

POPULATION REFERENCE BUREAU

PRB

INFORM
EMPOWER
ADVANCE

VOL. 73, NO. 1

MAY 2018

www.prb.org

Population Bulletin

BY **ELIZABETH LEAHY MADSEN** AND **CHARLOTTE GREENBAUM**



Family Planning
Equity Among Youth:
Where Are We Now?

ABOUT THE AUTHORS

Elizabeth Leahy Madsen is a program director, and Charlotte Greenbaum is a policy analyst, both in International Programs at PRB.

ACKNOWLEDGMENTS

The authors would like to thank reviewers Andreea Creanga and Duff Gillespie. We would also like to acknowledge PRB staff who reviewed a draft of this report and provided valuable editorial assistance. Funding for this *Population Bulletin* was provided through the generosity of the William and Flora Hewlett Foundation.

The *Population Bulletin* is published twice a year and distributed to members of the Population Reference Bureau. *Population Bulletins* are also available for \$7 each (discounts for bulk orders). To become a PRB member or to order PRB materials, contact PRB, 1875 Connecticut Ave., NW, Suite 520, Washington, DC 20009-5728; Tel.: 800-877-9881; Fax: 202-328-3937; E-mail: popref@prb.org; Website: www.prb.org.

The suggested citation, if you quote from this publication,

is: Elizabeth Leahy Madsen and Charlotte Greenbaum, *Family Planning Equity Among Youth: Where Are We Now* (Washington, DC: Population Reference Bureau, 2018).

Cover photo: Paula Bronstein/The Verbatim Agency/Getty Images

POPULATION REFERENCE BUREAU

The Population Reference Bureau **INFORMS** people around the world about population, health, and the environment, and **EMPOWERS** them to use that information to **ADVANCE** the well-being of current and future generations.

Funding for this *Population Bulletin* was provided through the generosity of the David and Lucile Packard Foundation.

BOARD OF TRUSTEES

Elizabeth K. Schoenecker, Chair of the Board

Former Chief, Policy, Evaluation, and Communication Division, Office of Population and Reproductive Health, USAID, Washington, D.C.

Amanda Glassman, Vice Chair of the Board

Chief Operating Officer and Senior Fellow, Center for Global Development, Washington, D.C.

Susan E. McGregor, Secretary of the Board

Assistant Professor, Journalism and Assistant Director, Tow Center of Digital Journalism, Columbia University, New York, N.Y.

Jamie Herring, Treasurer of the Board

Founder and President, HabitatSeven, Ottawa, Canada

Jeffrey Jordan, PRB President and Chief Executive Officer

Population Reference Bureau, Washington, D.C.

Christine A. Bachrach, Research Professor, Department of Sociology and Maryland Population Research Center, University of Maryland, College Park, Md.

Alaka Basu, Professor, Department of Development Sociology, Cornell University, Ithaca, N.Y.

Geoff Dabelko, Professor and Director, Environmental Studies Program, Voinovich School of Leadership and Public Affairs, Ohio University, Athens, Ohio

Sandy Davis, Senior Advisor, Bipartisan Policy Center, Washington, D.C.

Parfait M. Eloundou-Enyegue, Professor and Chair, Department of Development Sociology, Cornell University, Ithaca, N.Y.

David Finn, Chief Operating Officer, AppEsteem, Bellevue, Wash.

Nihal Goonewardene, Retired President and Chief Executive Officer, International Science and Technology Institute, Potomac, Md.

Scott C. McDonald, President and CEO, Advertising Research Foundation (ARF), New York, N.Y.

Marta Tienda, Maurice P. During '22 Professor, Demographic Studies and Sociology and Public Affairs, Princeton University, Princeton, N.J.

Linda J. Waite, Lucy Flower Professor, Urban Sociology, University of Chicago, Chicago, Ill.

Carolyn L. West, Senior Vice President, Public Finance, PNC Bank N.A., Washington, D.C.

Richard Woods, Senior Vice President, Corporate Affairs, Capital One, New York, N.Y.

Population Bulletin

FAMILY PLANNING EQUITY AMONG YOUTH: WHERE ARE WE NOW?

BY **ELIZABETH LEAHY MADSEN**
AND **CHARLOTTE GREENBAUM**

POPULATION REFERENCE BUREAU

VOL. 73, NO. 1

MAY 2018

TABLE OF CONTENTS

INTRODUCTION	2
Box 1. Defining Inequity in Health and Family Planning	2
Box 2. Measuring Household Wealth.....	3
Box 3. Demand for Family Planning Among Young Women	4
ANALYZING EQUITY IN DEMAND SATISFIED FOR FAMILY PLANNING	4
THE GLOBAL PICTURE: INEQUITIES IN DEMAND SATISFIED EXIST, BUT ARE DECREASING OVER TIME	5
Figure 1. Global Demand Satisfied for Modern Family Planning by Wealth Quintile	5
REGIONAL ESTIMATES TELL UNIQUE STORIES	6
Table 1. Average Regional Modern CPR, Unmet Need, and Demand Satisfied for Modern Family Planning Among Young Women at Most Recent Survey	6
Figure 2. Change in the Concentration Index for Demand Satisfied for Modern Family Planning by Wealth Quintile for Each Region	7
Table 2. Influence of Selected Factors on the Odds of Demand Satisfied in Each Region	7
Figure 3. Equity in Demand Satisfied for Modern Family Planning Among Women Ages 15 to 24 in Middle Africa.....	8
Figure 4. Equity in Demand Satisfied for Modern Family Planning Among Women Ages 15 to 24 in Western Africa	8
Figure 5. Equity in Demand Satisfied for Modern Family Planning Among Women Ages 15 to 24 in South Asia.....	9
Figure 6. Equity in Demand Satisfied for Modern Family Planning Among Women Ages 15 to 24 in Latin America and the Caribbean.....	9
Figure 7. Equity in Demand Satisfied for Modern Family Planning Among Women Ages 15 to 24 in Eastern Africa	10
Figure 8. Equity in Demand Satisfied for Modern Family Planning Among Women Ages 15 to 24 in Middle East and North Africa.....	10
Figure 9. Equity in Demand Satisfied for Modern Family Planning Among Women Ages 15 to 24 in Southeast Asia	11
Figure 10. Equity in Demand Satisfied for Modern Family Planning Among Women Ages 15 to 24 in Southern Africa.....	11
LEVELS OF DEMAND SATISFIED SHAPE EQUITY WITHIN COUNTRIES	12
Figure 11. Level of and Concentration Index for Demand Satisfied for Modern Family Planning by Country.....	12
Figure 12. Country Trends in Demand Satisfied and Equity Over Time	13
DEMAND SATISFIED STILL UNEVEN, BUT POOREST YOUNG WOMEN GAINING GROUND	14
RECOMMENDED ACTIONS	14
CONCLUSION	15
REFERENCES	16
APPENDIX	17

17

out of 33 countries showed improvements in both equity and overall levels of demand satisfied for modern family planning.

9

Percentage point increase in demand satisfied among poorest quintile globally from first to most recent surveys.

13

Percentage point difference in demand satisfied between poorest and richest quintile at most recent survey.

Introduction

Age-based inequities are rarely addressed in the otherwise robust existing literature on inequity in family planning (FP). Given the increased prioritization of expanding FP services to young people, and their higher rates of unmet need, this *Population Bulletin* seeks to address this research gap by exploring inequities in demand satisfied for modern FP over time among young women ages 15 to 24 (see Box 1).

Efforts to combat inequity in health are re-emerging as a priority on the international agenda. The United Nations 2030 Agenda for Sustainable Development and accompanying Sustainable Development Goals (SDGs) adopted in 2015 emphasize attaining equitable progress for all countries. The equity-driven approach is prominent within the SDG goal related to health, including its targets 3.7, “ensure universal access to sexual and reproductive health-care services,” and 3.8, “achieve universal health coverage, including financial risk protection.”¹

Within the SDGs framework, the key measure of universal access to sexual and reproductive health is demand for FP satisfied by modern methods. This *Bulletin* analyzes whether demand satisfied for modern FP is equitable among young women ages 15 to 24 in low- and middle-income countries as measured by household wealth quintile, and to what extent that status has changed over time. We consider these questions at the global, regional and country levels. The results show that wealthier young women are still more likely to have their demand for modern FP satisfied than poorer young women, but this inequity is decreasing over time as demand satisfied among poorer women is catching up. In addition, we find that changes in demand satisfied are more often attributable to increases in contraceptive use than to decreases in unmet need.

BOX 1

Defining Inequity in Health and Family Planning

Not all differences in health status between subgroups of a population should be attributed to inequity. By definition, differences in access to and utilization of health services and in health outcomes are *inequalities*. *Inequity* is a more complex concept reflecting that one subgroup is less successful in meeting its preferences, or fulfilling its rights, than another.¹

For example, differences in mortality rates between older and younger age groups are an inequality, but not an inequity, because higher mortality is biologically unavoidable among older age groups. However, differences in mortality rates between socioeconomic groups at least partially reflect inequities in access to health care.

The distinction between inequality and inequity is not always clear or well-defined in existing research. Some studies report differences in contraceptive use among rich and poor subgroups as a proxy for inequity. Other studies utilize measures that account for demand for contraception, which, by reflecting preferences, better capture inequity.

In line with the latter set of studies, as well as with the SDG indicators, this study uses demand satisfied for modern family planning as a measure of inequity. Demand satisfied for modern contraception is calculated by dividing the number of women of reproductive age using modern methods of family planning by the number of women of reproductive age with demand for family planning—itsself a sum of those with unmet need and those currently using family planning.²

For clarity and internal consistency, we have chosen to refer to differences in demand satisfied for modern family planning as an *inequity*. We have chosen to refer to differences in contraceptive use as an *inequality*, while acknowledging that aspects of inequity contribute to such inequalities and that some other authors refer to such differences as inequities.

1 For definitions of inequity in health and family planning, see: Duff Gillespie et al., “Unwanted Fertility Among the Poor: An Inequity?” *Bulletin of the World Health Organization* 85 (2007): 100-107; Sarah Thomsen et al., “Promoting Equity to Achieve Maternal and Child Health,” *Reproductive Health Matters* 19, no. 38 (2011): 176-82; and David R. Hotchkiss, Deepali Godha, and Mai Do, “Effect of an Expansion in Private Sector Provision of Contraceptive Supplies on Horizontal Inequity in Modern Contraceptive Use: Evidence From Africa and Asia,” *International Journal for Equity in Health* 10, no. 33 (2011).

2 Population Reference Bureau, “Demand Satisfied for Family Planning,” accessed at <https://thepaceproject.org/our-results/communicating-effectively/demand-satisfied>, on Mar. 23, 2018.

INEQUITY IN DEMAND FOR AND USE OF FAMILY PLANNING

A significant body of research examines inequities within FP, measured both by contraceptive use and the proportion of demand satisfied for FP. Inequalities in the contraceptive prevalence rate (CPR) and modern contraceptive prevalence rate (mCPR) between higher- and lower-income women in developing countries, especially in sub-Saharan Africa (SSA), are well-established. Across 46 countries, CPR averages 51 percent among those in the wealthiest quintile of the population, compared to 32 percent among the poorest quintile.² Another study of 21 African countries finds that the odds of women in the poorest wealth quintile using modern contraception are 77 percent lower than for women in the richest quintile (see Box 2).³

Research assessing demand satisfied for FP reports similar results. Examining data for 47 countries, Barros and colleagues find that demand satisfied for FP averages 41 percent among the poorest quintile and 67 percent among the richest.⁴ In a study of how inequities in contraceptive access and use might translate to fertility rates, Gillespie and colleagues find that across 41 countries, women in the poorest two quintiles have more than one child beyond their ideal family size, compared to 0.5-0.8 children per woman in the richest two quintiles.⁵

While many studies focus on economic inequality and inequity, some incorporate other dimensions, including geographic and educational differences in demand for and use of contraception. A World Health Organization (WHO) report finds that across 71 countries, median mCPR is nearly twice as high among women with secondary or higher education, at 35.3 percent, than among women with no education, at 18.9 percent.⁶ Interestingly, differences in service utilization among groups with different education levels often surpass those measured by wealth. Ahmed and colleagues find that disparities based on education are greater than those based on wealth for all three health outcomes analyzed: mCPR, antenatal care, and skilled attendance at birth.⁷

TRENDS IN FAMILY PLANNING INEQUITY

Positive news emerges from research on trends in FP inequity, which consistently reports that such inequities are diminishing over time. A study of 74 countries finds a clear decline in inequality of mCPR and inequity of demand satisfied for FP between 1990 and 2013.⁸ Analyzing data for 46 countries, Ross reports that the gap in CPR between the richest and poorest quintiles has narrowed from 24 points to 19 points over the same time period.⁹ In an analysis of 13 SSA countries, Creanga and colleagues find that wealth-based inequities in demand satisfied for FP decreased in most countries between 1997 and 2006.¹⁰

These improvements in equity for demand satisfied may be driven by larger recent increases in CPR among poorer women than their richer counterparts, who tend to have fairly high rates of contraceptive use already. Ross reports that among countries where CPR increased among both the richest and poorest quintiles between 1990 and 2013, CPR increases in most countries (26 of 33) were larger among the poorest quintile than the richest.¹¹

BOX 2

Measuring Household Wealth

This study utilizes the household wealth index calculated by the Demographic and Health Survey program, which provides country-specific measures of relative wealth divided into five subgroups, or quintiles, each representing 20 percent of households. Households are scored based on the physical assets that they own, such as televisions, as well as the features of their home, such as construction material and sanitation facilities. Standardization of the wealth index across the population allows for easy comparability of economic status within countries where data on income and other economic measures may be incomplete.¹

1 Shea Oscar Rutstein and Kiersten Johnson, *DHS Comparative Reports No. 6: The DHS Wealth Index* (Calverton, MD: ORC Macro, 2004).

This finding is replicated for inequality in contraceptive use as measured by educational attainment. A WHO analysis of 38 countries finds that mCPR increased by a median of 0.7 percentage points annually over an approximately 10-year period among women with no education, compared to a smaller annual increase of 0.2 percentage points among women with secondary education or higher.¹²

Further, equity improvements may be underway even when overall contraceptive use is relatively static. In the Creanga and colleagues study of 13 SSA countries, only five registered sizeable increases in overall CPR between the mid-1990s and mid-2000s. However, inequity in met need for FP, defined as the proportion of women who do not wish to conceive within the next two years or at all and are using contraception, declined in most of the countries analyzed.¹³

RELATIVE INEQUITY OF CONTRACEPTIVE USE AND DEMAND SATISFIED FOR FAMILY PLANNING

Although they are stark, inequalities in contraceptive use are often smaller than those observed for other health interventions.¹⁴ This finding may be because of the relatively high accessibility of contraceptive services near people's homes. Several studies report that interventions that can be delivered at the community level—such as contraceptive services—demonstrate lower inequality than those that require users to commit the time and potential expense of visiting a facility.¹⁵ Skilled birth attendance, which is closely associated with facility-based delivery, is often reported as the most inequitable of multiple interventions studied.¹⁶

In contrast to contraceptive use, demand satisfied for FP tends to be relatively inequitable compared to other health interventions. In a study of 74 countries between 1990 and 2013, demand satisfied for FP was consistently the least equitable overall of four maternal and reproductive health

outcomes, including mCPR, antenatal care, and facility-based delivery.¹⁷ Barros and colleagues find that demand satisfied was the third most inequitable of 12 maternal, newborn, and child health indicators measured across 47 countries between 2000 and 2010.¹⁸

Studies that directly compare mCPR and demand satisfied across large numbers of countries find greater disparities in demand satisfied. Alkenbrack and colleagues observe that demand satisfied is persistently less equitable than mCPR in their study of 74 countries, despite improvements in the equity of both indicators over time.¹⁹ A WHO analysis of 60 to 82 countries finds that the median difference in demand satisfied between the richest and poorest quintiles, at 15.9 percentage points, is over 20 percent greater than the median difference in mCPR, at 13.0 percentage points.²⁰

The discrepancy in the relative equity of contraceptive use and demand satisfied for FP suggests that there are factors apart from access to services that make poorer women less likely to have their demand for contraception satisfied. We know this because demand satisfied for FP is a ratio that incorporates two metrics: mCPR and the rate of unmet need for FP. Given that the first metric, mCPR, is relatively equitable, the discrepancy likely lies in factors related to unmet need. Research indicates that women with unmet need are at least four times more likely to report an issue related to health concerns, perceived inability to conceive, or opposition to FP than an access-related issue among their reasons for not using contraception.²¹

Analyzing Equity in Demand Satisfied for Family Planning

Our study aims to assess whether demand satisfied for FP by modern methods, as a key indicator of universal access to sexual and reproductive health, is equitable among young women ages 15 to 24 in low- and middle-income countries, and to what extent that inequity has changed over time (see Box 3). We consider these questions at the global, regional, and country levels. In addition, we consider whether changes in demand satisfied for modern FP over time within countries might be attributable more to increases in contraceptive use or decreases in unmet need.

We selected 33 countries that had a total of 76 nationally representative Demographic and Health Surveys (DHS) conducted between the years 2003 and 2016 (see appendix). To be included, a country's first survey had to be conducted between 2003 and 2007, and the most recent survey conducted in 2010 or later. Within these surveys, we analyzed data for young women in the 15 to 24 age group. We combined data for the 15 to 19 and 20 to 24 age groups because of the small number of women included in the two individual cohorts, especially the 15 to 19 age group, in some countries. The number of countries included was limited by the availability of wealth quintile data for a robust sample of young women.

In Bangladesh, Egypt, Jordan, and Pakistan, the sample for all surveys was limited to ever-married women. In Indonesia, the

BOX 3

Demand for Family Planning Among Young Women

Advocates, service providers, and governments are increasingly focused on improving access to and use of contraception among young people. Sixteen countries have committed to improving their policies and/or programs to facilitate youth access to and use of family planning as part of the global Family Planning (FP) 2020 initiative.¹ Unmet need for family planning among women ages 15 to 24, including those who are married and those who are unmarried and sexually active, is higher than among older women.² The benefits of expanding family planning to youth are clear: Meeting unmet need among young women ages 15 to 19 in developing countries would prevent over 2 million unintended births, 3 million abortions, and 5,600 maternal deaths.³

1 Family Planning 2020, "Commitments," accessed at www.familyplanning2020.org/commitments, on Dec. 22, 2017.

2 Gilda Sedgh, Lori S. Ashford, and Rubina Hussain, *Unmet Need for Contraception in Developing Countries: Examining Women's Reasons for Not Using a Method* (New York: Guttmacher Institute, 2016).

3 Jacqueline E. Darroch et al., *Adding It Up: Costs and Benefits of Meeting the Contraceptive Needs of Adolescents* (New York: Guttmacher Institute, 2016).

first two surveys were limited to ever-married women while the last survey included both ever-married and never-married women. In Nepal, the first survey only asked questions around unmet need to currently married women while the last asked these questions of all women. To make these data comparable across surveys for these six countries, we restricted the sample to currently married and in-union women in the country, global, and regional analysis. In all other countries, analysis included both ever-married and never-married women.

We compiled the mCPR, unmet need, and demand satisfied by modern methods for each survey. As an initial measure of equity in demand satisfied for FP, we calculated the concentration index for each survey and region. The concentration index is a measure of inequality that can range between -1 and 1, with 0 representing perfect equality. In our study, a value of 1 would represent a situation in which all of the individuals who have their demand satisfied for FP are in the wealthiest quintile. Any negative concentration index value would indicate that demand satisfied is concentrated among poorer individuals.

Next, we conducted multilevel mixed effects logistic regression modeling to determine the odds of demand for modern family planning being satisfied based on a set of independent variables. We selected demand satisfied for modern methods of FP as the dependent variable both to account for unequal demand for modern FP across subgroups and to align with the SDGs. In the simplest model, our independent variables

included household wealth quintile and the chronological number of the survey within each country (in other words, the country's first, second, or third survey in our sample).

We ran additional model specifications adding independent variables for age group, year categories, education, marital status, place of residence (urban versus rural), and an interaction of wealth quintile and survey number to assess the effect of wealth quintile changing over time. This analysis was repeated at the global level, for each region, and for each country. This method allowed us to control for the influence of several noneconomic factors that likely affect demand satisfied for FP among young women, gaining a clearer picture of the relative influence of wealth quintile.

After running the global logistic regression model, we used a predicted marginal probability model to calculate the predicted value of demand satisfied by wealth quintile and other independent variables, taking into account all factors in the regression model. An online appendix provides further details about our methodology. The regression output can be found in online appendices.

The Global Picture: Inequities in Demand Satisfied Exist, But Are Decreasing Over Time

At the global level, we first examined levels in demand satisfied for modern FP by wealth quintile as reported in the surveys across all countries (see Figure 1). We found that inequity in demand satisfied by wealth quintile among young women remained substantial, but that overall levels of demand satisfied improved from the first to most recent surveys. Demand satisfied increased from 38 percent to 47 percent from the first to most recent survey among the poorest quintile, and from 54 percent to 60 percent among the richest quintile. The gap in demand satisfied between the poorest and wealthiest quintiles decreased from 16 to 13 percentage points during this time, indicating that there is still progress to be made regarding equity.

The modeled results controlling for other factors tell a slightly different story. We assessed the probability of demand for modern family planning being satisfied over time, based on wealth quintile and other factors. In our regression modeling, we find a moderate correlation between wealth quintile and the probability of an individual young woman having her demand for modern FP satisfied. Across all surveys and time points in our dataset, our marginal probability model predicts demand satisfied for modern FP to average 45 percent among young women in the poorest quintile and 55 percent among young women in the richest quintile, holding other independent variables constant—an inequity of 10 percentage points. In other words, wealthier women were decidedly more likely to have their demand for family planning satisfied.

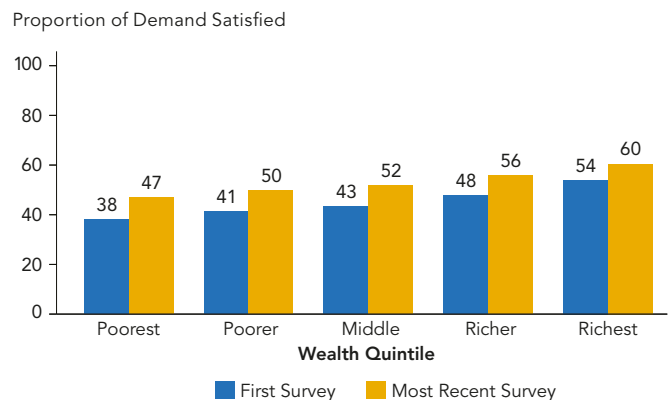
A positive finding, which reinforces other recent studies, is that **demand satisfied for modern FP among young women as**

measured by the concentration index has been getting more equitable over time, with a gap of 6 percentage points by the time of countries' final surveys in our model. Using our marginal probability model to control for all other covariates and thus isolate the effect of wealth quintile, the probability of demand satisfied among young women in the poorest wealth quintile was predicted to improve on average from the first to the most recent survey from 38 percent to 49 percent, while the probability of demand satisfied among the richest quintile was predicted to remain steady over time, only increasing from 53 percent to 55 percent. This finding indicates that by the most recent survey, demand satisfied was predicted to be much more equitable among young women when measured solely by wealth quintile. Across all countries, the effect of wealth quintile on the odds of demand being satisfied decreased over time, by around 8 percent for each successive survey. The difference between these values and the direct estimates observed in the survey is due to other related variables such as age, education, and residence, which confound the effect of wealth quintile on demand satisfied when not controlled for.

Education, age group, and marital status each affect the probability of demand for modern FP being met. In fact, **these factors have at least as strong of an impact on the probability of demand satisfied for modern FP as wealth quintile.** An individual young woman's probability of having her demand for modern FP satisfied increases with each level of education she completes. Controlling for other factors, young women with no education have a 40 percent predicted marginal probability of having their FP demand satisfied, while the probability is above 50 percent among those with secondary education and higher than secondary education. Young women 20 to 24 are more likely to have demand for modern FP satisfied than those 15 to 19 controlling for other factors, with respective predicted marginal probabilities of 52

FIGURE 1

Global Demand Satisfied for Modern Family Planning by Wealth Quintile



Source: PRB analysis of Demographic and Health Survey (DHS) data from 76 surveys in 33 countries.

percent and 45 percent. Finally, those who have never been married are more likely overall to have their demand for modern family planning satisfied when controlling for other factors, with a 55 percent predicted marginal probability compared to 48 percent among those who are or have been married or in union.

Regional Estimates Tell Unique Stories

At the regional level, we found widely varying results, albeit with two generally positive findings (see Table 1). **Inequity in demand satisfied for modern FP among young women has decreased over time**, as measured by the concentration index, in all regions except Middle Africa, although to varying degrees (see Figure 2). **In a second positive finding, overall levels of demand satisfied have also increased across wealth quintiles over time in all regions except Middle East and North Africa and Southeast Asia.**

Other results were more mixed. In five regions—Eastern, Southern, and Western Africa, Southeast Asia, and Middle East and North Africa—wealth quintile was significantly correlated with demand satisfied among young women across all surveys, while controlling for age, education, residence, and marital status. However, in the three remaining regions—Latin America and the Caribbean, Middle Africa, and South Asia—wealth quintile was not found to have a significant impact on the

probability of demand satisfied among young women when controlling for all other factors.

As seen at the global level, other factors, including education, age group, and marital status, were better predictors of demand satisfied than wealth quintile in most regions (see Table 2). In fact, in all regions except Southern Africa and Middle East and North Africa, at least one other factor had a larger, statistically significant effect on demand satisfied than wealth quintile in the regression analysis. Age had a greater effect on demand satisfied for modern FP among young women than wealth quintile in five of the eight regions. This finding was also true for marital status in four regions and for education in three regions.

Changes in equity over time also varied by region. As noted above, all regions except Middle Africa demonstrated improvements in equity over multiple surveys as measured by the concentration index of demand satisfied for FP, which does not control for the other factors included in the regression model. However, once other factors are controlled for, the effect of wealth quintile on the odds of demand satisfied for FP still decreased significantly over time in two regions: Middle East and North Africa and Southern Africa. In other words, in these regions, wealth quintile has become less important over time in influencing a young woman's odds of having her demand satisfied for FP.

TABLE 1

Average Regional Modern CPR, Unmet Need, and Demand Satisfied for Modern Family Planning Among Young Women at Most Recent Survey

	MODERN CPR (%)	UNMET NEED (%)	DEMAND SATISFIED (%)
REGION	MOST RECENT SURVEY		
Eastern Africa	20.2	11.2	62.4
Latin America and the Caribbean	23.2	11.7	60.5
Middle Africa	16.9	16.4	38.3
Middle East and North Africa	32.3	11.1	62.5
South Asia	29.9	21.9	52.5
Southeast Asia	21.0	7.4	64.7
Southern Africa	37.5	11.3	76.3
Western Africa	11.9	17.0	38.7

Source: ICF, Demographic and Health Surveys from 33 countries.



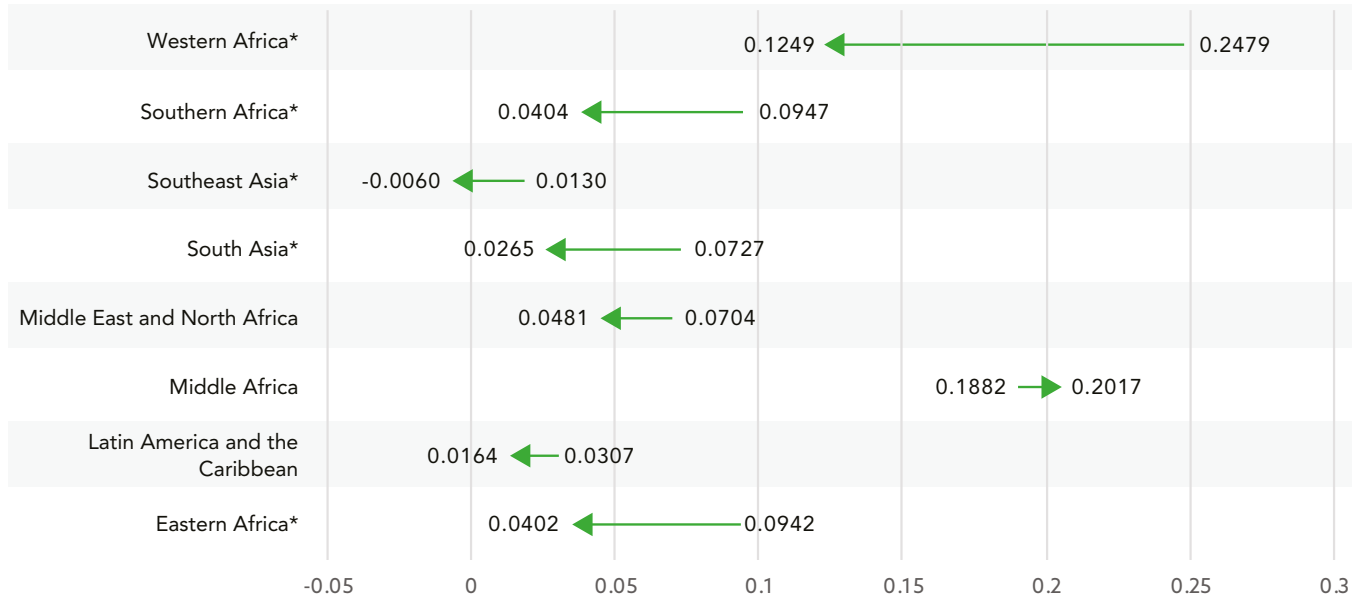
Young mothers in Uganda participate in a family planning information session with a community health worker.

Photo © Jonathan Torgovnik, Reportage by Getty Images.

FIGURE 2

Change in the Concentration Index for Demand Satisfied for Modern Family Planning by Wealth Quintile for Each Region

Average Regional Values Among Young Women at First (Right) and Most Recent Survey (Left)



Note: Statistically significant changes are denoted with an asterisk (*) next to the region name.

Source: PRB analysis of DHS data from 76 surveys in 33 countries.

TABLE 2

Influence of Selected Factors on the Odds of Demand Satisfied in Each Region

VARIABLE	EASTERN AFRICA	LATIN AMERICA AND THE CARIBBEAN	MIDDLE AFRICA	MIDDLE EAST AND NORTH AFRICA	SOUTH ASIA	SOUTHEAST ASIA	SOUTHERN AFRICA	WESTERN AFRICA
	ODDS RATIOS							
Wealth Quintile	1.33	1.24	1.10	1.33	1.31	1.12	1.55	1.42
20-24 Age Group	1.60	1.37	1.08	1.22	1.50	1.44	1.48	1.55
Rural Residence	0.79	0.97	0.74	0.78	0.65	1.09	0.75	0.69
Level of Education	1.37	1.15	1.83	1.04	1.03	0.93	1.36	1.55
Ever Married	1.58	1.14	0.58	n/a	n/a	2.41	0.56	0.43

Note: Table 2 presents the odds ratios for selected covariates on demand satisfied for family planning. These include the odds ratios for a single unit increase in wealth quintile, for being in the 20-to-24 age group as opposed to the 15-to-19 age group, for living in a rural area as opposed to an urban area, for a single unit increase in level of education obtained (for example, primary to secondary), and for having ever been married as opposed to having never been married. For example, in Western Africa, the odds ratio of 1.55 for being in the 20-to-24 age group mean the odds of a woman having her demand for modern family planning satisfied is 1.55 times greater in the 20-to-24 age group than in the 15-to-19 age group. In other words, being in the older age group increases a woman's odds of having her demand satisfied by 55 percent. Odds ratios less than 1 indicate a decrease in the likelihood of having demand for modern family planning satisfied. Odds ratios in **bold** indicate those that are statistically significant, and those that are also in *italics* have a greater impact on demand satisfied than wealth quintile. For Western Africa, this includes age group, level of education, and marital status.

Source: PRB analysis of DHS data from 76 surveys in 33 countries.

MIDDLE AFRICA

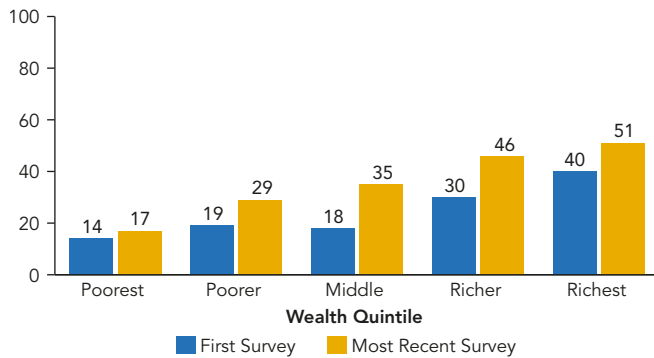
Middle Africa has the lowest overall level of demand satisfied by modern methods among young women of all regions in the analysis and the highest level of inequity. In the most recent survey, young women in the richest quintile were three times more likely to have their demand for modern family planning satisfied than young women in the poorest quintile, 51 percent to 17 percent respectively (see Figure 3). Furthermore, equity has not improved over time in this region. The concentration index increased from 0.188 to 0.202 from first to most recent survey, but this increase was not statistically significant.

As seen in Table 2, education and marital status play a significant role in inequities in FP among young women in Middle Africa, with larger effects than wealth quintile. Each additional level of education increases a young woman's odds of having her demand for modern FP satisfied by 83 percent. In Middle Africa, women who are or have been married also have a 42 percent reduction in their odds of having their demand for modern family planning satisfied compared to women who have never been married.

FIGURE 3

Equity in Demand Satisfied for Modern Family Planning by Wealth Quintile, Women Ages 15 to 24 in Middle Africa

Proportion of Demand Satisfied



Source: PRB analysis of DHS data from 76 surveys in 33 countries.

WESTERN AFRICA

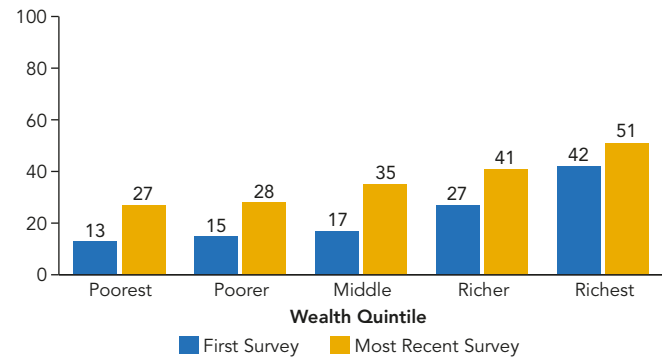
Western Africa has the second-lowest level of demand satisfied for FP among young women among all regions. It also has the second-highest level of inequity as measured by the concentration index, which reports how much demand satisfied is concentrated among the wealthiest quintiles. In the most recent survey, demand satisfied for modern family planning was only 27 percent among young women in the poorest wealth quintile, compared to 51 percent among those in the richest quintile (see Figure 4). Despite this large gap, equity is improving over time. The concentration index decreased from 0.248 to 0.125 from first to most recent survey, a statistically significant decrease.

Age, education, and marital status each have a larger impact on demand satisfied for modern FP than wealth in Western Africa (see Table 2). Each additional level of education (primary, secondary, or tertiary) increases a young woman's odds of having her demand for modern FP satisfied by 55 percent. For example, those with a secondary education have 1.55 times greater odds of having their demand for modern FP satisfied compared to those with only a primary education.

FIGURE 4

Equity in Demand Satisfied for Modern Family Planning by Wealth Quintile, Women Ages 15 to 24 in Western Africa

Proportion of Demand Satisfied



Source: PRB analysis of DHS data from 76 surveys in 33 countries.





Paula Bronstein/The Verbatim Agency/Getty Images

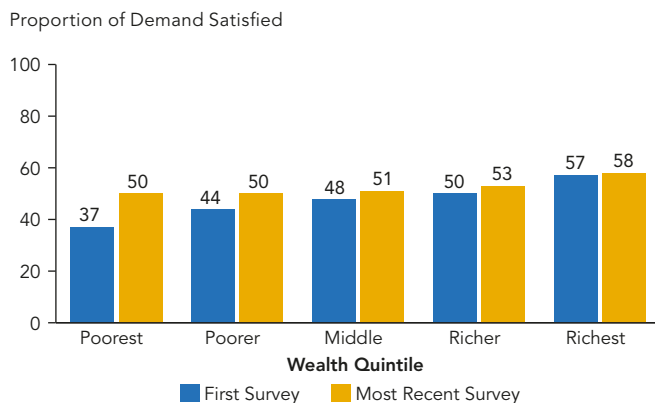
SOUTH ASIA

In South Asia, overall levels of demand satisfied for FP are the third-lowest of all regions, although there is relatively high equity. In the most recent survey, demand satisfied for modern FP was 50 percent among young women in the poor quintile, and 58 percent among young women in the richest quintile (see Figure 5). The concentration index decreased slightly from its low baseline of 0.073 to 0.026 in the most recent survey, illustrating the overall high levels of equity. This decrease was statistically significant.

In South Asia, age and residence have larger effects on demand satisfied for FP than wealth quintile (see Table 2). For example, young women living in rural areas have 35 percent lower odds of having their demand for modern family planning satisfied compared to those in urban areas.

FIGURE 5

Equity in Demand Satisfied for Modern Family Planning by Wealth Quintile, Women Ages 15 to 24 in South Asia



Source: PRB analysis of DHS data from 76 surveys in 33 countries.

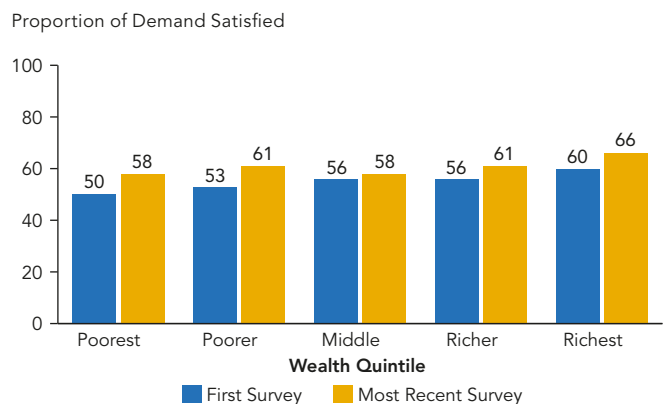
LATIN AMERICA AND THE CARIBBEAN

In Latin America and the Caribbean, around 61 percent of young women overall have their demand for modern FP satisfied, a level in the middle of all regional results. However, the degree to which wealth plays a role in demand satisfied is minimal, resulting in a high level of equity. In the most recent survey, 58 percent of young women in the poorest quintile had their demand for modern FP satisfied, compared to 66 percent among those in the richest quintile (see Figure 6). This gap is smaller than that seen in other regions. Age and marital status are the only factors in the regression model with an effect that is significant on demand satisfied in Latin America and the Caribbean, with older women and ever-married women in the youth cohort more likely to have their demand satisfied and ever-married women than their younger and never-married counterparts.

There is also not statistically significant evidence that the effect of wealth quintile on the odds of demand satisfied for modern FP has decreased significantly over time, which may reflect the fact that these countries have a high degree of equity to begin with. The concentration index declined slightly from 0.031 among the first surveys to 0.016 in the most recent surveys, with both values demonstrating low levels of inequity. However, this decrease was not statistically significant. As shown in Table 2, the only statistically significant factors associated with greater demand satisfied than wealth are age group and marital status. Those in the 20 to 24 age group had 37 percent greater odds of having their demand for modern FP satisfied than those in the 15 to 19 age group.

FIGURE 6

Equity in Demand Satisfied for Modern Family Planning by Wealth Quintile, Women Ages 15 to 24 in Latin America and the Caribbean



Source: PRB analysis of DHS data from 76 surveys in 33 countries.

EASTERN AFRICA

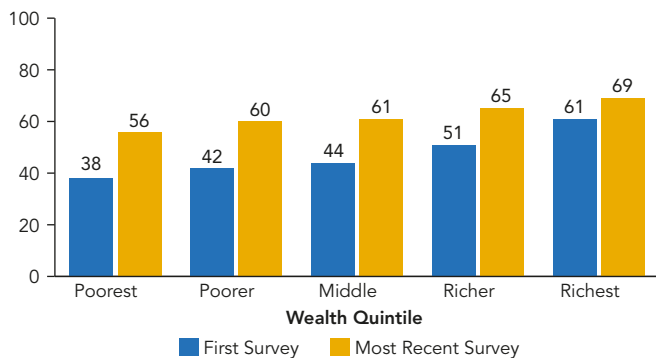
In Eastern Africa, demand satisfied for modern FP among young women is notably more equitable than in Middle Africa and Western Africa. At the most recent survey, 56 percent of young women with demand for modern FP in the poorest quintile had their demand satisfied, compared to 69 percent among young women in the richest quintile (see Figure 7). The concentration index decreased from 0.094 to 0.040 across surveys, indicating a slight improvement in equity. This decrease was statistically significant.

Age, education, and marital status have larger effects on demand satisfied for FP than wealth quintile in Eastern Africa (see Table 2). In contrast to all other regions in SSA, young women who are or have been married have 58 percent greater odds of having their demand for modern family planning satisfied compared to women who have never been married.

FIGURE 7

Equity in Demand Satisfied for Modern Family Planning by Wealth Quintile, Women Ages 15 to 24 in Eastern Africa

Proportion of Demand Satisfied



Source: PRB analysis of DHS data from 76 surveys in 33 countries.

MIDDLE EAST AND NORTH AFRICA

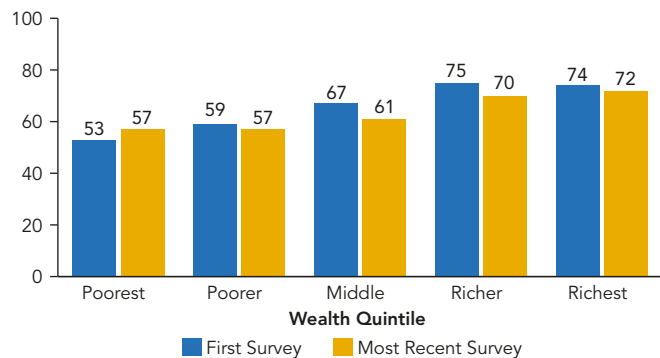
Overall demand satisfied for modern FP among young women in Middle East and North Africa is moderately high, at 63 percent, and the degree of inequity in this measure is comparable to several other regions. However, only two countries from this region had surveys meeting our criteria: Egypt and Jordan. In the most recent survey, demand satisfied measured 57 percent among young women in the poorest quintile, compared to 72 percent among young women in the richest quintile (see Figure 8). Unlike all other regions except Southern Africa, none of the other factors included in the regression analysis had larger effects on demand satisfied for modern FP than wealth quintile.

Unusually compared to all other regions except Southeast Asia, the levels of demand satisfied across most wealth quintiles have decreased over time, rather than increased. Still, the concentration index decreased as well, from 0.070 to 0.048, indicating improvements in equity. However, this was not a statistically significant decrease. As seen in Table 2, no other factors were statistically significant in predicting demand satisfied for modern FP.

FIGURE 8

Equity in Demand Satisfied for Modern Family Planning by Wealth Quintile, Women Ages 15 to 24 in Middle East and North Africa

Proportion of Demand Satisfied



Source: PRB analysis of DHS data from 76 surveys in 33 countries.



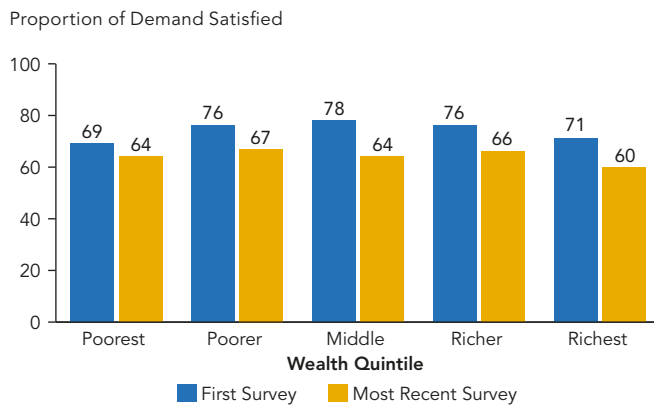
SOUTHEAST ASIA

Southeast Asia has the second-highest overall level of demand satisfied for modern FP among young women, at 65 percent, and the lowest level of inequity in that measure. In fact, the most recent survey shows that a slightly higher percentage of young women in the poorest wealth quintile have their demand satisfied compared to the richest wealth quintile, at 64 percent and 60 percent respectively—the only region where this pattern has emerged (see Figure 9). The concentration index remains very close to full equity, having decreased from 0.013 to -0.006, a statistically significant decrease. As in Middle East and North Africa, there has been a decline instead of an increase in the level of demand satisfied among young women across wealth quintiles.

Age and marital status have greater effects on demand satisfied for FP than wealth quintile in Southeast Asia (see Table 2). For example, young women who are or have been married have 2.4 times greater odds of having their demand for modern family planning satisfied compared to women who have never been married. Data from only two countries, albeit populous ones, were included for this region: Indonesia and Philippines.

FIGURE 9

Equity in Demand Satisfied for Modern Family Planning by Wealth Quintile, Women Ages 15 to 24 in Southeast Asia



Source: PRB analysis of DHS data from 76 surveys in 33 countries.

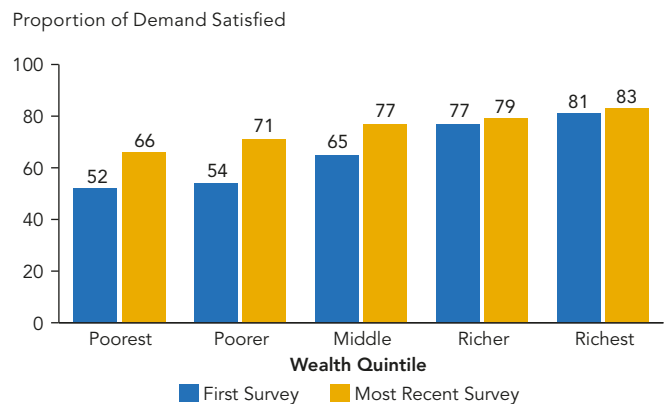
SOUTHERN AFRICA

Southern Africa records the highest overall level of demand satisfied for modern FP among young women among all regions, at 76 percent, although its equity on this measure is more average. Demand satisfied for modern FP is 66 percent among young women in the poorest quintile, compared to 83 percent among young women in the richest quintile (see Figure 10). As in most other regions, equity also shows modest improvements over the period covered in the surveys, with the concentration index decreasing from 0.095 to 0.040. This decrease was statistically significant.

In Southern Africa, no covariate had a larger effect on demand satisfied than wealth quintile, although being in the 20 to 24 age group, having a higher level of education, and never being married all were significantly associated with a higher level of demand satisfied (Table 2). Data for only two countries, Lesotho and Namibia, were available for this region.

FIGURE 10

Equity in Demand Satisfied for Modern Family Planning by Wealth Quintile, Women Ages 15 to 24 in Southern Africa



Source: PRB analysis of DHS data from 76 surveys in 33 countries.



Levels of Demand Satisfied Shape Equity Within Countries

We observed that countries with lower levels of demand satisfied among young women tend to also have greater inequity, while countries with higher levels of demand satisfied tend to also be more equitable (see Figure 11). While the countries with low levels of equity in demand satisfied are clustered in two regions, that is not the case for countries with high equity. The five countries with the lowest equity levels as measured at the most recent survey are located in Middle and Western Africa: Nigeria, Burkina Faso, Guinea, Democratic Republic of Congo, and Mali. The concentration index among those countries ranges from 0.248 to 0.198, compared to a median of 0.077 among all countries. Countries with the highest levels of equity at most recent survey display no regional pattern: Rwanda, Dominican Republic, Ghana, Philippines, and Malawi.

DEMAND SATISFIED AND EQUITY OVER TIME

Countries vary significantly in their trends in demand satisfied and equity over time (see Figure 12).²² The largest number of countries (17 countries of the 33 in our sample) have demonstrated improvements in both demand satisfied and

equity over time: Benin, Burkina Faso, Cameroon, Ethiopia, Ghana, Haiti, Honduras, Kenya, Lesotho, Liberia, Malawi, Mali, Pakistan, Senegal, Sierra Leone, Uganda, and Zimbabwe.

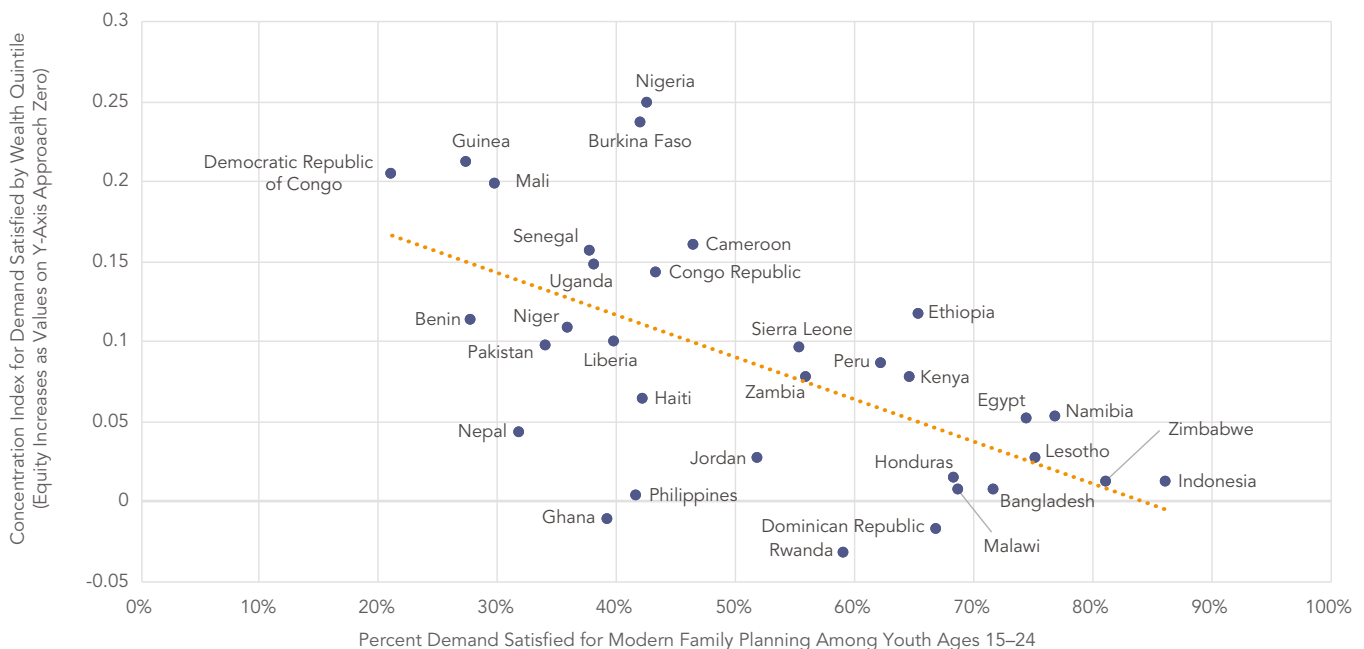
The remaining 16 countries displayed more mixed trends. Four countries—Dominican Republic, Egypt, Namibia, and Indonesia—recorded stable levels of both overall demand satisfied and equity over time. In two countries—Philippines and Rwanda—the overall level of demand satisfied was stable as equity improved. In two other countries—Jordan and Nepal—the overall level of demand satisfied decreased even as equity improved. Three countries saw improvements in demand satisfied while equity remained stable: Bangladesh, Democratic Republic of Congo, and Peru. In Guinea, equity remained stable, but overall levels of demand satisfied decreased. In the final four countries—Congo Republic, Niger, Nigeria, and Zambia—overall demand satisfied improved, but the level of equity decreased over time.

CHANGES IN MODERN CPR AND UNMET NEED

Further analysis revealed that the contributions of changes in mCPR and unmet need to levels of demand satisfied over time varied by country. However, increases in mCPR drove increases in demand satisfied more often than did

FIGURE 11

Level of and Concentration Index for Demand Satisfied for Modern Family Planning in Most Recent Survey, by Country



Source: PRB analysis of DHS data from 76 surveys in 33 countries.

FIGURE 12

Country Trends in Demand Satisfied and Equity Over Time

	Improved Demand Satisfied	Stable Demand Satisfied	Reduced Demand Satisfied
Improved Equity	Benin Burkina Faso Cameroon Ethiopia Ghana Haiti Honduras Kenya Lesotho Liberia Malawi Mali Pakistan Senegal Sierra Leone Uganda Zimbabwe	Philippines Rwanda	Jordan Nepal
Stable Equity	Bangladesh Democratic Republic of Congo Peru	Dominican Republic Egypt Indonesia Namibia	Guinea
Reduced Equity	Congo Republic Niger Nigeria Zambia		

Source: PRB analysis of DHS data from 76 surveys in 33 countries.

reductions in unmet need. For 12 of the 17 countries that saw improvements in both overall levels of demand satisfied and in equity—Burkina Faso, Ethiopia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mali, Pakistan, Senegal, Sierra Leone, and Uganda—increases in mCPR were proportionately larger than decreases in unmet need over the survey period. In Honduras and Zimbabwe, decreases in unmet need exceeded increases in mCPR. In Benin, Cameroon, and Haiti, mCPR increased, but so did unmet need.

Among the seven countries that experienced an increase in demand satisfied without accompanying improvements in equity, increases in mCPR were proportionately larger than decreases in unmet need in three: Bangladesh, Democratic Republic of Congo, and Zambia. In Nigeria and Peru, the decrease in unmet need was larger than the increase in mCPR. In Congo Republic and Niger, both mCPR and unmet need increased.

This pattern did not hold among countries where levels of demand satisfied decreased over time or remained stable. In Jordan, mCPR and unmet need both declined. Over the course of the two surveys in Egypt, mCPR declined among young women and unmet need increased slightly. In Guinea and Nepal, unmet need increased and mCPR decreased to a lesser degree. In Dominican Republic, Namibia, and Rwanda, mCPR and unmet need both increased. In Philippines, the increase in mCPR was greater than the decrease in unmet need. Finally, in Indonesia, the decrease in unmet need was larger than the increase in mCPR.

Demand Satisfied Still Uneven, But Poorest Young Women Gaining Ground

Equity in demand satisfied for modern FP among young women is improving when measured by wealth quintile, but is still a challenge. Across the full dataset and all time points, our regression analysis predicts that demand satisfied for modern FP is 10 percentage points lower among young women in the poorest quintile compared to those in the richest quintile (45 to 55 percent). However, demand satisfied for FP has become more equitable over time, with the equity gap between poor and rich young women shrinking to six percentage points by the most recent survey in our predicted marginal probability model.

These findings mirror those of other studies that have found improving levels of equity in demand satisfied among all women of reproductive age. Knowing that equity is improving among young women specifically is a positive signal for the SDGs' aim of equitable progress towards universal health access, and more relevant to these goals than overall mCPR or unmet need.

Increases in contraceptive use, in contrast to decreases in unmet need, have been the primary factor driving recent improvements in demand satisfied for FP among young women. Slightly more than half of countries (17 of the 33 in our sample) have demonstrated improvements in both demand satisfied and equity over time. Among this group, most experienced larger proportional increases in mCPR compared to decreases in unmet need. This suggests that an expansion in the percentage of young women who choose to use FP has had a larger effect on demand satisfied than a drop in the proportion of young women who wish to prevent pregnancy but are either unable or unwilling to adopt family planning. Other studies have found that improvements in equity in contraceptive use and demand satisfied have been driven by proportionately larger increases in CPR among poorer women than their richer counterparts.

Education and marital status affect demand satisfied for FP among young women at least as much as wealth. Globally, young women with high levels of education and those who have been married are at least as likely as those in the richest quintile to have their demand for modern FP satisfied. This result echoes a previous study's finding that disparities in contraceptive use and two maternal health measures are larger when measured by education level than by wealth quintile.²³

The influence of wealth quintile on demand satisfied for FP among young women is strongest in Eastern Africa, Southern Africa, Western Africa, and Middle East and North Africa. In these three regions, wealth quintile remained significantly correlated with demand satisfied, after accounting for age, education, residence, and marital status.

However, in Middle Africa, Latin America and the Caribbean, and South Asia, wealth quintile is not a significant correlate of demand satisfied for FP among young women after controlling for other factors. In most of these regions, factors such as education, place of residence, and marital status are better predictors of demand satisfied than wealth quintile.

Demand satisfied and equity are lowest in Middle and Western Africa. In Middle and Western Africa, half or less of young women have their demand for modern FP satisfied. These are also the two regions where equity in demand satisfied, as measured by wealth quintile, is lowest. Eight of the 10 countries with the highest levels of inequity in demand satisfied among young women at the most recent survey are located in these two regions. In contrast, high levels of equity are observed among individual countries across all other regions.

Recommended Actions

Invest in improving family planning programs broadly, especially access to contraceptive methods. High overall quality of FP programs seems to be a prerequisite to reducing inequity. In SSA, greater reductions in the wealth quintile gap in contraceptive use are correlated with strong FP programs, especially those that score high for access to methods. The strength of FP programs is also positively correlated with overall contraceptive use among the poorest quintile, indicating that strong programs in themselves may be a factor in reducing disparities in contraceptive use and demand satisfied for FP.²⁴

Emphasize service provision at the community level. Research suggests that localized, community- and outreach-based interventions can be most effective in reducing inequities in health because they address many of the geographic, economic, and information-related barriers often faced by disadvantaged subgroups. In a systematic review, Yuan and colleagues report that community health worker-based maternal and child health interventions in Bangladesh and India demonstrated reduced inequality in antenatal care and skilled birth attendance. In addition, the deployment of trained midwives in every village in an Indonesian study generated increases in skilled birth attendance overall, with the largest increases among the poorest two quintiles.²⁵ By focusing on community-level interventions, program designers can ensure that all young women have access to FP services and pave the way to both more equitable and higher levels of demand satisfied for FP among youth.

Look beyond economic measures in efforts to improve equity. Broader measures of development have been assessed for their effects on FP equity, with mixed results. Using multivariate analysis, Alkenbrack and colleagues find that education levels, followed by government spending on health, have significant association with equity across four maternal and reproductive health measures, including use of and demand satisfied for contraception, while GDP per capita

and governance are insignificant.²⁶ This finding reinforces the importance of improving measures of equity beyond economic status, such as education, in order to increase demand satisfied for FP.

Cultivate advocacy to promote domestic financing for health in general and FP specifically. Such financing should be encouraged from multiple sectors. Despite concerns that growth in the share of health services provided through the private sector could be detrimental to low-income users, Hotchkiss and colleagues found that as the private sector expanded as a source of supply for contraceptives in four countries, inequality measures were either stable or declined.²⁷

Conclusion

Strong attention to closing wealth-based inequities in FP access appears to have had a measurable impact. This study finds that the gap in demand satisfied for modern FP between rich and poor young women is closing, driven largely by increases in mCPR. These findings replicate the global trend toward reduced inequality in demand satisfied for FP among all women, offering the good news that young women are not being left behind. In fact, in most regions, a young woman's demand satisfied is more likely to depend on her level of education, age, or marital status than on her economic well-being.

However, wealth-based inequity remains a persistent challenge in most regions of sub-Saharan Africa, even accounting for factors such as educational attainment, urban/rural residence, and age. Therefore, programs that aim to reduce inequity in demand satisfied for young women of today, and likely for future generations, should continue to focus on wealth-based inequity, especially in SSA, while expanding approaches to improve FP access and use among the least educated, youngest women, and rural populations. The fact that demand satisfied is lower among the youngest reproductive-age cohort, women ages 15 to 19, even accounting for other factors, reinforces the importance of overcoming policy and sociocultural barriers inhibiting young women from fulfilling their FP needs.



References

- 1 United Nations General Assembly, "Resolution Adopted by the General Assembly on 25 September 2015: 70/1. Transforming Our World: The 2030 Agenda for Sustainable Development," accessed at www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E, on Dec. 15, 2017.
- 2 John Ross. "Improved Reproductive Health Equity Between the Poor and the Rich: An Analysis of Trends in 46 Low- and Middle-Income Countries," *Global Health: Science and Practice* 3, no. 3 (2015): 419-45.
- 3 Saifuddin Ahmed et al., "Economic Status, Education, and Empowerment: Implications for Maternal Health Service Utilization in Developing Countries," *PLoS One* 5, no. 6 (2010).
- 4 Aluisio J.D. Barros et al., "Equity in Maternal, Newborn, and Child Health Interventions in Countdown to 2015: A Retrospective Review of Survey Data From 54 Countries," *Lancet* 379, no. 9822 (2012): 1225-33.
- 5 Duff Gillespie et al., "Unwanted Fertility Among the Poor: An Inequity?" *Bulletin of the World Health Organization* 85 (2007): 100-107.
- 6 World Health Organization (WHO), *State of Inequality: Reproductive, Maternal, and Newborn Health* (Geneva: WHO, 2015).
- 7 Ahmed et al., "Economic Status, Education, and Empowerment."
- 8 Sarah Alkenbrack et al., "Did Equity of Reproductive and Maternal Health Service Coverage Increase During the MDG Era? An Analysis of Trends and Determinants Across 74 Low- and Middle-Income Countries," *PLoS One* 10, no. 9 (2015).
- 9 Ross, "Improved Reproductive Health Equity Between the Poor and the Rich."
- 10 Andreea A. Creanga et al., "Low Use of Contraception Among Poor Women in Africa: An Equity Issue," *Bulletin of the World Health Organization* 89 (2011): 258-66.
- 11 Ross, "Improved Reproductive Health Equity Between the Poor and the Rich."
- 12 WHO, *State of Inequality*.
- 13 Andreea A. Creanga et al., "Low Use of Contraception Among Poor Women in Africa."
- 14 Ahmad Reza Hosseinpoor et al., "Towards Universal Health Coverage: The Role of Within-Country Wealth-Related Inequality in 28 Countries in sub-Saharan Africa," *Bulletin of the World Health Organization* 89 (2011): 881-90.
- 15 Aluisio J.D. Barros et al., "Equity in Maternal, Newborn, and Child Health Interventions in Countdown to 2015."
- 16 Aluisio J.D. Barros et al., "Equity in Maternal, Newborn, and Child Health Interventions in Countdown to 2015"; and WHO, *State of Inequality*.
- 17 Alkenbrack et al., "Did Equity of Reproductive and Maternal Health Service Coverage Increase During the MDG Era?"
- 18 Aluisio J.D. Barros et al., "Equity in Maternal, Newborn, and Child Health Interventions in Countdown to 2015."
- 19 Alkenbrack et al., "Did Equity of Reproductive and Maternal Health Service Coverage Increase During the MDG Era?"
- 20 WHO, *State of Inequality*.
- 21 Gilda Sedgh, Lori S. Ashford, and Rubina Hussain, *Unmet Need for Contraception in Developing Countries: Examining Women's Reasons for Not Using a Method* (New York: Guttmacher Institute, 2016).
- 22 To assign countries to categories, we first calculated the median changes in overall level of demand satisfied (0.86 percentage points annually) and in equity as measured by the concentration index (-0.058 over the full survey period. A negative change in the concentration index represents an improvement in equity). Countries were categorized in the "improved" category for demand satisfied and/or equity if their level of improvement was at least half the median. Countries were classified in the stable category if their level of improvement was positive, but less than half the median. If a country demonstrated any level of regression in demand satisfied or equity, it was classified in the "reduced" category for that indicator.
- 23 Ahmed et al., "Economic Status, Education, and Empowerment."
- 24 Ross, "Improved Reproductive Health Equity Between the Poor and the Rich."
- 25 Beibei Yuan et al., "What Interventions Are Effective on Reducing Inequalities in Maternal and Child Health in Low- and Middle-Income Settings? A Systematic Review," *BMC Public Health* 14, no. 634 (2014): 64. <https://doi.org/10.1186/1471-2458-14-634>.
- 26 Alkenbrack et al., "Did Equity of Reproductive and Maternal Health Service Coverage Increase During the MDG Era?"
- 27 David R Hotchkiss, Deepali Godha, and Mai Do, "Effect of an Expansion in Private Sector Provision of Contraceptive Supplies on Horizontal Inequity in Modern Contraceptive Use: Evidence From Africa and Asia," *International Journal for Equity in Health* 10, no. 33 (2011).

Appendix

Trends in Modern CPR, Unmet Need, Demand Satisfied, and Concentration Index by Country

Additional appendices are available online.

COUNTRY	YEAR	SURVEY	MEAN MCPR	STANDARD ERROR MCPR	MEAN UNMET NEED	STANDARD ERROR UNMET NEED	MEAN DEMAND SATISFIED	STANDARD ERROR DEMAND SATISFIED	CONCENTRATION INDEX
Bangladesh	2007	1	43.5%	0.0118	18.1%	0.0085	65.7%	0.0130	0.020
Bangladesh	2011	2	49.4%	0.0089	15.9%	0.0062	70.6%	0.0093	0.006
Bangladesh	2014	3	51.5%	0.0108	15.7%	0.0083	71.8%	0.0133	0.007
Benin	2006	1	6.9%	0.0041	16.4%	0.0052	21.4%	0.0111	0.317
Benin	2011-12	2	9.5%	0.0053	19.7%	0.0061	27.9%	0.0132	0.113
Burkina Faso	2003	1	10.3%	0.0072	16.9%	0.0069	34.3%	0.0205	0.362
Burkina Faso	2010	2	11.6%	0.0056	15.2%	0.0053	42.2%	0.0149	0.236
Cameroon	2004	1	15.0%	0.0065	12.7%	0.0055	39.8%	0.0135	0.230
Cameroon	2011	2	16.7%	0.0064	14.3%	0.0059	46.5%	0.0127	0.160
Congo	2005	1	13.9%	0.0094	14.8%	0.0090	22.8%	0.0140	0.116
Congo	2011-12	2	25.8%	0.0109	15.4%	0.0081	43.5%	0.0146	0.142
Congo, Democratic Republic	2007	1	6.7%	0.0082	20.0%	0.0107	17.5%	0.0198	0.202
Congo, Democratic Republic	2013-14	2	7.6%	0.0053	19.5%	0.0089	21.1%	0.0138	0.204
Dominican Republic	2007	1	25.3%	0.0068	10.8%	0.0045	66.8%	0.0109	-0.008
Dominican Republic	2013	2	30.9%	0.0112	13.0%	0.0084	67.0%	0.0174	-0.018
Egypt	2005	1	37.6%	0.0107	9.9%	0.0060	74.2%	0.0133	0.038
Egypt	2014	2	36.2%	0.0104	10.6%	0.0063	74.6%	0.0131	0.051
Ethiopia	2011	1	12.4%	0.0076	10.2%	0.0072	53.5%	0.0254	0.165
Ethiopia	2016	2	15.8%	0.0080	8.1%	0.0072	65.5%	0.0232	0.117
Ghana	2003	1	10.6%	0.0076	19.0%	0.0096	31.6%	0.0200	0.231
Ghana	2008	2	9.7%	0.0075	18.5%	0.0112	29.5%	0.0206	0.090
Ghana	2014	3	13.7%	0.0084	16.1%	0.0088	39.5%	0.0191	-0.011
Guinea	2005	1	8.1%	0.0075	15.7%	0.0086	28.6%	0.0210	0.219
Guinea	2012	2	7.4%	0.0062	17.8%	0.0090	27.5%	0.0207	0.211
Haiti	2005-06	1	12.6%	0.0083	19.1%	0.0085	35.7%	0.0205	0.115
Haiti	2012	2	15.1%	0.0072	19.7%	0.0064	42.3%	0.0147	0.063

Continues next page

Appendix

Trends in Modern CPR, Unmet Need, Demand Satisfied, and Concentration Index by Country (continued)

COUNTRY	YEAR	SURVEY	MEAN MCPR	STANDARD ERROR MCPR	MEAN UNMET NEED	STANDARD ERROR UNMET NEED	MEAN DEMAND SATISFIED	STANDARD ERROR DEMAND SATISFIED	CONCENTRATION INDEX
Honduras	2005-06	1	19.8%	0.0052	10.7%	0.0041	59.2%	0.0099	0.071
Honduras	2011-12	2	24.7%	0.0054	7.9%	0.0033	68.6%	0.0094	0.014
Indonesia	2002-03	1	56.5%	0.0125	8.9%	0.0064	84.4%	0.0107	0.010
Indonesia	2007	2	57.6%	0.0111	9.9%	0.0064	83.6%	0.0096	0.004
Indonesia	2012	3	57.0%	0.0105	8.0%	0.0055	86.2%	0.0088	0.012
Jordan	2007	1	30.0%	0.0196	14.4%	0.0150	54.1%	0.0290	0.086
Jordan	2012	2	28.5%	0.0206	11.5%	0.0144	52.0%	0.0290	0.027
Kenya	2003	1	10.6%	0.0063	17.1%	0.0079	34.2%	0.0170	0.173
Kenya	2008-09	2	14.1%	0.0088	14.8%	0.0083	45.1%	0.0199	0.161
Kenya	2014	3	23.8%	0.0064	10.4%	0.0056	64.8%	0.0144	0.077
Lesotho	2004	1	17.9%	0.0083	16.0%	0.0079	52.2%	0.0180	0.156
Lesotho	2009	2	22.7%	0.0095	14.2%	0.0075	60.6%	0.0154	0.085
Lesotho	2014	3	35.4%	0.0109	11.2%	0.0083	75.3%	0.0158	0.026
Liberia	2007	1	10.5%	0.0087	34.3%	0.0113	22.4%	0.0158	0.277
Liberia	2013	2	21.2%	0.0145	30.9%	0.0119	39.9%	0.0217	0.100
Malawi	2004	1	15.7%	0.0068	21.4%	0.0066	40.2%	0.0132	0.090
Malawi	2010	2	20.5%	0.0062	16.1%	0.0053	53.3%	0.0120	0.041
Malawi	2015-16	3	30.5%	0.0066	13.4%	0.0047	68.8%	0.0096	0.007
Mali	2006	1	5.2%	0.0041	21.5%	0.0075	18.4%	0.0139	0.268
Mali	2012-13	2	8.1%	0.0065	18.5%	0.0101	30.0%	0.0220	0.198
Namibia	2006-07	1	36.7%	0.0113	9.5%	0.0052	77.9%	0.0115	0.064
Namibia	2013	2	39.5%	0.0099	11.3%	0.0067	77.1%	0.0123	0.053
Nepal	2006	1	23.2%	0.0153	34.7%	0.0128	38.4%	0.0208	0.119
Nepal	2011	2	20.9%	0.0120	39.3%	0.0137	32.0%	0.0156	0.042
Niger	2006	1	5.6%	0.0057	11.0%	0.0063	31.6%	0.0242	-0.018
Niger	2012	2	7.9%	0.0061	12.8%	0.0060	36.1%	0.0211	0.108
Nigeria	2003	1	7.6%	0.0061	11.3%	0.0088	34.3%	0.0226	0.199
Nigeria	2008	2	8.6%	0.0037	12.1%	0.0037	35.6%	0.0121	0.216
Nigeria	2013	3	8.7%	0.0039	9.2%	0.0031	42.8%	0.0131	0.248

Continues next page

Appendix

Trends in Modern CPR, Unmet Need, Demand Satisfied, and Concentration Index by Country (continued)

COUNTRY	YEAR	SURVEY	MEAN MCPR	STANDARD ERROR MCPR	MEAN UNMET NEED	STANDARD ERROR UNMET NEED	MEAN DEMAND SATISFIED	STANDARD ERROR DEMAND SATISFIED	CONCENTRATION INDEX
Pakistan	2006-07	1	8.8%	0.0081	25.2%	0.0115	23.1%	0.0191	0.249
Pakistan	2012-13	2	13.1%	0.0091	19.3%	0.0115	34.3%	0.0211	0.097
Peru	2009	1	19.9%	0.0063	7.1%	0.0036	58.9%	0.0126	0.085
Peru	2012	2	22.2%	0.0062	5.9%	0.0031	62.5%	0.0109	0.085
Philippines	2003	1	7.6%	0.0042	8.4%	0.0043	39.0%	0.0169	0.040
Philippines	2008	2	8.0%	0.0046	8.0%	0.0040	40.1%	0.0173	0.020
Philippines	2013	3	8.8%	0.0041	7.2%	0.0036	41.8%	0.0152	0.003
Rwanda	2010	1	9.8%	0.0046	6.1%	0.0034	59.8%	0.0166	0.030
Rwanda	2014-15	2	10.5%	0.0052	6.5%	0.0035	59.2%	0.0182	-0.033
Senegal	2005	1	3.3%	0.0030	15.4%	0.0059	17.1%	0.0134	0.247
Senegal	2010-11	2	3.9%	0.0034	14.4%	0.0073	20.8%	0.0178	0.215
Senegal	2015	3	6.9%	0.0053	10.8%	0.0065	38.0%	0.0248	0.156
Sierra Leone	2008	1	7.9%	0.0066	23.0%	0.0105	23.8%	0.0174	0.283
Sierra Leone	2013	2	23.7%	0.0112	17.9%	0.0073	55.5%	0.0179	0.096
Uganda	2006	1	10.8%	0.0063	19.1%	0.0082	33.2%	0.0174	0.257
Uganda	2011	2	12.1%	0.0067	18.1%	0.0078	38.4%	0.0176	0.147
Zambia	2007	1	17.5%	0.0079	16.2%	0.0076	47.3%	0.0162	0.056
Zambia	2013-14	2	20.5%	0.0066	15.1%	0.0056	56.1%	0.0124	0.077
Zimbabwe	2005-06	1	25.5%	0.0091	8.1%	0.0068	74.8%	0.0182	0.055
Zimbabwe	2010-11	2	26.7%	0.0087	9.2%	0.0052	73.5%	0.0124	0.018
Zimbabwe	2015	3	28.0%	0.0094	6.2%	0.0047	81.2%	0.0124	0.011

Source: ICF, Demographic and Health Surveys from 33 countries.

VISIT WWW.PRB.ORG TO FIND:

FOCUS AREAS. Explore policy-relevant areas where PRB applies much of its data, research, analysis, and communication expertise.

RESOURCES. Access videos with leading experts, multimedia presentations to draw stakeholders into critical development conversations, analytical *Population Bulletins*, the *Population Handbook* on demography basics, policy training tools, and visual products like interactive infographics.

DATA. Delve into indicators for the United States and around the world, and view data in map, tabular, and trend graph formats.

WORK WITH PRB. Explore ways to partner with us, apply to one of our fellowships, and join our membership program. Donate to PRB and learn about careers with us.

MONTHLY NEWSLETTER. Sign up to receive email announcements about new web content and PRB-sponsored seminars and briefings.

BECOME A PRB MEMBER

With new perspectives shaping public policies every day, you need to be well informed. As a PRB Member, you will receive reliable information on U.S. and world population trends—properly analyzed and clearly presented in readable language. Each year you will receive two *Population Bulletins*, the annual *World Population Data Sheet*, and complimentary copies of special publications. We welcome you to join PRB today.

INDIVIDUAL	\$65
LIBRARY	\$90
CORPORATION	\$350
LIFETIME MEMBERSHIP	\$6,000



Recent Population Bulletins

VOLUME 73 (2018)

No. 1 Family Planning Equity Among Youth: Where Are We Now?
by Elizabeth Leahy Madsen and Charlotte Greenbaum

VOLUME 72 (2017)

No. 1 Losing Ground: Young Women's Well-Being Across Generations in the United States
by Beth Jarosz and Mark Mather

No. 2 The Effect of Reproductive Health Improvements on Women's Economic Empowerment
by Marlene Lee and Jocelyn Finlay

VOLUME 71 (2016)

No. 1 Understanding the Dynamics of Family Change in the United States
by Alicia G. VanOrman and Paola Scommegna

No. 2 Global Employment and the Sustainable Development Goals
By Marlene Lee, Hanna Christianson, and Kristin Bietsch

VOLUME 70 (2015)

No. 1 India Approaches Replacement Fertility
by Carl Haub and O.P. Sharma

No. 2 Aging in the United States
by Mark Mather, Linda A. Jacobsen, and Kelvin M. Pollard

VOLUME 69 (2014)

No. 1 Migration and the Environment
by Jason Bremner and Lori M. Hunter

No. 2 The Demography of Inequality in the United States
by Mark Mather and Beth Jarosz

VOLUME 68 (2013)

No. 1 The Effect of Educational Attainment on Adult Mortality in the United States
by Robert A. Hummer and Elaine M. Hernandez

No. 2 The Global Challenge of Managing Migration
by Philip Martin

VOLUME 67 (2012)

No. 1 Household Change in the United States
by Linda A. Jacobsen, Mark Mather, and Genevieve Dupuis

No. 2 Achieving a Demographic Dividend
by James A. Gribble and Jason Bremner

VOLUME 66 (2011)

No. 1 America's Aging Population
by Linda A. Jacobsen, Mary Kent, Marlene Lee, and Mark Mather

No. 2 The World at 7 Billion
by Carl Haub and James Gribble

FAMILY PLANNING EQUITY AMONG YOUTH: WHERE ARE WE NOW?

While the gap in demand satisfied for modern family planning (FP) between rich and poor young women is improving, equitable access to FP is still challenging. Wealth-based inequity remains persistent in most regions of sub-Saharan Africa, even accounting for factors such as educational attainment, urban/rural residence, and age.

PRB's new *Population Bulletin* assesses whether demand satisfied for FP, as a key indicator of universal access to sexual and reproductive health, is equitable among young women ages 15 to 24 in low- and middle-income countries, and to what extent that inequity has changed over time. We consider these questions at the global, regional, and national levels, drawing on survey data from 33 countries. The results show that globally, education and marital status affect demand satisfied for FP among young women at least as much as wealth. Further, increases in contraceptive use, rather than decreases in unmet need, have been the primary factor driving recent improvements in demand satisfied among young women.

www.prb.org



POPULATION REFERENCE BUREAU

1875 Connecticut Avenue., NW 202 483 1100 PHONE
Suite 520 202 328 3937 FAX
Washington, DC 20009 popref@prb.org EMAIL
