



Trends in contraceptive need and use in developing countries in 2003, 2008, and 2012: an analysis of national surveys

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Summary

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See [Comment](#) page 1696

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Background Data for trends in contraceptive use and need are necessary to guide programme and policy decisions and to monitor progress towards Millennium Development Goal 5, which calls for universal access to contraceptive services. We therefore aimed to estimate trends in contraceptive use and unmet need in developing countries in 2003, 2008, and 2012.

Methods We obtained data from national surveys for married and unmarried women aged 15–49 years in regions and subregions of developing countries. We estimated trends in the numbers and proportions of women wanting to avoid pregnancy, according to whether they were using modern contraceptives, or had unmet need for modern methods (ie, using no methods or a traditional method). We used comparable data sources and methods for three reference years (2003, 2008, and 2012). National survey data were available for 81–98% of married women using and with unmet need for modern methods.

Findings The number of women wanting to avoid pregnancy and therefore needing effective contraception increased substantially, from 716 million (54%) of 1321 million in 2003, to 827 million (57%) of 1448 million in 2008, to 867 million (57%) of 1520 million in 2012. Most of this increase (108 million) was attributable to population growth. Use of modern contraceptive methods also increased, and the overall proportion of women with unmet need for modern methods among those wanting to avoid pregnancy decreased from 29% (210 million) in 2003, to 26% (222 million) in 2012. However, unmet need for modern contraceptives was still very high in 2012, especially in sub-Saharan Africa (53 million [60%] of 89 million), south Asia (83 million [34%] of 246 million), and western Asia (14 million [50%] of 27 million). Moreover, a shift in the past decade away from sterilisation, the most effective method, towards injectable drugs and barrier methods, might have led to increases in unintended pregnancies in women using modern methods.

Interpretation Achievement of the desired number and healthy timing of births has important benefits for women, families, and societies. To meet the unmet need for modern contraception, countries need to increase resources, improve access to contraceptive services and supplies, and provide high-quality services and large-scale public education interventions to reduce social barriers. Our findings confirm a substantial and unfinished agenda towards meeting of couples' reproductive needs.

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Introduction

In developing countries, desire for small families and motivation for healthy spacing of births has steadily increased.^{1,2} To achieve their childbearing preferences, women and their partners need effective contraception to prevent unintended pregnancies. Measurement of levels and trends in contraceptive use and unmet need for contraceptive services in developing countries is crucial to inform the decisions of health-care providers, programme planners, and those in charge of resource allocation. Commitments and additional resources for the 69 poorest countries, generated by the 2012 London Summit on Family Planning,³ promise substantial progress towards meeting Millennium Development Goal (MDG) 5, which calls for universal access to the contraceptive services that women and couples need to have the number of births they want, when they want them.

Numbers of women needing contraception and the proportion with unmet need are somewhat moving

targets—population growth and the increasing desire to control the number and timing of births lead to increases in the numbers of women needing contraception. Rapid improvements should be made in coverage and quality of services if women's needs are to be adequately met with quality care and the number and proportion of women with unmet need for contraception are to decrease over time.

To increase understanding of family planning challenges, achievements, and gaps from the past few years, and to identify the magnitude of immediate unmet needs, we used available survey data and comparable methods to estimate contraceptive use and unmet need in developing regions and subregions in 2003, 2008, and 2012.

Methods

Study design

We estimated the numbers of women in developing countries using, and with unmet need for, modern

contraceptives by applying survey-based proportions of women by use and need category to numbers of women aged 15–49 years. Our approach was similar to that used in other studies.^{4–7} We classed women as using modern contraceptives if they or their partner used one or more of the following methods: sterilisation, intrauterine devices, implants, injectable drugs, contraceptive pill, male condom, or other supply methods such as vaginal spermicides. We categorised women wanting to avoid pregnancy and using no or traditional methods, such as withdrawal or periodic abstinence, as having an unmet need for modern contraceptives. We included women using traditional methods in our calculations of unmet need because such methods are much more likely to fail than are modern methods; therefore, women's risk of having an unintended pregnancy (and related health consequences) is substantially higher.^{5,8}

Data sources

We made estimates for 2003, 2008, and 2012, with methodology and data sources similar to those previously used elsewhere.^{9–13} We revised previous estimates for 2003 and 2008 to allow us to compare them with those for 2012, and applied the same method to calculate the need status of women.^{14,15} The net effect of these adjustments was to slightly increase the numbers of women wanting to avoid pregnancy and those with unmet need for modern methods compared with previously published estimates. We also updated estimates made for some countries (the most notable being Mexico and Sudan) in 2003 and 2008, that had come from preliminary reports with datasets and reports now available.

We tabulated the proportions of women wanting to avoid pregnancy using modern methods and those with an unmet need for modern methods from available national surveys, mainly Demographic and Health Surveys (DHS), Reproductive Health Surveys, and Multiple Indicator Cluster Surveys. We estimated missing data from weighted subregional averages on the basis of available data, data from similar countries, or information from previous surveys. We made separate estimates for each country according to women's marital status (currently, never, or formerly married or in union), and applied these proportions to numbers of women in each marital status grouping by reference year (2003, 2008, or 2012). We obtained population numbers from UN estimates and based women's marital status groupings on national survey data and UN estimates with use of the most recent estimates available at the time of analysis for each of the three reference years.^{11–13}

We categorised women as wanting to avoid pregnancy if they were: using a contraceptive method; not using a contraceptive method and married, or unmarried and had sex in recent months, fecund, and wanting to wait 2 or more years to give birth or wanting no more children; or pregnant with a pregnancy that they had wanted later

or not at all, or in post-partum amenorrhoea after a birth that they had wanted at least 2 years later or not at all. This group corresponds to the DHS definition of demand for family planning.¹⁴ We regarded women who used no method or a traditional method as having an unmet need for modern methods, not only because traditional methods have high use-failure rates,^{5,8} but also because

	Number (millions) of women 15–49 years (%)			Proportion of women wanting to avoid pregnancy (%)		
	2003 (n=1321)	2008 (n=1448)	2012 (n=1520)	2003	2008	2012
Wanting to avoid pregnancy*	716 (54%)	827 (57%)	867 (57%)	100%	100%	100%
Using modern methods	506 (38%)	600 (41%)	645 (42%)	71%	73%	74%
Unmet need for modern methods	210 (16%)	226 (16%)	222 (15%)	29%	27%	26%
Using traditional methods	61 (5%)	74 (5%)	68 (4%)	8%	9%	8%
Using no method	149 (11%)	152 (11%)	153 (10%)	21%	18%	18%
Not in need of contraception*	605 (46%)	621 (43%)	653 (43%)	NA	NA	NA

NA=not applicable. *Includes women using contraception and non-users who are sexually active, fecund, and do not want a child in the next 2 years, and women pregnant or in postpartum amenorrhoea related to a pregnancy that they had wanted 2 or more years later or not at all; others are considered not to want to avoid pregnancy.

Table 1: Women aged 15–49 years in developing countries wanting to avoid pregnancy, by need for and use of contraception, and number not in need, in 2003, 2008, and 2012

	Number (millions) of women aged 15–49 years			Number (millions) wanting to avoid pregnancy (%)		
	2003	2008	2012	2003	2008	2012
All developing countries	1321	1448	1520	716 (54%)	827 (57%)	867 (57%)
Africa	204	240	260	81 (40%)	99 (41%)	110 (42%)
Sub-Saharan Africa*	164	195	213	64 (39%)	78 (40%)	89 (42%)
Eastern Africa	63	73	81	25 (39%)	31 (43%)	37 (45%)
Middle Africa	23	28	31	8 (35%)	12 (41%)	12 (40%)
Southern Africa	14	15	16	9 (63%)	10 (64%)	11 (70%)
Western Africa	56	69	75	20 (35%)	24 (35%)	26 (35%)
Northern Africa	48	55	58	20 (41%)	23 (41%)	23 (40%)
Asia†	970	1052	1098	549 (57%)	631 (60%)	655 (60%)
Eastern Asia	380	388	392	251 (66%)	285 (74%)	283 (72%)
Central Asia	16	17	17	8 (51%)	9 (51%)	8 (47%)
South Asia	373	428	458	185 (50%)	232 (54%)	246 (54%)
Southeast Asia	148	159	167	77 (52%)	76 (48%)	89 (53%)
Western Asia	52	58	62	27 (52%)	28 (49%)	27 (44%)
Latin America and the Caribbean	147	155	162	85 (58%)	96 (62%)	103 (63%)
Caribbean	10	11	11	5 (52%)	7 (63%)	6 (59%)
Central America	38	40	43	19 (50%)	22 (53%)	23 (52%)
South America	98	104	108	61 (62%)	68 (65%)	73 (68%)
69 poorest countries‡	651	775	833	304 (47%)	380 (49%)	414 (50%)
Higher-income countries§	670	672	687	411 (61%)	447 (66%)	452 (66%)

*Includes the following subregions: eastern, middle, southern, and western Africa, and Sudan and south Sudan, which are in the northern Africa subregion. †Oceania is included in total for Asia, but not shown separately. ‡Per head gross national income in 2010 of US\$2500 or less; these countries are the focus of the London Summit on Family Planning.³ §All other developing countries with 2010 per head gross national income of more than \$2500.

Table 2: Number (millions) of women aged 15–49 years in developing countries and those wanting to avoid pregnancy, by region and subregion and by country income in 2003, 2008, and 2012

although some women using traditional methods might choose to use these methods, such choices often imply that women perceive other options to be unavailable, or are not fully informed of contraceptive options.¹⁶

We present results for geographic regions and subregions of developing countries, aggregating country-specific estimates,¹⁷ and for the 69 poorest countries that have a 2010 per head gross national income of US\$2500 or less¹⁸ and are the focus of the London Summit on Family Planning (appendix).³ We present estimates for women of all union statuses. Almost all surveys in sub-Saharan Africa and Latin America include unmarried women, although their sexual activity is likely to be somewhat under-reported. However, unmarried women are largely excluded from surveys in Asia and northern Africa and, when they are included, under-reporting of their sexual activity is likely to be extensive. We made estimates for unmarried women in these two regions on the basis of data from national surveys and from sub-national studies to present estimates for all women of reproductive age. Married women account for 92–93% of all users of modern contraceptive methods and for 85–88% of women with unmet need for modern methods, dependent on the year. Available data (*vs* estimation) were

the source for countries making up 90% of modern method use in married women in 2003, and 2008, and 98% in 2012. Countries with data accounted for 81% of all unmet need for modern methods in married women in 2003, for 83% in 2008, and for 97% in 2012.

We noted some overlap in data sources between the estimation years. The same source was used for 2008 as for 2003 for 13 countries, accounting for 6% of all women aged 15–49 in developing countries in 2008; for 2008 and 2012 estimates for 27 countries, which make up 30% of all women in 2012 (almost three-quarters of whom live in India, for which other country surveys show little change over time in key measures, such as the proportion using contraception and unmet need, suggesting that the effect of the overlap on results is not as large as it might seem);^{6,19} and for 2003 and 2012 estimates for two countries, which account for less than 1% of all women aged 15–49 years in 2012. Because of this overlap, reported results, especially for 2008–12, might underestimate change and therefore provide a conservative estimate of trends for this period.

We used several different sources of data in this analysis. A key data source was demographic sample surveys for a large number of countries, which are the basis for regional and subregional estimates. Because errors in the estimate for one country are unlikely to be correlated with those for a different country, errors will cancel out to some extent. Thus, the error of the aggregate estimate for all countries is much smaller than the percentage error around the estimates for individual countries. A second key source was UN population estimates, which are technically measured without error. To inform interpretation of results, we reviewed published standard errors around the proportion of surveyed women using a modern contraceptive from 63 DHS and obtained an average relative standard error of 2.25%. With this information as a rough guide, we focused on larger differences (roughly 6%) between estimates for regions and subregions and across years. We also calculated distributions of women using modern methods by type of method.

Role of the funding source

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

Results

Of the 1.5 billion women of reproductive age in developing countries in 2012, 867 million (57%) wanted to avoid pregnancy and therefore needed contraception (table 1). The remaining 653 million women did not need contraception for various reasons: they were unmarried and not sexually active (24% of all women); had recently had an intended birth, were pregnant with an intended

See Online for appendix

	Number (millions) using modern methods			Proportion of women wanting to avoid pregnancy using modern methods (%)		
	2003	2008	2012	2003	2008	2012
All developing countries	506	600	645	71%	73%	74%
Africa	33	43	51	40%	44%	47%
Sub-Saharan Africa*	20	28	36	32%	35%	40%
Eastern Africa	8	12	17	31%	37%	46%
Middle Africa	1	2	2	17%	18%	19%
Southern Africa	7	7	9	75%	75%	83%
Western Africa	4	6	7	22%	26%	26%
Northern Africa	13	16	16	64%	70%	68%
Asia†	411	485	514	75%	77%	79%
Eastern Asia	230	262	267	92%	92%	94%
Central Asia	6	6	6	70%	70%	72%
South Asia	114	153	163	61%	66%	66%
Southeast Asia	49	51	64	64%	67%	72%
Western Asia	12	13	14	45%	46%	50%
Latin America and the Caribbean	62	72	80	72%	75%	78%
Caribbean	4	5	5	67%	69%	70%
Central America	14	17	17	71%	77%	77%
South America	45	51	58	73%	75%	79%
69 poorest countries‡	168	226	252	55%	59%	61%
Higher-income countries§	338	374	393	82%	84%	87%

*Includes eastern, middle, southern, and western Africa, and Sudan and south Sudan, which are in the northern Africa subregion. †Oceania is included in total for Asia, but not shown separately. ‡Per head gross national income in 2010 US\$2500 or less; these countries are the focus of the London Summit on Family Planning.³ §All other developing countries with 2010 per head gross national income more than \$2500.

Table 3: Number (millions) of women using modern methods and proportion of those wanting to avoid pregnancy using modern methods, by region and subregion and by country income in 2003, 2008, and 2012

	Female or male sterilisation			Intrauterine devices			Injectables or implants			Oral contraceptives			Barrier methods*		
	2003	2008	2012	2003	2008	2012	2003	2008	2012	2003	2008	2012	2003	2008	2012
All developing countries	47%	42%	38%	27%	30%	28%	6%	8%	9%	12%	11%	13%	7%	10%	13%
Africa	9%	8%	8%	24%	20%	14%	26%	31%	35%	29%	27%	28%	11%	14%	15%
Sub-Saharan Africa†	12%	11%	10%	6%	3%	3%	37%	42%	46%	29%	25%	21%	15%	20%	21%
Eastern Africa	12%	9%	8%	4%	2%	3%	36%	48%	59%	36%	30%	19%	12%	11%	11%
Middle Africa	13%	8%	5%	4%	2%	2%	8%	8%	12%	28%	13%	17%	46%	69%	63%
Southern Africa	19%	18%	19%	2%	2%	2%	56%	54%	48%	19%	19%	19%	4%	6%	13%
Western Africa	3%	6%	4%	14%	6%	5%	21%	27%	27%	33%	28%	25%	28%	34%	39%
Northern Africa	4%	3%	4%	54%	49%	40%	9%	12%	8%	29%	32%	45%	4%	4%	3%
Asia‡	50%	44%	41%	30%	34%	32%	5%	6%	6%	9%	8%	10%	7%	9%	11%
Eastern Asia	52%	38%	34%	39%	51%	51%	0	1%	0	4%	2%	2%	4%	8%	12%
Central Asia	7%	3%	4%	80%	84%	78%	2%	2%	3%	4%	4%	8%	7%	6%	7%
South Asia	68%	67%	67%	9%	5%	4%	3%	4%	3%	11%	12%	14%	10%	12%	12%
Southeast Asia	12%	13%	13%	26%	22%	18%	31%	37%	35%	24%	24%	28%	7%	4%	5%
Western Asia	11%	12%	14%	53%	51%	39%	1%	1%	4%	11%	13%	21%	24%	23%	22%
Latin America and the Caribbean	52%	54%	37%	9%	8%	9%	5%	7%	10%	24%	22%	24%	9%	10%	19%
Caribbean	63%	58%	39%	4%	2%	18%	8%	11%	11%	19%	17%	15%	5%	11%	17%
Central America	53%	58%	52%	22%	15%	15%	6%	10%	13%	13%	8%	8%	6%	10%	13%
South America	51%	52%	33%	6%	6%	7%	5%	5%	9%	28%	27%	29%	10%	10%	21%
69 poorest countries§	49%	48%	45%	14%	11%	12%	12%	14%	16%	16%	16%	16%	9%	11%	11%
Higher-income countries¶	46%	38%	33%	34%	41%	38%	4%	4%	4%	10%	8%	11%	6%	9%	14%

*Include condoms and modern vaginal methods. †Includes eastern, middle, southern, and western Africa, and Sudan and south Sudan, which are in the northern Africa subregion. ‡Oceania is included in total for Asia, but not shown separately. §Per head gross national income in 2010 of US\$2500 or less; these countries are the focus of the London Summit on Family Planning. ¶All other countries in the developing world with 2010 per head gross national income of \$2500 or more.

Table 4: Percentage distribution of women in developing countries using modern contraceptives, by type of method, region and subregion, and country income, in 2003, 2008, and 2012

pregnancy, or wanted to be pregnant soon (11%); or were sexually active but infertile (8%).¹¹ The number of women wanting to avoid pregnancy increased by 151 million between 2003 and 2012 (table 1); most of which (108 million) was because of the rising number of women aged 15–49 years, and the remainder because of increasing motivation to avoid unintended pregnancies and changing patterns of marriage and sexual activity. The proportion of women wanting to avoid pregnancy in 2012 varied widely across regions, from less than half of women in all regions in Africa (except southern Africa) and central and western Asia, to two-thirds or more in southern Africa, eastern Asia, and South America, and in higher-income countries (table 2). The proportion of women wanting to avoid pregnancy increased only slightly overall in the past decade (table 2); however, we noted substantial increases (≥ 6 percentage points) between 2003 and 2012 in eastern and southern Africa, eastern Asia, the Caribbean, and South America (table 2).

Whereas the total number of women aged 15–49 years increased by 15% in all developing countries, it rose by 27% in Africa; 13% in Asia, with a 23% rise in south Asia; 10% in Latin America and the Caribbean; and 28% in the 69 poorest countries, compared with only 3% in higher-income countries (table 2). Overall, the number of women wanting to avoid pregnancy increased by 21% between 2003 and 2012; the increase was 36% in Africa,

19% in Asia, and 21% in Latin America and the Caribbean (table 2). The number of women wanting to avoid pregnancy increased more rapidly in the 69 poorest countries (by 36% from 2003 to 2012) than in higher-income developing countries (by 10%; table 2).

In 2012, 645 million women in developing countries relied on modern contraceptives used by themselves or their partner, accounting for about three-quarters of those wanting to avoid pregnancy (table 1). We noted a slight increase from 2003 to 2012 in the proportion of women wanting to avoid pregnancy who were using modern contraceptives (table 1). Although the proportion of women wanting to avoid pregnancy who used modern contraceptives did not increase substantially between 2003 and 2012, the number of users increased by 139 million between 2003 and 2012, with average annual increases of 15 million (table 3). 106 million of this increase in modern method users is attributable to the increased numbers of women, and 33 million to growth in the proportion using modern methods. Levels of use were very low ($\leq 26\%$) in middle and western Africa and moderate (46–66%) in eastern Africa, South Asia and western Asia, and in the 69 poorest countries (table 3). Use was highest ($\geq 77\%$) in southern Africa, eastern Asia, Central and South America, and in higher-income countries (table 3). However, we noted substantial increases in use in those who wanted to avoid pregnancy in eastern

and southern Africa, in southeast Asia, in Central and South America, and in the 69 poorest countries (table 3). Despite these increases, modern contraceptive use is low in sub-Saharan Africa outside southern Africa, in western Asia, and in the poorest countries (table 3). Percentage increases in numbers of women using modern methods between 2003 and 2012 were steepest in sub-Saharan Africa (80%), partly because of the low initial levels of use (table 3). The number of women using modern methods rose by 25% in Asia, including a 43% rise in south Asia; by 29% in Latin America and the Caribbean; by 51% in the 69 poorest countries; and by 16% in higher-income countries (table 3).

Sterilisation (91% of which was female sterilisation) was the most commonly used method in 2012 in developing countries, followed by the intrauterine device, oral contraceptives, and barrier methods (97% of which was male condom use), and longacting injectable and implant hormonal methods (91% of which was use of injectables; table 4). We noted big regional differences in type of method used; however, sterilisation was the most commonly used modern method in Asia as a whole and in south Asia, and in Latin America and the Caribbean (table 4). Intrauterine devices made up almost a third of

modern use in Asia and were the most commonly used method in eastern, central, and western Asia (table 4). Longacting hormonal methods, mainly injectables, were the most commonly used methods in sub-Saharan Africa overall, particularly eastern and southern Africa, and in southeast Asia (table 4). Oral contraceptives made up 45% of total modern contraceptive use in northern Africa, and barrier methods, mainly male condoms, were the most commonly used modern method in middle and western Africa (table 4), which is probably an indicator of high HIV/AIDS risk and awareness in these regions.

Between 2003 and 2012, the numbers of women using each type of method rose, while the distribution by type of method changed substantially. Overall, the proportion of modern method use accounted for by sterilisation has reduced substantially, and that accounted for by barrier and longacting hormonal methods has increased (table 4). Between 2003 and 2012, the proportion of modern use accounted for by sterilisation decreased by 9 percentage points in Asia and by 15 percentage points in Latin America and the Caribbean (table 4). In eastern Asia, the decline in use of sterilisation was accompanied by a large increase in use of intrauterine devices, and some increase in use of barrier methods (table 4). In Latin America and the Caribbean, the large decrease in use of sterilisation was accompanied by increased use of barrier methods and a smaller increase in use of injectables and implants (table 4). A large decrease in use of intrauterine devices in northern Africa and western Asia was accompanied by increased use of oral contraceptives (table 4).

In 2012, 222 million women in developing countries had unmet need for modern methods (table 5). However, the number of women with unmet need increased more slowly than did the number wanting to avoid pregnancy (table 5), because the proportion using modern methods rose. In fact, the proportion of women with unmet need for modern methods of those wanting to avoid pregnancy has been slowly decreasing (table 5). If this proportion had not decreased from the 2003 level, 254 million women would have had unmet need for modern methods in 2012 (data not shown). In 2012, 73% of women with an unmet need for modern methods lived in the world's poorest countries (table 5). 66% of all women with unmet need for modern methods, compared with only 46% of those wanting to avoid pregnancy, lived in four subregions—south Asia, southeast Asia, and eastern and western Africa (table 5). The proportion of women wanting to avoid pregnancy with unmet need for modern methods remained high in many regions, with the highest proportions in eastern, middle, and western Africa, and in south and western Asia (table 5). Unmet need was much lower in other subregions and was three times higher in the poorest than the higher-income countries (table 5). The proportion of women wanting to avoid pregnancy with unmet need for modern methods fell in every subregion between 2003 and 2012; it fell most steeply in eastern

	Number (millions) with unmet need for modern methods			Proportion of women wanting to avoid pregnancy with unmet need for modern methods (%)		
	2003	2008	2012	2003	2008	2012
All developing countries	210	226	222	29%	27%	26%
Africa	49	56	58	60%	56%	53%
Sub-Saharan Africa*	43	51	53	68%	65%	60%
Eastern Africa	17	19	20	69%	63%	54%
Middle Africa	7	10	10	83%	82%	81%
Southern Africa	2	2	2	25%	25%	17%
Western Africa	15	18	19	78%	74%	74%
Northern Africa	7	7	8	36%	30%	32%
Asia†	138	147	140	25%	23%	21%
Eastern Asia	21	24	16	8%	8%	6%
Central Asia	2	3	2	30%	30%	28%
South Asia	72	79	83	39%	34%	34%
Southeast Asia	28	25	25	36%	33%	28%
Western Asia	15	15	14	55%	54%	50%
Latin America and the Caribbean	23	24	23	28%	25%	22%
Caribbean	2	2	2	33%	31%	30%
Central America	6	5	5	29%	23%	23%
South America	16	17	16	27%	25%	21%
69 poorest countries‡	137	154	162	44%	41%	39%
Higher-income countries§	73	73	59	18%	16%	13%

*Includes eastern, middle, southern, and western Africa, and Sudan and South Sudan, which are in the northern Africa subregion. †Oceania is included in total for Asia, but not shown separately. ‡Per head gross national income in 2010 of \$US2500 or less; these countries are the focus of the London Summit on Family Planning. §All other countries in the developing world with 2010 per head gross national income of \$2500 or more.

Table 5: Number (millions) of women with an unmet need for modern methods and proportion of those wanting to avoid pregnancy with unmet need for modern methods, by region and subregion and by country income, in 2003, 2008, and 2012

and southern Africa, southeast Asia, Central America, and South America (table 5).

Most women with unmet need for modern methods used no contraceptive (69% in 2012; appendix). Whereas the number of non-users with unmet need rose slightly from 149 million in 2003, to 153 million in 2012, this group decreased from 21% of all women wanting to avoid pregnancy in 2003 to 18% in 2008 and 2012 (appendix), accounting for most of the decrease in the overall proportion with unmet need for modern methods among those wanting to avoid pregnancy. The number of women relying on traditional methods was much smaller (68 million in 2012) than the number with unmet need using no method, and has accounted for only 8–9% of all women wanting to avoid pregnancy in 2003–12 (appendix). We noted a general decrease between 2003 and 2012 in the proportion of women wanting to avoid pregnancy who are using traditional methods, with minor variations in this pattern (appendix). In 2012, most women relying on traditional methods used some form of periodic abstinence (47%) or withdrawal (42%), with 11% using other methods (data not shown).

Discussion

The growing preference for small families and for better control of the timing of births, combined with population growth, resulted in a large increase in the number of women of reproductive age wanting to avoid pregnancy and in need of effective contraception. This increased need was partly accompanied by increased use of modern methods, and the proportion of women using modern methods increased slightly. In fact, in developing countries overall, about three in four women wanting to avoid pregnancy were using modern contraceptive methods in 2012. The absolute number of women with unmet need for modern methods of contraception changed little between 2003 and 2012, but encouragingly, the proportion with unmet need decreased slightly. Nevertheless, with one in four women wanting to avoid pregnancy not using effective contraception, the need for improved contraceptive services remains very high (panel). Moreover, the proportion not using effective contraception is much higher in some parts of the world—ie, sub-Saharan Africa (other than southern Africa), western Asia, and the 69 poorest countries.

Our findings emphasise another area in need of increased attention. Among women using modern contraceptive methods, there has been a shift away from sterilisation towards methods with higher failure rates, which could result in an overall increase in contraceptive failure and unintended pregnancies. This trend increases the importance of support for users of contraception to improve the consistency and correctness of use of reversible methods, with provision of steady supplies of various methods so that users can select what best fits their needs and preferences, and adaptation of existing

Panel: Research in context

Systematic review

We derived estimates of the proportion of women wanting to avoid pregnancy (either delay or stop childbearing) with modern contraception, and having an unmet need for modern contraception, from Demographic and Health Surveys and similar national surveys of women aged 15–49 years. Our estimates for unmet need for 2003, 2008, and 2012 follow the general approach used by other researchers,^{4–7} and use comparable methodology and data sources as in previous Guttmacher reports in 2003 and 2008.^{9–13}

Interpretation

Our report provides a comprehensive assessment of the need for contraceptive services in developing countries by region and subregion in 2012, and trends since 2003. The estimates might differ from those of other researchers in that they include both married women and unmarried women. Additionally, they show unmet need for modern methods, which includes women wanting to avoid pregnancy who are using no method and those using traditional methods. From 2003 to 2012, the number of women who needed effective contraception increased substantially, largely because of population growth. Modern contraceptive use also increased, but this increase was not much greater than growth in the numbers of women wanting to avoid pregnancy in most regions; as such, the proportion of women with an unmet need for modern methods decreased only slightly from 2008 to 2012. To meet the unmet need for modern contraception, countries need to increase resources, improve access to contraceptive services and supplies, and provide high-quality services and large-scale public education interventions to reduce social barriers. Our findings confirm a substantial and unfinished agenda towards the meeting of women's reproductive needs.

methods or development of new techniques to better suit user needs for effectiveness and ease of use.²⁰

The continuing high level of unmet need for effective contraception has several implications for policies and programmes to reinforce previous work.²¹ The first need is for increased allocation of financial resources at the global and country levels to improve access to contraceptive services and expand capacity where needed. The second is to improve the quality of services—an important factor in whether women will use available services—including offering a range of methods to meet the different needs of women and couples, ensuring voluntary choice of methods, training staff to increase provision of accurate information and confidential and respectful care, giving priority to adequate counselling and follow-up care, and facilitating switching methods. Third, public education interventions are needed to reduce barriers to contraceptive use. Studies show that many women do not use contraception because of poor understanding of their risk for pregnancy, health concerns about potential side-effects, or opposition from male partners;^{20,22} married women might have little control over contraceptive decision making (which is especially important when partners differ in their childbearing preferences);^{23,24} and unmarried women often face strong stigma if they are sexually active, linked to judgmental treatment by providers, which in turn reduces these young women's ability to obtain needed services.^{25,26} Governments should also address the needs

of young people for comprehensive information and access to services. Accessible, quality information and services would improve the choices that are presently available, thereby enabling women to choose from the full range of methods to most effectively avoid pregnancy.

The track record over the past decade is a mixed one. However, recent commitments²⁷ by national governments and international agencies to increase attention and resources towards meeting contraceptive needs in the poorest 69 countries increase optimism that substantial progress will be made in these countries, and in developing countries as a whole.

Contributors

Both authors developed and refined the report. JED did the analysis, produced the tables, and drafted the methods and findings sections. SS advised on analyses, previewed results, and drafted the background and discussion sections.

Conflicts of interest

We declare that we have no conflicts of interest.

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