)

eTable 10. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women aged 20 to 29 years compared to women aged 30 to 49 years (reference group)[a] (continued)

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Jamaica	0.67 (0.64-0.70)	-0.28 (-0.31--0.26)	0.73 (0.69-0.77)	-0.23 (-0.26--0.20)
Kenya	0.45 (0.30-0.66)	-0.09 (-0.13--0.05)	0.50 (0.38-0.66)	-0.09 (-0.12--0.05)
Kyrgyzstan	1.24 (1.01-1.52)	0.09 (0.00-0.19)	1.27 (1.08-1.51)	0.10 (0.03-0.18)
Lebanon	0.52 (0.25-1.09)	-0.08 (-0.15-0.00)	0.28 (0.16-0.51)	-0.07 (-0.10--0.04)
Lesotho	0.43 (0.35-0.55)	-0.10 (-0.12--0.07)	0.45 (0.38-0.55)	-0.08 (-0.10--0.06)
Mexico	0.55 (0.40-0.77)	-0.39 (-0.55--0.22)	0.53 (0.43-0.66)	-0.39 (-0.49--0.29)
Moldova	0.76 (0.67-0.86)	-0.17 (-0.24--0.10)	0.80 (0.71-0.89)	-0.14 (-0.20--0.08)
Mongolia	0.21 (0.18-0.24)	-0.50 (-0.53--0.47)	0.17 (0.15-0.19)	-0.52 (-0.54--0.50)
Morocco	0.53 (0.38-0.74)	-0.06 (-0.08--0.03)	0.53 (0.38-0.73)	-0.06 (-0.08--0.03)
Namibia	0.52 (0.47-0.57)	-0.19 (-0.22--0.17)	0.50 (0.45-0.55)	-0.19 (-0.22--0.17)
Nepal	0.43 (0.20-0.95)	-0.04 (-0.07--0.01)	0.43 (0.20-0.95)	-0.04 (-0.07--0.01)
Nicaragua	0.73 (0.71-0.76)	-0.23 (-0.25--0.21)	0.80 (0.78-0.82)	-0.18 (-0.19--0.16)
Paraguay	0.68 (0.65-0.71)	-0.28 (-0.31--0.25)	0.72 (0.69-0.75)	-0.24 (-0.26--0.21)
Peru	0.65 (0.62-0.68)	-0.23 (-0.26--0.21)	0.65 (0.63-0.68)	-0.22 (-0.24--0.20)
Philippines	0.81 (0.58-1.13)	0.00 (-0.01-0.00)	0.77 (0.61-0.97)	0.00 (-0.01-0.00)
Romania	0.52 (0.44-0.60)	-0.21 (-0.25--0.17)	0.49 (0.43-0.56)	-0.22 (-0.25--0.18)
Russia	0.85 (0.60-1.20)	-0.14 (-0.42-0.13)	1.03 (0.96-1.11)	0.03 (-0.04-0.10)
South Africa	0.43 (0.37-0.50)	-0.29 (-0.33--0.24)	0.41 (0.36-0.46)	-0.30 (-0.33--0.27)
Sri Lanka	0.04 (0.03-0.06)	-0.26 (-0.27--0.25)	0.05 (0.03-0.06)	-0.24 (-0.25--0.23)
SVG	0.72 (0.63-0.81)	-0.20 (-0.28--0.13)	0.69 (0.63-0.76)	-0.22 (-0.28--0.16)
Sudan	0.71 (0.34-1.51)	0.00 (-0.01-0.01)	0.95 (0.54-1.66)	0.00 (-0.01-0.01)
Tajikistan	0.61 (0.34-1.10)	-0.05 (-0.10-0.01)	0.50 (0.33-0.76)	-0.07 (-0.10--0.03)
Timor-Leste	0.43 (0.10-1.90)	-0.01 (-0.02-0.00)	0.43 (0.10-1.87)	-0.01 (-0.02-0.00)
Zimbabwe	0.45 (0.38-0.53)	-0.11 (-0.14--0.09)	0.47 (0.42-0.53)	-0.12 (-0.13--0.10)

Abbreviations: p.p., percentage points; RR, risk ratio. SVG, St. Vincent & the Grenadines.

[a] Women aged 30 to 49 years is the reference category. Standard errors were adjusted for clustering at the level of the primary sampling unit (PSU).

eTable 11. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women aged 50 years and older and women aged 30 to 49 years (reference group)[a]

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Algeria	1.21 (1.01-1.45)	0.03 (0.00-0.06)	1.17 (0.98-1.40)	0.03 (0.00-0.06)
Argentina	0.95 (0.94-0.96)	-0.04 (-0.05--0.03)	0.95 (0.94-0.96)	-0.04 (-0.06--0.03)
Azerbaijan	0.76 (0.53-1.09)	-0.03 (-0.06-0.01)	0.68 (0.49-0.94)	-0.04 (-0.07--0.01)
Belarus	0.96 (0.93-1.00)	-0.03 (-0.06-0.00)	0.96 (0.93-1.00)	-0.03 (-0.06-0.00)
Belize	0.91 (0.80-1.05)	-0.05 (-0.13-0.02)	0.89 (0.81-0.98)	-0.07 (-0.12--0.02)
Benin	0.52 (0.12-2.32)	0.00 (-0.01-0.00)	0.47 (0.12-1.89)	0.00 (-0.01-0.00)
Bhutan	0.56 (0.45-0.70)	-0.28 (-0.37--0.19)	0.55 (0.47-0.64)	-0.30 (-0.36--0.24)
Botswana	0.83 (0.71-0.97)	-0.09 (-0.16--0.01)	0.77 (0.68-0.86)	-0.12 (-0.17--0.07)
Brazil	0.94 (0.93-0.96)	-0.05 (-0.07--0.04)	0.94 (0.94-0.95)	-0.05 (-0.06--0.04)
Bulgaria	0.89 (0.84-0.94)	-0.08 (-0.12--0.04)	0.89 (0.84-0.94)	-0.08 (-0.12--0.04)
Chile	0.97 (0.92-1.02)	-0.03 (-0.08-0.02)	0.94 (0.91-0.97)	-0.06 (-0.09--0.03)
China	0.60 (0.53-0.68)	-0.14 (-0.18--0.09)	0.67 (0.58-0.78)	-0.11 (-0.15--0.07)
Costa Rica	0.96 (0.87-1.06)	-0.02 (-0.08-0.03)	0.95 (0.87-1.04)	-0.03 (-0.08-0.02)
Ecuador	1.04 (0.98-1.11)	0.04 (-0.02-0.09)	1.05 (1.00-1.11)	0.04 (0.00-0.09)
Egypt	3.86 (1.19-12.51)	0.01 (0.00-0.02)	4.90 (2.10-11.42)	0.01 (0.00-0.02)
Eswatini	0.60 (0.40-0.89)	-0.09 (-0.15--0.03)	0.61 (0.46-0.80)	-0.08 (-0.12--0.04)
Georgia	0.90 (0.76-1.07)	-0.02 (-0.06-0.02)	0.86 (0.74-1.00)	-0.03 (-0.07-0.00)
Ghana	0.46 (0.26-0.82)	-0.03 (-0.06-0.00)	0.46 (0.28-0.75)	-0.03 (-0.06-0.00)
Guyana	0.93 (0.68-1.26)	-0.02 (-0.09-0.05)	0.87 (0.70-1.09)	-0.03 (-0.08-0.02)
Haiti	0.87 (0.64-1.19)	-0.01 (-0.05-0.02)	0.90 (0.70-1.17)	-0.01 (-0.04-0.02)
Indonesia	1.08 (0.90-1.30)	0.00 (-0.01-0.02)	1.09 (0.90-1.31)	0.01 (-0.01-0.02)
Iran	0.70 (0.67-0.74)	-0.16 (-0.18--0.14)	0.70 (0.67-0.73)	-0.16 (-0.18--0.14)
Iraq	0.86 (0.60-1.22)	-0.02 (-0.05-0.02)	0.74 (0.57-0.98)	-0.03 (-0.06-0.00)
Kenya	0.71 (0.48-1.06)	-0.05 (-0.10-0.00)	0.62 (0.47-0.82)	-0.07 (-0.10--0.03)
Kyrgyzstan	0.57 (0.46-0.70)	-0.17 (-0.22--0.12)	0.55 (0.46-0.67)	-0.17 (-0.22--0.12)
Lebanon	1.30 (0.93-1.83)	0.05 (-0.01-0.11)	1.54 (1.19-1.99)	0.05 (0.02-0.08)
Mexico	0.98 (0.93-1.03)	-0.02 (-0.07-0.03)	0.99 (0.94-1.04)	-0.01 (-0.05-0.03)
Moldova	1.00 (0.93-1.07)	0.00 (-0.05-0.05)	1.00 (0.93-1.06)	0.00 (-0.05-0.04)
Morocco	1.01 (0.82-1.23)	0.00 (-0.02-0.03)	1.10 (0.91-1.34)	0.01 (-0.01-0.04)
Nepal	0.40 (0.17-0.95)	-0.04 (-0.07--0.01)	0.40 (0.17-0.95)	-0.04 (-0.07--0.01)

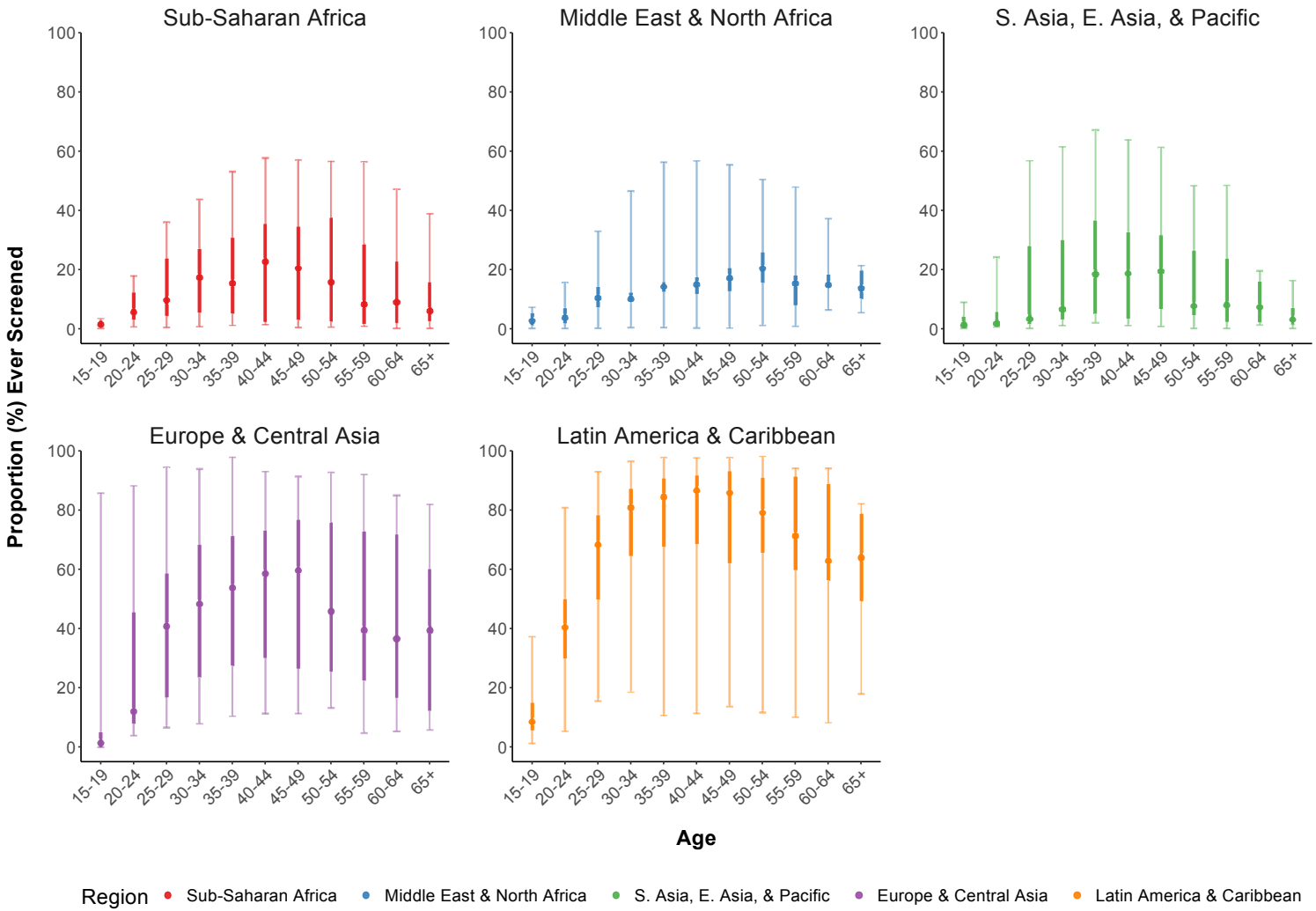
eTable 11. Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening coverage in each country by age group (women aged 30 to 49 years vs women aged 50 years or older)[a] (continued)

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Romania	0.72 (0.67-0.77)	-0.12 (-0.15--0.09)	0.70 (0.66-0.74)	-0.13 (-0.15--0.11)
Russia	0.85 (0.79-0.92)	-0.14 (-0.20--0.08)	0.88 (0.84-0.92)	-0.11 (-0.15--0.07)
South Africa	0.95 (0.87-1.03)	-0.03 (-0.07-0.01)	0.90 (0.84-0.96)	-0.05 (-0.09--0.02)
SVG	0.95 (0.88-1.03)	0.03 (0.00-0.06)	0.95 (0.88-1.03)	-0.04 (-0.09-0.02)
Sudan	0.75 (0.34-1.66)	0.00 (-0.01-0.01)	0.84 (0.42-1.67)	0.00 (-0.01-0.01)
Tajikistan	0.75 (0.45-1.26)	-0.03 (-0.08-0.02)	0.79 (0.56-1.10)	-0.03 (-0.07-0.01)
Timor-Leste	0.23 (0.03-1.96)	-0.01 (-0.02-0.00)	0.23 (0.03-1.92)	-0.01 (-0.02-0.00)

Abbreviations: p.p., percentage points; RR, risk ratio. SVG, St. Vincent & the Grenadines.

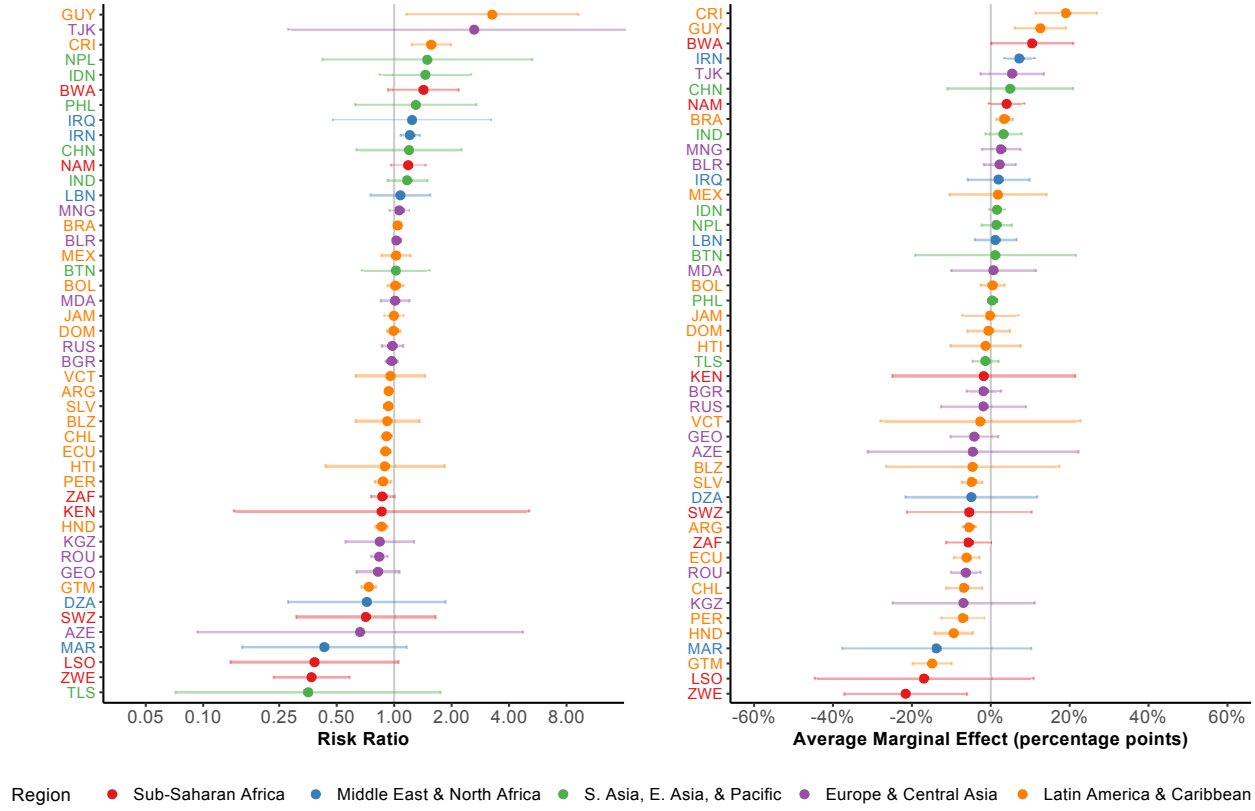
[a] Women aged 30 to 49 years is the reference category. Standard errors were adjusted for clustering at the level of the primary sampling unit (PSU).

eFigure 14. Country-level median lifetime cervical cancer screening prevalence by five-year age group, grouped by region



Point estimates depict the median lifetime prevalence of cervical cancer screening for the study countries in each region. That is, we took all study countries in a region, calculated the lifetime prevalence of cervical cancer screening separately for each five-year age group in each country, and then (separately for each five-year age group) summarized these country-level prevalence estimates using the median. Bold lines depict the interquartile range and thin lines depict the minimum and maximum of lifetime prevalence for cervical cancer screening in the region.

eFigure 15. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women who currently smoke and women who do not (reference group)



Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by smoking status (currently smoking [reference category] vs. currently not smoking). Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. The vertical bars are 95% CIs around point estimates. Upper confidence limits are truncated for risk ratios of Tajikistan. Smoking status was not available for Colombia, Nicaragua, Paraguay, and Sri Lanka. Estimates for Benin, Cote d'Ivoire, Egypt, Ghana, and Sudan are not displayed due to the extremely low prevalence of tobacco smoking. Risk ratios are shown on a logarithmic scale.

eTable 12. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women who currently smoke and women who do not (reference group)[a]

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Algeria	0.72 (0.28-1.85)	-0.05 (-0.22-0.12)	0.71 (0.28-1.82)	-0.06 (-0.24-0.13)
Argentina	0.94 (0.92-0.95)	-0.06 (-0.07--0.04)	0.95 (0.93-0.97)	-0.04 (-0.06--0.03)
Azerbaijan	0.66 (0.09-4.68)	-0.05 (-0.31-0.22)	0.36 (0.08-1.67)	-0.17 (-0.57-0.23)
Belarus	1.03 (0.98-1.07)	0.02 (-0.02-0.06)	1.02 (0.98-1.06)	0.02 (-0.02-0.05)
Belize	0.92 (0.63-1.34)	-0.05 (-0.26-0.17)	1.08 (0.81-1.43)	0.04 (-0.11-0.19)
Bhutan	1.02 (0.68-1.54)	0.01 (-0.19-0.21)	1.16 (0.84-1.58)	0.07 (-0.07-0.21)
Bolivia	1.01 (0.93-1.11)	0.00 (-0.02-0.03)	1.01 (0.94-1.08)	0.00 (-0.02-0.03)
Botswana	1.43 (0.94-2.17)	0.10 (0.00-0.21)	1.43 (1.10-1.88)	0.11 (0.04-0.19)
Brazil	1.04 (1.02-1.07)	0.03 (0.01-0.05)	1.04 (1.03-1.06)	0.03 (0.02-0.05)
Bulgaria	0.97 (0.91-1.04)	-0.02 (-0.06-0.02)	0.98 (0.91-1.04)	-0.02 (-0.06-0.03)
Chile	0.91 (0.86-0.97)	-0.07 (-0.11--0.02)	0.94 (0.91-0.96)	-0.05 (-0.07--0.03)
China	1.20 (0.64-2.25)	0.05 (-0.11-0.21)	1.56 (1.11-2.20)	0.09 (0.03-0.15)
Costa Rica	1.56 (1.24-1.96)	0.19 (0.11-0.27)	1.71 (1.37-2.14)	0.22 (0.15-0.29)
Dominican Republic	0.99 (0.92-1.07)	-0.01 (-0.06-0.05)	1.06 (1.00-1.13)	0.04 (0.00-0.08)
Ecuador	0.90 (0.85-0.95)	-0.06 (-0.09--0.03)	0.92 (0.89-0.95)	-0.06 (-0.08--0.03)
El Salvador	0.93 (0.90-0.97)	-0.05 (-0.07--0.02)	0.96 (0.94-0.99)	-0.03 (-0.05--0.01)
Eswatini	0.71 (0.31-1.63)	-0.05 (-0.21-0.10)	0.68 (0.34-1.39)	-0.06 (-0.20-0.08)
Georgia	0.82 (0.64-1.06)	-0.04 (-0.10-0.02)	0.73 (0.59-0.91)	-0.07 (-0.13--0.02)
Guatemala	0.74 (0.68-0.80)	-0.15 (-0.20--0.10)	0.74 (0.69-0.79)	-0.15 (-0.18--0.11)
Guyana	3.26 (1.16-9.12)	0.13 (0.06-0.19)	2.49 (0.96-6.43)	0.12 (0.04-0.19)
Haiti	0.89 (0.44-1.82)	-0.01 (-0.10-0.07)	0.79 (0.42-1.47)	-0.03 (-0.10-0.05)
Honduras	0.86 (0.80-0.92)	-0.09 (-0.14--0.05)	0.92 (0.85-0.99)	-0.05 (-0.10--0.01)
India	1.17 (0.92-1.48)	0.03 (-0.01-0.08)	0.99 (0.92-1.06)	0.00 (-0.02-0.01)
Indonesia	1.46 (0.85-2.51)	0.02 (0.00-0.03)	1.45 (0.88-2.38)	0.01 (0.00-0.03)
Iran	1.21 (1.08-1.35)	0.07 (0.03-0.11)	1.19 (1.07-1.33)	0.07 (0.03-0.11)
Iraq	1.24 (0.48-3.21)	0.02 (-0.06-0.10)	1.17 (0.50-2.72)	0.02 (-0.06-0.10)
Jamaica	1.00 (0.89-1.12)	0.00 (-0.07-0.07)	1.02 (0.96-1.08)	0.01 (-0.02-0.05)
Kenya	0.86 (0.15-5.07)	-0.02 (-0.25-0.21)	0.61 (0.19-1.97)	-0.08 (-0.32-0.16)
Kyrgyzstan	0.84 (0.56-1.27)	-0.07 (-0.25-0.11)	0.91 (0.62-1.32)	-0.03 (-0.17-0.10)
Lebanon	1.08 (0.75-1.54)	0.07 (0.04-0.10)	0.77 (0.59-1.00)	-0.03 (-0.06-0.00)

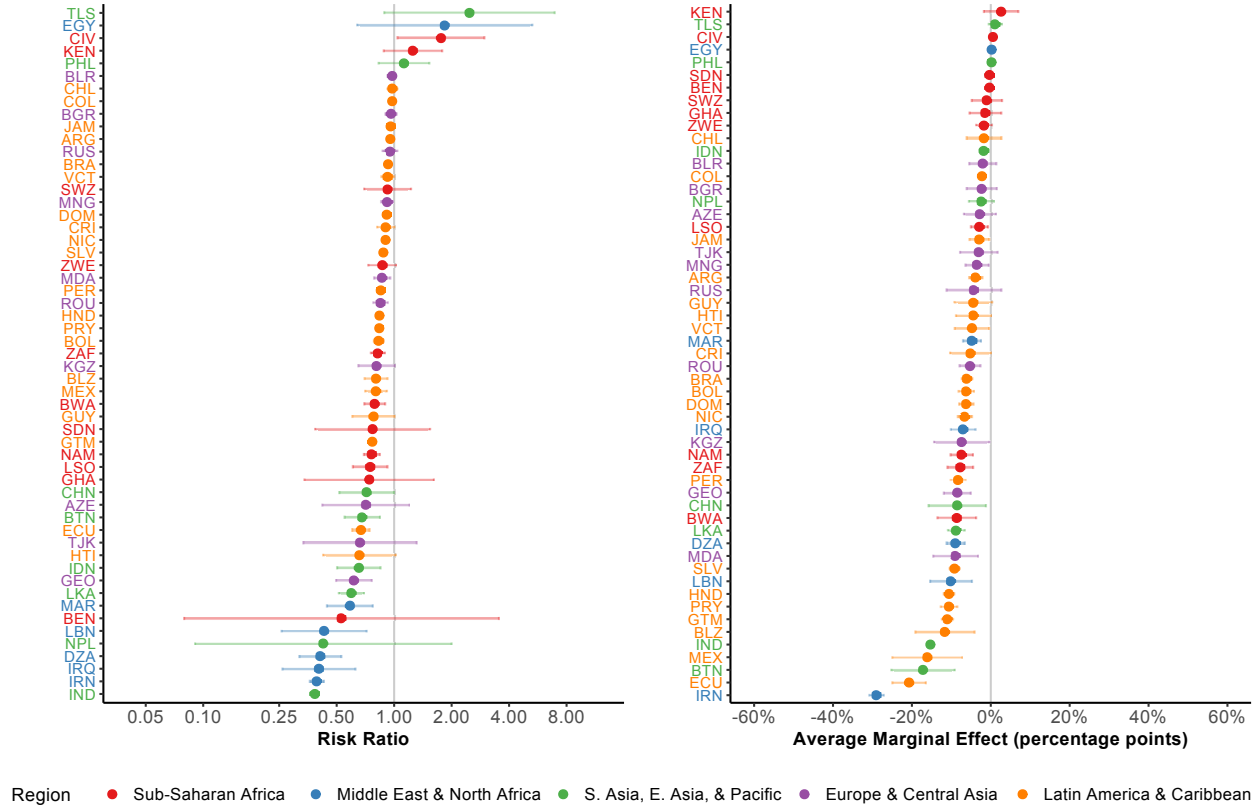
eTable 12. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women who currently smoke and women who do not (reference group)[a] (continued)

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Lesotho	0.38 (0.14-1.05)	0.16 (0.13-0.18)	0.41 (0.17-0.99)	-0.14 (-0.33-0.06)
Mexico	1.03 (0.86-1.22)	0.13 (0.11-0.15)	1.02 (0.94-1.11)	0.02 (-0.05-0.08)
Moldova	1.01 (0.85-1.20)	0.01 (0.01-0.02)	1.12 (0.95-1.31)	0.07 (-0.03-0.16)
Mongolia	1.06 (0.94-1.19)	0.22 (0.19-0.24)	1.03 (0.95-1.12)	0.01 (-0.02-0.05)
Morocco	0.43 (0.16-1.16)	-0.01 (-0.07-0.06)	0.47 (0.17-1.31)	-0.13 (-0.37-0.12)
Namibia	1.18 (0.97-1.45)	0.22 (0.18-0.26)	1.13 (0.98-1.30)	0.03 (0.00-0.06)
Nepal	1.49 (0.42-5.25)	0.07 (0.06-0.09)	1.49 (0.42-5.24)	0.01 (-0.02-0.05)
Peru	0.87 (0.80-0.96)	0.04 (-0.04-0.12)	0.97 (0.90-1.04)	-0.02 (-0.05-0.02)
Philippines	1.30 (0.63-2.68)	0.02 (0.00-0.04)	1.06 (0.62-1.81)	0.00 (-0.01-0.01)
Romania	0.84 (0.76-0.92)	0.15 (0.14-0.17)	0.80 (0.74-0.87)	-0.07 (-0.11--0.04)
Russia	0.98 (0.87-1.10)	-0.02 (-0.13-0.09)	1.02 (0.95-1.10)	0.02 (-0.04-0.07)
South Africa	0.87 (0.76-0.99)	-0.06 (-0.11-0.00)	0.86 (0.77-0.95)	-0.06 (-0.10--0.02)
SVG	0.96 (0.63-1.44)	-0.03 (-0.28-0.22)	1.06 (0.85-1.32)	0.04 (-0.10-0.17)
Tajikistan	2.62 (0.28-24.64)	0.05 (-0.02-0.13)	0.84 (0.14-5.14)	-0.02 (-0.26-0.21)
Timor-Leste	0.36 (0.07-1.75)	-0.01 (-0.05-0.02)	0.36 (0.07-1.73)	-0.01 (-0.05-0.02)
Zimbabwe	0.37 (0.23-0.58)	-0.22 (-0.37--0.06)	0.46 (0.29-0.72)	-0.16 (-0.29--0.03)

Abbreviations: p.p., percentage points; RR, risk ratio. SVG, St. Vincent & the Grenadines.

[a] Currently smoking is the reference category. Regressions were adjusted for age as a continuous variable with restricted cubic splines with five knots. Standard errors were adjusted for clustering at the level of the primary sampling unit (PSU).

eFigure 16. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women who are currently not married and women who are (reference group)



Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by relationship status (currently married [reference category] vs. currently not married). Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. The vertical bars are 95% CIs around point estimates. Risk ratios are shown on a logarithmic scale.

eTable 13. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women who are currently not married and women who are (reference group)[a]

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Algeria	0.41 (0.32-0.53)	-0.09 (-0.11--0.07)	0.45 (0.36-0.57)	-0.09 (-0.11--0.07)
Argentina	0.95 (0.94-0.97)	-0.04 (-0.06--0.02)	0.95 (0.94-0.97)	-0.04 (-0.05--0.03)
Azerbaijan	0.71 (0.42-1.19)	-0.03 (-0.07-0.01)	0.83 (0.58-1.18)	-0.02 (-0.05-0.01)
Belarus	0.98 (0.94-1.02)	-0.02 (-0.05-0.01)	0.97 (0.93-1.00)	-0.03 (-0.06-0.00)
Belize	0.80 (0.70-0.92)	-0.12 (-0.19--0.04)	0.87 (0.79-0.96)	-0.08 (-0.13--0.02)
Benin	0.53 (0.08-3.50)	0.00 (-0.01-0.01)	0.68 (0.10-4.54)	0.00 (-0.01-0.01)
Bhutan	0.68 (0.55-0.83)	-0.17 (-0.25--0.09)	0.79 (0.69-0.91)	-0.11 (-0.18--0.05)
Bolivia	0.83 (0.78-0.88)	-0.06 (-0.08--0.04)	0.80 (0.76-0.83)	-0.08 (-0.09--0.06)
Botswana	0.79 (0.70-0.89)	-0.09 (-0.13--0.04)	0.87 (0.78-0.96)	-0.06 (-0.10--0.01)
Brazil	0.93 (0.92-0.94)	-0.06 (-0.07--0.05)	0.94 (0.93-0.95)	-0.05 (-0.06--0.04)
Bulgaria	0.96 (0.91-1.02)	-0.02 (-0.06-0.01)	0.96 (0.90-1.02)	-0.03 (-0.06-0.01)
Chile	0.98 (0.92-1.03)	-0.02 (-0.06-0.02)	0.95 (0.92-0.98)	-0.04 (-0.06--0.02)
China	0.72 (0.52-0.99)	-0.09 (-0.16--0.01)	0.76 (0.64-0.89)	-0.06 (-0.10--0.02)
Colombia	0.98 (0.97-0.98)	-0.02 (-0.03--0.02)	0.97 (0.97-0.98)	-0.02 (-0.03--0.02)
Costa Rica	0.90 (0.81-1.00)	-0.05 (-0.10-0.00)	0.88 (0.81-0.97)	-0.06 (-0.11--0.02)
Cote d'Ivoire	1.76 (1.05-2.95)	0.01 (0.00-0.01)	1.67 (1.09-2.57)	0.00 (0.00-0.01)
Dominican Republic	0.91 (0.89-0.94)	-0.06 (-0.08--0.05)	0.92 (0.90-0.94)	-0.06 (-0.07--0.05)
Ecuador	0.67 (0.61-0.74)	-0.21 (-0.25--0.17)	0.79 (0.76-0.81)	-0.15 (-0.16--0.13)
Egypt	1.84 (0.64-5.26)	0.00 (0.00-0.01)	1.67 (0.70-3.98)	0.00 (0.00-0.00)
El Salvador	0.88 (0.86-0.89)	-0.09 (-0.10--0.08)	0.90 (0.89-0.91)	-0.08 (-0.09--0.07)
Eswatini	0.92 (0.70-1.22)	-0.01 (-0.05-0.03)	0.98 (0.77-1.24)	0.00 (-0.03-0.03)
Georgia	0.61 (0.50-0.76)	-0.09 (-0.12--0.05)	0.72 (0.61-0.86)	-0.06 (-0.10--0.03)
Ghana	0.74 (0.34-1.60)	-0.02 (-0.05-0.02)	0.99 (0.65-1.52)	0.00 (-0.01-0.01)
Guatemala	0.77 (0.74-0.79)	-0.11 (-0.12--0.10)	0.77 (0.75-0.79)	-0.11 (-0.12--0.10)
Guyana	0.78 (0.61-1.00)	-0.04 (-0.09-0.00)	0.84 (0.68-1.04)	-0.03 (-0.07-0.01)
Haiti	0.66 (0.43-1.01)	-0.04 (-0.09-0.00)	0.86 (0.59-1.24)	-0.02 (-0.05-0.02)
Honduras	0.84 (0.82-0.86)	-0.11 (-0.12--0.09)	0.83 (0.82-0.85)	-0.11 (-0.12--0.09)
India	0.38 (0.37-0.40)	-0.15 (-0.16--0.15)	0.37 (0.36-0.38)	-0.15 (-0.15--0.15)
Indonesia	0.65 (0.51-0.84)	-0.02 (-0.03--0.01)	0.64 (0.51-0.80)	-0.02 (-0.02--0.01)
Iran	0.39 (0.36-0.42)	-0.29 (-0.31--0.27)	0.39 (0.36-0.42)	-0.29 (-0.31--0.27)
Iraq	0.40 (0.26-0.62)	-0.07 (-0.10--0.04)	0.65 (0.47-0.90)	-0.04 (-0.07--0.01)

eTable 13. Relative (risk ratios) and absolute (average marginal effects) differences in lifetime prevalence of cervical cancer screening between women who are currently not married and women who are (reference group)[a] (continued)

	Poisson regression with sampling weights		Poisson regression without sampling weights	
Country	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**	**RR (95% CI)**	**Absolute change in p.p. (95% CI)**
Jamaica	0.96 (0.93-0.99)	-0.03 (-0.05--0.01)	0.95 (0.92-0.98)	-0.04 (-0.06--0.02)
Kenya	1.25 (0.88-1.77)	0.03 (-0.02-0.07)	1.28 (1.00-1.64)	0.03 (0.00-0.07)
Kyrgyzstan	0.81 (0.65-1.00)	-0.07 (-0.14-0.00)	0.85 (0.70-1.02)	-0.05 (-0.11-0.00)
Lebanon	0.43 (0.26-0.71)	-0.10 (-0.15--0.05)	0.66 (0.44-0.97)	-0.04 (-0.07-0.00)
Lesotho	0.75 (0.61-0.92)	-0.03 (-0.05--0.01)	0.80 (0.67-0.95)	-0.02 (-0.04-0.00)
Mexico	0.80 (0.71-0.91)	-0.16 (-0.25--0.07)	0.91 (0.88-0.94)	-0.08 (-0.11--0.05)
Moldova	0.86 (0.79-0.95)	-0.09 (-0.15--0.03)	0.90 (0.84-0.96)	-0.07 (-0.11--0.03)
Mongolia	0.92 (0.86-0.98)	-0.04 (-0.06--0.01)	0.93 (0.88-0.97)	-0.03 (-0.05--0.01)
Morocco	0.59 (0.45-0.77)	-0.05 (-0.07--0.03)	0.61 (0.47-0.79)	-0.05 (-0.07--0.03)
Namibia	0.76 (0.69-0.83)	-0.07 (-0.10--0.05)	0.78 (0.73-0.84)	-0.07 (-0.09--0.05)
Nepal	0.42 (0.09-1.98)	-0.02 (-0.06-0.01)	0.42 (0.09-1.97)	-0.02 (-0.06-0.01)
Nicaragua	0.90 (0.88-0.92)	-0.07 (-0.08--0.05)	0.92 (0.90-0.94)	-0.06 (-0.07--0.04)
Paraguay	0.84 (0.81-0.87)	-0.11 (-0.13--0.09)	0.85 (0.83-0.88)	-0.10 (-0.12--0.08)
Peru	0.85 (0.82-0.88)	-0.08 (-0.10--0.07)	0.86 (0.84-0.89)	-0.07 (-0.09--0.06)
Philippines	1.12 (0.83-1.52)	0.00 (0.00-0.01)	1.67 (1.34-2.08)	0.01 (0.00-0.01)
Romania	0.85 (0.78-0.92)	-0.05 (-0.08--0.03)	0.88 (0.82-0.95)	-0.04 (-0.06--0.02)
Russia	0.95 (0.88-1.03)	-0.04 (-0.11-0.02)	0.98 (0.95-1.02)	-0.01 (-0.04-0.01)
South Africa	0.82 (0.76-0.89)	-0.08 (-0.11--0.05)	0.84 (0.78-0.89)	-0.07 (-0.09--0.04)
Sri Lanka	0.60 (0.51-0.69)	-0.09 (-0.11--0.07)	0.56 (0.48-0.65)	-0.09 (-0.10--0.07)
SVG	0.92 (0.86-0.99)	-0.05 (-0.09--0.01)	0.89 (0.82-0.96)	-0.08 (-0.13--0.02)
Sudan	0.77 (0.39-1.54)	0.00 (-0.01-0.00)	0.76 (0.39-1.49)	0.00 (-0.01-0.00)
Tajikistan	0.66 (0.33-1.31)	-0.03 (-0.08-0.02)	0.84 (0.53-1.31)	-0.02 (-0.06-0.03)
Timor-Leste	2.48 (0.89-6.91)	0.01 (-0.01-0.03)	2.48 (0.90-6.85)	0.01 (-0.01-0.03)
Zimbabwe	0.87 (0.74-1.02)	-0.02 (-0.04-0.00)	0.84 (0.74-0.96)	-0.02 (-0.04--0.01)

Abbreviations: p.p., percentage points; RR, risk ratio. SVG, St. Vincent & the Grenadines.

[a] Currently married is the reference category. Regressions were adjusted for age as a continuous variable with restricted cubic splines with five knots. Standard errors were adjusted for clustering at the level of the primary sampling unit (PSU).

eTable 14. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Europe: Azerbaijan to Kyrgyzstan

	Azerbaijan	Belarus	Bulgaria	Georgia	Kyrgyzstan
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-unadjusted regressions[a]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.22 (0.08-0.62)	0.97 (0.89-1.05)	0.24 (0.18-0.33)	0.23 (0.11-0.47)	NA
25-34	0.65 (0.38-1.14)	1.03 (0.99-1.07)	0.87 (0.79-0.97)	0.68 (0.51-0.92)	1.24 (1.03-1.49)
45-54	0.91 (0.59-1.39)	1.00 (0.97-1.04)	1.05 (0.97-1.14)	1.15 (0.93-1.41)	0.65 (0.52-0.83)
55-64	0.47 (0.27-0.80)	0.95 (0.91-1.00)	0.99 (0.91-1.07)	0.80 (0.63-1.02)	0.51 (0.35-0.74)
>= 65	0.42 (0.16-1.09)	0.90 (0.84-0.97)	0.77 (0.71-0.84)	0.55 (0.40-0.75)	NA
Education					
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	1.06 (0.41-2.77)	1.32 (0.71-2.46)	2.00 (1.67-2.39)	1.57 (0.77-3.18)	1.18 (0.53-2.63)
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.04 (0.51-2.08)	NA	1.22 (1.06-1.40)	0.90 (0.66-1.23)	0.90 (0.65-1.26)
3	0.92 (0.51-1.67)	NA	1.50 (1.33-1.69)	1.03 (0.79-1.35)	1.15 (0.83-1.59)
4	1.65 (0.98-2.76)	NA	1.61 (1.44-1.81)	1.23 (0.87-1.73)	1.34 (0.98-1.83)
5 (richest)	1.99 (1.06-3.76)	NA	1.88 (1.69-2.10)	1.73 (1.31-2.29)	1.77 (1.24-2.52)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.82 (0.79-4.21)	1.03 (0.97-1.09)	1.77 (1.54-2.02)	5.50 (3.37-8.96)	1.86 (0.86-4.04)
Separated	2.24 (0.58-8.69)	1.05 (0.95-1.16)	2.41 (2.06-2.81)	8.33 (3.73-18.63)	1.93 (0.75-4.98)
Divorced	0.70 (0.13-3.75)	1.01 (0.95-1.09)	1.93 (1.65-2.25)	4.39 (2.35-8.21)	1.63 (0.67-3.94)
Widowed	1.01 (0.39-2.66)	0.94 (0.87-1.02)	1.38 (1.19-1.61)	4.62 (2.64-8.1)	0.92 (0.39-2.18)
Cohabitating	3.41 (0.42-27.47)	1.09 (1.01-1.16)	1.46 (1.21-1.75)	NA	2.21 (0.57-8.56)
Place of residence[c]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	2.05 (1.13-3.74)	1.02 (0.96-1.07)	1.38 (1.28-1.49)	NA	1.69 (1.33-2.14)
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.44 (0.2-10.37)	0.99 (0.95-1.03)	1.13 (1.06-1.20)	1.28 (0.97-1.68)	1.21 (0.79-1.87)
Covariate-adjusted regressions[d]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.28 (0.09-0.90)	0.97 (0.90-1.05)	0.30 (0.21-0.42)	0.35 (0.14-0.87)	NA
25-34	0.76 (0.45-1.29)	1.03 (0.99-1.07)	0.91 (0.82-1.01)	0.76 (0.56-1.05)	1.19 (1.00-1.41)
45-54	1.17 (0.75-1.83)	1.01 (0.97-1.04)	1.03 (0.95-1.11)	1.15 (0.92-1.43)	0.71 (0.55-0.92)
55-64	0.60 (0.33-1.10)	0.96 (0.92-1.01)	1.01 (0.93-1.09)	0.80 (0.61-1.04)	0.54 (0.39-0.74)
>= 65	0.67 (0.26-1.75)	0.92 (0.86-0.99)	0.91 (0.83-0.99)	0.58 (0.40-0.82)	NA
Education					
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	0.75 (0.32-1.74)	1.29 (0.68-2.44)	1.59 (1.32-1.91)	1.28 (0.58-2.80)	0.81 (0.32-2.07)

eTable 14. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Europe: Azerbaijan to Kyrgyzstan (continued)

	Azerbaijan	Belarus	Bulgaria	Georgia	Kyrgyzstan
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-adjusted regressions[d]					
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.10 (0.56-2.17)	NA	1.17 (1.02-1.34)	0.74 (0.54-1.03)	0.89 (0.65-1.24)
3	0.97 (0.55-1.73)	NA	1.36 (1.21-1.54)	0.93 (0.70-1.24)	0.94 (0.70-1.28)
4	1.63 (0.99-2.67)	NA	1.35 (1.20-1.52)	1.26 (0.90-1.75)	1.12 (0.82-1.53)
5 (richest)	1.82 (1.01-3.29)	NA	1.51 (1.34-1.69)	1.66 (1.25-2.20)	1.36 (1.00-1.85)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.25 (0.51-3.07)	1.03 (0.97-1.08)	1.18 (1.04-1.34)	2.83 (1.62-4.96)	2.25 (0.92-5.50)
Separated	1.11 (0.27-4.61)	1.04 (0.95-1.15)	1.55 (1.31-1.84)	5.04 (2.02-12.61)	2.23 (0.85-5.82)
Divorced	0.42 (0.07-2.43)	1.02 (0.95-1.08)	1.24 (1.08-1.43)	2.21 (1.08-4.51)	1.77 (0.68-4.58)
Widowed	0.73 (0.25-2.09)	0.97 (0.90-1.04)	1.07 (0.92-1.24)	2.83 (1.48-5.41)	1.76 (0.66-4.74)
Cohabitating	1.96 (0.22-17.52)	1.08 (1.01-1.15)	1.18 (0.99-1.41)	NA	2.49 (0.68-9.19)
Place of residence[c]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	2.02 (1.08-3.79)	1.01 (0.96-1.07)	1.18 (1.09-1.28)	NA	1.72 (1.36-2.16)
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.55 (0.22-11.14)	0.98 (0.93-1.02)	1.02 (0.96-1.08)	1.05 (0.76-1.45)	1.01 (0.59-1.74)
Observations[e]	1,268	2,672	2,815	2,395	1,523

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Wealth quintiles are missing for Belarus.

[c] Place of residence is missing for Georgia.

[d] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[e] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 15. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Europe: Moldova to Tajikistan

Variable	Moldova RR (95% CI)	Mongolia RR (95% CI)	Romania RR (95% CI)	Russia RR (95% CI)	Tajikistan RR (95% CI)
Covariate-unadjusted regressions[a]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.59 (0.49-0.72)	0.06 (0.05-0.08)	0.15 (0.11-0.21)	0.67 (0.33-1.39)	0.65 (0.33-1.28)
25-34	0.85 (0.76-0.95)	0.49 (0.45-0.52)	0.84 (0.75-0.95)	0.97 (0.87-1.08)	0.81 (0.44-1.48)
45-54	1.03 (0.94-1.13)	1.09 (1.04-1.15)	1.02 (0.93-1.13)	0.94 (0.88-1.01)	1.52 (0.97-2.37)
55-64	0.99 (0.91-1.09)	NA	0.86 (0.78-0.95)	0.91 (0.86-0.97)	0.45 (0.20-1.01)
>= 65	0.79 (0.68-0.92)	NA	0.51 (0.46-0.57)	0.75 (0.66-0.85)	0.64 (0.26-1.59)
Education					
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	1.00 (0.71-1.4)	1.23 (1.10-1.38)	3.21 (2.65-3.88)	1.57 (1.22-2.02)	0.78 (0.33-1.85)
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.06 (0.93-1.02)	0.96 (0.86-1.08)	1.41 (1.19-1.67)	1.07 (0.93-1.23)	NA
3	0.98 (0.84-1.15)	0.95 (0.85-1.07)	2.00 (1.71-2.34)	1.05 (0.84-1.31)	NA
4	1.13 (0.98-1.31)	1.03 (0.92-1.16)	2.57 (2.21-3.00)	1.15 (0.99-1.33)	NA
5 (richest)	1.01 (0.87-1.17)	1.12 (1.01-1.25)	2.81 (2.42-3.25)	1.10 (0.93-1.30)	NA
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	2.05 (1.64-2.57)	5.37 (4.42-6.51)	2.50 (2.15-2.91)	1.33 (0.86-2.07)	3.36 (0.95-11.86)
Separated	1.92 (1.37-2.68)	5.41 (4.13-7.09)	NA	1.35 (0.88-2.07)	6.62 (1.41-31.20)
Divorced	2.00 (1.57-2.56)	5.04 (3.95-6.42)	2.77 (2.32-3.31)	NA	2.14 (0.33-14.07)
Widowed	2.07 (1.63-2.62)	5.66 (4.56-7.02)	1.45 (1.22-1.72)	1.09 (0.70-1.70)	3.68 (0.83-16.33)
Cohabitating	1.84 (1.29-2.64)	3.50 (2.79-4.39)	NA	1.30 (0.84-2.01)	NA
Place of residence[c]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	0.91 (0.81-1.02)	0.88 (0.82-0.94)	1.94 (1.78-2.12)	0.99 (0.87-1.12)	NA
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0.96 (0.81-1.13)	1.11 (0.97-1.27)	1.35 (1.23-1.49)	1.06 (0.95-1.19)	0.49 (0.05-4.65)
Covariate-adjusted regressions[d]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.72 (0.59-0.88)	0.08 (0.06-0.11)	0.22 (0.16-0.31)	0.81 (0.47-1.40)	0.77 (0.38-1.57)
25-34	0.89 (0.79-1.00)	0.49 (0.45-0.52)	0.87 (0.77-0.98)	1.01 (0.92-1.10)	0.81 (0.44-1.49)
45-54	1.01 (0.92-1.11)	1.06 (1.01-1.12)	0.99 (0.90-1.09)	0.94 (0.85-1.03)	1.49 (0.96-2.31)
55-64	0.97 (0.89-1.07)	NA	0.88 (0.80-0.97)	0.92 (0.84-1.00)	0.43 (0.20-0.95)
>= 65	0.76 (0.64-0.89)	NA	0.74 (0.66-0.83)	0.80 (0.72-0.90)	0.58 (0.24-1.38)
Education					
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	0.8 (0.62-1.03)	1.38 (1.23-1.55)	2.09 (1.70-2.56)	1.36 (1.09-1.68)	0.78 (0.33-1.88)

eTable 15. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Europe: Moldova to Tajikistan (continued)

	Moldova	Mongolia		Romania	Russia	Tajikistan
Variable	**RR (95% CI)**	**RR (95% CI)**		**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-adjusted regressions[d]						
Household wealth quintile[b]						
1 (poorest)	1 (ref.)	1 (ref.)		1 (ref.)	1 (ref.)	1 (ref.)
2	1.03 (0.91-1.17)	1.12 (1.02-1.24)		1.20 (1.02-1.41)	1.04 (0.93-1.16)	NA
3	0.95 (0.82-1.10)	1.20 (1.08-1.32)		1.48 (1.26-1.73)	0.99 (0.81-1.21)	NA
4	1.08 (0.94-1.25)	1.27 (1.14-1.41)		1.73 (1.48-2.03)	1.02 (0.90-1.15)	NA
5 (richest)	0.95 (0.82-1.11)	1.46 (1.31-1.62)		1.76 (1.50-2.06)	0.96 (0.84-1.10)	NA
Relationship status						
Never married	1 (ref.)	1 (ref.)		1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.49 (1.17-1.91)	1.53 (1.27-1.84)		1.40 (1.20-1.64)	1.27 (0.93-1.72)	3.14 (0.85-11.68)
Separated	1.41 (1.00-2.01)	1.62 (1.24-2.12)		NA	1.27 (0.96-1.67)	6.16 (1.11-34.11)
Divorced	1.43 (1.10-1.86)	1.44 (1.16-1.79)		1.43 (1.19-1.72)	NA	2.01 (0.31-13.08)
Widowed	1.51 (1.17-1.94)	1.31 (1.06-1.62)		1.31 (1.08-1.58)	1.19 (0.88-1.62)	3.55 (0.71-17.89)
Cohabitating	1.44 (1.02-2.03)	1.39 (1.13-1.71)		NA	1.21 (0.92-1.61)	NA
Place of residence[c]						
Rural	1 (ref.)	1 (ref.)		1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.05 (0.93-1.18)	0.79 (0.75-0.85)		1.43 (1.30-1.56)	0.96 (0.87-1.06)	NA
Tobacco smoking						
Not currently smoking	1 (ref.)	1 (ref.)		1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.00 (0.84-1.19)	0.97 (0.86-1.10)	0.655	1.14 (1.04-1.25)	1.02 (0.91-1.16)	0.40 (0.05-3.54)
Observations[e]	2,321	10,362		8,653	2,580	1,534

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Wealth quintiles are missing for Tajikistan.

[c] Place of residence is missing for Tajikistan.

[d] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[e] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 16. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Latin America and the Caribbean: Argentina to Chile

Variable	Argentina RR (95% CI)	Belize RR (95% CI)	Bolivia RR (95% CI)	Brazil RR (95% CI)	Chile RR (95% CI)
Covariate-unadjusted regressions[a]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.65 (0.61-0.69)	0.36 (0.27-0.50)	0.26 (0.23-0.28)	0.58 (0.56-0.62)	0.20 (0.15-0.26)
25-34	0.95 (0.93-0.97)	0.77 (0.68-0.86)	0.96 (0.91-1.01)	0.94 (0.92-0.96)	0.82 (0.74-0.91)
45-54	1.02 (1.00-1.04)	0.93 (0.76-1.13)	0.88 (0.80-0.96)	1.02 (1.00-1.03)	1.01 (0.98-1.04)
55-64	0.99 (0.96-1.01)	0.92 (0.80-1.07)	NA	0.98 (0.96-1.00)	0.99 (0.95-1.02)
>= 65	0.90 (0.88-0.92)	0.69 (0.59-0.80)	NA	0.85 (0.83-0.88)	0.83 (0.79-0.88)
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.13 (1.06-1.21)	1.27 (0.92-1.76)	1.24 (1.07-1.45)	1.16 (1.12-1.2)	1.06 (0.93-1.21)
Secondary education or further	1.15 (1.06-1.24)	1.16 (0.80-1.69)	1.22 (1.04-1.44)	1.14 (1.1-1.17)	0.86 (0.75-0.99)
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.06 (1.03-1.09)	NA	1.33 (1.17-1.51)	NA	NA
3	1.06 (0.99-1.14)	NA	1.70 (1.48-1.95)	NA	NA
4	1.14 (1.06-1.22)	NA	1.92 (1.69-2.19)	NA	NA
5 (richest)	1.15 (1.05-1.26)	NA	2.17 (1.92-2.46)	NA	NA
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.20 (1.15-1.25)	2.04 (1.51-2.75)	5.28 (4.71-5.93)	1.25 (1.23-1.28)	2.22 (1.90-2.59)
Separated	1.18 (1.14-1.23)	1.79 (0.93-3.43)	4.87 (4.27-5.56)	1.20 (1.12-1.28)	2.24 (1.92-2.62)
Divorced	1.21 (1.14-1.28)	1.69 (1.18-2.42)	6.02 (4.87-7.43)	1.30 (1.26-1.33)	2.37 (2.03-2.76)
Widowed	1.07 (1.02-1.12)	1.78 (1.26-2.52)	4.72 (3.83-5.82)	1.14 (1.10-1.18)	1.90 (1.59-2.26)
Cohabitating	NA	2.22 (1.33-3.71)	4.21 (3.71-4.78)	NA	2.07 (1.75-2.45)
Place of residence[c]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	NA	NA	1.47 (1.35-1.61)	1.11 (1.07-1.14)	NA
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.09 (1.06-1.11)	1.16 (0.86-1.55)	1.08 (0.99-1.18)	1.01 (0.99-1.04)	1.08 (1.00-1.16)
Covariate-adjusted regressions[d]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.67 (0.63-0.71)	0.41 (0.28-0.59)	0.48 (0.43-0.54)	0.61 (0.58-0.65)	0.23 (0.17-0.30)
25-34	0.96 (0.93-0.98)	0.82 (0.71-0.95)	1.02 (0.97-1.08)	0.95 (0.93-0.97)	0.85 (0.77-0.94)
45-54	1.00 (0.98-1.02)	0.90 (0.71-1.13)	0.91 (0.83-0.99)	1.01 (0.99-1.03)	1.01 (0.98-1.05)
55-64	0.97 (0.94-0.99)	0.93 (0.76-1.14)	NA	0.98 (0.95-1.00)	1.02 (0.97-1.07)
>= 65	0.91 (0.89-0.94)	0.79 (0.65-0.96)	NA	0.87 (0.84-0.90)	0.91 (0.84-0.99)
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.12 (1.03-1.21)	1.36 (1.05-1.77)	1.18 (1.02-1.37)	1.14 (1.11-1.18)	1.01 (0.89-1.14)
Secondary education or further	1.14 (1.06-1.24)	1.50 (1.08-2.08)	1.33 (1.14-1.54)	1.16 (1.12-1.20)	1.05 (0.93-1.19)

eTable 16. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Latin America and the Caribbean: Argentina to Chile (continued)

	Argentina	Belize	Bolivia	Brazil	Chile
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-adjusted regressions[d]					
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.05 (1.03-1.08)	NA	1.42 (1.25-1.61)	NA	NA
3	1.04 (0.98-1.10)	NA	1.86 (1.61-2.16)	NA	NA
4	1.10 (1.05-1.16)	NA	2.06 (1.77-2.40)	NA	NA
5 (richest)	1.09 (1.01-1.17)	NA	2.54 (2.17-2.97)	NA	NA
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.09 (1.06-1.12)	2.05 (1.48-2.83)	3.65 (3.18-4.19)	1.13 (1.11-1.15)	1.26 (1.09-1.44)
Separated	1.07 (1.04-1.11)	1.71 (0.85-3.43)	3.46 (2.98-4.00)	1.07 (1.01-1.14)	1.25 (1.09-1.43)
Divorced	1.06 (1.01-1.12)	2.07 (1.51-2.84)	3.19 (2.58-3.94)	1.14 (1.11-1.17)	1.23 (1.07-1.42)
Widowed	1.02 (0.97-1.07)	1.99 (1.44-2.73)	3.52 (2.84-4.35)	1.10 (1.06-1.14)	1.12 (0.95-1.33)
Cohabitating	NA	2.02 (1.26-3.25)	3.56 (3.10-4.10)	NA	1.31 (1.13-1.51)
Place of residence[c]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	NA	NA	0.92 (0.83-1.03)	1.07 (1.04-1.10)	NA
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.08 (1.06-1.10)	1.11 (0.85-1.45)	0.99 (0.90-1.08)	0.98 (0.96-1.01)	1.11 (1.05-1.16)
Observations[e]	17,906	1,161	16,686	34,282	2,900

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Wealth quintiles are missing for Belize, Brazil, and Chile.

[c] Place of residence is missing for Argentina, Belize, and Chile.

[d] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[e] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 17. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Latin America and the Caribbean: Colombia to El Salvador

	Colombia	Costa Rica	Dominican Republic	Ecuador	El Salvador
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-unadjusted regressions[a]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.83 (0.81-0.85)	0.45 (0.37-0.55)	0.34 (0.31-0.37)	0.21 (0.18-0.24)	0.35 (0.33-0.37)
25-34	0.97 (0.96-0.98)	0.79 (0.66-0.95)	0.90 (0.87-0.93)	0.80 (0.76-0.85)	0.90 (0.88-0.92)
45-54	1.00 (0.99-1.01)	1.01 (0.90-1.14)	0.99 (0.96-1.03)	1.03 (1.00-1.07)	1.01 (0.99-1.03)
55-64	NA	0.97 (0.84-1.11)	NA	NA	NA
>= 65	NA	0.84 (0.73-0.95)	NA	NA	NA
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.15 (1.08-1.22)	1.44 (1.05-1.99)	1.18 (1.03-1.35)	1.04 (0.92-1.18)	0.92 (0.89-0.95)
Secondary education or further	1.15 (1.08-1.22)	1.38 (0.99-1.93)	1.05 (0.92-1.20)	0.87 (0.76-0.99)	0.70 (0.68-0.73)
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.03 (1.01-1.05)	NA	1.11 (1.05-1.19)	1.16 (1.07-1.26)	1.01 (0.96-1.05)
3	1.04 (1.02-1.06)	NA	1.17 (1.08-1.27)	1.28 (1.18-1.38)	1.04 (0.99-1.09)
4	1.06 (1.04-1.07)	NA	1.17 (1.08-1.27)	1.34 (1.22-1.46)	1.07 (1.02-1.12)
5 (richest)	1.06 (1.05-1.08)	NA	1.21 (1.13-1.30)	1.35 (1.21-1.51)	0.98 (0.93-1.03)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.15 (1.13-1.18)	1.89 (1.64-2.17)	5.35 (4.69-6.09)	3.64 (2.86-4.64)	6.07 (5.52-6.67)
Separated	1.11 (1.09-1.14)	1.86 (1.46-2.36)	4.72 (4.15-5.37)	3.60 (2.79-4.63)	5.85 (5.31-6.43)
Divorced	1.17 (1.14-1.20)	2.37 (1.99-2.83)	5.57 (4.88-6.36)	NA	6.23 (5.61-6.91)
Widowed	1.16 (1.13-1.19)	1.74 (1.49-2.03)	5.54 (4.86-6.32)	3.87 (2.92-5.12)	6.09 (5.52-6.73)
Cohabitating	1.11 (1.09-1.14)	1.95 (1.63-2.34)	4.50 (3.95-5.12)	NA	5.63 (5.12-6.19)
Place of residence					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.04 (1.02-1.05)	1.14 (1.03-1.27)	1.02 (0.98-1.06)	1.27 (1.15-1.39)	1.03 (1.00-1.07)
Tobacco smoking[c]					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	NA	0.67 (0.54-0.83)	1.24 (1.16-1.33)	1.32 (1.20-1.45)	1.11 (1.06-1.16)
Covariate-adjusted regressions[d]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.85 (0.83-0.87)	0.59 (0.48-0.72)	0.54 (0.50-0.58)	0.33 (0.29-0.37)	0.63 (0.60-0.65)
25-34	0.97 (0.97-0.98)	0.86 (0.72-1.02)	0.95 (0.93-0.98)	0.89 (0.85-0.94)	0.97 (0.96-0.99)
45-54	1.00 (0.99-1.01)	1.00 (0.89-1.12)	0.99 (0.97-1.02)	1.03 (0.99-1.06)	1.00 (0.98-1.02)
55-64	NA	0.97 (0.84-1.12)	NA	NA	NA
>= 65	NA	0.88 (0.76-1.02)	NA	NA	NA
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.15 (1.08-1.21)	1.34 (0.95-1.89)	1.18 (1.05-1.32)	1.11 (1.01-1.23)	1.04 (1.01-1.07)
Secondary education or further	1.17 (1.10-1.23)	1.49 (1.04-2.14)	1.28 (1.15-1.43)	1.16 (1.05-1.28)	1.03 (1.00-1.06)

eTable 17. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Latin America and the Caribbean: Colombia to El Salvador (continued)

Variable	Colombia RR (95% CI)	Costa Rica RR (95% CI)	Dominican Republic RR (95% CI)	Ecuador RR (95% CI)	El Salvador RR (95% CI)
Covariate-adjusted regressions[d]					
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.03 (1.01-1.04)	NA	1.10 (1.03-1.17)	1.11 (1.05-1.17)	1.03 (1.00-1.06)
3	1.04 (1.02-1.06)	NA	1.13 (1.05-1.22)	1.17 (1.10-1.23)	1.06 (1.02-1.09)
4	1.05 (1.03-1.08)	NA	1.17 (1.10-1.26)	1.23 (1.15-1.31)	1.09 (1.05-1.13)
5 (richest)	1.06 (1.04-1.08)	NA	1.25 (1.17-1.34)	1.23 (1.15-1.31)	1.08 (1.03-1.12)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.10 (1.08-1.12)	1.58 (1.37-1.83)	3.41 (2.99-3.90)	2.32 (1.83-2.95)	4.53 (4.10-5.01)
Separated	1.08 (1.06-1.10)	1.56 (1.23-1.98)	3.46 (3.04-3.95)	2.30 (1.84-2.87)	4.47 (4.04-4.95)
Divorced	1.10 (1.08-1.12)	1.85 (1.53-2.24)	3.37 (2.94-3.87)	-	4.38 (3.92-4.90)
Widowed	1.11 (1.08-1.13)	1.54 (1.31-1.81)	3.62 (3.15-4.17)	2.29 (1.79-2.92)	4.40 (3.96-4.89)
Cohabitating	1.10 (1.08-1.12)	1.58 (1.37-1.83)	3.41 (2.99-3.90)	2.32 (1.83-2.95)	4.53 (4.10-5.01)
Place of residence					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	0.99 (0.97-1.00)	1.11 (0.99-1.24)	0.98 (0.94-1.03)	1.07 (1.01-1.13)	1.01 (0.98-1.03)
Tobacco smoking[c]					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	NA	0.65 (0.53-0.81)	1.04 (0.96-1.13)	1.14 (1.08-1.21)	1.06 (1.03-1.09)
Observations[e]	26,670	2,449	8,983	17,806	11,983

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Wealth quintiles are missing for Costa Rica.

[c] Tobacco smoking is missing for Colombia.

[d] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[e] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 18. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Latin America and the Caribbean: Guatemala to Jamaica

	Guatemala	Guyana	Haiti	Honduras	Jamaica
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-unadjusted regressions[a]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.15 (0.14-0.16)	0.18 (0.09-0.34)	NA	0.29 (0.28-0.31)	0.28 (0.25-0.32)
25-34	0.76 (0.74-0.79)	0.72 (0.49-1.06)	NA	0.87 (0.85-0.89)	0.89 (0.86-0.92)
45-54	1.00 (0.96-1.03)	1.22 (0.88-1.71)	1.14 (0.85-1.54)	0.98 (0.95-1.01)	1.01 (0.96-1.06)
55-64	NA	0.78 (0.51-1.20)	0.84 (0.57-1.24)	NA	NA
>= 65	NA	0.78 (0.45-1.34)	NA	NA	NA
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.01 (0.95-1.07)	1.34 (0.57-3.17)	1.86 (1.24-2.78)	1.13 (1.07-1.20)	1.86 (1.12-3.10)
Secondary education or further	0.87 (0.81-0.93)	1.41 (0.59-3.38)	4.21 (2.87-6.18)	0.88 (0.82-0.93)	1.68 (0.99-2.83)
Household wealth quintile					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.23 (1.13-1.34)	0.96 (0.61-1.53)	1.56 (0.66-3.68)	1.11 (1.05-1.17)	1.00 (0.92-1.08)
3	1.39 (1.28-1.51)	1.21 (0.78-1.88)	2.97 (1.31-6.75)	1.20 (1.14-1.27)	1.02 (0.94-1.11)
4	1.76 (1.62-1.92)	1.19 (0.77-1.86)	4.51 (2.11-9.62)	1.20 (1.13-1.27)	0.99 (0.92-1.08)
5 (richest)	2.00 (1.84-2.17)	1.35 (0.86-2.12)	10.02 (4.79-20.95)	1.25 (1.19-1.31)	1.08 (0.98-1.18)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	10.36 (9.31-11.53)	1.86 (1.19-2.89)	2.30 (0.90-5.88)	7.95 (7.25-8.71)	1.06 (0.98-1.16)
Separated	9.54 (8.52-10.69)	0.71 (0.26-1.93)	1.41 (0.46-4.29)	6.76 (6.14-7.44)	1.19 (1.11-1.26)
Divorced	14.61 (12.95-16.50)	2.52 (1.34-4.74)	4.23 (0.61-29.32)	8.69 (7.85-9.62)	NA
Widowed	10.82 (9.57-12.22)	1.23 (0.66-2.32)	0.76 (0.17-3.42)	7.34 (6.60-8.17)	NA
Cohabitating	7.82 (6.98-8.75)	1.23 (0.76-1.98)	2.21 (0.78-6.27)	6.48 (5.91-7.12)	0.76 (0.7-0.82)
Place of residence[b]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.29 (1.22-1.36)	NA	3.20 (2.33-4.40)	1.07 (1.04-1.11)	1.09 (0.99-1.19)
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.39 (1.25-1.55)	0.33 (0.12-0.94)	1.12 (0.54-2.32)	1.19 (1.09-1.30)	1.19 (1.09-1.31)
Covariate-adjusted regressions[c]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.29 (0.27-0.31)	0.24 (0.12-0.48)	NA	0.52 (0.49-0.54)	0.41 (0.36-0.46)
25-34	0.84 (0.82-0.87)	0.77 (0.50-1.17)	NA	0.93 (0.91-0.95)	0.92 (0.89-0.95)
45-54	1.01 (0.98-1.04)	1.32 (0.90-1.93)	1.51 (1.13-2.02)	0.98 (0.96-1.01)	1.02 (0.98-1.07)
55-64	NA	0.96 (0.58-1.59)	1.39 (0.92-2.12)	NA	NA
>= 65	NA	0.83 (0.42-1.63)	NA	NA	NA
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.20 (1.14-1.26)	1.42 (0.59-3.45)	1.43 (0.93-2.20)	1.21 (1.15-1.27)	1.52 (0.97-2.39)
Secondary education or further	1.23 (1.17-1.30)	1.60 (0.66-3.88)	2.32 (1.36-3.98)	1.27 (1.20-1.35)	1.68 (1.08-2.60)

eTable 18. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Latin America and the Caribbean: Guatemala to Jamaica (continued)

Variable	Guatemala RR (95% CI)	Guyana RR (95% CI)	Haiti RR (95% CI)	Honduras RR (95% CI)	Jamaica RR (95% CI)
Covariate-adjusted regressions[c]					
Household wealth quintile					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.21 (1.12-1.31)	0.95 (0.60-1.51)	1.49 (0.63-3.55)	1.10 (1.06-1.15)	1.02 (0.96-1.08)
3	1.32 (1.22-1.42)	1.20 (0.78-1.86)	2.53 (1.08-5.91)	1.18 (1.13-1.24)	1.06 (1.00-1.12)
4	1.59 (1.48-1.71)	1.27 (0.82-1.99)	2.97 (1.32-6.68)	1.19 (1.13-1.26)	1.05 (0.99-1.11)
5 (richest)	1.78 (1.65-1.92)	1.37 (0.81-2.32)	5.13 (2.18-12.07)	1.24 (1.17-1.31)	1.13 (1.05-1.22)
Relationship status[d]					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	5.50 (4.90-6.17)	1.22 (0.74-2.00)	NA	5.34 (4.83-5.89)	1.06 (0.99-1.13)
Separated	5.03 (4.46-5.68)	0.43 (0.14-1.29)	NA	4.86 (4.39-5.39)	1.09 (1.03-1.16)
Divorced	5.38 (4.70-6.14)	1.20 (0.61-2.36)	NA	5.13 (4.59-5.72)	NA
Widowed	5.37 (4.73-6.10)	0.71 (0.34-1.49)	NA	4.99 (4.46-5.58)	NA
Cohabitating	5.26 (4.69-5.91)	0.96 (0.52-1.76)	NA	5.09 (4.62-5.62)	0.95 (0.89-1)
Place of residence[b]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	0.99 (0.94-1.03)	NA	1.32 (0.93-1.87)	1.03 (1.00-1.06)	1.03 (0.95-1.12)
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.23 (1.12-1.34)	0.31 (0.09-1.00)	1.48 (0.79-2.79)	1.19 (1.09-1.29)	1.03 (0.96-1.12)
Observations[e]	25,555	1,256	1,368	22,009	7,464

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Place of residence is missing for Guyana.

[c] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[d] For Haiti, relationship status is missing for women aged 55 to 64 years and is, thus, excluded from the covariate-adjusted regression for Haiti.

[e] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 19. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Latin America and the Caribbean: Mexico to St. Vincent & the Grenadines

	Mexico	Nicaragua	Paraguay	Peru	SVG
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-unadjusted regressions[a]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.24 (0.13-0.43)	0.37 (0.35-0.39)	0.30 (0.28-0.33)	0.29 (0.27-0.32)	0.43 (0.34-0.55)
25-34	0.85 (0.73-0.98)	0.95 (0.92-0.97)	0.90 (0.87-0.94)	0.87 (0.84-0.90)	0.89 (0.79-1.01)
45-54	0.99 (0.89-1.11)	1.00 (0.97-1.03)	NA	0.96 (0.92-1.01)	1.03 (0.94-1.12)
55-64	1.00 (0.93-1.09)	NA	NA	NA	0.95 (0.84-1.08)
>= 65	0.88 (0.80-0.95)	NA	NA	NA	0.71 (0.56-0.90)
Education[b]					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.28 (1.02-1.61)	0.97 (0.92-1.01)	NA	1.09 (0.96-1.24)	2.93 (1.68-5.09)
Secondary education or further	1.02 (0.81-1.30)	0.82 (0.77-0.86)	NA	1.06 (0.94-1.21)	2.36 (1.36-4.11)
Household wealth quintile[c]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	NA	NA	NA	1.15 (1.07-1.23)	0.98 (0.82-1.17)
3	NA	NA	NA	1.31 (1.21-1.41)	1.07 (0.90-1.27)
4	NA	NA	NA	1.35 (1.25-1.45)	1.10 (0.96-1.27)
5 (richest)	NA	NA	NA	1.47 (1.37-1.58)	1.09 (0.94-1.27)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	2.79 (2.07-3.76)	6.44 (5.67-7.31)	4.13 (3.74-4.56)	4.12 (3.80-4.47)	1.38 (1.27-1.49)
Separated	2.53 (1.81-3.54)	6.04 (5.31-6.86)	3.64 (3.22-4.11)	3.61 (3.31-3.95)	1.08 (0.78-1.50)
Divorced	NA	7.04 (6.15-8.06)	4.49 (3.91-5.16)	5.50 (5.03-6.01)	1.32 (1.18-1.47)
Widowed	2.62 (1.96-3.50)	5.99 (5.07-7.07)	3.88 (3.02-4.98)	3.69 (3.02-4.51)	1.29 (1.02-1.62)
Cohabitating	2.13 (1.46-3.11)	6.03 (5.32-6.82)	3.60 (3.25-3.99)	3.57 (3.30-3.87)	1.33 (1.15-1.54)
Place of residence[d]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.03 (0.91-1.16)	1.11 (1.06-1.16)	1.21 (1.12-1.30)	1.22 (1.15-1.29)	NA
Tobacco smoking[e]					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.01 (0.84-1.21)	NA	NA	1.09 (0.99-1.21)	1.03 (0.78-1.36)
Covariate-adjusted regressions[f]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.30 (0.17-0.54)	0.63 (0.59-0.66)	0.53 (0.48-0.58)	0.50 (0.46-0.55)	0.45 (0.34-0.60)
25-34	0.90 (0.80-1.02)	0.99 (0.97-1.02)	0.98 (0.95-1.02)	0.94 (0.91-0.98)	0.91 (0.82-1.01)
45-54	0.95 (0.85-1.07)	1.00 (0.96-1.03)	NA	0.94 (0.90-0.99)	1.01 (0.91-1.12)
55-64	0.99 (0.91-1.08)	NA	NA	NA	0.96 (0.80-1.16)
>= 65	0.88 (0.80-0.97)	NA	NA	NA	0.67 (0.47-0.94)
Education[b]					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.23 (1.00-1.50)	1.08 (1.03-1.13)	NA	1.11 (0.98-1.26)	11.20 (1.03-121.91)
Secondary education or further	1.26 (1.01-1.55)	1.14 (1.09-1.20)	NA	1.24 (1.09-1.40)	11.16 (0.99-125.76)

eTable 19. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Latin America and the Caribbean: Mexico to St. Vincent & the Grenadines (continued)

	Mexico	Nicaragua	Paraguay	Peru	SVG
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-adjusted regressions[f]					
Household wealth quintile[c]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	NA	NA	NA	1.15 (1.07-1.24)	0.95 (0.79-1.14)
3	NA	NA	NA	1.31 (1.21-1.42)	1.07 (0.85-1.33)
4	NA	NA	NA	1.39 (1.27-1.52)	1.04 (0.90-1.19)
5 (richest)	NA	NA	NA	1.56 (1.43-1.70)	1.00 (0.86-1.16)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.97 (1.49-2.60)	4.86 (4.25-5.56)	2.77 (2.47-3.11)	2.96 (2.70-3.25)	1.18 (1.04-1.33)
Separated	1.71 (1.29-2.28)	4.76 (4.15-5.45)	2.57 (2.25-2.94)	2.69 (2.44-2.97)	0.92 (0.60-1.40)
Divorced	NA	4.79 (4.16-5.52)	2.81 (2.47-3.20)	3.31 (2.96-3.70)	1.04 (0.93-1.16)
Widowed	1.88 (1.45-2.43)	4.39 (3.70-5.21)	2.46 (1.93-3.14)	2.74 (2.25-3.35)	1.10 (0.75-1.60)
Cohabitating	1.76 (1.29-2.41)	4.95 (4.35-5.64)	2.69 (2.40-3.01)	2.93 (2.68-3.20)	1.14 (0.97-1.33)
Place of residence[d]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.05 (0.94-1.17)	1.11 (1.07-1.15)	1.16 (1.10-1.23)	1.01 (0.94-1.07)	NA
Tobacco smoking[e]					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.07 (0.90-1.28)	NA	NA	1.16 (1.06-1.27)	0.91 (0.58-1.43)
Observations[g]	2,792	15,257	6,536	20,808	1,398

Abbreviations: RR, risk ratio; NA, not applicable; SVG, St. Vincent & the Grenadines.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Education is missing for Paraguay

[c] Wealth quintiles are missing for Mexico, Nicaragua and Paraguay.

[d] Place of residence is missing for St. Vincent & the Grenadines.

[e] Tobacco smoking is missing for Nicaragua and Paraguay.

[f] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[g] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 20. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Middle East & Northern Africa

Variable	Algeria RR (95% CI)	Egypt RR (95% CI)	Iran RR (95% CI)	Iraq RR (95% CI)	Lebanon RR (95% CI)	Morocco RR (95% CI)
Covariate-unadjusted regressions[a]						
Age (years)[b]						
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.14 (0.08-0.25)	NA	0.25 (0.22-0.29)	0.58 (0.35-0.98)	0.10 (0.02-0.57)	0.32 (0.19-0.53)
25-34	0.52 (0.41-0.67)	0.43 (0.08-2.39)	0.71 (0.68-0.75)	0.96 (0.63-1.47)	0.87 (0.48-1.56)	0.62 (0.45-0.84)
45-54	1.29 (1.06-1.58)	2.11 (0.53-8.33)	0.94 (0.90-0.99)	1.16 (0.78-1.71)	1.53 (1.04-2.25)	1.15 (0.89-1.48)
55-64	0.98 (0.76-1.26)	2.86 (0.72-11.37)	0.77 (0.72-0.81)	0.52 (0.29-0.94)	0.98 (0.56-1.70)	1.18 (0.89-1.55)
>= 65	0.81 (0.54-1.22)	NA	0.38 (0.34-0.42)	0.87 (0.41-1.85)	1.25 (0.48-3.29)	0.40 (0.26-0.64)
Education						
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.10 (0.83-1.46)	0.82 (0.18-3.67)	1.98 (1.83-2.15)	1.44 (0.93-2.24)	2.04 (0.63-6.58)	0.98 (0.75-1.28)
Secondary education or further	1.00 (0.78-1.28)	0.73 (0.22-2.40)	2.00 (1.84-2.16)	0.80 (0.51-1.27)	5.26 (1.78-15.54)	1.29 (1.03-1.62)
Household wealth quintile[c]						
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.10 (0.78-1.55)	NA	1.28 (1.21-1.35)	NA	NA	2.86 (1.39-5.88)
3	1.05 (0.77-1.43)	NA	1.66 (1.53-1.80)	NA	NA	2.33 (1.09-4.97)
4	1.30 (0.94-1.82)	NA	1.69 (1.30-2.19)	NA	NA	3.04 (1.45-6.37)
5 (richest)	1.42 (1.05-1.90)	NA	1.63 (0.97-2.75)	NA	NA	4.57 (2.19-9.52)
Relationship status[d]						
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	10.51 (5.51-20.08)	1.16 (0.38-3.51)	26.59 (18.49-38.25)	7.88 (2.74-22.65)	6.83 (2.98-15.64)	4.65 (2.46-8.79)
Separated	12.14 (4.11-35.81)	NA	22.46 (15.42-32.72)	6.29 (1.34-29.44)	6.91 (1.43-33.47)	NA
Divorced	9.48 (4.48-20.05)	NA	NA	4.27 (0.75-24.18)	4.68 (1.48-14.85)	5.40 (2.53-11.53)
Widowed	9.76 (4.77-19.98)	NA	13.46 (9.24-19.61)	5.79 (1.80-18.65)	5.17 (1.77-15.12)	2.80 (1.38-5.65)
Cohabitating	10.51 (5.51-20.08)	NA	26.59 (18.49-38.25)	7.88 (2.74-22.65)	6.83 (2.98-15.64)	4.65 (2.46-8.79)
Place of residence[e]						
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.56 (1.19-2.05)	2.34 (0.76-7.18)	1.32 (1.24-1.41)	0.67 (0.44-1.03)	NA	1.88 (1.46-2.41)
Tobacco smoking[f]						
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.69 (0.66-4.33)	0 (0-0)	0.86 (0.76-0.96)	0.79 (0.31-2.01)	0.97 (0.67-1.42)	2.52 (0.95-6.71)
Covariate-adjusted regressions[g]						
Age (years)[b]						
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.38 (0.19-0.77)	NA	0.46 (0.40-0.53)	0.83 (0.49-1.39)	0.17 (0.03-0.87)	0.51 (0.30-0.88)
25-34	0.50 (0.37-0.67)	0.39 (0.06-2.47)	0.80 (0.75-0.84)	1.03 (0.68-1.55)	1.08 (0.65-1.81)	0.70 (0.51-0.96)
45-54	1.46 (1.16-1.83)	2.03 (0.47-8.71)	1.00 (0.94-1.06)	1.19 (0.80-1.78)	1.58 (1.06-2.38)	1.24 (0.94-1.62)
55-64	1.09 (0.81-1.47)	2.72 (0.60-12.40)	0.93 (0.86-1.00)	0.62 (0.33-1.14)	1.03 (0.62-1.71)	1.40 (1.03-1.91)
>= 65	1.03 (0.64-1.66)	NA	0.58 (0.51-0.66)	1.19 (0.63-2.23)	1.53 (0.66-3.55)	0.65 (0.39-1.07)
Education						
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	0.99 (0.73-1.34)	0.82 (0.19-3.60)	1.69 (1.53-1.86)	1.41 (0.94-2.12)	2.01 (0.65-6.20)	1.20 (0.72-2.00)
Secondary education or further	1.31 (0.97-1.77)	1.13 (0.30-4.19)	1.96 (1.77-2.17)	0.95 (0.60-1.50)	6.56 (2.35-18.31)	1.41 (0.96-2.08)

eTable 20. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Middle East & Northern Africa (continued)

Variable	Algeria RR (95% CI)	Egypt RR (95% CI)	Iran RR (95% CI)	Iraq RR (95% CI)	Lebanon RR (95% CI)	Morocco RR (95% CI)
Covariate-adjusted regressions[g]						
Household wealth quintile[c]						
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.06 (0.76-1.49)	NA	1.07 (1.02-1.13)	NA	NA	2.26 (1.07-4.78)
3	0.97 (0.71-1.34)	NA	1.22 (1.13-1.31)	NA	NA	1.84 (0.82-4.11)
4	1.13 (0.81-1.58)	NA	1.30 (1.08-1.56)	NA	NA	2.17 (1.00-4.72)
5 (richest)	1.28 (0.97-1.69)	NA	1.51 (0.88-2.57)	NA	NA	2.78 (1.29-5.99)
Relationship status[d]						
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	10.31 (4.02-26.40)	1.27 (0.37-4.34)	24.25 (15.74-37.34)	6.75 (2.23-20.40)	6.24 (2.76-14.14)	3.12 (1.59-6.11)
Separated	12.82 (3.80-43.26)	NA	20.70 (13.29-32.22)	5.03 (0.89-28.33)	5.14 (0.62-42.75)	NA
Divorced	7.02 (2.47-19.99)	NA	NA	3.72 (0.62-22.09)	4.73 (1.89-11.83)	3.33 (1.52-7.29)
Widowed	7.57 (2.72-21.04)	NA	18.96 (12.16-29.58)	5.53 (1.70-18.01)	6.17 (2.24-16.97)	2.40 (1.13-5.10)
Cohabitating	10.31 (4.02-26.40)	NA	24.25 (15.74-37.34)	6.75 (2.23-20.40)	6.24 (2.76-14.14)	3.12 (1.59-6.11)
Place of residence[e]						
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.57 (1.10-2.23)	2.02 (0.61-6.69)	1.07 (1.00-1.15)	0.70 (0.46-1.06)	NA	1.52 (1.15-2.01)
Tobacco smoking[f]						
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	2.33 (0.87-6.29)	0 (0-0)	0.91 (0.81-1.03)	0.87 (0.33-2.33)	0.92 (0.67-1.26)	2.09 (0.80-5.51)
Observations[h]	2,675	8,684	10,508	2,305	1,751	2,852

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] For Egypt, the age groups are 15-34, 35-44 (ref.), 45-54, and >= 55.

[c] Wealth quintiles are missing for Egypt, Iraq and Lebanon.

[d] Place of residence is missing for Lebanon.

[e] For Egypt, the reference category for relationship status is currently not married.

[f] For Egypt, there is a 0% screening prevalence among women who currently smoke.

[g] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[h] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 21. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in South Asia, East Asia, and Pacific: Bhutan to Indonesia

	Bhutan	China	India	Indonesia
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-unadjusted regressions[a]				
Age (years)				
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.31 (0.23-0.44)	0.09 (0.03-0.32)	0.33 (0.32-0.34)	0.08 (0.05-0.13)
25-34	0.89 (0.79-1.01)	0.98 (0.70-1.38)	0.91 (0.90-0.93)	0.50 (0.39-0.63)
45-54	0.85 (0.73-0.98)	0.97 (0.85-1.11)	1.03 (1.01-1.05)	1.25 (1.02-1.53)
55-64	0.50 (0.36-0.70)	0.64 (0.54-0.77)	NA	1.19 (0.92-1.55)
>= 65	0.10 (0.03-0.32)	0.48 (0.41-0.55)	NA	0.48 (0.32-0.72)
Education				
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	0.58 (0.47-0.73)	1.99 (1.55-2.57)	0.94 (0.92-0.96)	4.57 (3.32-6.30)
Household wealth quintile[b]				
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.02 (0.86-1.20)	1.77 (1.05-2.97)	1.32 (1.28-1.36)	NA
3	1.04 (0.85-1.26)	2.65 (1.73-4.04)	1.70 (1.64-1.75)	NA
4	1.14 (0.94-1.39)	2.55 (1.70-3.84)	1.97 (1.90-2.03)	NA
5 (richest)	1.11 (0.92-1.33)	3.95 (2.71-5.75)	2.24 (2.16-2.31)	NA
Relationship status				
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	7.42 (3.23-17.00)	5.28 (2.10-13.25)	12.06 (11.37-12.79)	18.40 (8.83-38.33)
Separated	10.97 (4.66-25.83)	4.68 (1.97-11.15)	10.06 (9.08-11.14)	12.35 (3.25-46.95)
Divorced	7.33 (3.17-16.95)	NA	9.04 (7.80-10.47)	18.51 (7.83-43.77)
Widowed	3.45 (1.39-8.57)	3.33 (1.24-8.91)	10.76 (10.06-11.52)	13.74 (6.28-30.08)
Cohabitating	NA	9.74 (2.49-38.18)	NA	0 (0-0)
Place of residence				
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.14 (0.99-1.32)	2.18 (1.63-2.90)	1.22 (1.19-1.26)	4.01 (2.93-5.50)
Tobacco smoking				
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0.92 (0.61-1.38)	0.77 (0.41-1.45)	0.97 (0.78-1.20)	0.82 (0.48-1.41)
Covariate-adjusted regressions[c]				
Age (years)				
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.46 (0.33-0.64)	0.11 (0.02-0.62)	0.74 (0.73-0.76)	0.13 (0.07-0.23)
25-34	0.92 (0.82-1.04)	1.01 (0.71-1.45)	0.95 (0.93-0.97)	0.45 (0.35-0.58)
45-54	0.85 (0.74-0.99)	0.98 (0.84-1.14)	1.02 (1.00-1.04)	1.77 (1.44-2.17)
55-64	0.57 (0.42-0.78)	0.76 (0.65-0.90)	NA	2.34 (1.83-3.00)
>= 65	0.13 (0.04-0.40)	0.61 (0.50-0.74)	NA	1.68 (1.13-2.48)

eTable 21. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in South Asia, East Asia, and Pacific: Bhutan to Indonesia (continued)

	Bhutan	China	India	Indonesia
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-adjusted regressions[c]				
Education				
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	0.65 (0.54-0.80)	1.27 (1.01-1.59)	1.05 (1.03-1.07)	6.67 (4.71-9.45)
Household wealth quintile[b]				
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	0.98 (0.83-1.15)	1.76 (1.06-2.92)	1.34 (1.30-1.38)	NA
3	1.02 (0.84-1.23)	2.29 (1.53-3.45)	1.73 (1.68-1.79)	NA
4	1.07 (0.89-1.28)	2.11 (1.44-3.11)	2.04 (1.97-2.11)	NA
5 (richest)	1.10 (0.91-1.34)	2.68 (1.82-3.94)	2.36 (2.27-2.45)	NA
Relationship status				
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	5.19 (2.02-13.28)	2.62 (1.16-5.93)	10.17 (9.56-10.83)	7.20 (3.31-15.66)
Separated	7.42 (2.79-19.75)	2.20 (0.85-5.68)	8.96 (8.08-9.94)	4.78 (1.34-17.08)
Divorced	5.33 (2.06-13.80)	NA	7.63 (6.58-8.85)	7.42 (3.13-17.59)
Widowed	3.29 (1.18-9.20)	2.66 (1.10-6.41)	9.00 (8.39-9.66)	5.06 (2.22-11.57)
Cohabitating	NA	4.08 (1.62-10.28)	NA	0 (0-0)
Place of residence				
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.18 (1.02-1.36)	1.89 (1.36-2.62)	0.92 (0.89-0.95)	2.35 (1.74-3.17)
Tobacco smoking				
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.03 (0.74-1.44)	0.91 (0.54-1.55)	0.99 (0.76-1.29)	0.74 (0.45-1.23)
Observations[d]	1,653	7,437	677,463	15,635

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Wealth quintiles are missing for Indonesia.

[c] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[d] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 22. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in South Asia, East Asia, and Pacific: Nepal to Timor-Leste

	Nepal	Philippines	Sri Lanka	Timor-Leste
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-unadjusted regressions[a]				
Age (years)				
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.28 (0.09-0.86)	0.65 (0.43-0.96)	0.01 (0.00-0.02)	0.49 (0.10-2.40)
25-34	0.94 (0.44-2.01)	0.92 (0.60-1.41)	0.11 (0.10-0.13)	0.32 (0.10-1.01)
45-54	1.24 (0.54-2.80)	0.69 (0.39-1.22)	0.78 (0.73-0.84)	0.26 (0.03-2.20)
55-64	0.37 (0.09-1.62)	NA	NA	0.43 (0.05-3.65)
>= 65	0.27 (0.04-2.00)	NA	NA	0 (0-0)
Education				
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	2.22 (1.20-4.10)	3.07 (1.50-6.30)	1.57 (1.39-1.79)	0.53 (0.12-2.23)
Household wealth quintile[b]				
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	NA	1.29 (0.81-2.05)	1.65 (1.46-1.87)	NA
3	NA	2.22 (1.25-3.94)	1.84 (1.63-2.08)	4.79 (1.52-15.11)
4	NA	2.16 (1.18-3.97)	1.96 (1.74-2.21)	NA
5 (richest)	NA	4.81 (2.90-8.00)	2.28 (2.02-2.57)	1.20 (0.25-5.77)
Relationship status				
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	3.95 (0.97-16.11)	1.23 (0.90-1.70)	NA	0.27 (0.11-0.70)
Separated	NA	1.42 (0.72-2.77)	0.66 (0.53-0.82)	0 (0-0)
Divorced	0 (0-0)	1.92 (0.53-7.00)	NA	0 (0-0)
Widowed	0 (0-0)	2.26 (0.90-5.67)	0.92 (0.75-1.13)	0 (0-0)
Cohabitating	NA	1.32 (0.87-2.00)	NA	0 (0-0)
Place of residence[c]				
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	2.25 (1.24-4.08)	0.80 (0.52-1.23)	NA	NA
Tobacco smoking[d]				
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0.65 (0.20-2.07)	0.79 (0.39-1.62)	NA	2.59 (0.57-11.65)
Covariate-adjusted regressions[e]				
Age (years)				
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.27 (0.07-1.02)	0.80 (0.52-1.23)	0.01 (0.00-0.02)	0.56 (0.09-3.46)
25-34	0.70 (0.32-1.56)	1.02 (0.67-1.55)	0.11 (0.09-0.12)	0.40 (0.11-1.51)
45-54	1.65 (0.71-3.83)	0.68 (0.38-1.21)	0.84 (0.78-0.90)	0.22 (0.03-1.63)
55-64	0.61 (0.13-2.85)	NA	NA	0.43 (0.05-3.87)
>= 65	0 (0-0)	NA	NA	0 (0-0)
Education				
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	2.94 (1.32-6.57)	1.71 (0.82-3.59)	1.82 (1.61-2.07)	0.44 (0.10-1.89)

eTable 22. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in South Asia, East Asia, and Pacific: Nepal to Timor-Leste (continued)

Variable	Nepal RR (95% CI)	Philippines RR (95% CI)	Sri Lanka RR (95% CI)	Timor-Leste RR (95% CI)
Covariate-adjusted regressions[e]				
Household wealth quintile[b]				
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	NA	1.31 (0.80-2.12)	1.41 (1.26-1.59)	NA
3	NA	2.37 (1.29-4.34)	1.51 (1.35-1.69)	5.00 (1.51-16.54)
4	NA	2.57 (1.32-4.97)	1.54 (1.38-1.73)	NA
5 (richest)	NA	6.11 (3.46-10.8)	1.59 (1.42-1.79)	1.78 (0.48-6.57)
Relationship status				
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	2.78 (0.53-14.64)	1.25 (0.82-1.90)	NA	0.21 (0.06-0.67)
Separated	NA	1.35 (0.66-2.75)	0.62 (0.50-0.77)	0 (0-0)
Divorced	0 (0-0)	1.33 (0.33-5.30)	NA	0 (0-0)
Widowed	0 (0-0)	3.00 (1.11-8.11)	0.70 (0.57-0.85)	0 (0-0)
Cohabitating	NA	1.63 (1.03-2.58)	NA	0 (0-0)
Place of residence[c]				
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.72 (0.93-3.17)	0.56 (0.35-0.88)	NA	NA
Tobacco smoking[d]				
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.18 (0.34-4.13)	0.75 (0.36-1.59)	NA	2.15 (0.45-10.30)
Observations[f]	997	24,831	18,288	1,007

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Wealth quintiles are missing for Nepal. For Timor-Leste, we merged the 1st and 2nd quintile as well as the 4th and 5th in order to get interpretable results (due to the extremely low prevalence in each quintile).

[c] Place of residence is missing for Sri Lanka and Timor-Leste.

[d] Tobacco smoking is missing for Sri Lanka.

[e] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[f] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 23. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Sub-Saharan Africa: Benin to Kenya

	Benin	Botswana	Côte d'Ivoire	Eswatini	Ghana	Kenya
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-unadjusted regressions[a]						
Age (years)						
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.55 (0.11-2.77)	0.21 (0.16-0.28)	0.18 (0.08-0.40)	0.23 (0.18-0.30)	1.38 (0.34-5.60)	0.27 (0.13-0.59)
25-34	0.38 (0.10-1.45)	0.71 (0.60-0.83)	0.39 (0.19-0.78)	0.16 (0.09-0.28)	1.68 (0.62-4.59)	0.73 (0.51-1.04)
45-54	0.36 (0.07-1.93)	0.96 (0.79-1.17)	1.05 (0.37-2.98)	0.84 (0.56-1.26)	0.69 (0.20-2.37)	0.99 (0.63-1.56)
55-64	0.44 (0.06-3.26)	0.71 (0.57-0.89)	NA	0.92 (0.62-1.37)	0.48 (0.20-1.13)	0.51 (0.30-0.86)
>= 65	0 (0-0)	0.38 (0.23-0.62)	NA	0.55 (0.31-0.97)	0.40 (0.17-0.96)	0.35 (0.16-0.79)
Education						
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	2.32 (0.57-9.41)	1.24 (0.83-1.85)	3.81 (1.95-7.44)	1.79 (0.84-3.79)	3.95 (1.21-12.89)	4.55 (2.20-9.39)
Secondary education or further	6.05 (2.07-17.71)	1.53 (1.09-2.15)	5.35 (2.84-10.08)	2.38 (1.32-4.29)	4.36 (1.69-11.22)	5.83 (2.79-12.15)
Household wealth quintile						
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	2.88 (0.53-15.6)	1.17 (0.88-1.55)	1.54 (0.39-6.09)	0.98 (0.48-1.98)	2.43 (0.50-11.86)	1.88 (1.05-3.37)
3	3.22 (0.42-24.76)	1.24 (0.94-1.62)	3.21 (1.11-9.27)	1.01 (0.52-1.94)	0.65 (0.13-3.30)	2.14 (1.24-3.68)
4	1.26 (0.17-9.06)	1.55 (1.20-2.00)	7.89 (3.07-20.30)	1.32 (0.68-2.58)	2.65 (0.60-11.80)	3.69 (1.91-7.13)
5 (richest)	6.84 (1.28-36.43)	1.71 (1.37-2.14)	14.99 (6.30-35.70)	2.50 (1.36-4.61)	3.23 (0.81-12.89)	3.44 (1.83-6.46)
Relationship status						
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	2.85 (0.36-22.72)	1.95 (1.70-2.23)	1.45 (0.68-3.09)	2.20 (1.59-3.06)	0.63 (0.23-1.73)	1.41 (0.81-2.46)
Separated	0 (0-0)	2.89 (1.95-4.28)	2.02 (0.53-7.67)	4.50 (2.51-8.07)	0.20 (0.06-0.73)	2.34 (1.19-4.61)
Divorced	0 (0-0)	2.07 (1.40-3.07)	1.24 (0.16-9.81)	1.52 (0.36-6.49)	NA	3.56 (1.19-10.67)
Widowed	2.20 (0.14-35.19)	1.38 (1.05-1.80)	1.39 (0.18-10.98)	2.02 (1.28-3.20)	0.18 (0.05-0.60)	1.28 (0.68-2.42)
Cohabitating	0 (0-0)	1.21 (0.96-1.54)	2.18 (1.05-4.52)	0.86 (0.35-2.12)	1.22 (0.25-6.03)	1.41 (0.32-6.14)
Place of residence[b]						
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	3.62 (1.08-12.14)	NA	4.63 (2.61-8.19)	NA	3.37 (1.22-9.26)	1.38 (0.86-2.20)
Tobacco smoking[c]						
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0 (0-0)	0.80 (0.54-1.18)	14.25 (4.90-41.43)	1.80 (0.77-4.24)	0.27 (0.04-2.04)	1.14 (0.19-6.71)
Covariate-adjusted regressions[d]						
Age (years)						
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.94 (0.17-5.25)	0.20 (0.13-0.29)	0.15 (0.06-0.43)	0.23 (0.12-0.43)	1.51 (0.29-7.78)	0.27 (0.11-0.65)
25-34	0.35 (0.09-1.29)	0.74 (0.63-0.88)	0.35 (0.17-0.71)	0.83 (0.58-1.19)	1.42 (0.43-4.71)	0.69 (0.47-1.00)
45-54	0.19 (0.02-1.85)	0.96 (0.79-1.16)	1.37 (0.49-3.83)	1.18 (0.75-1.84)	0.88 (0.26-3.01)	1.00 (0.69-1.46)
55-64	0.34 (0.02-7.43)	0.85 (0.66-1.09)	NA	0.89 (0.47-1.68)	0.93 (0.42-2.08)	0.66 (0.37-1.16)
>= 65	0 (0-0)	0.58 (0.33-1.03)	NA	0.50 (0.20-1.24)	1.31 (0.52-3.35)	0.48 (0.21-1.10)
Education						
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.84 (0.44-7.63)	1.38 (0.80-2.36)	3.05 (1.47-6.34)	1.66 (0.73-3.81)	2.92 (0.92-9.23)	3.54 (1.67-7.47)
Secondary education or further	4.43 (1.80-10.93)	1.98 (1.23-3.17)	3.57 (1.80-7.07)	2.81 (1.47-5.39)	3.12 (1.07-9.08)	4.66 (2.06-10.53)

eTable 23. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Sub-Saharan Africa: Benin to Kenya (continued)

Variable	Benin RR (95% CI)	Botswana RR (95% CI)	Côte d'Ivoire RR (95% CI)	Eswatini RR (95% CI)	Ghana RR (95% CI)	Kenya RR (95% CI)
Covariate-adjusted regressions[e]						
Household wealth quintile[c]						
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	2.75 (0.47-16.19)	1.10 (0.85-1.42)	1.42 (0.36-5.57)	0.95 (0.49-1.83)	2.11 (0.48-9.39)	1.29 (0.73-2.29)
3	2.74 (0.34-21.76)	1.17 (0.91-1.50)	2.61 (0.80-8.50)	0.89 (0.46-1.71)	0.51 (0.11-2.33)	1.40 (0.81-2.41)
4	0.83 (0.11-6.50)	1.29 (1.02-1.64)	4.98 (1.39-17.89)	1.09 (0.56-2.10)	1.24 (0.32-4.83)	2.24 (1.07-4.70)
5 (richest)	3.92 (0.87-17.68)	1.40 (1.13-1.75)	7.73 (2.24-26.64)	1.93 (1.10-3.41)	1.22 (0.28-5.34)	2.20 (1.18-4.11)
Relationship status						
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	7.59 (0.54-105.82)	1.18 (0.99-1.40)	1.17 (0.45-3.02)	0.96 (0.66-1.40)	1.13 (0.28-4.58)	1.21 (0.70-2.10)
Separated	0 (0-0)	2.14 (1.71-2.68)	0.95 (0.23-3.94)	2.30 (1.24-4.27)	0.32 (0.06-1.76)	1.69 (0.83-3.44)
Divorced	0 (0-0)	1.05 (0.68-1.64)	0.62 (0.07-5.25)	0.21 (0.03-1.74)	NA	2.77 (0.97-7.91)
Widowed	30.21 (0.47-1927.26)	1.22 (0.85-1.73)	0.67 (0.08-5.82)	1.04 (0.65-1.67)	0.40 (0.07-2.29)	1.35 (0.74-2.48)
Cohabitating	0 (0-0)	1.05 (0.81-1.36)	1.78 (0.71-4.50)	0.84 (0.29-2.50)	1.16 (0.22-5.98)	1.72 (0.42-7.11)
Place of residence[b]						
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	3.30 (1.09-9.98)	NA	1.39 (0.59-3.28)	NA	3.03 (1.01-9.10)	0.92 (0.58-1.46)
Tobacco smoking[c]						
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0 (0-0)	0.93 (0.59-1.47)	9.1 (4.51-18.39)	1.16 (0.43-3.13)	0.11 (0.01-0.99)	1.71 (0.56-5.20)
Observations[h]	2,544	1,878	9,796	1,390	2,366	2,679

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Place of residence is missing for Botswana and Eswatini.

[c] For Benin, there is a 0% screening prevalence among women who currently smoke.

[d] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[e] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 24. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Sub-Saharan Africa: Lesotho to Zimbabwe

	Lesotho	Namibia	South Africa	Sudan	Zimbabwe
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-unadjusted regressions[a]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.17 (0.15-0.21)	0.43 (0.40-0.45)	0.53 (0.49-0.58)	0.02 (0.01-0.03)	0.21 (0.19-0.23)
25-34	0.25 (0.19-0.35)	0.21 (0.18-0.24)	0.16 (0.13-0.20)	0.80 (0.35-1.81)	0.13 (0.10-0.17)
45-54	0.68 (0.54-0.86)	0.72 (0.66-0.78)	0.66 (0.58-0.74)	0.65 (0.28-1.51)	0.79 (0.70-0.89)
55-64	1.17 (0.88-1.55)	1.03 (0.92-1.15)	1.06 (0.95-1.19)	1.13 (0.59-2.18)	1.15 (0.95-1.40)
>= 65	NA	NA	0.98 (0.87-1.10)	0.51 (0.18-1.45)	NA
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	5.80 (0.80-42.03)	1.21 (0.93-1.57)	1.32 (1.07-1.64)	1.07 (0.38-3.01)	0.90 (0.40-2.05)
Secondary education or further	12.74 (1.79-90.74)	1.73 (1.35-2.23)	1.59 (1.32-1.91)	1.72 (0.95-3.09)	1.59 (0.71-3.56)
Household wealth quintile					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.98 (1.26-3.11)	1.58 (1.33-1.87)	1.20 (1.01-1.42)	0.59 (0.20-1.74)	1.21 (0.88-1.66)
3	2.88 (1.89-4.39)	1.78 (1.49-2.13)	1.40 (1.17-1.69)	0.90 (0.34-2.42)	2.88 (2.19-3.78)
4	3.11 (2.03-4.76)	2.17 (1.84-2.57)	1.80 (1.50-2.17)	2.15 (0.67-6.93)	3.56 (2.74-4.62)
5 (richest)	6.41 (4.27-9.63)	2.76 (2.35-3.26)	2.55 (2.15-3.01)	2.70 (0.69-10.54)	4.86 (3.77-6.26)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	2.94 (2.25-3.84)	2.25 (2.03-2.50)	1.99 (1.80-2.20)	1.34 (0.64-2.80)	6.61 (4.97-8.78)
Separated	1.57 (0.85-2.88)	1.19 (0.89-1.58)	1.62 (1.29-2.04)	4.53 (0.73-28.23)	6.71 (4.62-9.74)
Divorced	5.40 (3.35-8.70)	1.74 (1.23-2.48)	2.54 (2.14-3.02)	1.45 (0.25-8.35)	6.60 (4.58-9.50)
Widowed	3.34 (2.26-4.91)	1.84 (1.48-2.29)	1.38 (1.19-1.61)	0.51 (0.12-2.12)	8.25 (5.81-11.72)
Cohabitating	2.90 (1.20-6.99)	1.13 (0.99-1.29)	1.49 (1.27-1.75)	NA	4.09 (2.59-6.45)
Place of residence					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.85 (1.51-2.27)	1.57 (1.42-1.74)	1.62 (1.43-1.82)	1.97 (0.88-4.43)	2.93 (2.50-3.43)
Tobacco smoking[b]					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	2.29 (0.70-7.48)	1.08 (0.87-1.33)	1.32 (1.13-1.54)	0 (0-0)	3.18 (1.83-5.50)
Covariate-adjusted regressions[c]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.41 (0.29-0.58)	0.21 (0.17-0.24)	0.18 (0.14-0.23)	0.60 (0.22-1.70)	0.24 (0.18-0.31)
25-34	0.77 (0.61-0.96)	0.72 (0.66-0.78)	0.67 (0.59-0.76)	0.47 (0.20-1.09)	0.81 (0.72-0.91)
45-54	1.27 (0.97-1.66)	1.05 (0.94-1.18)	1.08 (0.97-1.21)	1.15 (0.59-2.24)	1.25 (1.05-1.50)
55-64	NA	NA	1.07 (0.95-1.20)	0.70 (0.26-1.91)	NA
>= 65	NA	NA	0.89 (0.77-1.03)	3.30 (0.88-12.36)	NA
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	7.50 (1.01-55.95)	1.35 (1.06-1.72)	1.31 (1.05-1.62)	1.05 (0.35-3.12)	1.31 (0.56-3.09)
Secondary education or further	12.29 (1.67-90.26)	1.77 (1.39-2.25)	1.75 (1.43-2.15)	1.76 (0.86-3.61)	1.42 (0.61-3.31)

eTable 24. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (with survey weights) in Sub-Saharan Africa: Lesotho to Zimbabwe (continued)

	Lesotho	Namibia	South Africa	Sudan	Zimbabwe
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-adjusted regressions[c]					
Household wealth quintile					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.90 (1.21-2.99)	1.46 (1.24-1.72)	1.11 (0.95-1.31)	0.49 (0.17-1.38)	1.24 (0.90-1.71)
3	2.56 (1.66-3.95)	1.60 (1.34-1.91)	1.18 (0.99-1.41)	0.68 (0.27-1.73)	2.48 (1.86-3.31)
4	2.69 (1.74-4.15)	1.90 (1.57-2.29)	1.45 (1.18-1.77)	1.39 (0.51-3.84)	2.36 (1.60-3.48)
5 (richest)	4.99 (3.20-7.80)	2.17 (1.79-2.63)	1.73 (1.41-2.12)	1.28 (0.37-4.49)	3.44 (2.31-5.11)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	2.08 (1.53-2.82)	1.16 (1.05-1.28)	1.18 (1.08-1.29)	1.28 (0.47-3.49)	3.52 (2.54-4.86)
Separated	1.05 (0.57-1.95)	0.76 (0.58-0.99)	1.09 (0.86-1.37)	0 (0-0)	3.56 (2.45-5.19)
Divorced	3.21 (1.96-5.27)	0.82 (0.58-1.16)	1.33 (1.13-1.57)	1.67 (0.22-12.63)	2.84 (1.96-4.13)
Widowed	2.11 (1.36-3.27)	1.00 (0.81-1.23)	1.00 (0.87-1.15)	0.39 (0.05-2.81)	3.44 (2.37-4.99)
Cohabitating	1.96 (0.84-4.62)	0.87 (0.76-0.98)	1.29 (1.10-1.50)	NA	2.97 (1.87-4.72)
Place of residence					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.04 (0.82-1.31)	1.08 (0.96-1.21)	1.11 (0.97-1.28)	1.48 (0.72-3.05)	1.58 (1.18-2.13)
Tobacco smoking[b]					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	2.87 (1.15-7.17)	0.86 (0.71-1.04)	1.09 (0.96-1.24)	0 (0-0)	1.16 (0.43-3.13)
Observations[d]	6,211	8,822	5,939	4,043	9,481

Abbreviations: RR, risk ratio; NA, not applicable.

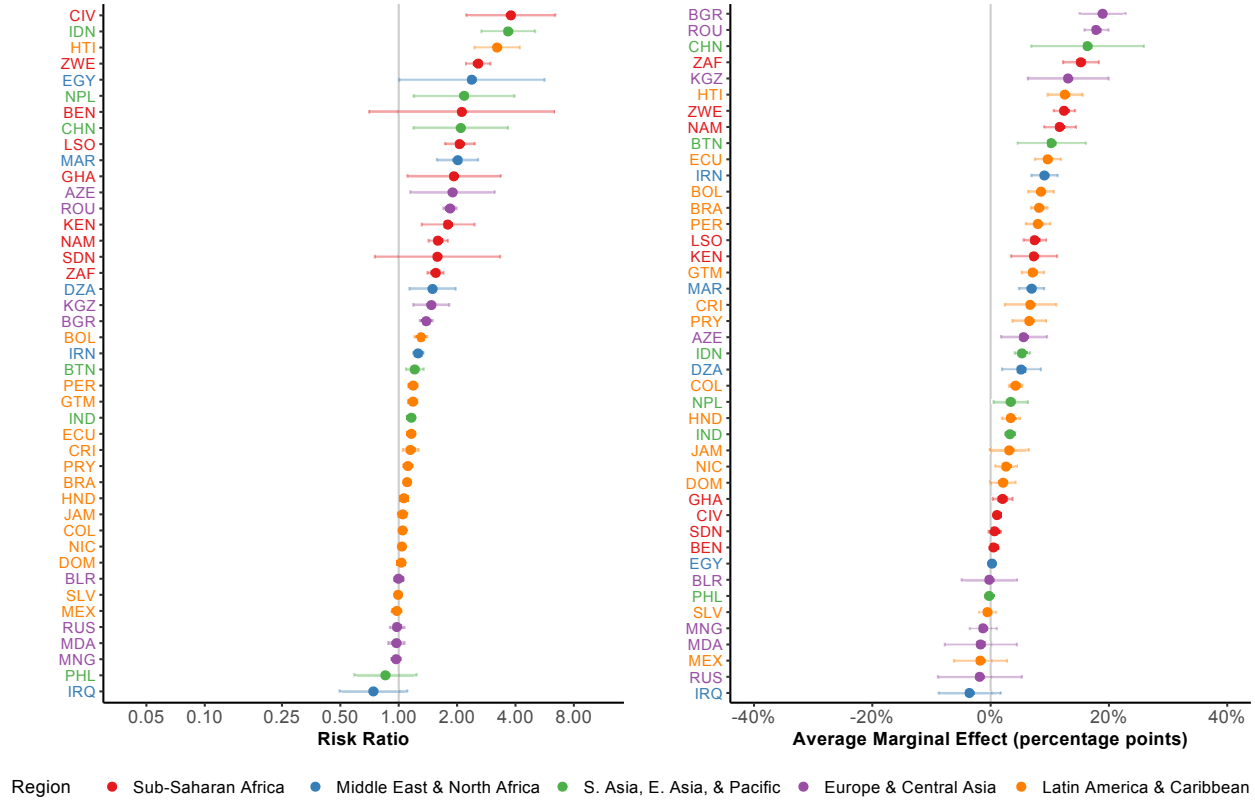
[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] For Sudan, there is a 0% screening prevalence among women who currently smoke.

[c] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

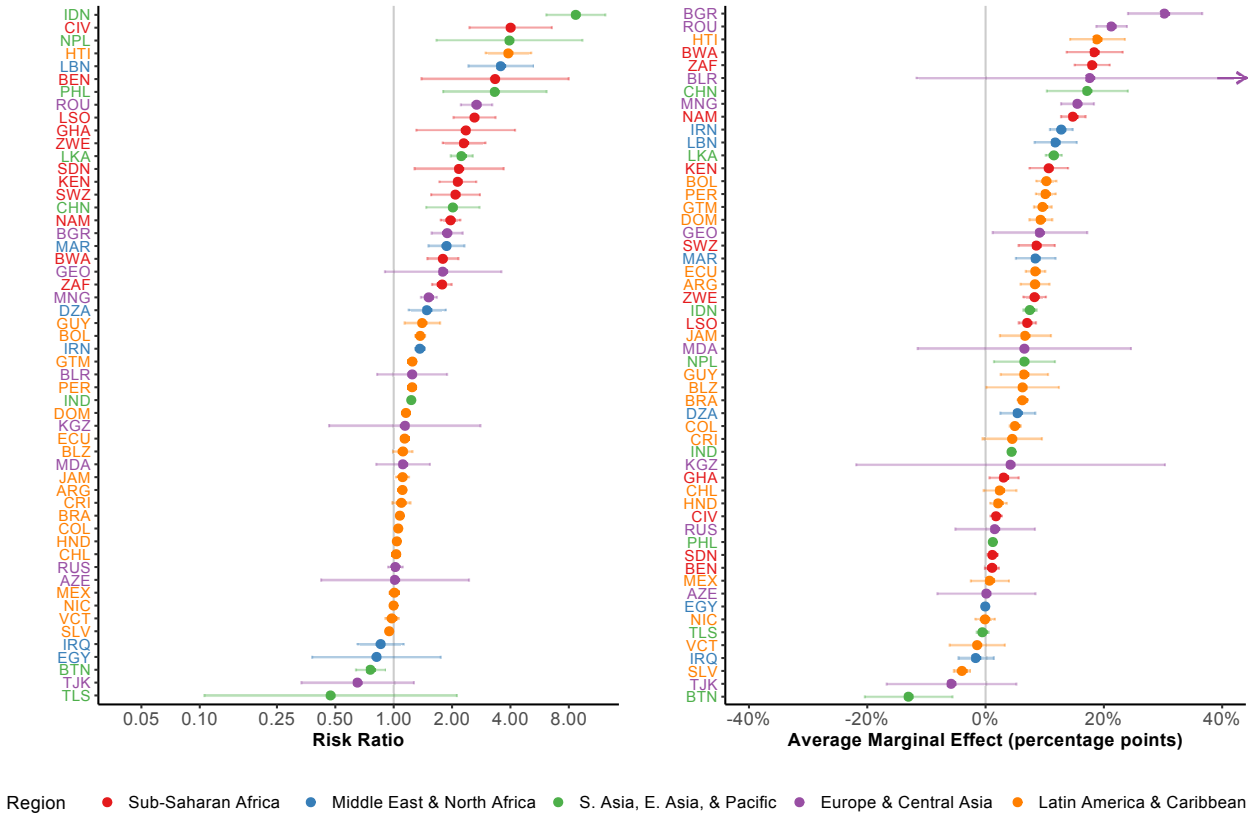
[d] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eFigure 17. Relative and absolute differences in lifetime prevalence of cervical cancer screening between urban and rural (reference group) areas (Poisson regression without sampling weights)



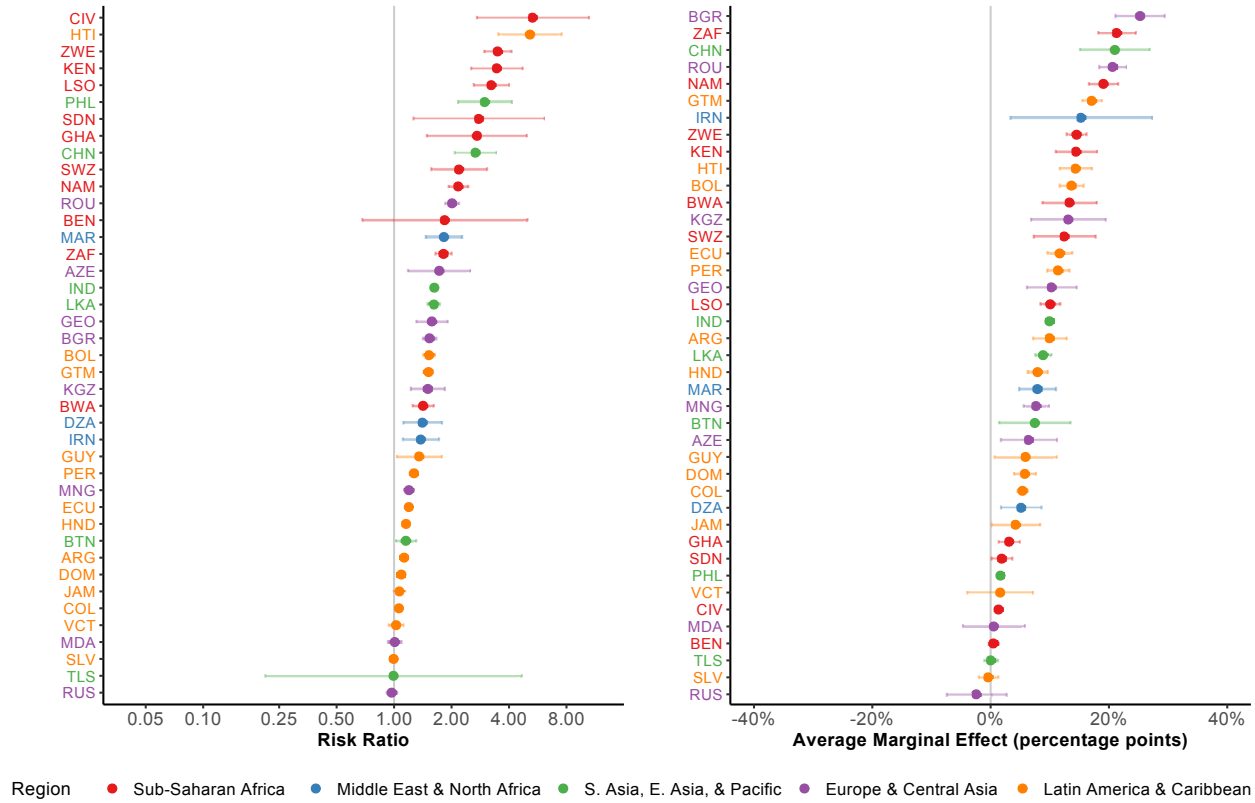
Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by place of residence (rural [reference category] vs. urban place of residence). Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. The vertical bars are 95% CIs around point estimates. Place of residence was not available for Argentina, Belize, Botswana, Chile, Georgia, Guyana, Lebanon, Sri Lanka, St. Vincent & the Grenadines, Eswatini, Tajikistan, and Timor-Leste. Risk ratios are shown on a logarithmic scale.

eFigure 18. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women having completed high school or further and those who have completed primary school or less (reference group) (Poisson regression without sampling weights)



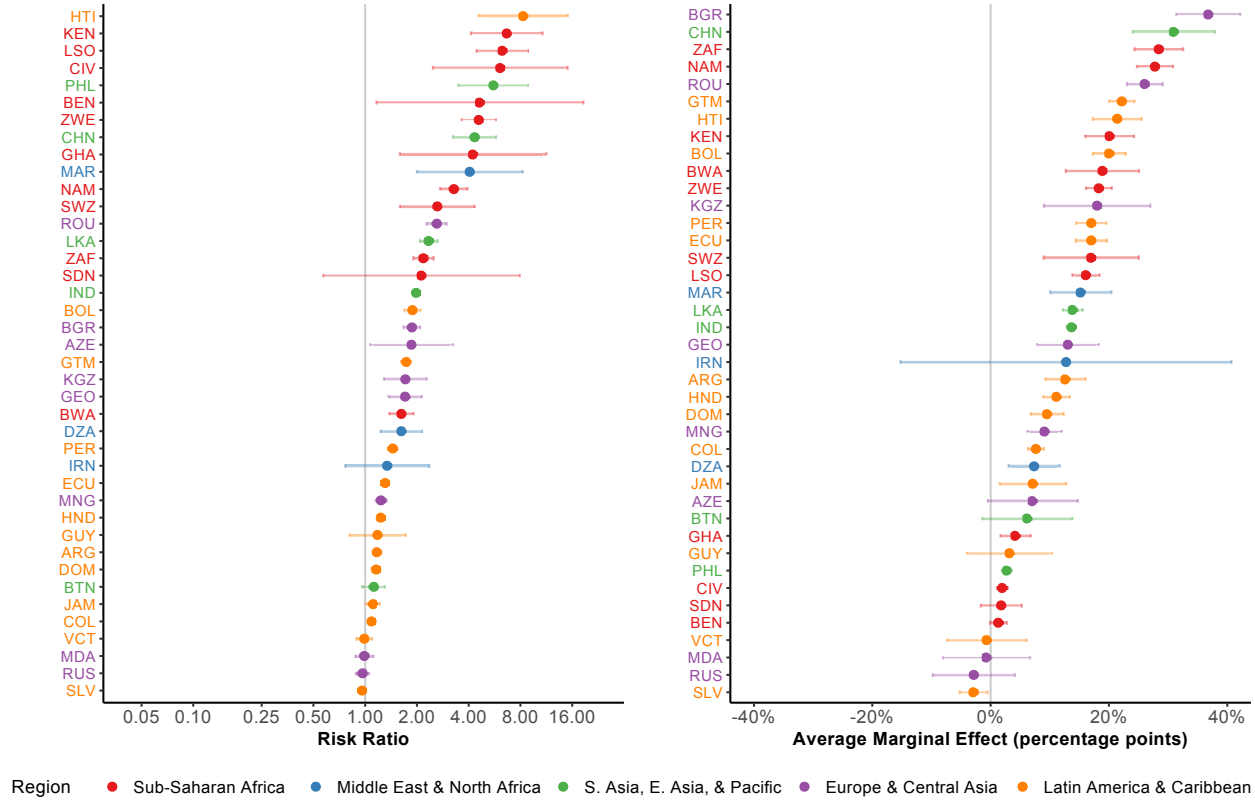
Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by educational attainment (primary school or less [reference category] vs. secondary education or further). Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. The vertical bars are 95% CIs around point estimates. Upper confidence limits are truncated for average marginal effects of Belarus. Educational attainment was not available for Paraguay. Odds ratios are shown on a logarithmic scale.

eFigure 19. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women in the top two versus the bottom two (reference group) household wealth quintiles (Poisson regression without sampling weights)



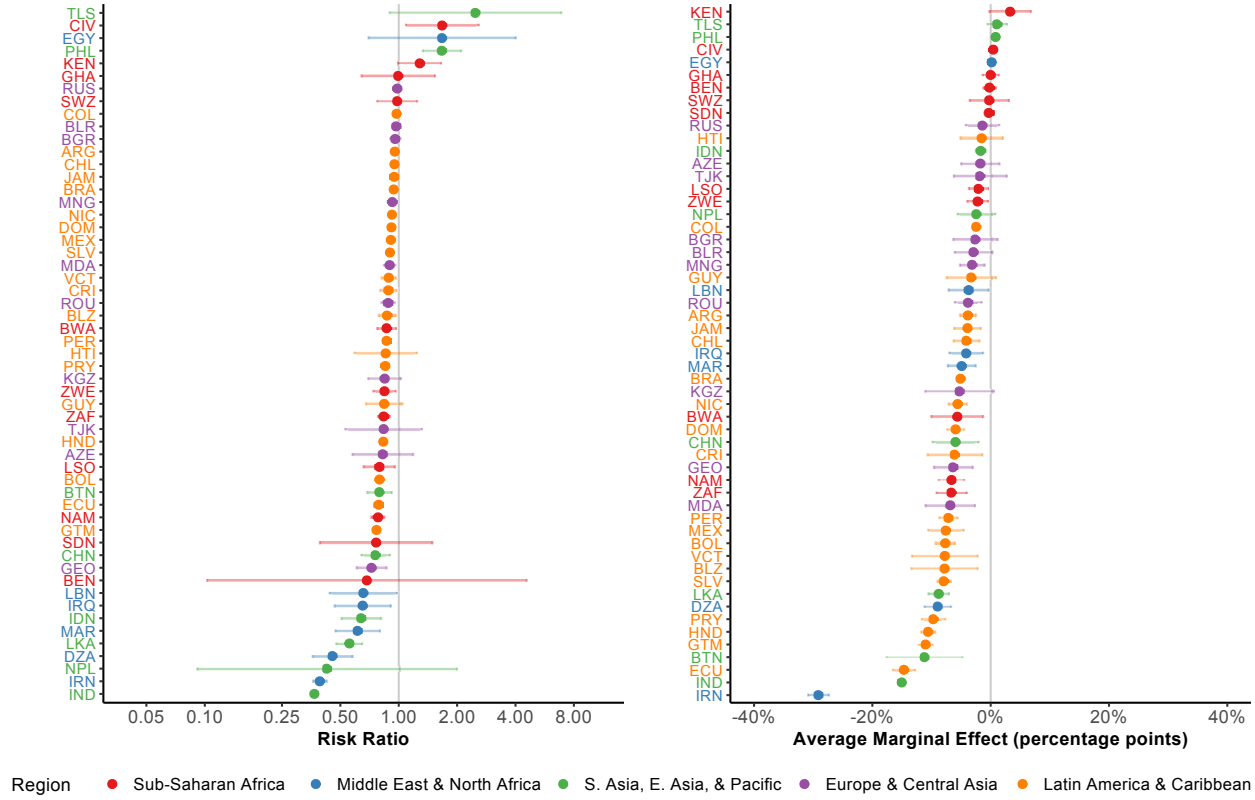
Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by wealth group (bottom two household wealth quintiles [reference category] vs. top two household wealth quintiles). Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. The vertical bars are 95% CIs around point estimates. Wealth quintiles were not available for Belarus, Belize, Brazil, Chile, Costa Rica, Egypt, Indonesia, Iraq, Lebanon, Mexico, Nepal, Nicaragua, Paraguay, and Tajikistan. Risk ratios are shown on a logarithmic scale.

eFigure 20. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women in the top versus the bottom (reference group) household wealth quintile (Poisson regression without sampling weights)



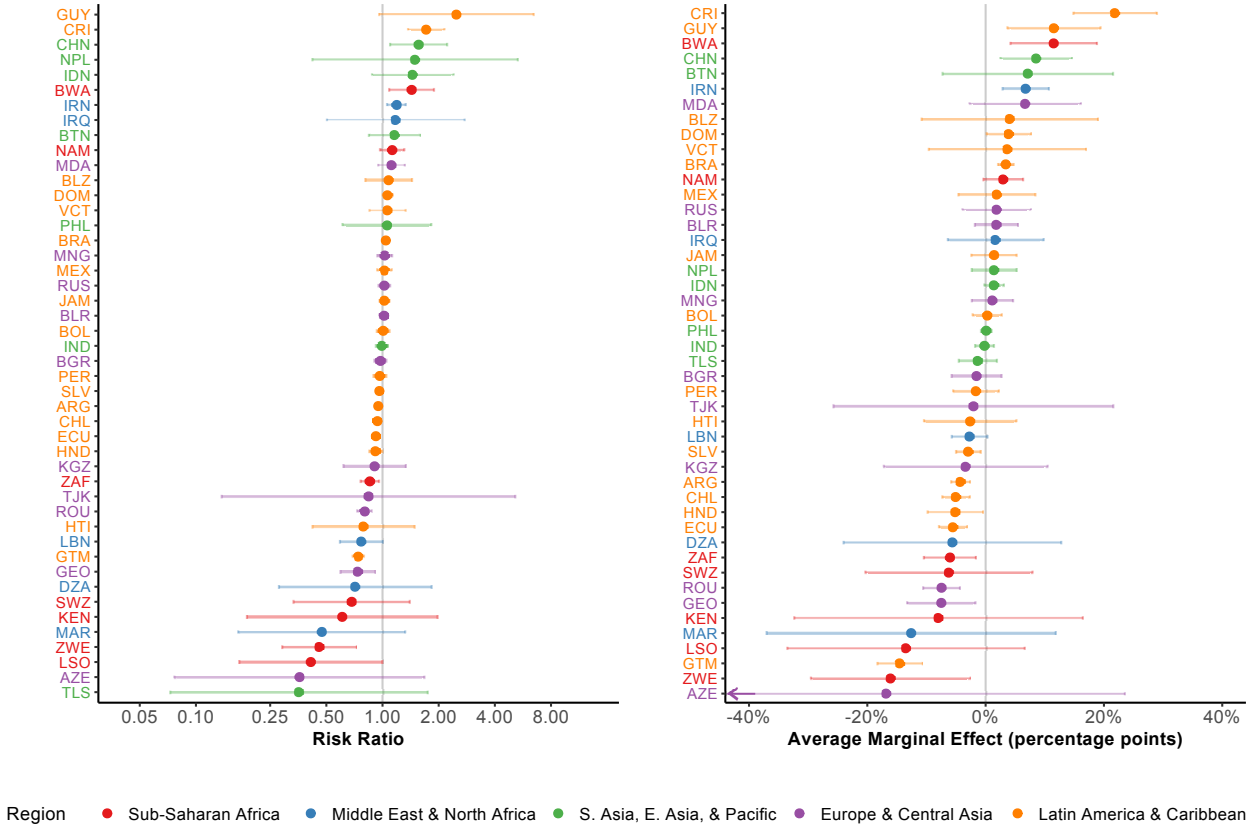
Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by household wealth quintile (1st wealth quintile [reference category] vs. 5th wealth quintile). Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. Household wealth quintiles were not available for Belarus, Belize, Brazil, Chile, Costa Rica, Egypt, Indonesia, Iraq, Lebanon, Mexico, Nepal, Nicaragua, Paraguay, and Tajikistan. Estimate for Timor-Leste is not shown due to the extremely low prevalence in each household wealth quintile. The vertical bars are 95% CIs around point estimates. Risk ratios are shown on a logarithmic scale.

eFigure 21. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women who are currently not married and women who are (reference group) (Poisson regression without sampling weights)



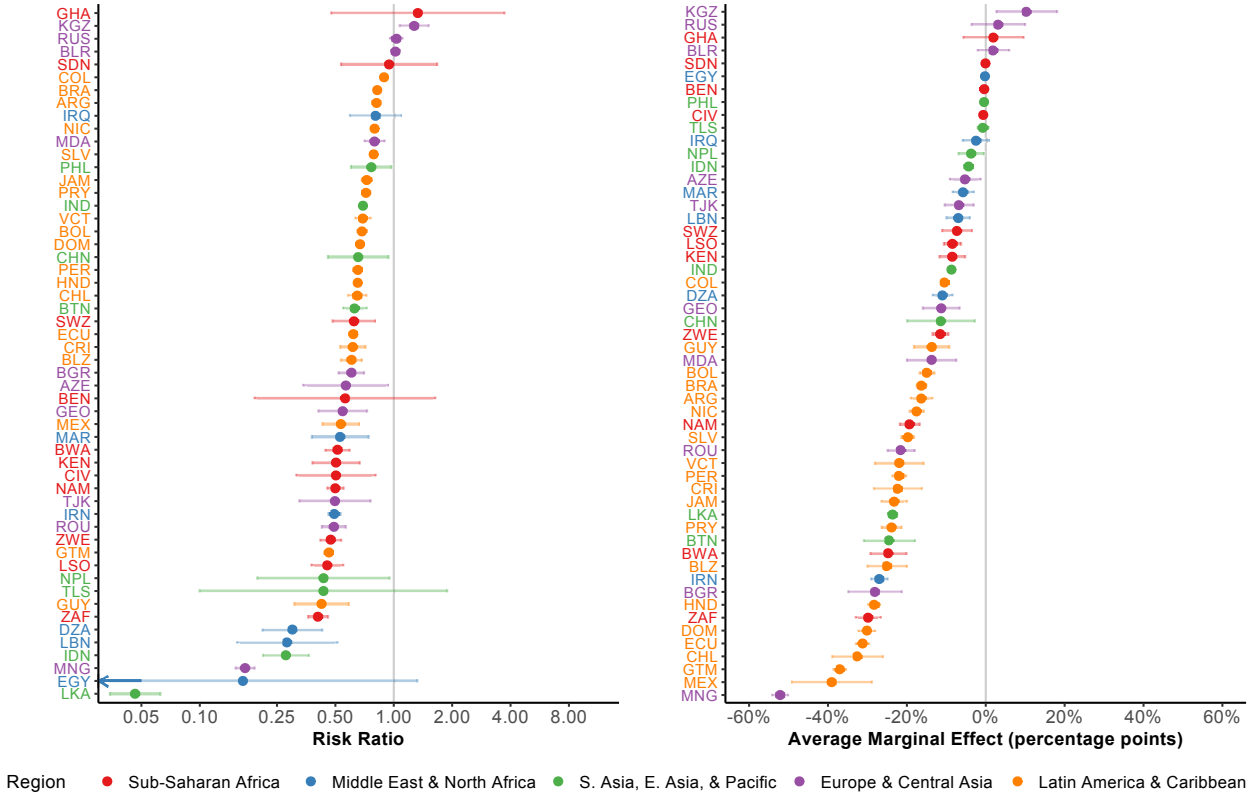
Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by relationship status (currently married [reference category] vs. currently not married). Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. The vertical bars are 95% CIs around point estimates. Risk ratios are shown on a logarithmic scale.

eFigure 22. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women who currently smoke and women who do not (reference group) (Poisson regression without sampling weights)



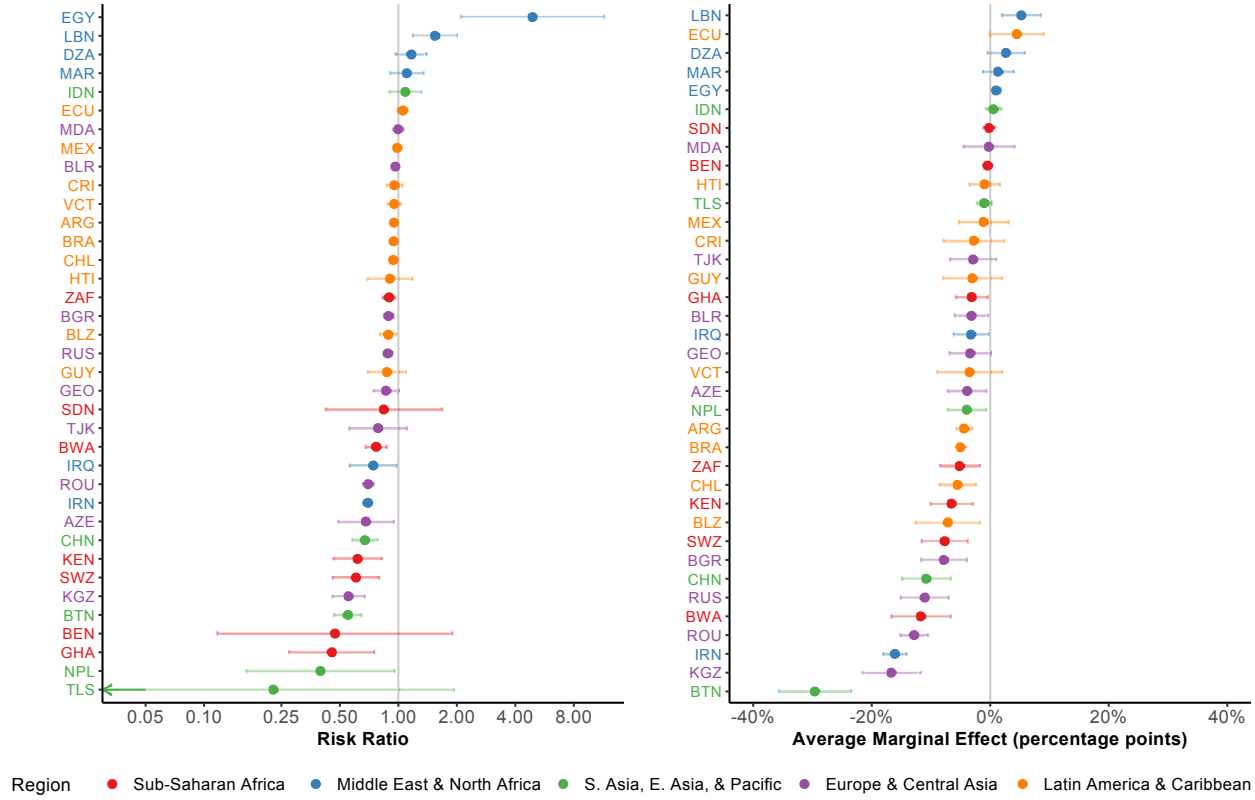
Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by smoking status (currently smoking [reference category] vs. currently not smoking). Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. The vertical bars are 95% CIs around point estimates. Upper confidence limits are truncated for risk ratios of Tajikistan. Smoking status was not available for Colombia, Nicaragua, Paraguay, and Sri Lanka. Estimates for Benin, Cote d'Ivoire, Egypt, Ghana, and Sudan are not displayed due to the extremely low prevalence of tobacco smoking. Risk ratios are shown on a logarithmic scale.

eFigure 23. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women aged 20 to 29 years compared to women aged 30 to 49 years (reference group) (Poisson regression without sampling weights)



Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by age group (women aged 30 to 49 years [reference category] vs. women aged 20 to 29 years). Countries are indicated by their ISO 3 code. The vertical bars are 95% CIs around point estimates. Lower confidence limits are truncated for risk ratios of Egypt. Risk ratios are shown on a logarithmic scale.

eFigure 24. Relative and absolute differences in lifetime prevalence of cervical cancer screening between women aged 50 years and older and women aged 30 to 49 years (reference group) (Poisson regression without sampling weights)



Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by age group (women aged 30 to 49 years [reference category] vs. women aged 50 years or older). Countries are indicated by their ISO 3 code. The vertical bars are 95% CIs around point estimates. Lower confidence limits are truncated for risk ratios of Timor-Leste. Risk ratios are shown on a logarithmic scale.

eTable 25. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Europe: Azerbaijan to Kyrgyzstan

Variable	Azerbaijan RR (95% CI)	Belarus RR (95% CI)	Bulgaria RR (95% CI)	Georgia RR (95% CI)	Kyrgyzstan RR (95% CI)
Covariate-unadjusted regressions[a]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.21 (0.06-0.68)	0.98 (0.91-1.05)	0.22 (0.16-0.30)	0.22 (0.12-0.40)	NA
25-34	0.70 (0.43-1.14)	1.03 (0.99-1.06)	0.85 (0.76-0.95)	0.75 (0.58-0.97)	1.19 (1.02-1.39)
45-54	0.96 (0.64-1.44)	1.01 (0.97-1.04)	1.05 (0.97-1.14)	1.18 (0.97-1.42)	0.68 (0.57-0.83)
55-64	0.47 (0.29-0.77)	0.96 (0.93-1.00)	0.99 (0.92-1.07)	0.84 (0.68-1.04)	0.47 (0.36-0.61)
>= 65	0.59 (0.26-1.33)	0.92 (0.87-0.98)	0.80 (0.74-0.86)	0.62 (0.47-0.83)	NA
Education					
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	1.06 (0.45-2.52)	1.25 (0.84-1.86)	2.06 (1.73-2.46)	2.02 (1.02-3.98)	1.50 (0.62-3.65)
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.28 (0.70-2.34)	NA	1.28 (1.12-1.47)	0.99 (0.77-1.28)	1.06 (0.80-1.39)
3	0.98 (0.59-1.64)	NA	1.58 (1.40-1.77)	1.15 (0.92-1.44)	1.33 (1.00-1.77)
4	1.79 (1.15-2.79)	NA	1.70 (1.52-1.90)	1.22 (0.92-1.62)	1.49 (1.12-1.98)
5 (richest)	1.80 (1.04-3.12)	NA	1.98 (1.78-2.21)	1.81 (1.45-2.25)	1.81 (1.35-2.43)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.72 (0.94-3.16)	1.02 (0.97-1.08)	1.80 (1.57-2.06)	3.44 (2.22-5.33)	1.16 (0.70-1.94)
Separated	2.06 (0.67-6.35)	1.02 (0.92-1.14)	2.49 (2.12-2.92)	4.80 (2.29-10.07)	0.93 (0.48-1.81)
Divorced	0.70 (0.16-3.05)	1.00 (0.94-1.06)	1.95 (1.68-2.28)	3.25 (1.86-5.68)	1.03 (0.59-1.81)
Widowed	1.38 (0.68-2.79)	0.94 (0.88-1.01)	1.43 (1.23-1.65)	2.74 (1.70-4.43)	0.65 (0.36-1.17)
Cohabitating	3.29 (0.48-22.36)	1.05 (0.98-1.14)	1.43 (1.18-1.72)	0 (0-0)	1.08 (0.44-2.62)
Place of residence[c]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.92 (1.18-3.12)	1.00 (0.95-1.05)	1.41 (1.31-1.52)	NA	1.51 (1.22-1.88)
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	2.64 (0.48-14.55)	0.99 (0.95-1.03)	1.11 (1.04-1.18)	1.44 (1.16-1.77)	1.13 (0.76-1.66)
Covariate-adjusted regressions[d]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.27 (0.08-0.92)	0.99 (0.92-1.07)	0.27 (0.20-0.38)	0.31 (0.15-0.61)	NA
25-34	0.80 (0.48-1.32)	1.03 (1.00-1.07)	0.90 (0.81-1.00)	0.79 (0.60-1.03)	1.16 (1.00-1.36)
45-54	1.11 (0.72-1.71)	1.01 (0.98-1.04)	1.03 (0.95-1.11)	1.16 (0.94-1.42)	0.72 (0.59-0.88)
55-64	0.54 (0.31-0.94)	0.98 (0.94-1.01)	1.01 (0.94-1.09)	0.84 (0.66-1.05)	0.52 (0.39-0.69)
>= 65	0.74 (0.33-1.70)	0.95 (0.89-1.01)	0.92 (0.85-1.01)	0.67 (0.48-0.93)	NA
Education					
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	0.85 (0.39-1.86)	1.22 (0.82-1.83)	1.60 (1.33-1.91)	1.77 (0.79-3.96)	1.09 (0.38-3.14)

eTable 25. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Europe: Azerbaijan to Kyrgyzstan (continued)

Variable	Azerbaijan RR (95% CI)	Belarus RR (95% CI)	Bulgaria RR (95% CI)	Georgia RR (95% CI)	Kyrgyzstan RR (95% CI)
Covariate-adjusted regressions[d]					
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.28 (0.72-2.28)	NA	1.22 (1.07-1.39)	0.80 (0.62-1.05)	1.06 (0.81-1.38)
3	0.97 (0.59-1.60)	NA	1.42 (1.26-1.59)	1.04 (0.83-1.31)	1.17 (0.89-1.53)
4	1.70 (1.11-2.62)	NA	1.41 (1.26-1.57)	1.20 (0.91-1.58)	1.28 (0.96-1.69)
5 (richest)	1.55 (0.92-2.62)	NA	1.57 (1.41-1.75)	1.68 (1.34-2.11)	1.53 (1.17-2.01)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.60 (0.78-3.30)	1.03 (0.97-1.09)	1.16 (1.02-1.31)	2.05 (1.30-3.23)	1.34 (0.75-2.37)
Separated	1.15 (0.36-3.69)	1.02 (0.92-1.14)	1.54 (1.30-1.83)	3.50 (1.61-7.61)	1.18 (0.60-2.31)
Divorced	0.57 (0.12-2.63)	1.00 (0.94-1.07)	1.21 (1.06-1.39)	1.80 (0.98-3.30)	1.12 (0.61-2.04)
Widowed	1.46 (0.65-3.27)	0.97 (0.90-1.04)	1.04 (0.90-1.21)	2.01 (1.19-3.38)	1.17 (0.61-2.27)
Cohabitating	2.57 (0.36-18.52)	1.05 (0.97-1.14)	1.15 (0.96-1.37)	0 (0-0)	1.40 (0.59-3.33)
Place of residence[c]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.98 (1.19-3.29)	0.99 (0.95-1.05)	1.20 (1.11-1.29)	NA	1.53 (1.24-1.90)
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	3.05 (0.72-12.92)	0.98 (0.95-1.02)	1.01 (0.95-1.08)	1.15 (0.88-1.50)	0.99 (0.61-1.61)
Observations[e]	1,268	2,672	2,815	2,395	1,523

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Wealth quintiles are missing for Belarus.

[c] Place of residence is missing for Georgia.

[d] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[e] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 26. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Europe: Moldova to Tajikistan

	Moldova	Mongolia	Romania		Russia	Tajikistan
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**		**RR (95% CI)**	**RR (95% CI)**
Covariate-unadjusted regressions[a]						
Age (years)						
35-44	1 (ref.)	1 (ref.)	1 (ref.)		1 (ref.)	1 (ref.)
15-24	0.59 (0.49-0.70)	0.06 (0.05-0.08)	0.15 (0.11-0.20)		0.94 (0.79-1.12)	0.52 (0.31-0.88)
25-34	0.89 (0.81-0.98)	0.47 (0.44-0.49)	0.81 (0.73-0.91)		1.00 (0.93-1.08)	0.90 (0.61-1.35)
45-54	1.05 (0.96-1.14)	1.08 (1.03-1.12)	1.05 (0.97-1.15)		0.92 (0.85-0.99)	1.48 (1.02-2.13)
55-64	1.01 (0.93-1.11)	NA	0.87 (0.80-0.95)		0.93 (0.89-0.97)	0.58 (0.32-1.05)
>= 65	0.82 (0.70-0.95)	NA	0.50 (0.45-0.55)		0.79 (0.74-0.85)	1.11 (0.53-2.33)
Education						
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)		1 (ref.)	1 (ref.)
Secondary education or further	1.19 (0.88-1.62)	1.19 (1.09-1.31)	3.32 (2.82-3.90)		1.14 (1.06-1.23)	0.70 (0.37-1.35)
Household wealth quintile[b]						
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)		1 (ref.)	1 (ref.)
2	1.06 (0.98-1.16)	0.92 (0.86-1.00)	1.59 (1.37-1.83)		1.02 (0.94-1.10)	NA
3	1.06 (0.95-1.18)	0.94 (0.86-1.02)	2.19 (1.92-2.51)		1.01 (0.92-1.12)	NA
4	1.13 (1.02-1.25)	1.09 (1.01-1.18)	2.82 (2.48-3.21)		1.04 (0.95-1.14)	NA
5 (richest)	1.01 (0.91-1.14)	1.18 (1.09-1.28)	3.06 (2.70-3.48)		1.03 (0.95-1.13)	NA
Relationship status						
Never married	1 (ref.)	1 (ref.)	1 (ref.)		1 (ref.)	1 (ref.)
Currently married	1.83 (1.52-2.22)	6.17 (5.34-7.12)	2.24 (1.97-2.53)		1.14 (0.97-1.34)	3.32 (1.32-8.35)
Separated	1.58 (1.14-2.19)	5.08 (3.97-6.48)	NA		1.18 (1.01-1.38)	1.68 (0.29-9.53)
Divorced	1.74 (1.42-2.13)	5.77 (4.87-6.84)	2.63 (2.26-3.07)		NA	3.56 (1.15-11.08)
Widowed	1.75 (1.43-2.14)	6.81 (5.74-8.08)	1.27 (1.09-1.47)		1.02 (0.87-1.20)	3.34 (1.05-10.57)
Cohabitating	1.70 (1.30-2.22)	4.06 (3.45-4.78)	NA		1.12 (0.92-1.35)	NA
Place of residence[c]						
Rural	1 (ref.)	1 (ref.)	1 (ref.)		1 (ref.)	1 (ref.)
Urban	0.95 (0.86-1.04)	0.90 (0.85-0.96)	1.98 (1.84-2.13)		0.96 (0.88-1.04)	NA
Tobacco smoking						
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)		1 (ref.)	1 (ref.)
Currently smoking	0.87 (0.75-1.02)	1.14 (1.04-1.25)	1.44 (1.33-1.57)		1.05 (0.98-1.13)	1.30 (0.21-7.99)
Covariate-adjusted regressions[d]						
Age (years)						
35-44	1 (ref.)	1 (ref.)	1 (ref.)		1 (ref.)	1 (ref.)
15-24	0.72 (0.60-0.86)	0.08 (0.06-0.10)	0.21 (0.15-0.29)	<0.001	1.04 (0.91-1.19)	0.63 (0.36-1.10)
25-34	0.94 (0.86-1.03)	0.47 (0.45-0.50)	0.85 (0.76-0.95)	0.005	1.03 (0.96-1.11)	0.88 (0.59-1.31)
45-54	1.03 (0.95-1.12)	1.05 (1.01-1.09)	1.01 (0.93-1.10)	0.806	0.92 (0.86-0.99)	1.48 (1.03-2.13)
55-64	0.99 (0.91-1.09)	NA	0.88 (0.81-0.96)	0.005	0.94 (0.90-0.99)	0.58 (0.32-1.05)
>= 65	0.80 (0.68-0.92)	NA	0.72 (0.65-0.80)	<0.001	0.82 (0.76-0.88)	1.06 (0.51-2.20)
Education						
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)		1 (ref.)	1 (ref.)
Secondary education or further	1.02 (0.77-1.34)	1.32 (1.21-1.45)	2.07 (1.73-2.46)	<0.001	1.05 (0.97-1.14)	0.66 (0.34-1.27)

eTable 26. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Europe: Moldova to Tajikistan (continued)

	Moldova	Mongolia	Romania	Russia	Tajikistan
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-adjusted regressions[d]					
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.06 (0.97-1.15)	1.08 (1.01-1.15)	1.32 (1.14-1.52)	0.99 (0.92-1.07)	NA
3	1.02 (0.92-1.14)	1.12 (1.04-1.20)	1.59 (1.39-1.82)	0.97 (0.88-1.08)	NA
4	1.08 (0.98-1.20)	1.25 (1.17-1.34)	1.86 (1.63-2.13)	0.97 (0.88-1.07)	NA
5 (richest)	0.96 (0.85-1.08)	1.39 (1.29-1.50)	1.85 (1.62-2.11)	0.94 (0.86-1.03)	NA
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.40 (1.17-1.69)	1.61 (1.40-1.86)	1.39 (1.21-1.58)	1.18 (1.00-1.40)	2.59 (0.98-6.82)
Separated	1.24 (0.89-1.72)	1.51 (1.20-1.90)	NA	1.21 (1.03-1.42)	1.18 (0.16-8.80)
Divorced	1.31 (1.07-1.61)	1.56 (1.33-1.84)	1.49 (1.27-1.75)	NA	2.69 (0.84-8.57)
Widowed	1.38 (1.14-1.68)	1.49 (1.27-1.75)	1.34 (1.13-1.58)	1.14 (0.96-1.34)	2.63 (0.80-8.63)
Cohabitating	1.37 (1.08-1.75)	1.50 (1.29-1.76)	NA	1.15 (0.96-1.38)	NA
Place of residence[c]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.06 (0.97-1.17)	0.82 (0.77-0.87)	1.44 (1.33-1.55)	0.98 (0.90-1.06)	NA
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0.97 (0.84-1.11)	1.01 (0.93-1.10)	1.17 (1.08-1.27)	0.98 (0.92-1.05)	1.27 (0.20-7.99)
Observations[e]	2,321	10,362	8,653	2,580	1,534

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Wealth quintiles are missing for Tajikistan.

[c] Place of residence is missing for Tajikistan.

[d] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[e] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 27. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Latin America and the Caribbean: Argentina to Chile

Variable	Argentina RR (95% CI)	Belize RR (95% CI)	Bolivia RR (95% CI)	Brazil RR (95% CI)	Chile RR (95% CI)
Covariate-unadjusted regressions[a]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.62 (0.58-0.67)	0.42 (0.33-0.53)	0.26 (0.24-0.28)	0.61 (0.60-0.63)	0.26 (0.21-0.32)
25-34	0.95 (0.93-0.98)	0.80 (0.72-0.89)	0.96 (0.92-1.00)	0.95 (0.94-0.96)	0.91 (0.87-0.95)
45-54	1.03 (1.02-1.05)	0.94 (0.80-1.11)	0.90 (0.84-0.96)	1.01 (1.00-1.02)	1.04 (1.01-1.07)
55-64	0.99 (0.97-1.01)	0.96 (0.85-1.07)	NA	0.98 (0.97-0.99)	1.00 (0.97-1.04)
>= 65	0.89 (0.87-0.92)	0.69 (0.61-0.78)	NA	0.86 (0.85-0.88)	0.84 (0.79-0.88)
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.15 (1.08-1.23)	1.33 (0.97-1.83)	1.23 (1.08-1.4)	1.12 (1.10-1.14)	1.13 (1.01-1.25)
Secondary education or further	1.22 (1.14-1.31)	1.30 (0.90-1.86)	1.15 (1.01-1.32)	1.13 (1.11-1.15)	1.02 (0.91-1.14)
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.06 (1.02-1.10)	NA	1.23 (1.10-1.37)	NA	NA
3	1.12 (1.07-1.17)	NA	1.47 (1.32-1.64)	NA	NA
4	1.17 (1.11-1.23)	NA	1.58 (1.42-1.77)	NA	NA
5 (richest)	1.21 (1.15-1.28)	NA	1.81 (1.63-2.02)	NA	NA
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.19 (1.15-1.23)	1.54 (1.28-1.85)	5.50 (5.02-6.03)	1.17 (1.16-1.19)	1.82 (1.69-1.96)
Separated	1.18 (1.14-1.22)	1.49 (1.01-2.21)	4.88 (4.36-5.47)	1.16 (1.14-1.19)	1.81 (1.67-1.95)
Divorced	1.21 (1.16-1.26)	1.31 (1.08-1.58)	6.10 (5.11-7.27)	1.20 (1.19-1.22)	1.87 (1.72-2.04)
Widowed	1.07 (1.04-1.10)	1.29 (1.06-1.57)	4.97 (4.16-5.93)	1.07 (1.05-1.09)	1.53 (1.39-1.68)
Cohabitating	NA	1.81 (1.35-2.43)	4.26 (3.85-4.71)	NA	1.72 (1.59-1.86)
Place of residence[c]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	NA	NA	1.26 (1.17-1.36)	1.11 (1.09-1.13)	NA
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.07 (1.05-1.10)	0.97 (0.73-1.27)	1.08 (1.01-1.17)	1.00 (0.98-1.01)	1.07 (1.03-1.11)
Covariate-adjusted regressions[d]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.66 (0.61-0.70)	0.44 (0.34-0.58)	0.49 (0.44-0.53)	0.63 (0.61-0.65)	0.29 (0.24-0.36)
25-34	0.97 (0.95-0.99)	0.81 (0.72-0.91)	1.04 (0.99-1.08)	0.95 (0.94-0.96)	0.93 (0.89-0.96)
45-54	1.02 (1.00-1.04)	0.91 (0.76-1.09)	0.93 (0.87-0.99)	1.01 (1.00-1.02)	1.04 (1.01-1.07)
55-64	0.98 (0.96-1.00)	0.96 (0.84-1.09)	NA	0.98 (0.97-1.00)	1.04 (1.00-1.08)
>= 65	0.91 (0.89-0.93)	0.76 (0.65-0.89)	NA	0.89 (0.88-0.91)	0.92 (0.87-0.97)
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.13 (1.06-1.21)	1.32 (0.99-1.76)	1.21 (1.07-1.37)	1.12 (1.10-1.14)	1.06 (0.96-1.17)
Secondary education or further	1.20 (1.11-1.29)	1.47 (1.06-2.04)	1.36 (1.19-1.54)	1.14 (1.13-1.16)	1.09 (0.98-1.20)

eTable 27. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Latin America and the Caribbean: Argentina to Chile (continued)

Variable	Argentina RR (95% CI)	Belize RR (95% CI)	Bolivia RR (95% CI)	Brazil RR (95% CI)	Chile RR (95% CI)
Covariate-adjusted regressions[d]					
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.04 (1.01-1.07)	NA	1.35 (1.21-1.51)	NA	NA
3	1.09 (1.05-1.12)	NA	1.76 (1.56-1.97)	NA	NA
4	1.12 (1.08-1.16)	NA	1.90 (1.68-2.15)	NA	NA
5 (richest)	1.13 (1.09-1.18)	NA	2.32 (2.05-2.63)	NA	NA
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.09 (1.06-1.11)	1.43 (1.18-1.72)	3.76 (3.36-4.21)	1.09 (1.08-1.11)	1.28 (1.20-1.36)
Separated	1.09 (1.06-1.12)	1.33 (0.79-2.25)	3.51 (3.09-3.99)	1.06 (1.04-1.09)	1.25 (1.16-1.34)
Divorced	1.07 (1.04-1.10)	1.47 (1.24-1.74)	3.31 (2.75-3.98)	1.08 (1.07-1.10)	1.23 (1.15-1.33)
Widowed	1.05 (1.02-1.08)	1.34 (1.13-1.59)	3.63 (3.01-4.38)	1.05 (1.03-1.07)	1.13 (1.04-1.23)
Cohabitating	NA	1.62 (1.26-2.08)	3.65 (3.26-4.08)	NA	1.31 (1.23-1.40)
Place of residence[c]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	NA	NA	0.84 (0.78-0.92)	1.08 (1.06-1.10)	NA
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.06 (1.04-1.08)	0.98 (0.73-1.31)	1.00 (0.93-1.07)	0.99 (0.97-1.00)	1.07 (1.05-1.10)
Observations[e]	17,906	1,161	16,686	34,282	2,900

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Wealth quintiles are missing for Belize, Brazil, and Chile.

[c] Place of residence is missing for Argentina, Belize, and Chile.

[d] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[e] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 28. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Latin America and the Caribbean: Colombia to El Salvador

Variable	Colombia RR (95% CI)	Costa Rica RR (95% CI)	Dominican Republic RR (95% CI)	Ecuador RR (95% CI)	El Salvador RR (95% CI)
Covariate-unadjusted regressions[a]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.81 (0.80-0.83)	0.44 (0.36-0.54)	0.33 (0.31-0.35)	0.32 (0.30-0.34)	0.42 (0.40-0.44)
25-34	0.96 (0.96-0.97)	0.79 (0.69-0.92)	0.88 (0.86-0.90)	0.83 (0.81-0.85)	0.93 (0.91-0.94)
45-54	1.00 (0.99-1.00)	1.02 (0.91-1.14)	1.01 (0.99-1.03)	1.02 (0.99-1.04)	1.00 (0.98-1.02)
55-64	NA	0.97 (0.85-1.10)	NA	NA	NA
>= 65	NA	0.84 (0.74-0.96)	NA	NA	NA
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.20 (1.14-1.26)	1.58 (1.13-2.19)	1.15 (1.05-1.26)	1.19 (1.07-1.31)	0.96 (0.93-0.98)
Secondary education or further	1.21 (1.15-1.27)	1.44 (1.03-2.02)	1.02 (0.93-1.12)	1.16 (1.05-1.29)	0.79 (0.77-0.81)
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.05 (1.03-1.07)	NA	1.15 (1.09-1.21)	1.22 (1.17-1.28)	1.00 (0.97-1.04)
3	1.07 (1.06-1.09)	NA	1.21 (1.14-1.27)	1.31 (1.25-1.37)	1.04 (1.00-1.08)
4	1.08 (1.07-1.10)	NA	1.23 (1.16-1.30)	1.43 (1.36-1.49)	1.07 (1.03-1.10)
5 (richest)	1.09 (1.07-1.11)	NA	1.25 (1.19-1.32)	1.46 (1.39-1.53)	0.99 (0.95-1.03)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.18 (1.17-1.20)	2.02 (1.75-2.32)	6.07 (5.42-6.80)	2.75 (2.51-3.01)	5.07 (4.68-5.50)
Separated	1.16 (1.14-1.18)	1.94 (1.54-2.44)	5.31 (4.75-5.94)	2.83 (2.57-3.11)	4.90 (4.51-5.31)
Divorced	1.21 (1.18-1.23)	2.48 (2.06-2.98)	6.35 (5.63-7.16)	NA	5.22 (4.78-5.71)
Widowed	1.18 (1.16-1.21)	1.86 (1.58-2.19)	6.45 (5.76-7.23)	3.00 (2.68-3.36)	5.06 (4.64-5.52)
Cohabitating	1.14 (1.12-1.16)	2.03 (1.70-2.43)	5.06 (4.53-5.66)	NA	4.73 (4.36-5.12)
Place of residence					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.04 (1.03-1.06)	1.16 (1.06-1.27)	1.02 (0.98-1.06)	1.21 (1.16-1.25)	1.03 (1.00-1.05)
Tobacco smoking[c]					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	NA	0.62 (0.50-0.76)	1.21 (1.14-1.29)	1.19 (1.14-1.24)	1.06 (1.03-1.10)
Covariate-adjusted regressions[d]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.83 (0.82-0.85)	0.58 (0.47-0.71)	0.52 (0.49-0.55)	0.41 (0.38-0.43)	0.64 (0.62-0.67)
25-34	0.97 (0.96-0.97)	0.86 (0.74-0.99)	0.93 (0.91-0.95)	0.86 (0.84-0.88)	0.97 (0.96-0.98)
45-54	1.00 (0.99-1.01)	0.99 (0.88-1.11)	1.01 (0.99-1.03)	1.02 (1.00-1.04)	1.00 (0.98-1.02)
55-64	NA	0.96 (0.84-1.09)	NA	NA	NA
>= 65	NA	0.86 (0.75-0.99)	NA	NA	NA
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.19 (1.14-1.25)	1.47 (1.04-2.09)	1.15 (1.06-1.25)	1.18 (1.07-1.29)	1.04 (1.02-1.07)
Secondary education or further	1.22 (1.16-1.28)	1.56 (1.08-2.26)	1.26 (1.16-1.37)	1.24 (1.13-1.36)	1.02 (1.00-1.05)

eTable 28. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Latin America and the Caribbean: Colombia to El Salvador (continued)

Variable	Colombia RR (95% CI)	Costa Rica RR (95% CI)	Dominican Republic RR (95% CI)	Ecuador RR (95% CI)	El Salvador RR (95% CI)
Covariate-adjusted regressions[d]					
Household wealth quintile[b]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.05 (1.03-1.06)	NA	1.11 (1.06-1.17)	1.15 (1.11-1.20)	1.02 (1.00-1.05)
3	1.08 (1.06-1.10)	NA	1.17 (1.12-1.22)	1.17 (1.13-1.22)	1.06 (1.03-1.09)
4	1.09 (1.07-1.11)	NA	1.21 (1.16-1.27)	1.23 (1.18-1.28)	1.08 (1.05-1.11)
5 (richest)	1.09 (1.07-1.11)	NA	1.28 (1.22-1.34)	1.25 (1.20-1.30)	1.08 (1.05-1.12)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.12 (1.11-1.14)	1.67 (1.44-1.94)	3.75 (3.34-4.20)	2.07 (1.90-2.26)	3.94 (3.63-4.28)
Separated	1.11 (1.09-1.13)	1.63 (1.28-2.07)	3.81 (3.40-4.26)	2.05 (1.88-2.23)	3.87 (3.55-4.21)
Divorced	1.12 (1.10-1.14)	1.90 (1.56-2.31)	3.66 (3.24-4.14)	NA	3.84 (3.49-4.21)
Widowed	1.12 (1.10-1.15)	1.62 (1.37-1.93)	4.05 (3.59-4.56)	2.08 (1.88-2.30)	3.82 (3.50-4.18)
Cohabitating	1.12 (1.10-1.14)	1.86 (1.56-2.22)	3.76 (3.36-4.21)	NA	4.01 (3.70-4.36)
Place of residence					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	0.98 (0.97-1.00)	1.14 (1.04-1.25)	0.99 (0.96-1.02)	1.07 (1.04-1.10)	1.01 (0.99-1.03)
Tobacco smoking[c]					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	NA	0.60 (0.48-0.74)	0.99 (0.94-1.05)	1.08 (1.04-1.11)	1.04 (1.02-1.07)
Observations[e]	26,670	2,449	8,983	17,806	11,983

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Wealth quintiles are missing for Costa Rica.

[c] Tobacco smoking is missing for Colombia.

[d] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[e] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 29. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Latin America and the Caribbean: Guatemala to Jamaica

	Guatemala	Guyana	Haiti	Honduras	Jamaica
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-unadjusted regressions[a]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.15 (0.14-0.16)	0.22 (0.13-0.39)	NA	0.29 (0.28-0.30)	0.32 (0.28-0.36)
25-34	0.76 (0.74-0.78)	0.66 (0.48-0.89)	NA	0.87 (0.85-0.89)	0.90 (0.86-0.95)
45-54	1.01 (0.98-1.04)	1.01 (0.78-1.33)	1.17 (0.91-1.49)	0.97 (0.95-1.00)	1.00 (0.97-1.03)
55-64	NA	0.77 (0.56-1.06)	0.78 (0.56-1.10)	NA	NA
>= 65	NA	0.80 (0.51-1.26)	NA	NA	NA
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.03 (0.98-1.08)	0.98 (0.49-1.94)	1.67 (1.18-2.38)	1.12 (1.07-1.18)	1.93 (1.00-3.75)
Secondary education or further	0.87 (0.82-0.93)	1.20 (0.61-2.35)	4.30 (3.15-5.88)	0.87 (0.82-0.92)	1.77 (0.94-3.33)
Household wealth quintile					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.20 (1.12-1.29)	0.87 (0.61-1.23)	1.34 (0.66-2.70)	1.13 (1.07-1.18)	1.00 (0.95-1.06)
3	1.36 (1.27-1.46)	1.14 (0.80-1.62)	2.41 (1.24-4.69)	1.22 (1.16-1.28)	1.04 (0.97-1.11)
4	1.71 (1.60-1.84)	1.23 (0.87-1.75)	3.77 (2.03-7.02)	1.23 (1.17-1.30)	1.03 (0.94-1.12)
5 (richest)	1.97 (1.84-2.11)	1.11 (0.77-1.59)	8.21 (4.55-14.81)	1.29 (1.23-1.36)	1.09 (0.99-1.21)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	10.74 (9.7-11.88)	1.54 (1.18-2.02)	1.47 (0.62-3.49)	8.24 (7.58-8.95)	1.08 (1.02-1.14)
Separated	9.84 (8.86-10.92)	0.97 (0.52-1.81)	1.17 (0.42-3.23)	6.84 (6.28-7.45)	1.20 (1.12-1.29)
Divorced	14.27 (12.46-16.33)	1.79 (1.08-2.96)	2.76 (0.40-19.09)	9.06 (8.24-9.97)	NA
Widowed	11.22 (10.01-12.58)	1.29 (0.82-2.02)	0.80 (0.20-3.17)	7.40 (6.69-8.18)	NA
Cohabitating	8.19 (7.38-9.07)	1.15 (0.84-1.58)	1.79 (0.68-4.68)	6.62 (6.10-7.19)	0.81 (0.78-0.84)
Place of residence[b]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.26 (1.20-1.33)	NA	3.24 (2.49-4.21)	1.08 (1.05-1.11)	1.07 (1.01-1.13)
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.41 (1.28-1.55)	0.43 (0.16-1.14)	1.28 (0.68-2.40)	1.12 (1.03-1.22)	1.12 (1.05-1.19)
Covariate-adjusted regressions[c]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.29 (0.27-0.31)	0.27 (0.15-0.48)	NA	0.50 (0.48-0.52)	0.44 (0.40-0.50)
25-34	0.84 (0.82-0.86)	0.68 (0.50-0.93)	NA	0.92 (0.91-0.94)	0.92 (0.88-0.97)
45-54	1.02 (0.99-1.05)	1.00 (0.74-1.36)	1.50 (1.18-1.90)	0.97 (0.95-1.00)	1.01 (0.98-1.04)
55-64	NA	0.90 (0.61-1.30)	1.26 (0.90-1.78)	NA	NA
>= 65	NA	0.79 (0.45-1.39)	NA	NA	NA
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.22 (1.17-1.27)	1.05 (0.49-2.26)	1.30 (0.90-1.86)	1.22 (1.16-1.27)	1.30 (0.71-2.38)
Secondary education or further	1.26 (1.20-1.33)	1.32 (0.61-2.83)	2.24 (1.53-3.28)	1.26 (1.20-1.33)	1.38 (0.77-2.48)

eTable 29. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Latin America and the Caribbean: Guatemala to Jamaica (continued)

Variable	Guatemala RR (95% CI)	Guyana RR (95% CI)	Haiti RR (95% CI)	Honduras RR (95% CI)	Jamaica RR (95% CI)
Covariate-adjusted regressions[c]					
Household wealth quintile					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.18 (1.11-1.25)	0.86 (0.61-1.22)	1.29 (0.64-2.61)	1.12 (1.07-1.17)	1.02 (0.97-1.08)
3	1.29 (1.21-1.37)	1.17 (0.82-1.67)	2.09 (1.05-4.18)	1.21 (1.16-1.27)	1.05 (1.00-1.11)
4	1.54 (1.45-1.64)	1.27 (0.90-1.80)	2.59 (1.32-5.05)	1.24 (1.18-1.30)	1.07 (0.99-1.14)
5 (richest)	1.72 (1.61-1.84)	1.11 (0.77-1.61)	4.24 (2.14-8.37)	1.29 (1.23-1.35)	1.11 (1.02-1.20)
Relationship status[d]					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	5.68 (5.11-6.32)	1.22 (0.89-1.66)	NA	5.45 (4.99-5.95)	1.09 (1.03-1.15)
Separated	5.24 (4.70-5.84)	0.73 (0.39-1.39)	NA	4.87 (4.45-5.32)	1.11 (1.03-1.20)
Divorced	5.37 (4.66-6.19)	1.28 (0.72-2.25)	NA	5.22 (4.72-5.77)	NA
Widowed	5.61 (4.98-6.31)	1.03 (0.59-1.81)	NA	4.93 (4.45-5.48)	NA
Cohabitating	5.50 (4.96-6.11)	1.08 (0.75-1.55)	NA	5.13 (4.71-5.59)	0.97 (0.93-1.00)
Place of residence[b]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	0.98 (0.94-1.02)	NA	1.31 (0.96-1.77)	1.00 (0.97-1.03)	1.03 (0.99-1.07)
Tobacco smoking					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.23 (1.15-1.33)	0.36 (0.12-1.09)	1.67 (0.96-2.90)	1.09 (1.01-1.18)	1.00 (0.96-1.05)
Observations[e]	25,555	1,256	1,368	22,009	7,464

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Place of residence is missing for Guyana.

[c] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[d] For Haiti, relationship status is missing for women aged 55 to 64 years and is, thus, excluded from the covariate-adjusted regression for Haiti.

[e] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 30. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Latin America and the Caribbean: Mexico to St. Vincent & the Grenadines

	Mexico	Nicaragua	Paraguay	Peru	SVG
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-unadjusted regressions[a]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.28 (0.19-0.41)	0.45 (0.43-0.46)	0.33 (0.31-0.36)	0.29 (0.27-0.30)	0.43 (0.35-0.54)
25-34	0.80 (0.70-0.92)	0.96 (0.94-0.98)	0.91 (0.88-0.93)	0.87 (0.84-0.89)	0.89 (0.81-0.97)
45-54	1.02 (0.95-1.10)	0.98 (0.96-1.01)	NA	0.93 (0.90-0.97)	1.02 (0.96-1.09)
55-64	1.05 (0.98-1.13)	NA	NA	NA	0.94 (0.83-1.07)
>= 65	0.91 (0.85-0.97)	NA	NA	NA	0.72 (0.61-0.86)
Education[b]					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.05 (0.99-1.12)	1.00 (0.96-1.04)	NA	1.09 (0.99-1.20)	1.76 (0.87-3.54)
Secondary education or further	1.01 (0.94-1.08)	0.90 (0.86-0.94)	NA	1.03 (0.94-1.14)	1.54 (0.79-3.01)
Household wealth quintile[c]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	NA	NA	NA	1.16 (1.09-1.24)	0.97 (0.87-1.09)
3	NA	NA	NA	1.27 (1.19-1.36)	1.05 (0.91-1.21)
4	NA	NA	NA	1.33 (1.25-1.42)	1.03 (0.93-1.13)
5 (richest)	NA	NA	NA	1.44 (1.36-1.54)	1.03 (0.94-1.13)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.57 (1.41-1.74)	5.86 (5.33-6.43)	4.07 (3.72-4.45)	4.41 (4.14-4.71)	1.29 (1.17-1.42)
Separated	1.44 (1.28-1.63)	5.61 (5.10-6.17)	3.66 (3.29-4.08)	4.00 (3.73-4.30)	1.06 (0.83-1.36)
Divorced	NA	6.25 (5.58-7.00)	4.46 (3.71-5.35)	5.67 (5.05-6.36)	1.24 (1.16-1.34)
Widowed	1.44 (1.28-1.61)	5.67 (5.02-6.40)	4.14 (3.49-4.90)	3.74 (3.13-4.47)	1.22 (0.98-1.52)
Cohabitating	1.40 (1.23-1.59)	5.60 (5.10-6.14)	3.57 (3.25-3.91)	3.80 (3.56-4.05)	1.21 (1.04-1.41)
Place of residence[d]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	0.99 (0.93-1.05)	1.07 (1.04-1.11)	1.11 (1.05-1.18)	1.16 (1.11-1.21)	NA
Tobacco smoking[e]					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0.96 (0.89-1.04)	NA	NA	1.01 (0.93-1.10)	0.96 (0.79-1.16)
Covariate-adjusted regressions[f]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.31 (0.21-0.45)	0.67 (0.64-0.69)	0.55 (0.51-0.59)	0.48 (0.45-0.51)	0.48 (0.37-0.63)
25-34	0.82 (0.72-0.94)	0.98 (0.96-1.00)	0.96 (0.94-0.99)	0.93 (0.91-0.96)	0.93 (0.83-1.04)
45-54	1.02 (0.95-1.09)	0.98 (0.95-1.00)	NA	0.93 (0.89-0.96)	1.01 (0.94-1.09)
55-64	1.05 (0.98-1.12)	NA	NA	NA	0.91 (0.77-1.07)
>= 65	0.92 (0.86-0.98)	NA	NA	NA	0.69 (0.54-0.89)
Education[b]					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.04 (0.98-1.11)	1.09 (1.05-1.13)	NA	1.11 (1.00-1.22)	5.45 (0.82-36.31)
Secondary education or further	1.07 (1.00-1.15)	1.14 (1.10-1.19)	NA	1.23 (1.11-1.36)	5.31 (0.75-37.49)

eTable 30. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Latin America and the Caribbean: Mexico to St. Vincent & the Grenadines (continued)

	Mexico	Nicaragua	Paraguay	Peru	SVG
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-adjusted regressions[f]					
Household wealth quintile[c]					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	NA	NA	NA	1.17 (1.10-1.24)	0.94 (0.85-1.03)
3	NA	NA	NA	1.30 (1.21-1.39)	1.00 (0.87-1.15)
4	NA	NA	NA	1.41 (1.31-1.52)	0.98 (0.88-1.10)
5 (richest)	NA	NA	NA	1.56 (1.45-1.68)	0.95 (0.87-1.05)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.43 (1.29-1.59)	4.71 (4.27-5.19)	2.86 (2.59-3.16)	3.10 (2.88-3.34)	1.23 (1.11-1.36)
Separated	1.31 (1.17-1.48)	4.59 (4.16-5.07)	2.62 (2.34-2.95)	2.87 (2.65-3.11)	0.98 (0.77-1.24)
Divorced	NA	4.58 (4.09-5.13)	2.88 (2.49-3.32)	3.30 (2.92-3.72)	1.14 (1.05-1.24)
Widowed	1.37 (1.22-1.53)	4.42 (3.91-5.00)	2.68 (2.25-3.20)	2.69 (2.26-3.20)	1.16 (0.88-1.54)
Cohabitating	1.40 (1.23-1.59)	4.82 (4.38-5.31)	2.73 (2.47-3.02)	3.02 (2.81-3.24)	1.12 (0.95-1.32)
Place of residence[d]					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	0.98 (0.93-1.04)	1.10 (1.07-1.12)	1.21 (1.15-1.27)	0.97 (0.93-1.03)	NA
Tobacco smoking[e]					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.00 (0.92-1.08)	NA	NA	1.05 (0.97-1.13)	0.94 (0.76-1.17)
Observations[g]	2,792	15,257	6,536	20,808	1,398

Abbreviations: RR, risk ratio; NA, not applicable; SVG, St. Vincent & the Grenadines.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Education is missing for Paraguay

[c] Wealth quintiles are missing for Mexico, Nicaragua and Paraguay.

[d] Place of residence is missing for St. Vincent & the Grenadines.

[e] Tobacco smoking is missing for Nicaragua and Paraguay.

[f] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[g] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 31. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Middle East & Northern Africa

	Algeria	Egypt	Iran	Iraq	Lebanon	Morocco
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-unadjusted regressions[a]						
Age (years)[b]						
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.14 (0.08-0.25)	NA	0.26 (0.23-0.30)	0.51 (0.33-0.77)	0.15 (0.05-0.42)	0.34 (0.20-0.56)
25-34	0.54 (0.42-0.69)	0.14 (0.03-0.74)	0.71 (0.68-0.75)	0.83 (0.62-1.12)	0.44 (0.28-0.70)	0.62 (0.46-0.84)
45-54	1.29 (1.06-1.58)	2.46 (0.84-7.21)	0.94 (0.89-0.98)	1.01 (0.73-1.40)	1.55 (1.14-2.12)	1.24 (0.96-1.58)
55-64	0.97 (0.75-1.25)	5.08 (1.66-15.53)	0.76 (0.72-0.81)	0.50 (0.31-0.81)	1.21 (0.85-1.73)	1.28 (0.98-1.67)
>= 65	0.81 (0.54-1.22)	NA	0.37 (0.33-0.41)	0.51 (0.30-0.87)	1.17 (0.63-2.18)	0.48 (0.31-0.74)
Education						
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.15 (0.88-1.50)	1.23 (0.46-3.30)	1.95 (1.8-2.10)	1.31 (0.93-1.83)	2.88 (1.30-6.39)	1.03 (0.80-1.33)
Secondary education or further	1.13 (0.89-1.44)	0.33 (0.13-0.82)	1.95 (1.8-2.11)	1.05 (0.75-1.49)	6.62 (3.13-14.01)	1.47 (1.19-1.82)
Household wealth quintile[c]						
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.09 (0.78-1.52)	NA	1.28 (1.22-1.36)	NA	NA	2.36 (1.18-4.72)
3	1.08 (0.80-1.47)	NA	1.65 (1.52-1.78)	NA	NA	2.12 (1.03-4.38)
4	1.30 (0.94-1.80)	NA	1.67 (1.31-2.11)	NA	NA	2.71 (1.33-5.53)
5 (richest)	1.49 (1.12-1.97)	NA	1.48 (0.83-2.65)	NA	NA	4.08 (2.01-8.24)
Relationship status[d]						
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	9.44 (5.05-17.64)	1.29 (0.56-2.96)	27.25 (19.07-38.94)	4.91 (2.06-11.71)	2.81 (1.47-5.39)	4.53 (2.51-8.19)
Separated	11.87 (4.17-33.82)	NA	22.87 (15.82-33.05)	5.08 (1.45-17.80)	4.14 (1.42-12.05)	NA
Divorced	8.46 (4.07-17.58)	NA	NA	1.97 (0.40-9.78)	3.88 (1.79-8.41)	5.24 (2.56-10.70)
Widowed	8.31 (4.14-16.67)	NA	13.66 (9.45-19.75)	3.49 (1.40-8.73)	2.22 (1.00-4.93)	2.93 (1.52-5.66)
Cohabitating	9.44 (5.05-17.64)	NA	27.25 (19.07-38.94)	4.91 (2.06-11.71)	2.81 (1.47-5.39)	4.53 (2.51-8.19)
Place of residence[e]						
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.57 (1.20-2.05)	2.79 (1.16-6.72)	1.30 (1.23-1.39)	0.74 (0.50-1.09)	NA	2.09 (1.64-2.65)
Tobacco smoking[f]						
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.60 (0.63-4.04)	0 (0-0)	0.86 (0.77-0.96)	0.79 (0.34-1.85)	1.59 (1.22-2.07)	2.21 (0.83-5.92)
Covariate-adjusted regressions[g]						
Age (years)[b]						
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.37 (0.18-0.75)	NA	0.47 (0.41-0.54)	0.66 (0.43-1.00)	0.18 (0.06-0.48)	0.53 (0.31-0.90)
25-34	0.51 (0.38-0.68)	0.15 (0.03-0.81)	0.79 (0.75-0.84)	0.86 (0.63-1.15)	0.49 (0.32-0.76)	0.69 (0.51-0.94)
45-54	1.46 (1.16-1.83)	2.02 (0.65-6.32)	0.99 (0.93-1.04)	1.02 (0.74-1.42)	1.76 (1.30-2.39)	1.32 (1.02-1.73)
55-64	1.09 (0.81-1.47)	3.65 (1.10-12.06)	0.92 (0.85-0.99)	0.56 (0.33-0.94)	1.48 (1.00-2.19)	1.51 (1.12-2.04)
>= 65	1.04 (0.65-1.67)	NA	0.56 (0.50-0.64)	0.62 (0.35-1.09)	2.08 (1.06-4.07)	0.71 (0.43-1.16)
Education						
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	0.97 (0.73-1.30)	1.17 (0.46-2.96)	1.64 (1.49-1.80)	1.18 (0.83-1.67)	3.26 (1.46-7.29)	1.20 (0.74-1.94)
Secondary education or further	1.31 (0.99-1.74)	0.61 (0.25-1.53)	1.88 (1.70-2.08)	1.05 (0.73-1.53)	8.49 (3.96-18.19)	1.49 (1.03-2.17)

eTable 31. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Middle East & Northern Africa (continued)

Variable	Algeria RR (95% CI)	Egypt RR (95% CI)	Iran RR (95% CI)	Iraq RR (95% CI)	Lebanon RR (95% CI)	Morocco RR (95% CI)
Covariate-adjusted regressions[g]						
Household wealth quintile[c]						
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.03 (0.74-1.43)	NA	1.08 (1.03-1.14)	NA	NA	1.97 (0.96-4.02)
3	0.99 (0.73-1.36)	NA	1.22 (1.13-1.31)	NA	NA	1.70 (0.79-3.67)
4	1.11 (0.81-1.54)	NA	1.32 (1.08-1.61)	NA	NA	1.90 (0.90-4.01)
5 (richest)	1.32 (1.00-1.73)	NA	1.38 (0.75-2.53)	NA	NA	2.40 (1.15-5.03)
Relationship status[d]						
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	9.64 (3.76-24.73)	1.47 (0.62-3.49)	25.47 (16.71-38.82)	4.17 (1.71-10.18)	2.90 (1.52-5.54)	3.13 (1.68-5.85)
Separated	12.77 (3.75-43.44)	NA	21.76 (14.14-33.48)	3.53 (0.88-14.23)	3.40 (0.73-15.89)	NA
Divorced	6.74 (2.36-19.23)	NA	NA	1.89 (0.38-9.41)	3.44 (1.59-7.44)	3.33 (1.59-7.01)
Widowed	7.15 (2.56-19.97)	NA	19.81 (12.85-30.53)	4.00 (1.57-10.18)	2.00 (0.88-4.51)	2.55 (1.25-5.21)
Cohabitating	9.64 (3.76-24.73)	NA	25.47 (16.71-38.82)	4.17 (1.71-10.18)	2.90 (1.52-5.54)	3.13 (1.68-5.85)
Place of residence[e]						
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.53 (1.08-2.16)	2.71 (1.10-6.67)	1.06 (1.00-1.14)	0.75 (0.51-1.12)	NA	1.68 (1.29-2.18)
Tobacco smoking[f]						
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	2.36 (0.91-6.09)	0 (0-0)	0.93 (0.83-1.04)	0.88 (0.38-2.04)	1.12 (0.86-1.48)	1.72 (0.61-4.85)
Observations[h]	2,675	8,684	10,508	2,305	1,751	2,852

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] For Egypt, the age groups are 15-34, 35-44 (ref.), 45-54, and >= 55.

[c] Wealth quintiles are missing for Egypt, Iraq and Lebanon.

[d] Place of residence is missing for Lebanon.

[e] For Egypt, the reference category for relationship status is currently not married.

[f] For Egypt, there is a 0% screening prevalence among women who currently smoke.

[g] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[h] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 32. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in South Asia, East Asia, and Pacific: Bhutan to Indonesia

Variable	Bhutan RR (95% CI)	China RR (95% CI)	India RR (95% CI)	Indonesia RR (95% CI)
Covariate-unadjusted regressions[a]				
Age (years)				
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.31 (0.23-0.40)	0.22 (0.08-0.66)	0.32 (0.31-0.32)	0.07 (0.04-0.11)
25-34	0.90 (0.80-1.01)	0.90 (0.67-1.21)	0.90 (0.89-0.91)	0.49 (0.40-0.60)
45-54	0.90 (0.80-1.01)	0.88 (0.76-1.03)	1.00 (0.99-1.02)	1.28 (1.07-1.54)
55-64	0.47 (0.37-0.61)	0.72 (0.60-0.86)	NA	1.15 (0.90-1.46)
>= 65	0.15 (0.06-0.38)	0.50 (0.41-0.60)	NA	0.48 (0.32-0.73)
Education				
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	0.67 (0.56-0.80)	2.18 (1.63-2.93)	0.89 (0.87-0.90)	4.14 (3.01-5.68)
Household wealth quintile[b]				
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.01 (0.87-1.17)	1.79 (1.39-2.30)	1.26 (1.23-1.30)	NA
3	1.09 (0.93-1.28)	2.41 (1.86-3.11)	1.52 (1.48-1.56)	NA
4	1.19 (1.01-1.39)	3.15 (2.40-4.13)	1.77 (1.72-1.82)	NA
5 (richest)	1.21 (1.04-1.41)	4.77 (3.68-6.19)	2.11 (2.05-2.18)	NA
Relationship status				
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	4.49 (2.16-9.30)	1.72 (1.09-2.72)	10.86 (10.47-11.26)	17.07 (8.51-34.24)
Separated	5.19 (2.34-11.49)	1.65 (0.98-2.78)	8.61 (8.03-9.24)	9.59 (2.58-35.71)
Divorced	5.12 (2.44-10.78)	NA	8.49 (7.86-9.17)	17.04 (7.54-38.53)
Widowed	2.60 (1.19-5.70)	0.99 (0.61-1.61)	9.33 (8.92-9.75)	13.95 (6.65-29.27)
Cohabitating	NA	1.56 (0.56-4.32)	NA	0 (0-0)
Place of residence				
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.20 (1.08-1.34)	2.02 (1.17-3.48)	1.20 (1.17-1.23)	3.90 (2.84-5.36)
Tobacco smoking				
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0.82 (0.60-1.13)	0.56 (0.40-0.79)	1.21 (1.12-1.30)	0.90 (0.54-1.50)
Covariate-adjusted regressions[c]				
Age (years)				
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.41 (0.31-0.55)	0.19 (0.04-0.87)	0.74 (0.73-0.75)	0.12 (0.07-0.20)
25-34	0.93 (0.83-1.04)	0.85 (0.63-1.13)	0.95 (0.94-0.97)	0.47 (0.38-0.58)
45-54	0.93 (0.83-1.04)	0.93 (0.80-1.09)	0.99 (0.98-1.01)	1.85 (1.55-2.22)
55-64	0.52 (0.41-0.67)	0.82 (0.68-1.00)	NA	2.31 (1.83-2.93)
>= 65	0.18 (0.07-0.46)	0.69 (0.53-0.89)	NA	1.66 (1.10-2.49)

eTable 32. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in South Asia, East Asia, and Pacific: Bhutan to Indonesia (continued)

	Bhutan	China	India	Indonesia
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-adjusted regressions[c]				
Education				
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	0.72 (0.60-0.85)	1.30 (1.13-1.50)	1.01 (1.00-1.02)	6.74 (4.74-9.59)
Household wealth quintile[b]				
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	0.97 (0.83-1.12)	1.63 (1.27-2.09)	1.31 (1.27-1.34)	NA
3	1.03 (0.88-1.21)	1.99 (1.56-2.54)	1.61 (1.56-1.65)	NA
4	1.08 (0.93-1.25)	2.44 (1.86-3.19)	1.89 (1.83-1.94)	NA
5 (richest)	1.14 (0.98-1.33)	3.28 (2.37-4.54)	2.28 (2.20-2.35)	NA
Relationship status				
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	3.18 (1.40-7.22)	1.60 (0.96-2.66)	9.12 (8.78-9.48)	6.07 (2.96-12.44)
Separated	3.36 (1.38-8.16)	1.46 (0.78-2.73)	7.67 (7.15-8.23)	3.83 (1.10-13.30)
Divorced	3.67 (1.58-8.48)	NA	6.86 (6.35-7.41)	6.13 (2.72-13.84)
Widowed	2.42 (1.00-5.87)	1.38 (0.79-2.40)	7.78 (7.42-8.15)	4.43 (2.05-9.56)
Cohabitating	NA	1.66 (0.64-4.29)	NA	0 (0-0)
Place of residence				
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.20 (1.07-1.34)	1.51 (0.90-2.55)	0.94 (0.91-0.96)	2.43 (1.79-3.30)
Tobacco smoking				
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0.92 (0.68-1.25)	0.74 (0.53-1.04)	1.08 (1.01-1.16)	0.78 (0.49-1.23)
Observations[d]	1,653	7,437	677,463	15,635

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Wealth quintiles are missing for Indonesia.

[c] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[d] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 33. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in South Asia, East Asia and Pacific: Nepal to Timor-Leste

Variable	Nepal RR (95% CI)	Philippines RR (95% CI)	Sri Lanka RR (95% CI)	Timor-Leste RR (95% CI)
Covariate-unadjusted regressions[a]				
Age (years)				
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.28 (0.09-0.86)	0.74 (0.58-0.94)	0.01 (0.00-0.02)	0.49 (0.10-2.40)
25-34	0.94 (0.44-2.01)	0.88 (0.66-1.15)	0.11 (0.10-0.13)	0.32 (0.10-1.01)
45-54	1.24 (0.54-2.80)	0.95 (0.69-1.30)	0.76 (0.71-0.81)	0.26 (0.03-2.20)
55-64	0.37 (0.09-1.62)	NA	NA	0.43 (0.05-3.65)
>= 65	0.27 (0.04-2.00)	NA	NA	0 (0-0)
Education				
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	2.22 (1.20-4.10)	3.13 (1.69-5.78)	1.66 (1.46-1.88)	0.53 (0.12-2.23)
Household wealth quintile[b]				
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	NA	1.87 (1.21-2.88)	1.89 (1.68-2.13)	NA
3	NA	2.61 (1.65-4.12)	2.18 (1.94-2.45)	4.79 (1.52-15.11)
4	NA	2.98 (1.82-4.89)	2.33 (2.08-2.62)	NA
5 (richest)	NA	5.58 (3.53-8.83)	2.72 (2.42-3.05)	1.20 (0.25-5.77)
Relationship status				
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	3.95 (0.97-16.11)	0.91 (0.73-1.12)	NA	0.27 (0.11-0.70)
Separated	NA	1.49 (0.93-2.40)	0.61 (0.49-0.76)	0 (0-0)
Divorced	0 (0-0)	4.32 (1.50-12.43)	NA	0 (0-0)
Widowed	0 (0-0)	1.78 (0.90-3.53)	0.84 (0.69-1.03)	0 (0-0)
Cohabitating	NA	1.30 (0.96-1.77)	NA	0 (0-0)
Place of residence[c]				
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	2.25 (1.24-4.08)	0.85 (0.59-1.22)	NA	NA
Tobacco smoking[d]				
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0.65 (0.20-2.07)	0.97 (0.56-1.66)	NA	2.59 (0.57-11.65)
Covariate-adjusted regressions[e]				
Age (years)				
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.27 (0.07-1.02)	0.68 (0.51-0.92)	0.01 (0.00-0.02)	0.34 (0.06-1.89)
25-34	0.70 (0.32-1.56)	0.86 (0.65-1.13)	0.11 (0.10-0.13)	0.32 (0.10-1.06)
45-54	1.65 (0.71-3.83)	0.91 (0.65-1.25)	0.81 (0.76-0.87)	0.29 (0.04-2.32)
55-64	0.61 (0.13-2.85)	NA	NA	0.84 (0.10-6.86)
>= 65	0 (0-0)	NA	NA	0 (0-0)
Education				
Primary education or less	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Secondary education or further	2.94 (1.32-6.57)	1.78 (0.94-3.37)	1.77 (1.57-2.01)	0.44 (0.10-1.89)

eTable 33. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in South Asia, East Asia, and Pacific: Nepal to Timor-Leste (continued)

	Nepal	Philippines	Sri Lanka	Timor-Leste
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-adjusted regressions[e]				
Household wealth quintile[b]				
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	NA	1.80 (1.15-2.82)	1.65 (1.47-1.85)	NA
3	NA	2.59 (1.60-4.19)	1.82 (1.63-2.03)	5.00 (1.51-16.54)
4	NA	3.22 (1.92-5.38)	1.84 (1.64-2.06)	NA
5 (richest)	NA	6.55 (4.04-10.62)	1.93 (1.73-2.16)	1.78 (0.48-6.57)
Relationship status				
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	2.78 (0.53-14.64)	0.83 (0.61-1.13)	NA	0.15 (0.05-0.41)
Separated	NA	1.35 (0.84-2.20)	0.61 (0.49-0.75)	0 (0-0)
Divorced	0 (0-0)	3.23 (1.09-9.58)	NA	0 (0-0)
Widowed	0 (0-0)	1.77 (0.84-3.75)	0.67 (0.55-0.82)	0 (0-0)
Cohabitating	NA	1.51 (1.09-2.12)	NA	0 (0-0)
Place of residence[c]				
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.72 (0.93-3.17)	0.53 (0.37-0.76)	NA	NA
Tobacco smoking[d]				
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	1.18 (0.34-4.13)	0.91 (0.53-1.57)	NA	2.25 (0.46-11.01)
Observations[f]	997	24,831	18,288	1,007

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Wealth quintiles are missing for Nepal. For Timor-Leste, we merged the 1st and 2nd quintile as well as the 4th and 5th in order to get interpretable results (due to the extremely low prevalence in each quintile).

[c] Place of residence is missing for Sri Lanka and Timor-Leste.

[d] Tobacco smoking is missing for Sri Lanka.

[e] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[f] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 34. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Sub-Saharan Africa: Benin to Kenya

Variable	Benin RR (95% CI)	Botswana RR (95% CI)	Côte d'Ivoire RR (95% CI)	Eswatini RR (95% CI)	Ghana RR (95% CI)	Kenya RR (95% CI)
Covariate-unadjusted regressions[a]						
Age (years)						
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.59 (0.15-2.26)	0.22 (0.17-0.28)	0.26 (0.14-0.51)	0.22 (0.15-0.33)	1.42 (0.36-5.61)	0.26 (0.16-0.43)
25-34	0.52 (0.17-1.62)	0.72 (0.63-0.81)	0.53 (0.30-0.93)	0.77 (0.60-1.00)	2.02 (0.88-4.67)	0.75 (0.58-0.99)
45-54	0.49 (0.10-2.32)	0.91 (0.80-1.04)	0.73 (0.31-1.75)	0.87 (0.63-1.19)	0.90 (0.39-2.06)	0.88 (0.63-1.22)
55-64	0.42 (0.07-2.58)	0.66 (0.56-0.79)	NA	0.47 (0.30-0.73)	0.54 (0.25-1.19)	0.52 (0.33-0.81)
>= 65	0 (0-0)	0.45 (0.30-0.67)	NA	0.46 (0.27-0.81)	0.50 (0.22-1.13)	0.37 (0.18-0.77)
Education						
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.31 (0.34-5.14)	1.40 (1.05-1.86)	2.54 (1.49-4.33)	2.07 (1.15-3.73)	2.14 (1.10-4.17)	5.92 (3.33-10.53)
Secondary education or further	3.17 (1.26-7.96)	1.71 (1.32-2.22)	4.14 (2.39-7.16)	3.00 (1.78-5.06)	3.41 (1.88-6.18)	8.68 (4.83-15.59)
Household wealth quintile						
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	2.38 (0.53-10.64)	1.23 (1.00-1.52)	0.63 (0.19-2.08)	1.05 (0.63-1.74)	1.80 (0.62-5.24)	2.51 (1.50-4.19)
3	1.17 (0.20-7.01)	1.34 (1.12-1.60)	1.25 (0.45-3.48)	1.25 (0.73-2.14)	1.67 (0.57-4.91)	2.97 (1.85-4.77)
4	1.32 (0.22-7.96)	1.48 (1.24-1.77)	2.25 (0.89-5.70)	1.86 (1.12-3.09)	3.74 (1.34-10.44)	4.82 (2.94-7.91)
5 (richest)	4.60 (1.15-18.46)	1.79 (1.51-2.13)	5.15 (2.13-12.45)	2.85 (1.75-4.65)	4.56 (1.71-12.19)	6.61 (4.14-10.56)
Relationship status						
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	1.67 (0.22-12.78)	1.53 (1.37-1.71)	1.43 (0.81-2.55)	1.61 (1.23-2.09)	0.49 (0.22-1.12)	1.21 (0.84-1.74)
Separated	0 (0-0)	2.35 (1.65-3.35)	1.62 (0.47-5.61)	2.75 (1.64-4.60)	0.47 (0.18-1.21)	2.10 (1.28-3.44)
Divorced	0 (0-0)	1.51 (1.04-2.20)	2.22 (0.29-17.04)	1.50 (0.42-5.41)	NA	2.13 (1.17-3.87)
Widowed	1.15 (0.07-18.21)	1.26 (1.04-1.54)	0.81 (0.11-6.22)	1.25 (0.85-1.86)	0.27 (0.12-0.62)	1.07 (0.68-1.68)
Cohabitating	0 (0-0)	1.04 (0.86-1.25)	2.38 (1.23-4.58)	0.87 (0.39-1.96)	0.84 (0.18-3.91)	2.11 (0.77-5.80)
Place of residence[b]						
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	2.08 (0.70-6.20)	NA	3.25 (1.96-5.38)	NA	1.98 (1.14-3.45)	1.74 (1.26-2.39)
Tobacco smoking[c]						
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0 (0-0)	0.76 (0.59-0.99)	14.25 (4.90-41.43)	1.67 (0.81-3.47)	0.27 (0.04-2.04)	1.60 (0.47-5.51)
Covariate-adjusted regressions[d]						
Age (years)						
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.73 (0.14-3.81)	0.21 (0.15-0.28)	0.26 (0.11-0.62)	0.28 (0.17-0.46)	1.33 (0.21-8.18)	0.27 (0.16-0.44)
25-34	0.49 (0.15-1.58)	0.69 (0.60-0.80)	0.47 (0.27-0.83)	0.80 (0.59-1.08)	1.92 (0.76-4.87)	0.72 (0.55-0.94)
45-54	0.21 (0.02-2.00)	0.89 (0.76-1.05)	0.87 (0.38-2.01)	1.09 (0.76-1.58)	0.95 (0.42-2.14)	0.95 (0.69-1.29)
55-64	0.34 (0.02-6.41)	0.84 (0.69-1.03)	NA	0.82 (0.50-1.36)	0.73 (0.34-1.55)	0.79 (0.51-1.22)
>= 65	0 (0-0)	0.64 (0.41-1.00)	NA	0.75 (0.35-1.62)	0.95 (0.40-2.23)	0.62 (0.33-1.17)
Education						
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.15 (0.30-4.46)	1.56 (1.09-2.23)	2.14 (1.25-3.67)	1.94 (0.95-3.98)	1.61 (0.82-3.17)	4.35 (2.44-7.78)
Secondary education or further	2.15 (0.82-5.64)	1.96 (1.41-2.73)	3.04 (1.71-5.39)	3.09 (1.60-5.96)	2.02 (1.01-4.04)	5.36 (2.90-9.90)

eTable 34. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Sub-Saharan Africa: Benin to Kenya (continued)

	Benin	Botswana	Côte d'Ivoire	Eswatini	Ghana	Kenya
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-adjusted regressions[e]						
Household wealth quintile[c]						
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	2.34 (0.48-11.37)	1.17 (0.96-1.42)	0.58 (0.18-1.93)	0.96 (0.59-1.57)	1.51 (0.53-4.30)	1.70 (1.03-2.81)
3	1.12 (0.20-6.32)	1.23 (1.03-1.47)	0.98 (0.32-3.00)	1.10 (0.64-1.91)	1.42 (0.50-4.01)	1.89 (1.21-2.97)
4	1.04 (0.18-6.15)	1.30 (1.10-1.53)	1.48 (0.48-4.58)	1.57 (0.94-2.63)	2.55 (0.87-7.49)	2.78 (1.71-4.55)
5 (richest)	3.09 (0.83-11.58)	1.48 (1.27-1.74)	2.58 (0.86-7.71)	2.14 (1.33-3.45)	2.70 (0.99-7.36)	3.44 (2.12-5.58)
Relationship status						
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	2.72 (0.22-34.17)	1.10 (0.96-1.25)	1.71 (0.77-3.79)	0.91 (0.66-1.23)	0.74 (0.23-2.37)	1.19 (0.84-1.69)
Separated	0 (0-0)	1.88 (1.27-2.77)	1.06 (0.28-4.02)	1.72 (1.01-2.93)	0.83 (0.24-2.85)	1.73 (1.08-2.77)
Divorced	0 (0-0)	1.04 (0.71-1.53)	1.58 (0.2-12.45)	0.52 (0.11-2.46)	NA	1.91 (1.02-3.58)
Widowed	6.68 (0.14-311.03)	1.16 (0.90-1.49)	0.68 (0.08-5.68)	0.85 (0.54-1.35)	0.61 (0.19-1.99)	1.43 (0.90-2.30)
Cohabitating	0 (0-0)	0.99 (0.81-1.21)	2.61 (1.16-5.87)	0.83 (0.31-2.24)	0.90 (0.18-4.53)	2.21 (0.82-5.94)
Place of residence[b]						
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.97 (0.77-5.03)	NA	1.40 (0.68-2.89)	NA	1.31 (0.72-2.37)	1.13 (0.84-1.52)
Tobacco smoking[c]						
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0 (0-0)	0.80 (0.57-1.12)	9.62 (3.67-25.19)	1.39 (0.64-3.01)	0.48 (0.06-3.54)	1.88 (0.98-3.62)
Observations[h]	2,544	1,878	9,796	1,390	2,366	2,679

Abbreviations: RR, risk ratio; NA, not applicable.

[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] Place of residence is missing for Botswana and Eswatini.

[c] For Benin, there is a 0% screening prevalence among women who currently smoke.

[d] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[e] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eTable 35. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Sub-Saharan Africa: Lesotho to Zimbabwe

	Lesotho	Namibia	South Africa	Sudan	Zimbabwe
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-unadjusted regressions[a]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.23 (0.17-0.30)	0.21 (0.18-0.24)	0.15 (0.12-0.18)	0.90 (0.45-1.79)	0.16 (0.13-0.19)
25-34	0.70 (0.57-0.85)	0.68 (0.62-0.73)	0.64 (0.59-0.70)	0.87 (0.41-1.82)	0.78 (0.70-0.87)
45-54	1.21 (0.95-1.52)	0.95 (0.86-1.04)	1.07 (0.98-1.16)	0.82 (0.45-1.50)	1.11 (0.95-1.30)
55-64	NA	0.91 (0.80-1.04)	0.95 (0.87-1.05)	0.67 (0.25-1.81)	NA
>= 65	NA	NA	0.65 (0.57-0.74)	1.68 (0.59-4.78)	NA
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	4.32 (0.60-30.95)	1.40 (1.16-1.70)	1.40 (1.17-1.67)	1.05 (0.41-2.71)	1.04 (0.49-2.21)
Secondary education or further	9.76 (1.38-68.92)	1.91 (1.58-2.29)	1.56 (1.34-1.83)	2.01 (1.16-3.48)	2.05 (0.98-4.28)
Household wealth quintile					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.93 (1.31-2.86)	1.67 (1.41-1.97)	1.18 (1.01-1.38)	0.51 (0.19-1.37)	1.27 (0.96-1.68)
3	2.83 (1.94-4.12)	2.04 (1.70-2.46)	1.40 (1.19-1.64)	0.76 (0.28-2.05)	2.93 (2.33-3.69)
4	3.24 (2.25-4.66)	2.52 (2.11-3.02)	1.83 (1.57-2.13)	1.73 (0.52-5.76)	3.49 (2.77-4.39)
5 (richest)	6.91 (4.89-9.75)	3.35 (2.80-4.01)	2.51 (2.18-2.90)	2.25 (0.59-8.61)	4.65 (3.72-5.81)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	3.02 (2.36-3.86)	2.12 (1.95-2.31)	2.08 (1.91-2.26)	1.18 (0.60-2.35)	5.35 (4.18-6.83)
Separated	2.14 (1.32-3.47)	1.18 (0.96-1.45)	1.72 (1.43-2.06)	2.46 (0.36-16.59)	4.78 (3.49-6.54)
Divorced	5.24 (3.33-8.25)	1.74 (1.35-2.24)	2.83 (2.46-3.25)	1.49 (0.29-7.57)	4.90 (3.56-6.76)
Widowed	3.34 (2.37-4.70)	1.59 (1.34-1.88)	1.48 (1.30-1.68)	0.49 (0.14-1.69)	6.41 (4.74-8.67)
Cohabitating	3.46 (1.61-7.44)	1.13 (1.00-1.27)	1.62 (1.42-1.84)	NA	4.27 (2.97-6.15)
Place of residence					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	2.09 (1.76-2.50)	1.61 (1.43-1.80)	1.62 (1.47-1.79)	1.58 (0.73-3.43)	2.63 (2.28-3.03)
Tobacco smoking[b]					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	2.43 (0.87-6.77)	1.13 (0.98-1.31)	1.35 (1.20-1.52)	0 (0-0)	2.39 (1.44-3.97)
Covariate-adjusted regressions[c]					
Age (years)					
35-44	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.36 (0.27-0.48)	0.20 (0.18-0.23)	0.16 (0.13-0.20)	0.69 (0.29-1.60)	0.26 (0.21-0.32)
25-34	0.78 (0.64-0.94)	0.67 (0.62-0.73)	0.66 (0.60-0.72)	0.71 (0.33-1.53)	0.81 (0.73-0.90)
45-54	1.30 (1.04-1.62)	0.99 (0.90-1.09)	1.08 (1.00-1.17)	0.96 (0.53-1.72)	1.19 (1.02-1.38)
55-64	NA	1.10 (0.98-1.23)	1.03 (0.94-1.14)	1.01 (0.39-2.58)	NA
>= 65	NA	NA	0.79 (0.70-0.89)	3.29 (0.94-11.48)	NA
Education					
No schooling	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	5.35 (0.73-39.20)	1.42 (1.19-1.71)	1.34 (1.13-1.60)	1.18 (0.45-3.08)	1.42 (0.66-3.04)
Secondary education or further	8.65 (1.20-62.28)	1.85 (1.54-2.23)	1.72 (1.46-2.02)	2.32 (1.31-4.11)	1.82 (0.86-3.83)

eTable 35. Poisson regressions of reporting to have ever been screened for cervical cancer onto individual-level characteristics (without survey weights) in Sub-Saharan Africa: Lesotho to Zimbabwe (continued)

	Lesotho	Namibia	South Africa	Sudan	Zimbabwe
Variable	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**	**RR (95% CI)**
Covariate-adjusted regressions[c]					
Household wealth quintile					
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.85 (1.25-2.74)	1.56 (1.33-1.84)	1.12 (0.97-1.30)	0.44 (0.17-1.15)	1.26 (0.96-1.67)
3	2.50 (1.70-3.67)	1.84 (1.54-2.21)	1.18 (1.02-1.37)	0.59 (0.23-1.49)	2.56 (2.00-3.28)
4	2.69 (1.84-3.93)	2.12 (1.76-2.55)	1.45 (1.25-1.69)	1.23 (0.43-3.52)	2.48 (1.86-3.31)
5 (richest)	5.00 (3.39-7.37)	2.53 (2.09-3.06)	1.66 (1.43-1.93)	1.25 (0.39-4.00)	3.45 (2.58-4.62)
Relationship status					
Never married	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	2.04 (1.54-2.70)	1.11 (1.03-1.21)	1.21 (1.12-1.31)	1.24 (0.53-2.92)	2.95 (2.26-3.85)
Separated	1.40 (0.85-2.31)	0.81 (0.67-0.98)	1.15 (0.97-1.37)	0 (0-0)	2.69 (1.94-3.74)
Divorced	2.80 (1.76-4.45)	0.89 (0.71-1.12)	1.46 (1.30-1.65)	1.86 (0.31-11.03)	2.28 (1.66-3.14)
Widowed	1.92 (1.31-2.81)	0.89 (0.76-1.05)	1.08 (0.95-1.22)	0.48 (0.08-2.79)	2.80 (2.05-3.83)
Cohabitating	2.08 (1.00-4.32)	0.89 (0.80-1.00)	1.31 (1.17-1.48)	NA	3.05 (2.14-4.34)
Place of residence					
Rural	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.13 (0.93-1.36)	1.09 (0.98-1.21)	1.15 (1.04-1.28)	1.08 (0.54-2.12)	1.39 (1.14-1.69)
Tobacco smoking[b]					
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	2.68 (1.09-6.56)	0.92 (0.81-1.05)	1.09 (0.98-1.20)	0 (0-0)	2.00 (1.26-3.18)
Observations[d]	6,211	8,822	5,939	4,043	9,481

Abbreviations: RR, risk ratio; NA, not applicable.

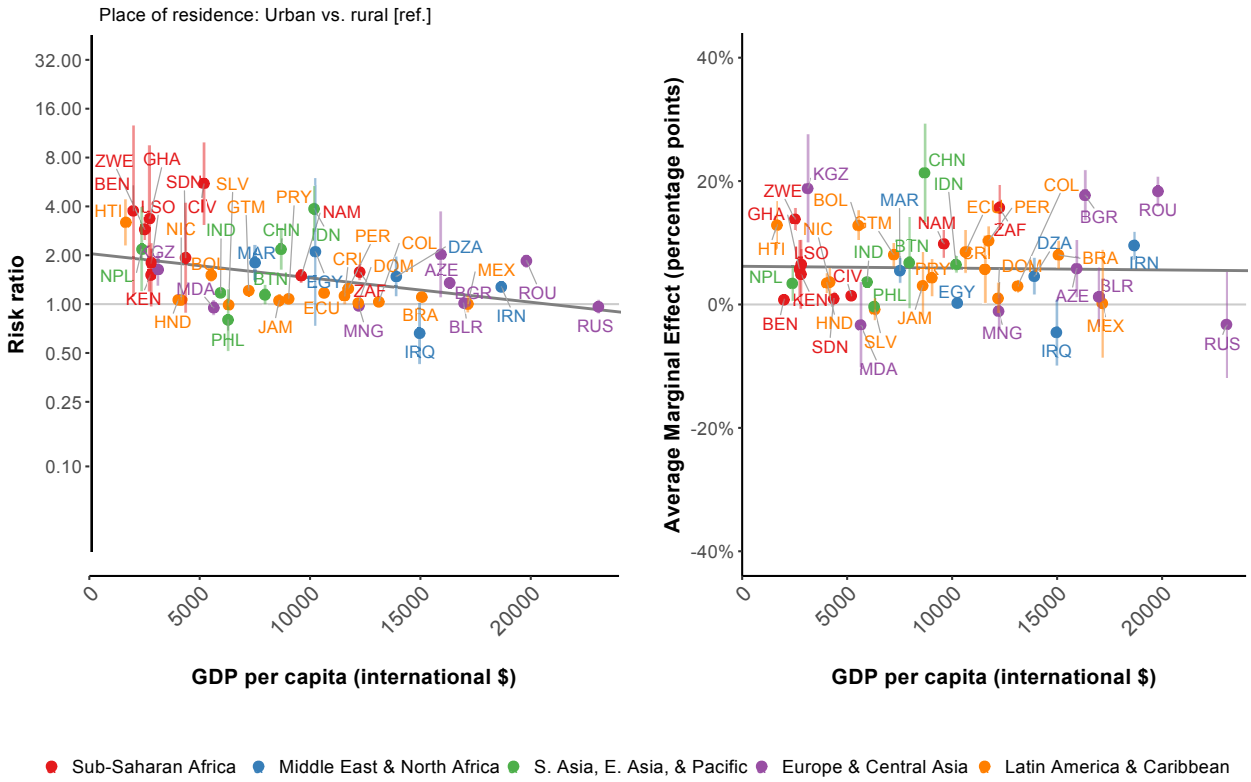
[a] Included only one of the variables shown in the table. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

[b] For Sudan, there is a 0% screening prevalence among women who currently smoke.

[c] Included age group, education, household wealth quintile, relationship status, place of residence, and smoking. RRs are shown with 95% CIs which are adjusted for clustering at the level of the primary sampling unit.

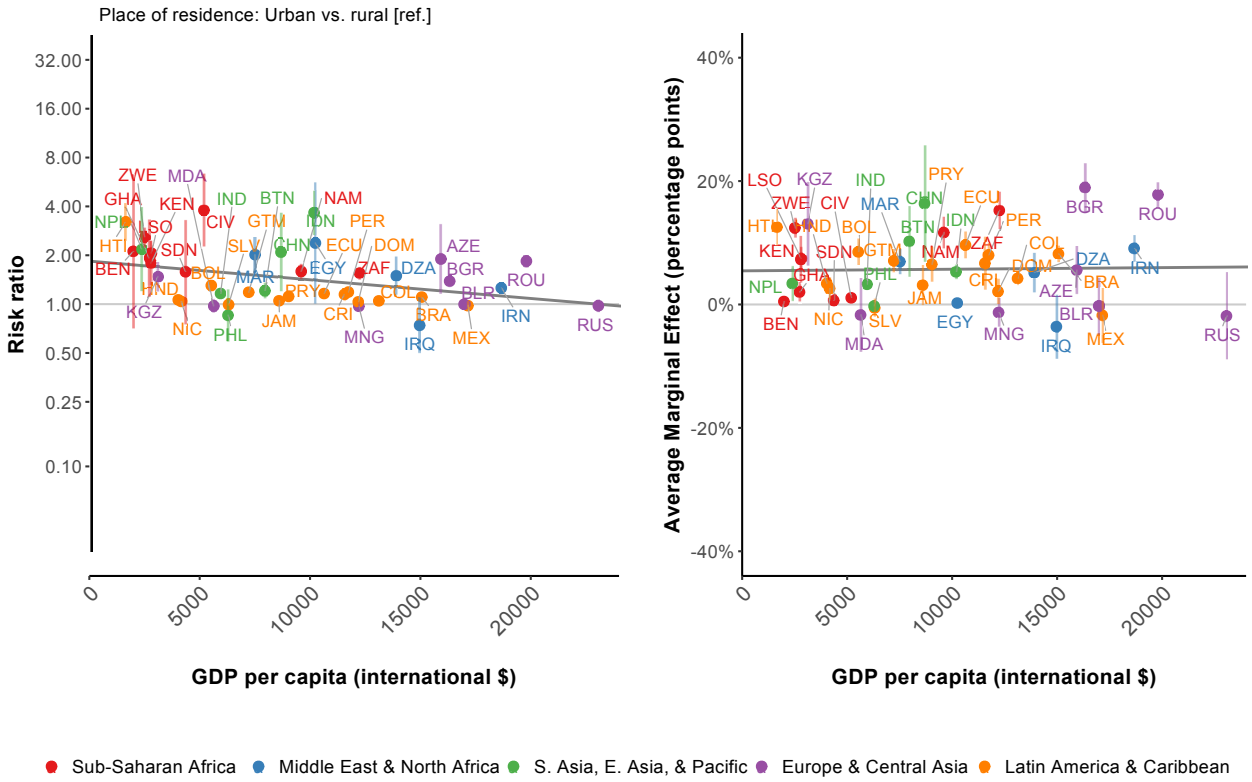
[d] Number of observations in the covariate-adjusted regression model. Percent missing for each individual-level predictor is shown by country in **eTable 4 in this Supplement**.

eFigure 25. GDP per capita plotted against the relative and absolute difference in lifetime prevalence of cervical cancer screening between urban and rural (reference group) areas in each country (Poisson regression with sampling weights)



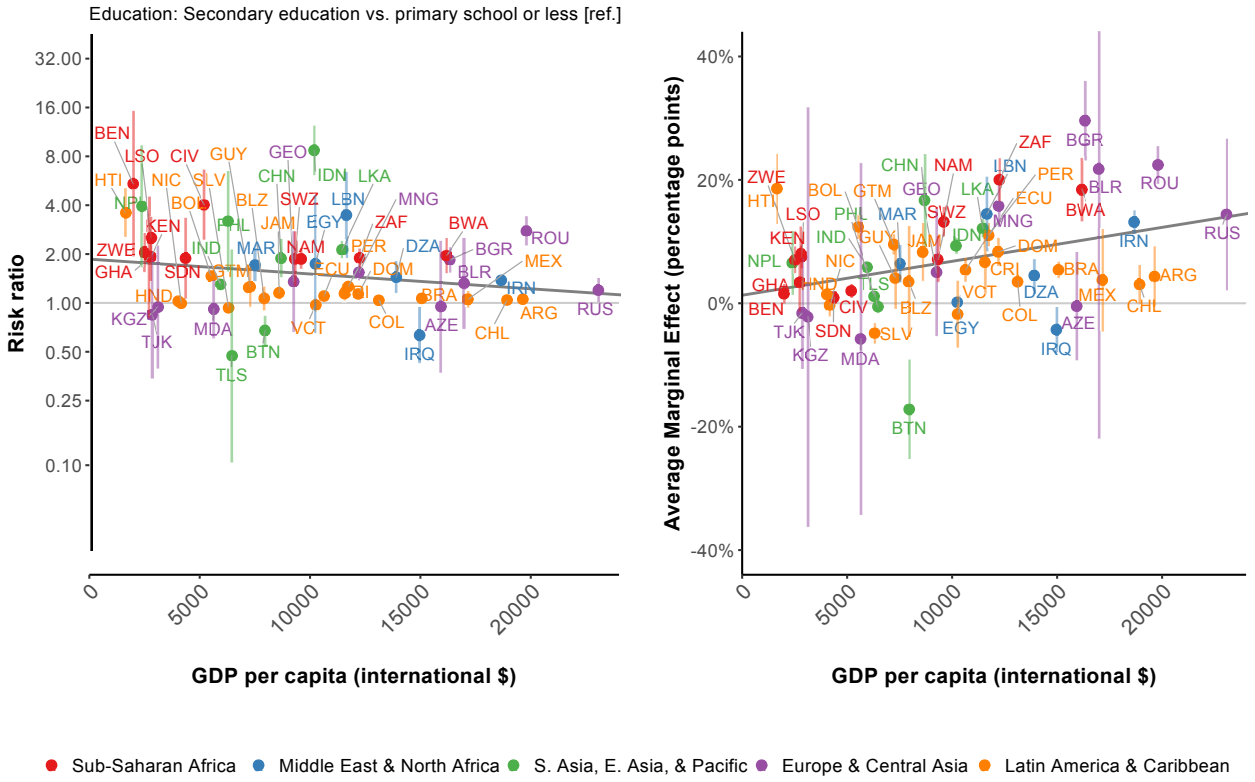
Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by place of residence (rural [reference category] vs. urban place of residence) plotted against a country's GDP per capita. Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. The vertical bars are 95% CIs around point estimates. Risk ratios are shown on a logarithmic scale. The grey line depicts an Ordinary Least Squares regression (with each country having the same weight) of the risk ratio (average marginal effect) in a country onto GDP per capita. The standardized regression coefficient β was -0.38, 95% CI -0.67- -0.10 (-0.03, 95% CI -0.33-0.28) and the explained variability R^2 was 0.15 (0.00).

eFigure 26. GDP per capita plotted against the relative and absolute difference in lifetime prevalence of cervical cancer screening between urban and rural (reference group) areas in each country (Poisson regression without sampling weights)



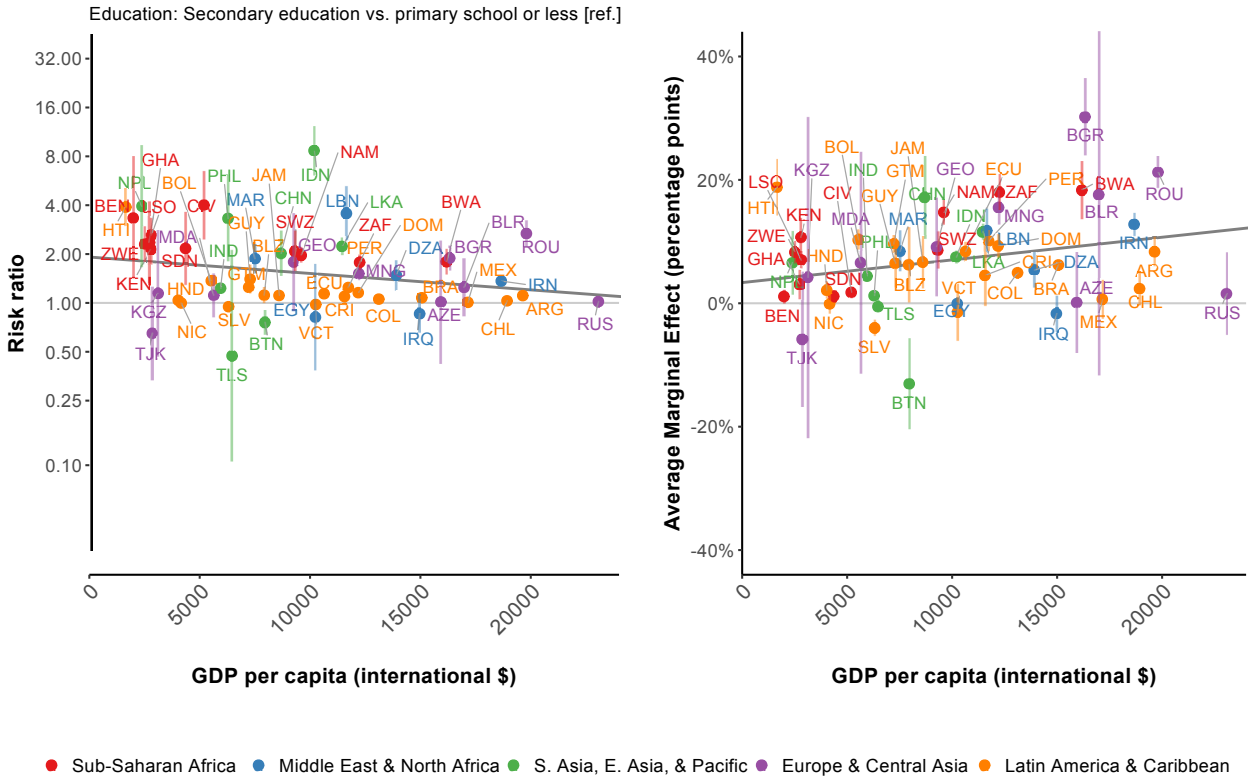
Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by place of residence (rural [reference category] vs. urban place of residence) plotted against a country's GDP per capita. Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. The vertical bars are 95% CIs around point estimates. Risk ratios are shown on a logarithmic scale. The grey line depicts an Ordinary Least Squares regression (with each country having the same weight) of the risk ratio (average marginal effect) in a country onto GDP per capita. The standardized regression coefficient β was -0.35, 95% CI -0.63- -0.06 (0.03, 95% CI -0.28-0.33) and the explained variability R^2 was 0.12 (0.00).

eFigure 27. GDP per capita plotted against the relative and absolute difference in lifetime prevalence of cervical cancer screening between women having completed high school or further and those who have completed primary school or less (reference group) in each country (Poisson regression with sampling weights)



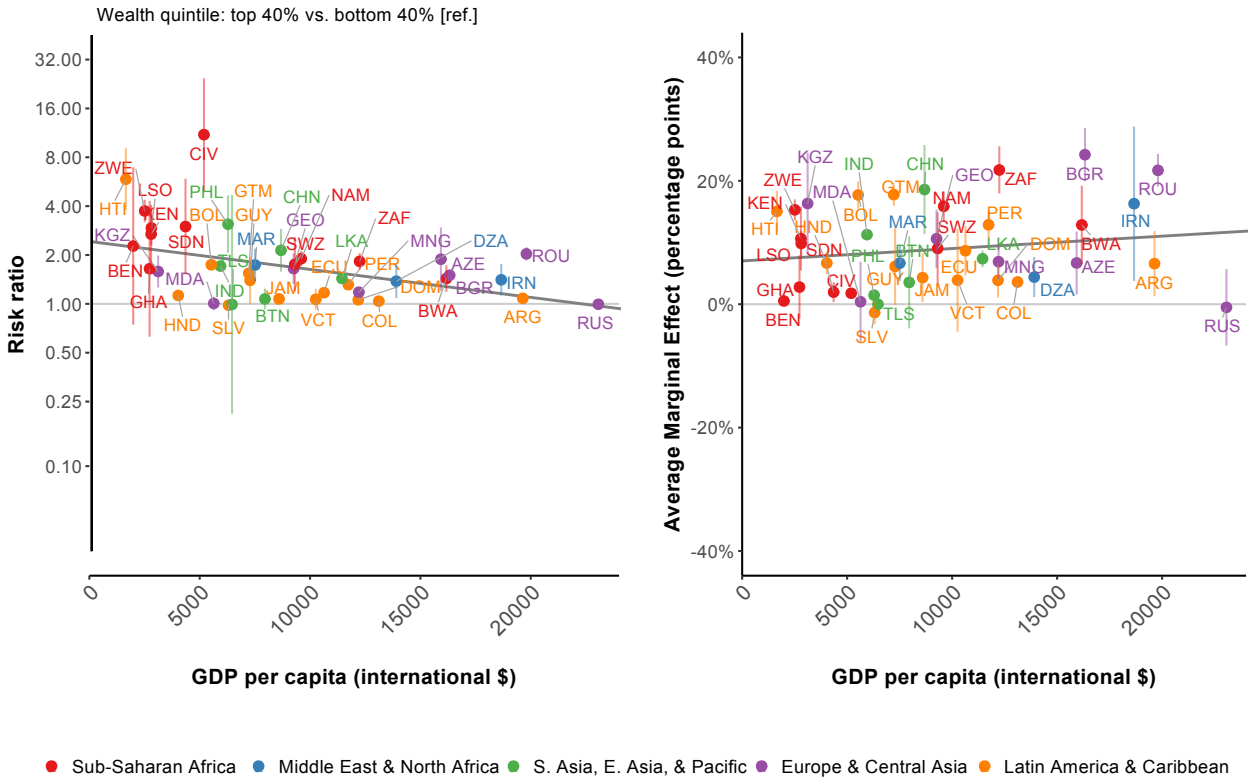
Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by educational attainment (primary school or less [reference category] vs. secondary education or further) plotted against a country's GDP per capita. Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. The vertical bars are 95% CIs around point estimates. Risk ratios are shown on a logarithmic scale. The grey line depicts an Ordinary Least Squares regression (with each country having the same weight) of the risk ratio (average marginal effect) in a country onto GDP per capita. The standardized regression coefficient β was -0.21, 95% CI -0.47- 0.06 (0.37, 95% CI 0.11-0.62) and the explained variability R^2 was 0.04 (0.13).

eFigure 28. GDP per capita plotted against the relative and absolute difference in lifetime prevalence of cervical cancer screening between women having completed high school or further and those who have completed primary school or less (reference group) in each country (Poisson regression without sampling weights)



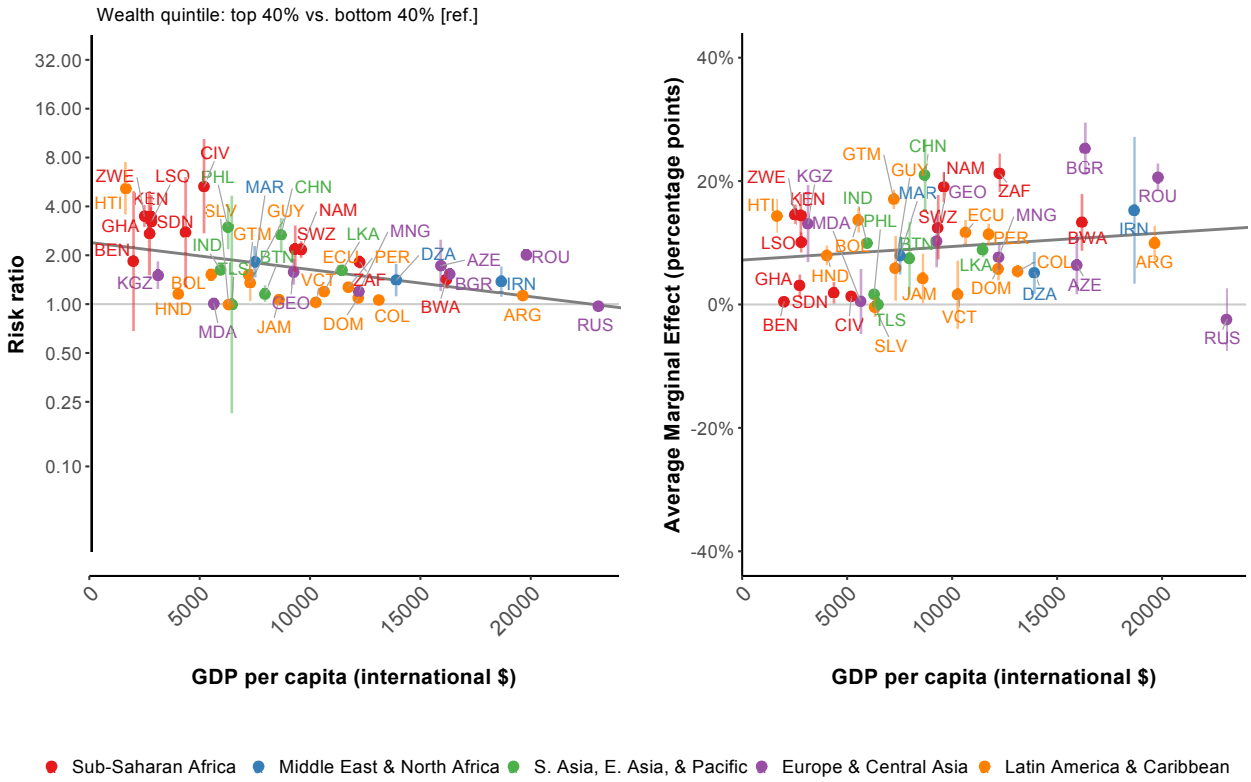
Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by educational attainment (primary school or less [reference category] vs. secondary education or further) plotted against a country's GDP per capita. Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. The vertical bars are 95% CIs around point estimates. Risk ratios are shown on a logarithmic scale. The grey line depicts an Ordinary Least Squares regression (with each country having the same weight) of the risk ratio (average marginal effect) in a country onto GDP per capita. The standardized regression coefficient β was -0.22, 95% CI -0.48-0.05 (0.27, 95% CI 0.01-0.53) and the explained variability R^2 was 0.05 (0.07).

eFigure 29. GDP per capita plotted against the relative and absolute difference in lifetime prevalence of cervical cancer screening between women in the top two versus the bottom two (reference group) household wealth quintile in each country (Poisson regression with sampling weights)



Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by wealth (bottom 40% [reference category] vs. top 40%) plotted against a country's GDP per capita. Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. The vertical bars are 95% CIs around point estimates. Risk ratios are shown on a logarithmic scale. The grey line depicts an Ordinary Least Squares regression (with each country having the same weight) of the risk ratio (average marginal effect) in a country onto GDP per capita. The standardized regression coefficient β was -0.34, 95% CI -0.64- -0.05 (0.16, 95% CI -0.15-0.47) and the explained variability R^2 was 0.12 (0.03).

eFigure 30. GDP per capita plotted against the relative and absolute difference in lifetime prevalence of cervical cancer screening between women in the top two versus the bottom two (reference group) household wealth quintile in each country (Poisson regression without sampling weights)



Relative (risk ratios) and absolute (average marginal effects) differences in cervical cancer screening prevalence by wealth (bottom 40% [reference category] vs. top 40%) plotted against a country's GDP per capita. Countries are indicated by their ISO 3 code. Poisson regressions were adjusted for age with restricted cubic splines with five knots. The vertical bars are 95% CIs around point estimates. Risk ratios are shown on a logarithmic scale. The grey line depicts an Ordinary Least Squares regression (with each country having the same weight) of the risk ratio (average marginal effect) in a country onto GDP per capita. The standardized regression coefficient β was -0.47, 95% CI -0.75- -0.19 (0.18, 95% CI -0.13-0.48) and the explained variability R^2 was 0.22 (0.03).

eMethods 7
Review of prevailing screening methods in countries that asked about Pap smears only

Rationale
For 28 of 55 countries included in our study, the lifetime prevalence of cervical cancer screening was assessed by asking about whether the woman has ever had a Pap smear test. This may have resulted in an underestimate of lifetime cervical cancer screening prevalence if other screening modalities were common in these countries prior to the data collection period of the included survey. In the following section, we outline for each of these 28 countries to what extent other existing screening modalities (namely visual inspection of the cervix with acetic acid [VIA] and testing for high-risk types of the human papilloma virus [HPV testing]) had been implemented prior to the data collection period of the survey that was included in our analysis. An overview of the findings of this review is provided in eTable 36 in this supplement.

Approach
We determined whether a country currently has, or has had in the past, any programs on VIA or HPV testing by verifying if any of the following three sources recorded VIA or HPV testing for the country in question: the WHO cancer country profile,[11] the country report by the HPV Information Centre,[12] and the report card by the Cervical Cancer Action (CCA) organization.[13] For countries for which at least one of these resources indicated VIA or HPV testing activities (whether at the national or subnational level), we reviewed when implementation of these screening modalities had started by searching peer-reviewed scientific publications, documents published by the country's government, and any documents published by multi- or bi-lateral organizations and local non-governmental organizations. The search engines that we used to identify these documents were Pubmed/MEDLINE, Google, and Google Scholar.

General background
Since cytology-based screening (Pap smear testing) has been the recommended approach to screen for precancerous lesions in most high-income countries,[17] numerous middle-income countries, in particular in Latin America and the Caribbean, adopted cytology-based screening programs when first expanding the provision of cervical cancer screening as early as the 1960s.[18] However, Pap smear testing requires an established laboratory, highly trained cytotechnologists, and up to three visits for screening, evaluation of cytologic abnormalities, and treatment, and is therefore difficult to implement and sustain in settings with limited resources.[19] Thus, more recently, attention has been directed at new tests for cervical cancer screening that are appropriate for settings with limited resources. Alternative methods to cytology have been developed, namely visual inspection of the cervix after application of acetic acid (VIA), potentially followed by application of Lugol's iodine (VIA-VILI), and molecular testing for high-risk types of the human papilloma virus (HPV testing). These screening methods have only come into use in low- and middle-income countries (LMICs) in recent years.

Country: Argentina; survey year: 2013
Prior to 2014, cervical cancer screening in Argentina was primarily through Pap smear testing. HPV testing was introduced as a national programmatic strategy in 2014 (i.e., after the data collection period of the survey included in our study).[20] Prior to 2014, HPV testing was, to our knowledge, only conducted as part of a three-year pilot project (other than a clinical trial described below), called the Jujuy Demonstration Project. The program was restricted to the Jujuy Province and tested women aged 30 years and older attending the public health system with clinician- and self-collected HPV tests. The first round of screening was conducted in 2012.[21] It is thus possible that a limited number of women have been screened via HPV testing in the Jujuy Province prior to the data collection period (2013) of the survey in our study. The Jujuy Province, however, accounts for only 1.7% of Argentina's population,[22] and the survey included in our analysis sampled women from all 25 regions throughout the country.[23] Argentina is also part of the ESTAMPA study, a multicenter study of cervical cancer screening and triage with HPV testing across multiple sites in Latin America.[24,25] The recruitment period for the ESTAMPA study was from 2013 (the year of data collection for the survey included in our analysis) to 2018. The study has enrolled 6,000 women in Argentina.[26] Given this small number compared to the total female adult population in Argentina, we conclude that it is unlikely that substantial VIA or HPV testing has been conducted in Argentina prior to 2013 (the data collection period of the included survey).

Country: Belize; survey year: 2005-6
According to the HPV Information Centre, prevention of cervical cancer in Belize is primarily based on Pap smear testing.[27] The WHO country profile also mentions opportunistic VIA screening as a screening method in Belize.

According to statements by the Belize Director of Health Services, VIA was first launched as a screening strategy at two healthcare facilities in Belize City in 2017 (i.e., more than ten years after the data collection period of the survey included in our study).[28] Since then, VIA has been introduced to at least ten healthcare facilities nation-wide.[29,30] To our knowledge, it is, thus, unlikely that VIA or HPV testing has been conducted in Belize prior to 2005-6 (the data collection period of the included survey).

Country: Bhutan; survey year: 2014
Bhutan launched a Pap smear testing-based screening program in 1999, which has been implemented nation-wide as of 2006. According to national guidelines from 2014, VIA is also being conducted but only in addition to Pap smear testing; not as a stand-alone alternative.[31] In other words, all women who undergo VIA testing will also have undergone a Pap smear test at the same time. According to the Ministry of Health's cervical cancer screening manual, VIA was not provided as an alternative to Pap smear testing in Bhutan because providers need longer and more intensive training followed by regular supervision by gynecologists, both of which were not possible at the time of issuing the national cervical cancer screening guidelines.[31] HPV testing was only introduced in Bhutan after the data collection period of the included survey. Specifically, a demonstration project for community-based HPV testing (using self-sampling) was conducted in 2016.[32] This study has enrolled a total of 2,590 women from 15 primary healthcare facilities (Basic Health Units). To our knowledge, it is, thus, unlikely that substantial VIA or HPV testing has been conducted in Bhutan prior to 2014 (the data collection period of the included survey).

Country: Bolivia; survey year: 2008
With possibly the exception of limited VIA testing at private healthcare facilities, cervical cancer screening in Bolivia has been exclusively conducted through Pap smear tests prior to the included survey's data collection period. In 2009 (one year after the survey's data collection period), the Bolivian Ministry of Health's unit for the detection and control of women's cancers developed a comprehensive plan for cervical cancer prevention and control for 2009-2015.[33] This plan prioritizes Pap smear testing as a primary screening method, recommends screening every 3 years after two consecutive negative Pap smear tests, and incorporates the use of VIA and cryotherapy on a smaller scale. The Pan American Health Organization's cancer country profile (from 2013) for Bolivia states that VIA is generally not available in the public sector but is accessible in some private healthcare facilities.[34] In addition, Bolivia is part of the ESTAMPA study, a multicenter study of cervical cancer screening and triage with HPV testing across multiple sites in Latin America.[24,25] This study only started five years after (in 2013) the data collection period of the included survey.[26] To our knowledge, it is, thus, unlikely that substantial VIA or HPV testing has been conducted in Bolivia prior to 2008 (the data collection period of the included survey).

Country: Bulgaria; survey year: 2014
Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Bulgaria report any VIA or HPV testing in the country. It is, thus, unlikely that substantial VIA or HPV testing has been conducted in Bulgaria prior to 2014 (the data collection period of the included survey).

Country: Chile; survey year: 2009-10
Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Chile report any HPV or VIA testing. Chile is part of the ESTAMPA study, a multicenter study of cervical cancer screening and triage with HPV testing across multiple sites in Latin America.[24,25] However, this study, which enrolled 1,000 women in Chile,[26] has a recruitment period from 2013 to 2018 and thus started after the data collection period for the included survey. It is, thus, unlikely that substantial VIA or HPV testing has been conducted in Chile prior to 2009-10 (the data collection period of the included survey).

Country: China; survey year: 2008-10
While the WHO cancer country profile states that Pap smear testing is the primary screening method in China, both the HPV Information Centre country report and CCA report card mention that VIA is part of the national program for cervical cancer prevention in the country.

Regarding VIA, two demonstration projects were conducted in 2005 in Shenzhen and in Xiangyuan County.[35] After expanding the project sites to five counties in 2006 and 43 in 2008,[36] in 2009, the Chinese Ministry of Finance, Ministry of Health, and the All China Women's Federation jointly initiated the so-called Free Examination Program among rural women, providing cervical (using Pap smear testing and VIA) and breast cancer screening to approximately 10 million women between 2009 and 2011 in selected areas of China (in 221 out of 1,355 counties). However, there were approximately 350 million women aged 30 to 49 years at the time of the data collection period

of our survey.[37] Thus, even if we ignored the fact that the dates of the Free Examination Program and those of the data collection period for the included survey overlap and if we assumed that all cervical cancer screening in the Free Examination Program was conducted through VIA only (even though the program employed both Pap smear testing and VIA), the Free Examination Program could at most have raised our estimates for the lifetime cervical cancer screening prevalence by 2.9 percentage points. From 2012 to 2015 (i.e., after the data collection period of our survey), the program has been expanded to an additional 10 million rural women each year.[35] Nonetheless, it is, thus, possible that limited VIA screening has been conducted in China, particularly in rural areas, prior to or during 2008-10 (the data collection period of the included survey).

Regarding HPV, several small-scale studies for HPV testing have been conducted in China since 1999.[35] From 1999 to 2011, fourteen clinical trials enrolled a total of 35,070 women.[35] A number of larger demonstration projects for HPV testing have been implemented after 2010 (the data collection endpoint of the included survey), for example in seven rural counties of Jiangxi province (2014-2016) or through a multicenter randomized trial to compare different screening modalities (2015-2016).[38,39] To our knowledge, it is, thus, unlikely that substantial HPV testing has been conducted prior to 2008-10 (the data collection period of the included survey).

Country: Colombia; survey year: 2015
Cervical cancer screening in Colombia is primarily conducted through Pap smear testing. VIA and HPV testing only started to be recommended by the Colombian Ministry of Health and Social Protection as a stand-alone screening test (rather than as an additional test to be carried out among those with a positive Pap smear test) in late 2014 (i.e., merely a few months prior to the data collection period of the included survey).[40,41] Colombia's cervical cancer screening guidelines state that a total of 9,002 women were screened for cervical cancer using VIA by the end of 2013 as part of a demonstration project in five low-resource areas (Amazonas, Buenaventura, Caquetá, Guajira, Tumaco) of the country. The survey included in our analyses sampled women from all 32 departments of the country and the capital Bogotá.[42–44] Colombia is also part of the ESTAMPA study, a multicenter study of cervical cancer screening and triage with HPV testing across multiple sites in Latin America.[24,25] ESTAMPA's recruitment period was from 2013 to 2018 and the study enrolled 12,000 women in Colombia.[26] To our knowledge, it is, thus, unlikely that substantial VIA and HPV testing has been conducted in Colombia prior to 2015 (the data collection period of the included survey).

Country: Costa Rica; survey year: 2006
Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Costa Rica report any HPV or VIA testing. Costa Rica is part of the ESTAMPA study, a multicenter study of cervical cancer screening and triage with HPV across multiple sites in Latin America.[24,25] However, the ESTAMPA study initiated enrolment in 2013 (i.e., after the data collection period for the included survey). To our knowledge, it is, thus, unlikely that substantial VIA or HPV testing has been conducted in Costa Rica prior to 2006 (the data collection period of the included survey).

Country: Dominican Republic; survey year: 2013
While neither the WHO country profile nor the CCA report card for the Dominican Republic report any VIA or HPV testing, the HPV Information Centre mentions HPV testing alongside Pap smear testing. According to a study from 2020,[45] VIA and HPV testing in the Dominican Republic are included in the 2007 national guidelines for cervical cancer prevention and recommended to be used where available. However, the study's survey among 202 healthcare providers in public and private primary and secondary/tertiary care facilities in two provinces of the Dominican Republic concluded that the majority (86.6%) of providers, particularly in the public sector (92.9%), use conventional cytology screening (Pap smear testing). We were not able to identify further information about the extent of VIA or HPV testing in the Dominican Republic prior to 2013 (the data collection period of the included survey). It is, thus, possible that limited VIA or HPV testing has been conducted in the Dominican Republic prior to 2013 (the data collection period of the included survey).

Country: Ecuador; survey year: 2012
Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Ecuador report any HPV or VIA testing. In a study from 2009, VIA was only used as a supplemental test that was conducted among those with a positive Pap smear test.[46] To our knowledge, it is, thus, unlikely that substantial (stand-alone) VIA or HPV testing has been conducted in Ecuador prior to 2012 (the data collection period of the included survey).

Country: Egypt; survey year: 2015
Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Egypt report any VIA or HPV testing in the country. It is, thus, unlikely that substantial VIA or HPV testing has been conducted in Egypt prior to 2015 (the data collection period of the included survey).

Country: El Salvador; survey year: 2008
According to the WHO cancer country profile, cervical cancer screening in El Salvador is primarily conducted through Pap smear testing. While the HPV Information Centre and the CCA report card (published in 2015) mentions VIA as part of the country's national screening strategy,[47] the national cervical cancer screening guideline (published in 2006) in use at the time of the included survey's data collection period in 2008 does not include VIA as part of the recommended cervical cancer screening approach.[48] It is, thus, unlikely that substantial VIA has been conducted in El Salvador prior to 2008 (the data collection period of the included survey).

HPV testing activities in El Salvador only started in 2011, i.e., after the data collection period for the included survey. Specifically, in 2011, El Salvador's Ministry of Health partnered with non-governmental organizations to implement a cervical cancer screening and treatment study (the CAPE study). This study enrolled 10,000 women between 2011 and 2014 and was aimed at identifying best practices to integrate HPV-testing into the existing cervical cancer control program and to improve screening coverage for women living in rural areas.[49] Following this demonstration project, the national cervical cancer guideline were updated in 2015 to include the model exemplified by CAPE, i.e., HPV testing and referral in case of a positive result for women aged 30 to 59 years.[47] Given that these HPV testing activities only started in 2011, it is unlikely that substantial HPV testing has been conducted in El Salvador prior to 2008 (the data collection period of the included survey).

Country: Ghana; survey year: 2008-9
Cervical cancer screening in Ghana is primarily conducted through Pap smear testing.[50,51] In 2001, Ghana began a pilot program for cervical cancer screening that trialed a single-visit approach, which used VIA along with cryotherapy for pre-cancerous lesions.[52] The study took place in Ghana's capital and enrolled 3,665 women. Ten years later (in 2011), there were, according to a peer-reviewed study, still only six healthcare facilities (spread across two of Ghana's ten provinces) in the entire country that offered VIA screening.[53] To our knowledge, it is, thus, unlikely that substantial VIA has been conducted in Ghana prior to 2008-2009 (the data collection period of the included survey).

Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Ghana report any HPV testing in the country. It is, thus, unlikely that substantial HPV testing has been conducted prior to 2008-2009 (the data collection period of the included survey).

Country: Guatemala; survey year: 2014-15
Guatemala has adopted VIA as an alternative to Pap smear testing for cervical cancer prevention. Several reports mention small-scale, non-governmental campaigns, and pilot projects using VIA since 2004.[54,55] The Guatemalan Ministry of Health officially incorporated VIA into their national cervical cancer prevention strategy in 2008.[56] A study from 2014 details severe challenges in scaling up VIA-based cervical cancer programs in Guatemala.[54] Nonetheless, we conclude that it is possible that substantial VIA screening has been conducted in Guatemala prior to 2014-2015 (the data collection period of the included survey).

In addition, Guatemala is part of the "Scale-Up Project", which introduced HPV self-sampling and low-cost HPV testing as the primary approach for cervical cancer screening in selected public healthcare centers in Guatemala, Honduras, and Nicaragua between 2015 and 2018.[57] However, while the study enrolled a total of 85,226 women in Guatemala,[57] the intervention phase of the project did not begin in the country until early 2016 (i.e., after the data collection period of the included survey).[58] To our knowledge, it is, thus, unlikely that substantial HPV testing has been conducted in Guatemala prior to 2014-2015 (the data collection period of the included survey).

Country: Honduras; survey year: 2012-13
According to the HPV Information Centre, cervical cancer screening in Honduras is conducted primarily through Pap smear testing.[59] The CCA report card states that VIA was being carried out as part of a demonstration project at the time of the report card's publication (in 2015). However, we were not able to determine the extent of VIA piloting activities in Honduras. A case study published in 2018 details a joint initiative by the National Cervical Cancer Coalition (NCCC) and the Honduran League Against Cancer (La Liga Contra el Cancer, LCC), which

describes in detail that the LCC insisted that VIA is not a viable option for Honduras and that the standard modality for cervical cancer screening should remain Pap smear testing.[60] Given that VIA in Honduras appears to be limited to piloting activities, it is unlikely that substantial VIA screening has been conducted prior to 2012-13 (the data collection period of the included survey).

In addition, Honduras is part of the "Scale-Up Project", which introduced HPV self-sampling and low-cost HPV testing as the primary approach for cervical cancer screening in selected public healthcare centers in Guatemala, Honduras, and Nicaragua.[57] However, this project started only in 2015,[58] i.e., two years after the data collection period for the included survey ended. To our knowledge, it is, thus, unlikely that substantial HPV testing has been conducted in Guatemala prior to 2014-2015 (the data collection period of the included survey).

Country: Indonesia; survey year: 2014-15
VIA was first introduced in Indonesia as part of a demonstration study between 2004 and 2006. The study, which screened a total of 22,040 women, applied a "see and treat" approach using VIA and cryotherapy in three regions (Jakarta, Tasikmalaya, and Bali).[61] While we were unable to determine the exact number, a peer-reviewed publication from 2012 suggests that most of the 22,040 women in the study also underwent Pap smear testing during the same visit.[61] In 2012-2014, a small study enrolling 1,270 women in Indonesia' s capital evaluated VIA accuracy among the population of Jakarta by comparing it to HPV testing as the "gold standard".[62] The aim of this study was to provide evidence for recommending VIA as a routine method of screening alongside Pap smear testing in Indonesia. VIA was then first recommended by the Indonesian Ministry of Health as a cervical cancer screening modality in 2015.[63] Given that the included survey's data collection period ended in 2015, it is likely that only limited VIA screening has been conducted in Indonesia prior to the implementation of the survey.

Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Indonesia report any HPV testing in the country. It is, thus, unlikely that substantial HPV testing has been conducted prior to 2014-15 (the data collection period of the included survey).

Country: Jamaica; survey year: 2008
Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Jamaica report any VIA or HPV testing in the country. It is, thus, unlikely that substantial VIA or HPV testing has been conducted prior to 2008 (the data collection period of the included survey).

Country: Lesotho; survey year: 2014
The Lesotho health system offered VIA for the first time in 2013 through the launch of a cervical cancer screening and prevention facility.[64,65] Recent reports indicate that there are plans for expanding training for VIA to health workers in all districts of Lesotho.[66,67] Given that only one healthcare facility offered VIA prior to 2014 and started doing so just one year prior to the survey data collection period, it is unlikely that substantial VIA testing has been conducted in Lesotho prior to 2014 (the data collection period of the included survey).

Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Lesotho report any HPV testing in the country. It is, thus, unlikely that substantial HPV testing has been conducted prior to 2014 (the data collection period of the included survey).

Country: Mexico; survey year: 2014
Prior to 2008, cervical cancer screening in Mexico was primarily conducted through Pap smear testing. Demonstration projects of HPV testing (using self-sampling) and VIA were first carried out as part of the Mexican Cervical Cancer Screening (MECCS) study I (2002-2004) and study II (2009).[68,69] These studies screened 8,621 and 2,049 women, respectively. In a separate demonstration project conducted between 2007 and 2010, a total of 100,242 women were screened using HPV testing.[70,71] In 2008, HPV testing was officially incorporated into the national cervical cancer screening guidelines as an alternative to Pap smear testing for all women older than 35 years while conventional cervical cytology (Pap smear testing) continued as the only recommended screening modality for women younger than 35 years.[72,73] According to the guidelines, women who have a positive HPV test should undergo a Pap smear test for further evaluation.[72,73] Mexico is also part of the ESTAMPA study, a multicenter study of cervical cancer screening and triage with HPV testing across multiple sites in Latin America.[24,25] This study enrolled 5,000 women in Mexico between 2013 and 2018.[26] To our knowledge, it is likely that substantial HPV testing has been conducted in Mexico prior to 2014 (the data collection period of the included survey).

Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Mexico report any VIA testing in the country. It is, thus, unlikely that substantial VIA testing has been conducted prior to 2014 (the data collection period of the included survey).

Country: Nepal; survey year: 2014
Prior to 2010, cervical cancer screening in Nepal was primarily conducted through Pap smear testing.[74] VIA was first recommended in the country's national cervical cancer screening guidelines in 2010.[75] Specifically, the guidelines recommend VIA screening for settings in which Pap smear testing is not feasible. According to publications from 2017 and 2018,[76,77] Nepal does not yet have an established national cervical cancer screening program and it is unclear to what extent VIA has been integrated into health services. A local non-governmental organization initiated a project in 2018 to integrate VIA into routine primary healthcare services in two districts.[78] To our knowledge, it is, thus, possible that substantial VIA testing has been conducted in Nepal prior to 2014 (the data collection period of the included survey).

Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Nepal report any HPV testing in the country. It is, thus, unlikely that substantial HPV testing has been conducted prior to 2014 (the data collection period of the included survey).

Country: Nicaragua; survey year: 2011
Cervical cancer screening in Nicaragua is primarily conducted through Pap smear testing. The Nicaraguan Ministry of Health's (MINSA) efforts to control cervical cancer have included a nationwide program offering Pap smear testing in each region and a new national cytology laboratory in Managua that was opened in 2014.[79] However, MINSA published a guideline in 2010 (i.e., one year prior to the data collection period of the included survey), which mentions VIA as a possible alternative screening approach to Pap smear testing.[80] In addition, several non-governmental organizations initiated demonstration projects using VIA.[81,82] Between 2007 and 2014, 14,168 women received VIA testing through campaigns or local providers trained by the non-governmental organization Grounds for Health,[81] which claims that its projects represent the most extensive application of VIA in Nicaragua. Given that the country mentioned VIA in its cervical cancer screening guidelines for the first time only one year prior to the data collection period of the included survey and that VIA screening by non-governmental organizations has been fairly limited, it is likely that only limited VIA screening has been conducted in Nicaragua prior to 2011 (the data collection period of the included survey).

From 2014 to 2018 (i.e., after the data collection period of the included survey), the global health organization PATH worked closely with MINSA through a local non-governmental organization to introduce HPV testing for the first time within the public sector health system in three provinces as part of the "Scale-Up" demonstration project.[57,79] This project screened 73,642 women in Nicaragua between 2014 and 2018.[57] Given that all HPV testing activities took place after 2011, it is unlikely that substantial HPV testing has been conducted in Nicaragua prior to the data collection period of the included survey.

Country: Paraguay; survey year: 2008
Cervical cancer screening in Paraguay is primarily conducted through Pap smear testing. Pap smear testing was the recommended screening modality in the country's 2010 national guideline for prevention and treatment of cervical cancer.[83] While VIA is mentioned as a promising new method in the 2010 guideline, it was not recommended for broader use at the time. In the country's 2015 guideline, VIA screening continues to be recommended only when colposcopy is inaccessible.[84] Given that the data collection period of the included survey was in 2008 and VIA was first mentioned in the country's screening guidelines in 2010, it is unlikely that substantial VIA has been conducted in Paraguay prior to the data collection period of the included survey.

HPV testing is only mentioned in the appendix of the country's 2010 national guideline for prevention and treatment of cervical cancer.[83] It is described as an adjunct method to increase sensitivity of Pap smear testing and for inconclusive Pap smear test results. HPV testing capabilities were only available at the National Health Sciences Research Institute to support research activities regarding cervical cancer screening. HPV testing is mentioned in the country's 2015 guideline as a means to increase effectiveness of screening in women older than 30 years. A peer-reviewed publication stated that the use of HPV testing in 2019 was limited to private healthcare facilities and one public-sector gynecology referral center.[85] Two small clinical studies, conducted in 1988-1990 and 2006-2007, enrolled 116 and 272 women for HPV testing, respectively.[86,87] In addition, Paraguay is part of the ESTAMPA study, a multicenter study of cervical cancer screening and triage with HPV testing across multiple sites in Latin

America.[24–26] However, the ESTAMPA study initiated enrolment only in 2013 (i.e., after the data collection period for the included survey). Given that HPV testing was not recommended without the concurrent use of Pap smear testing in the 2010 cervical cancer screening guidelines, it is unlikely that substantial HPV testing has been conducted in Paraguay prior to 2008 (the data collection period of the included survey).

Country: Peru; survey year: 2013
Peru's 2010 national guideline for cervical cancer prevention recommends Pap smear testing as the primary cervical cancer screening strategy.[88] According to a publication from 2012, VIA was not added to cervical cancer screening guidelines in the country before 2013 (the year of data collection for the included survey) because changing institutional protocols away from Pap smear testing would require a substantial investment.[89] There have been two demonstration studies of VIA and HPV testing prior to the survey data collection period (TATI[90] in 2000-3 and TATI-2[91] in 2006-7). These studies compared Pap smear testing, VIA, and HPV testing. All women enrolled in these studies were screened using both Pap smear testing and VIA. Peru is also part of the ESTAMPA study, a multicenter study of cervical cancer screening and triage with HPV testing across multiple sites in Latin America.[24,25,88] The recruitment period for the ESTAMPA study was from 2013 (the year of data collection for the survey included in our analysis) to 2018. The study has enrolled 5,000 women in Peru.[26] Given that neither VIA nor HPV testing was recommended in the country's national guidelines prior to 2013, it is unlikely that substantial VIA or HPV testing has been conducted in Peru prior to the data collection period of the included survey.

Country: Romania; survey year: 2014
Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Romania report any VIA or HPV testing in the country. It is, thus, unlikely that substantial VIA or HPV testing has been conducted prior to 2014 (the data collection period of the included survey).

Country: Russia; survey year: 2007-10
Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Russia report any VIA or HPV testing in the country. It is, thus, unlikely that substantial VIA or HPV testing has been conducted prior to 2007-10 (the data collection period of the included survey).

Country: South Africa; survey year: 2016
Cervical cancer screening in South Africa is primarily being conducted through Pap smear testing.[92] At present, the national cervical cancer prevention program offers three Pap smear tests at public healthcare facilities – at age 30, 40, and 50 years. The country's 2017 cervical cancer prevention and control policy states that Pap smear testing will continue to be the recommended cervical cancer screening modality in South Africa in at least the short term.[93] The policy also lays out plans for introducing and rolling out cervical cancer screening using liquid-based cytology and HPV testing based on resource availability. It acknowledges VIA as a useful screening approach in resource-constrained regions, but states that the health system intends to first scale up liquid-based cytology and HPV testing before rolling out VIA testing. There have been several small-scale studies of VIA and HPV testing in South Africa, particularly among women living with HIV, dating back to 2008.[94–96] These studies all had small sample sizes ranging from 205 to 1,202 women.[94–96] Given that South Africa relied on Pap smear testing as the main screening modality until at least 2017, it is unlikely that substantial VIA or HPV testing has been conducted prior to 2016 (the data collection period of the included survey).

Country: Sri Lanka; survey year: 2016
Neither the WHO cancer country profile, the HPV Information Centre report, nor the CCA report card for Sri Lanka report any VIA or HPV testing in the country. It is, thus, unlikely that substantial VIA or HPV testing has been conducted prior to 2016 (the data collection period of the included survey).

eTable 36. Review summary of prevailing screening modalities in countries that asked about Pap smear testing only[a]

Country	Survey	Year	VIA or HPV at the national level?	If yes, since when?	VIA or HPV at the subnational level?	If yes, since when?	Conclusion
Argentina	ENFR	2013	Yes, HPV	2014	Yes, HPV	2012	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because subnational activities were restricted to one pilot program in one province and one relatively small clinical trial.
Belize	CAMDI	2005-6	Yes, VIA	After 2017	Yes, VIA	2017	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because VIA screening (as part of a pilot project) started only after the included survey's data collection period.
Bhutan	STEPS	2014	No	NA	Yes, HPV	2016	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because subnational activities as part of a pilot program only started after the included survey's data collection period.
Bolivia	DHS	2008	Yes, VIA	2009	Yes, HPV	2013	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because the national program included VIA only in 2009 and HPV testing was restricted to one relatively small clinical trial that started enrolment in 2013.
Bulgaria	EHS	2014	No	NA	No	NA	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because neither the WHO country profile nor the HPV Information Centre or CCA report card report any VIA or HPV testing activities.
Chile	ENS	2009-10	No	NA	Yes, HPV	2013	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because neither the WHO country profile nor the HPV Information Centre or the CCA report card report any VIA or HPV activities.

eTable 36. Review summary of prevailing screening modalities in countries that asked about Pap smear testing only[a] (continued)

Country	Survey	Year	VIA or HPV at the national level?	If yes, since when?	VIA or HPV at the subnational level?	If yes, since when?	Conclusion
China	SAGE	2008-10	Yes, VIA	2012[b]	Yes, VIA and HPV	1999	Likely to have conducted limited VIA screening prior to the survey year due to a screening program (implemented at the same time as the survey data collection period) for 10 million women in rural areas across 17% of counties in China. Unlikely to have conducted substantial HPV testing prior to the survey year because all larger demonstration projects of HPV testing took place after the survey data collection period.
Colombia	DHS	2015	No[c]	NA	Yes, VIA and HPV	2007 (VIA) / 2013 (HPV)	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because subnational activities were restricted to one small-scale demonstration project in five areas of the country, one pilot program at two healthcare facilities, and one clinical trial.
Costa Rica	ENSA	2006	No	NA	Yes, HPV	2013	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because neither the WHO country profile nor the HPV Information Centre or the CCA report card report any VIA or HPV testing activities; HPV testing was restricted to one relatively small clinical trial that began enrolment in 2013.
Dominican Republic	DHS	2013	No[c]	NA	No	NA	Likely to have conducted limited VIA screening or HPV testing prior to the survey year.
Ecuador	ENSANUT	2012	No	NA	No	NA	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because neither the WHO country profile nor the HPV Information Centre or the CCA report card report any VIA or HPV testing activities.

eTable 36. Review summary of prevailing screening modalities in countries that asked about Pap smear testing only[a] (continued)

Country	Survey	Year	VIA or HPV at the national level?	If yes, since when?	VIA or HPV at the subnational level?	If yes, since when?	Conclusion
Egypt	DHS	2015	No	NA	No	NA	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because neither the WHO country profile nor the HPV Information Centre or CCA report card report any VIA or HPV testing activities.
El Salvador	FESAL	2008	Yes, VIA	2015	Yes, HPV	2011	Unlikely to have conducted substantial VIA testing prior to the survey year because VIA was only introduced as a national programmatic strategy in 2015. Unlikely to have conducted HPV testing prior to the survey year because HPV testing activities only started in 2011.
Ghana	SAGE	2008-09	No	NA	Yes, VIA	2001	Unlikely to have conducted substantial VIA testing prior to the survey year because, as of 2011, only six healthcare facilities in the entire country offered VIA screening. Unlikely to have conducted substantial HPV testing prior to the survey year because neither the WHO country profile nor the HPV Information Centre or CCA report card report any HPV testing activities.
Guatemala	DHS	2014-15	Yes, VIA	2008	Yes, VIA and HPV	2004 (VIA) / 2016 (HPV)	May have conducted substantial VIA testing prior to the survey year because of pilot projects on VIA that started as early as 2004 and the adoption of VIA into the national cervical cancer screening guidelines in 2008. Unlikely to have conducted substantial HPV testing prior to the survey year because neither the WHO country profile nor the HPV Information Centre or CCA report card report any HPV testing activities.

eTable 36. Review summary of prevailing screening modalities in countries that asked about Pap smear testing only[a] (continued)

Country	Survey	Year	VIA or HPV at the national level?	If yes, since when?	VIA or HPV at the subnational level?	If yes, since when?	Conclusion
Honduras	DHS	2012-13	No	NA	Yes, VIA and HPV	2002 (VIA) / 2016 (HPV)	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because subnational activities were restricted to pilot projects.
Indonesia	IFLS-5	2014-15	Yes, VIA	2015	Yes, VIA	2004	Likely to have conducted only limited VIA screening prior to the survey year because VIA was not included in the country's cervical cancer screening guidelines until 2015 (with only small demonstration projects having been conducted prior to 2015). Unlikely to have conducted substantial HPV testing prior to the survey year because neither the WHO country profile nor the HPV Information Centre or the CCA report card report any HPV testing activities.
Jamaica	RHS	2008	No	NA	No	NA	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because neither the WHO country profile nor the HPV Information Centre or the CCA report card report any VIA or HPV testing activities.
Lesotho	DHS	2014	No	NA	Yes, VIA	2013	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because subnational activities were restricted to one healthcare facility that opened just one year prior to the survey year.

eTable 36. Review summary of prevailing screening modalities in countries that asked about Pap smear testing only[a] (continued)

Country	Survey	Year	VIA or HPV at the national level?	If yes, since when?	VIA or HPV at the subnational level?	If yes, since when?	Conclusion
Mexico	SAGE	2014	Yes, HPV	2008	Yes, VIA and HPV	2002	Likely to have conducted substantial HPV testing prior to the survey year because the country officially adopted HPV testing in 2008 as an alternative to Pap smear testing for women younger than 35 years. Unlikely to have conducted substantial VIA screening prior to the survey year because neither the WHO country profile nor the HPV Information Centre or the CCA report card report any VIA testing activities.
Nepal	SOSAS	2014	No[c]	NA	Yes, VIA	2004	May have conducted substantial VIA testing prior to the survey year because of the adoption of VIA testing in Nepal's 2010 screening guidelines. Unlikely to have conducted substantial HPV screening prior to the survey year because neither the WHO country profile nor the HPV Information Centre or the CCA report card report any HPV testing activities.
Nicaragua	ENDESA	2011	Yes, VIA	2010	Yes, VIA and HPV	2007 (VIA) / 2014 (HPV)	Likely to have conducted only limited VIA screening prior to the survey year because VIA was first recommended in the country's screening guidelines only one year prior to the survey data collection period. Unlikely to have conducted substantial HPV testing prior to the survey year because HPV testing activities (as part of demonstration projects) began only in 2014.

eTable 36. Review summary of prevailing screening modalities in countries that asked about Pap smear testing only[a] (continued)

Country	Survey	Year	VIA or HPV at the national level?	If yes, since when?	VIA or HPV at the subnational level?	If yes, since when?	Conclusion
Paraguay	ENDSSR	2008	Yes, VIA[d]	2010	Yes, HPV	2013	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because the country's screening guidelines first mention VIA testing in 2010 and HPV testing as a standalone approach in 2015.
Peru	DHS	2013	Yes, VIA and HPV	2017	Yes, VIA and HPV	2000	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because screening guidelines in the country did not recommend VIA or HPV testing prior to 2013.
Romania	EHS	2014	No	NA	No	NA	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because neither the WHO country profile nor the HPV Information Centre or CCA report card report any VIA or HPV testing activities.
Russia	SAGE	2007-10	No	NA	No	NA	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because neither the WHO country profile nor the HPV Information Centre or CCA report card report any VIA or HPV testing activities.
South Africa	DHS	2016	No	NA	Yes, VIA and HPV	2008	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because South Africa relied on Pap smear testing as the main screening modality until at least 2017, and the subnational employment of VIA and HPV testing has been restricted to several small-scale research studies.
Sri Lanka	DHS	2016	No	NA	No	NA	Unlikely to have conducted substantial VIA or HPV testing prior to the survey year because neither the WHO country profile nor the HPV Information Centre or CCA report card report any VIA or HPV testing activities.

eTable 36. Review summary of prevailing screening modalities in countries that asked about Pap smear testing only[a] (continued)

Abbreviations: CAMDI, Central America Diabetes Initiative; DHS, Demographic Health and Surveillance; EHS, European Health Survey; ENFR, Encuesta Nacional de Factores de Riesgo; ENS, Encuesta Nacional de Salud; ENSA, Encuesta Nacional de Salud; FESAL, Encuesta Nacional de Salud Familiar; ENSANUT, Encuesta Nacional de Salud y Nutrición; ENDSSR, Encuesta Nacional de Demografía y Salud Sexual y Reproductiva; ENDESA, Encuesta Nicargaüense de Demografía y Salud; HPV testing, testing for high-risk types of the human papilloma virus; IFLS-5, Indonesia Family Life Survey Wave 5; NA, not applicable; RHS, Reproductive Health Survey; SAGE, Study on global AGEing and adult health; SOSAS, Surgeons Over Seas Assessment of Surgical Need; VIA, visual inspection of the cervix with acetic acid.

[a] Details for each country are provided in eMethods 4 in the Supplement.

[b] In 2012, a nationwide program started to provide free cervical cancer screening to 10 million women each year. We were not able to determine to what extent this has been scaled up until 2020.

[c] To our knowledge, although VIA and HPV are part of the national cervical cancer prevention strategy in Colombia, the Dominican Republic, and Nepal, they are not (yet) used at national scale.

[d] To our knowledge, although HPV testing is part of the national cervical cancer prevention strategy in Paraguay, they are not (yet) used at national scale.

eTable 37. Poisson regressions run separately for each group of cervical cancer screening modalities as ascertained in the included survey questionnaires[a,b]

	Questionnaire asked about each of HPV, VIA, or Pap smear RR (95% CI)	Questionnaire asked about Pap smear only RR (95% CI)	Questionnaire did not specify the screening modality RR (95% CI)
Covariate-unadjusted regressions[c]			
Age (years)			
35-44	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.36 (0.32-0.41)	0.31 (0.26-0.36)	0.37 (0.36-0.38)
25-34	0.76 (0.72-0.80)	0.88 (0.78-1.01)	0.92 (0.90-0.93)
45-54	1.00 (0.95-1.06)	0.98 (0.90-1.06)	1.01 (1.00-1.02)
55-64	0.79 (0.75-0.83)	0.80 (0.72-0.87)	0.93 (0.91-0.95)
>= 65	0.48 (0.44-0.53)	0.63 (0.58-0.69)	0.81 (0.78-0.83)
Education[d]			
No schooling	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.73 (1.58-1.90)	2.04 (1.74-2.40)	1.07 (1.05-1.09)
Secondary education or further	1.78 (1.64-1.94)	2.66 (2.19-3.22)	1.00 (0.99-1.02)
Household wealth quintile[e]			
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.29 (1.22-1.37)	1.21 (0.99-1.49)	1.32 (1.28-1.36)
3	1.45 (1.32-1.59)	1.52 (1.26-1.83)	1.70 (1.64-1.76)
4	1.89 (1.61-2.22)	1.55 (1.28-1.87)	1.97 (1.90-2.04)
5 (richest)	2.24 (1.93-2.59)	2.04 (1.70-2.45)	2.24 (2.16-2.33)
Relationship status			
Never married	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	3.82 (3.32-4.40)	2.20 (1.91-2.55)	2.58 (2.46-2.70)
Separated	3.76 (3.12-4.53)	2.04 (1.77-2.35)	2.07 (1.94-2.21)
Divorced	3.56 (2.91-4.36)	2.21 (1.87-2.62)	2.13 (2.04-2.22)
Widowed	2.44 (2.09-2.85)	1.65 (1.40-1.95)	2.06 (1.96-2.16)
Cohabitating	3.09 (2.52-3.79)	1.94 (1.67-2.25)	1.72 (1.53-1.95)
Place of residence[f]			
Rural	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.30 (1.21-1.39)	1.69 (1.34-2.14)	1.20 (1.17-1.24)
Tobacco smoking[g]			
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0.94 (0.88-1.02)	1.01 (0.91-1.13)	1.01 (0.99-1.04)
Covariate-adjusted regressions[h]			
Age (years)			
35-44	1 (ref.)	1 (ref.)	1 (ref.)
15-24	0.42 (0.34-0.51)	0.35 (0.28-0.44)	0.73 (0.71-0.75)
25-34	0.75 (0.69-0.81)	0.94 (0.78-1.14)	0.94 (0.93-0.96)
45-54	1.07 (1.00-1.14)	0.99 (0.89-1.10)	1.02 (1.00-1.05)
55-64	0.93 (0.86-1.00)	0.88 (0.79-0.97)	NA
>= 65	0.62 (0.55-0.71)	0.81 (0.72-0.92)	NA

eTable 37. Poisson regressions run separately for each group of cervical cancer screening modalities as ascertained in the included survey questionnaires[a,b] (continued)

	Questionnaire asked about each of HPV, VIA, or Pap smear RR (95% CI)	Questionnaire asked about Pap smear only RR (95% CI)	Questionnaire did not specify the screening modality RR (95% CI)
Education[d]			
No schooling	1 (ref.)	1 (ref.)	1 (ref.)
Primary education	1.56 (1.41-1.73)	1.96 (1.61-2.38)	1.03 (1.00-1.05)
Secondary education or further	1.88 (1.69-2.09)	2.71 (2.07-3.53)	1.06 (1.04-1.08)
Household wealth quintile[e]			
1 (poorest)	1 (ref.)	1 (ref.)	1 (ref.)
2	1.14 (1.07-1.20)	1.14 (0.92-1.42)	1.33 (1.29-1.37)
3	1.17 (1.07-1.28)	1.34 (1.12-1.61)	1.71 (1.65-1.76)
4	1.53 (1.28-1.82)	1.34 (1.10-1.63)	1.96 (1.89-2.04)
5 (richest)	1.79 (1.55-2.06)	1.63 (1.34-1.97)	2.23 (2.14-2.32)
Relationship status			
Never married	1 (ref.)	1 (ref.)	1 (ref.)
Currently married	3.63 (2.91-4.53)	1.49 (1.27-1.73)	9.67 (9.10-10.27)
Separated	3.61 (2.76-4.72)	1.46 (1.25-1.70)	8.38 (7.59-9.26)
Divorced	3.94 (2.78-5.60)	1.44 (1.21-1.72)	7.33 (6.45-8.33)
Widowed	2.92 (2.31-3.69)	1.54 (1.26-1.88)	8.51 (7.94-9.13)
Cohabitating	3.28 (2.30-4.67)	1.72 (1.47-2.03)	5.65 (4.96-6.43)
Place of residence[f]			
Rural	1 (ref.)	1 (ref.)	1 (ref.)
Urban	1.22 (1.11-1.34)	1.56 (1.15-2.11)	0.89 (0.86-0.93)
Tobacco smoking[g]			
Not currently smoking	1 (ref.)	1 (ref.)	1 (ref.)
Currently smoking	0.98 (0.88-1.11)	1.06 (0.93-1.20)	1.00 (0.85-1.19)

Abbreviations: RR, Risk ratio.

[a] Surveys that asked about each of HPV, VIA, or Pap smear: Algeria, Azerbaijan, Belarus, Benin, Botswana, Georgia, Guyana, Haiti, Iran, Iraq, Kenya, Kyrgyzstan, Lebanon, Moldova, Morocco, St. Vincent & the Grenadines, Sudan, Swaziland, Tajikistan, Timor-Leste. Survey that asked about Pap smear only: Argentina, Belize, Bhutan, Bolivia, Bulgaria, Chile, China, Colombia, Costa Rica, Dominican Republic, Ecuador, Egypt, El Salvador, Ghana, Guatemala, Honduras, Indonesia, Jamaica, Lesotho, Mexico, Nepal, Nicaragua, Paraguay, Peru, Romania, Russia, South Africa, Sri Lanka. Survey that did not specify any screening modality: Brazil, Cote d'Ivoire, India, Mongolia, Namibia, Philippines, Zimbabwe. RRs are shown with 95% CIs, which were adjusted for clustering at the level of the primary sampling unit.

[b] We used survey weights and weighted each country relative to its total female population size in 2019.

[c] Included only one of the variables shown in the table and a binary indicator for each country (country-level fixed effects).

[d] Education was missing for Paraguay.

[e] Household wealth quintiles were missing for Belarus, Belize, Brazil, Chile, Costa Rica, Egypt, Indonesia, Iraq, Lebanon, Mexico, Nepal, Nicaragua, Paraguay, and Tajikistan.

[f] Place of residence was missing for Argentina, Belize, Botswana, Chile, Georgia, Guyana, Lebanon, Sri Lanka, St. Vincent & the Grenadines, Swaziland, Tajikistan, and Timor-Leste.

[g] Tobacco smoking was missing for Colombia, Nicaragua, Paraguay, and Sri Lanka.

[h] Included age group, education, household wealth quintile, relationship status, place of residence, smoking, and a binary indicator for each country (country-level fixed effects).

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