

Reducing Unmet Need by Supporting Women With Met Need

CONTEXT: The 2012 London Summit on family planning set a goal of providing modern contraceptives to 120 million women with unmet need by 2020. Reducing the high rate of contraceptive discontinuation by facilitating switching among methods will play a critical role in meeting that goal.

METHODS: Data collected from married women in Demographic and Health Surveys conducted in 34 countries between 2005 and 2010 were used to estimate the potential contribution of contraceptive discontinuation to current and future unmet need. An indicator of relevant discontinuation was created by calculating the proportion of past users with an unmet need for modern methods among ever-users. Regression analyses identified associations between this indicator and access to and composition of methods.

RESULTS: Women who had discontinued method use and subsequently had unmet need at the survey accounted for 38% of the total estimated unmet need. These past users represented 19% of women who had ever used modern methods. Both the access to and composition of available methods were associated with a reduction in the relevant discontinuation rate. The level of discontinuation in Sub-Saharan Africa was significantly higher than in other regions, in part due to differences in method availability.

CONCLUSIONS: High contraceptive discontinuation in the past has contributed tens of millions of cases of unmet need, and discontinuation among current users will contribute even more cases in the future. Enabling past users with unmet need to resume use and encouraging current users to continue use of the same or another method could be an effective strategy to reduce future unmet need.

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In July 2012, the London Summit on family planning reinvigorated the global commitment to family planning; it generated pledges for more than \$2.6 billion in new resources, and set a goal of providing modern contraceptive methods to 120 million women with unmet need in 69 of the poorest countries by 2020. The summit raised a number of questions: Which women and girls have an unmet need for modern contraceptives? Can unmet need be eliminated solely by increasing their access to contraceptives? Whose unmet needs are most pressing, and which strategies should be prioritized? In addressing these questions, it is important to remember that unmet need is a theoretical concept that has been used mainly for advocacy and for estimating the potential demand for contraception. Unmet need has not been operationalized by family planning programs to first identify women with unmet need and then to deliver contraceptive services to them.

We propose a strategy for reducing unmet need that focuses on enabling women and girls with a met need to achieve their reproductive intentions by continued use of their current method or another modern method. This strategy may appear counterintuitive, but we believe it to be essential, both because it will reduce unmet need for contraception and because it will allow women to determine how they can achieve their desired number and timing of

children and thus will also reduce unintended pregnancies.

Changes in unmet need status over time can best be studied via panel surveys in which the same women are interviewed more than once. Previous panel studies have shown that although the overall level of unmet need remains quite stable over time, a substantial proportion of women experience a change in their status.^{1–4} For example, a panel study in Pakistan found that 67% of women remained in the same need category between 2008–2009 and 2011–2012: Eleven percent had unmet need, 16% had met need and 40% had no need.⁴ The remaining one-third experienced a change in contraceptive need status between the two surveys: Seven percent went from unmet to met need, 4% went from met to unmet need, and the rest moved in or out of the no need group. The women who shifted from met to unmet need constituted 4% of all women but 17% of those who reported met need in 2008–2009, and their status changed because they discontinued contraceptive use between surveys. Thus, it is important to tailor service responses to address women's changing needs and preferences. Notably, the static measure of unmet need does not capture the changes described here.

A 1989 simulation analysis illustrated the importance of high contraceptive discontinuation to contraceptive prevalence.⁵ Since then, many studies conducted in develop-

ing countries and using Demographic and Health Survey (DHS) calendar data have documented method-specific discontinuation rates and drawn attention to the high rates associated with traditional and short-acting reversible modern methods in comparison with long-acting reversible methods.⁶⁻⁹ However, the contribution of contraceptive discontinuation to current and future unmet need has not been adequately studied.

In the aftermath of the London Summit, plans are now under way for the FP2020 initiative to reach 120 million women with unmet need over the next seven years. While advocacy efforts supporting FP2020 seek to reach women with an unmet need for contraception, as illustrated by the Pakistan study,⁴ women's contraceptive needs change over time. For example, substantial proportions of women who are currently using a method may discontinue use in the near future and many of them may continue to subsequently have an unmet need, and they will add to the challenge of reaching the target set for FP2020.

In addition to the current users who may contribute to unmet need in the future, women who discontinued contraceptive use prior to being surveyed can contribute to current levels of unmet need because many of them may report having an unmet need at the time of the survey. For this reason, we divided women with unmet need into two groups: those who have never used any method (never-users), and those who started using a method but discontinued its use before the survey (past users). Strategies focused on supporting women who have used contraceptives in the past or are using them now will necessarily be different from strategies that enable nonusers to start using a contraceptive for the first time. While unmet need can be reduced by focusing on both groups of women, a strategy targeting women who have used a method or are using one now is likely to be more cost-effective because of the size of this group and because these women have already overcome attitudinal, cultural and service-related access and cost barriers that often inhibit the initiation of method use.

We demonstrate that unmet need can be reduced substantially even in Sub-Saharan Africa by enabling women with a met need to achieve their reproductive intentions by sustained use of contraception. This can be accomplished by improving the quality of care, including the nature and content of client-provider interactions, and the availability of different types of methods.

METHODS

Women with unmet need say they want no more children, or want to delay the birth of their next child, but are not using any method. To determine unmet need, we used DHS

data on married women from 34 developing countries with surveys conducted between 2005 and 2010; for countries with more than one survey in this period, we used the most recent.

Indicators of Met and Unmet Need

We used the revised definition of unmet need^{10,11} to first divide women into three groups according to their current need for a modern method:* those with met need (currently using a modern method), those with unmet need (want to space or limit their childbearing but are not using a modern method) and those with no current need for a modern method (want their next child within two years, or are infecund or menopausal). To be consistent with FP2020, women who were using a traditional method at interview were classified as having an unmet need for a modern method. The group with unmet need consists of those who had never used a modern method (never-users) and those who had discontinued one by the time of the survey (past users).

Second, we estimated the number of all past contraceptive users. To determine if women could be classified as having used a modern method in the past but having discontinued it before the survey, we assessed their responses regarding the use of modern methods over their lifetime (ever-use) and at the survey (current use). The difference between the number of ever-users and current users provided an estimate of the number of all past users. This figure may overestimate the extent of past use within a marriage or union, as ever-users include women who used contraceptives before getting married or joining a union but have not used any since.

Third, to estimate the number of past users who had an unmet need for modern contraceptives at the time of the survey, we subtracted the number of past users with no current need for a modern method from the number of all past users.† Finally, to estimate the number of never-users with unmet need, we subtracted the number of past users with unmet need from the total number of women with current unmet need.

Outcome Variables

Three outcome variables were used in this analysis: current use of a modern contraceptive method, method mix and contraceptive discontinuation resulting in unmet need. A measure of skewness of method mix among current users was created by calculating the ratio of women currently using long-acting or permanent methods (the IUD, implant, or male or female sterilization) to those using any modern method.

Prior studies have found a considerable degree of switching among methods.^{6,9} However, the estimated number of past users with unmet need described earlier represents the cumulative but net effect of all contraceptive discontinuations observed before the survey. For example, women who had discontinued a method but then started using the same one or switched to another modern method and

*At the time of interview, women who were pregnant or postpartum amenorrheic for less than 24 months were classified according to the intention status of their last pregnancy or birth.

†Because of a change in the questionnaire, the latest DHS for a few countries did not include information to identify past users of modern methods. For these countries, we used the most recent survey that had collected the required information (see Table 2 for countries and year of survey included in this analysis).

were still using it at the time of the survey are considered current users. Moreover, women who discontinued use but do not have a current need for contraception, including those who want to become pregnant, are included in the group of women with no need (and therefore excluded from the group of past users with unmet need). Thus, while the magnitude of all past users in a cross-sectional survey reflects the cumulative effect of contraceptive discontinuation observed before the survey, the group of past users with unmet need reflects the net effect of contraceptive discontinuation on the current estimate of unmet need. The net contribution of past users to current unmet need is measured by creating an index—the percentage of past users with unmet need among all women with unmet need.

This index, however, is not useful in answering the following question: What is the projected contribution of current users of modern methods to unmet need in the future if these users experience the current high contraceptive discontinuation rates? Although method-specific discontinuation rates are available for several countries, they are not available for all. Moreover, while DHS calendar data for method-specific discontinuation specify the reason for discontinuation, they do not distinguish between women who continue to have an unmet need at interview and those who do not. To address this shortcoming, we used an indirect approach to estimate the projected net contribution of contraceptive discontinuation to future unmet need by creating a second index—the relevant discontinuation rate—which was estimated as the ratio of past users with unmet need to ever-users of modern methods (i.e., current users plus all past users). We used ever-users in the denominator because a cross-sectional survey does not provide information on all users who contributed to the group of past users. We also estimated average discontinuation rates for countries by applying median method-specific discontinuation rates, based on 19 countries,⁹ to the method mix of current users in each country. The correlation coefficient between this estimated average discontinuation rate and the relevant discontinuation rate index was statistically significant ($r=0.51$; $p<.05$).

Explanatory Variables

Four variables were considered to explain country-level variations in the relevant discontinuation index: the number of available methods, the type or composition of available methods, the country's Human Development Index (HDI) and its region. Data on availability of modern methods were taken from the 2009 Family Planning Program Effort (FPE) Survey conducted by the Futures Group.¹² This periodic survey collects information on family planning programs in developing countries from knowledgeable persons.¹³ The 2009 survey collected data on availability of the pill, the IUD, condoms, the injectable, and male and female sterilization—that is, the estimated proportion of women of reproductive age who have “ready and easy access” to these six methods. The availability score for each method ranged from 0 (no availability) to 100 (full availability).

TABLE 1. Weighted indicators of use of and unmet need for modern contraceptives among married women aged 15–49, by region, Demographic and Health Surveys, 2005–2010

Indicator	Sub-Saharan Africa	Other	Total
No. of countries	20	14	34
No. of married women	144,726	225,232	369,958
% with met need	17.6	47.0	35.5
% with unmet need	30.5	24.8	27.0
% with no need	52.0	28.1	37.4
Want another child in ≤ 2 years	37.3	16.6	24.7
Infecund/menopausal	14.7	11.5	12.7
% past users of modern methods	18.3	18.9	18.7
With unmet need	9.8	10.6	10.3
With no unmet need	8.5	8.4	8.4
% never-users with unmet need	20.7	14.3	16.8
Past users with unmet need as % of women with unmet need	32.2	42.6	38.0
Never-users with unmet need as % of women with unmet need	67.8	57.4	62.0
Past users with unmet need as % of ever-users	27.3	16.0	18.9

Notes: The weighted numbers of women in a country included in the denominator (all surveyed women, number with unmet need or number of ever-users) of an indicator were used as weights. Percentages may not add to 100.0 because of rounding.

These availability scores were then used to create two indicators—access to and composition of available modern methods. Together, these indicators reflect the choice of methods available to women in a country.* The access index was created by adding the availability scores for the six methods and dividing by 100. This index, reflecting the equivalent number of methods fully available in a country, can range from 0 to 6, with the highest score indicating that all six methods are available to all couples. The index differs from the number of methods available, because a score of 1, indicating full availability of one method, can be obtained by many combinations—for example, one method is available to all women, each of two methods is available to 50% of women or each of five methods is available to 20% of women. The composition index was estimated by expressing the sum of availability scores of long-acting or permanent methods (the IUD, male and female sterilization) as a percentage of the total of availability scores for all methods. This index can range from 0 to 100 and provides a measure of the relative availability of long-acting and permanent methods. A score of 0 indicates that such methods are not available in a country, while a score of 100 indicates that only long-acting or permanent methods are available.

Data on the HDI for each country were obtained from the United Nations.¹⁴ This composite index ranges from 0 to 1 and measures a country's average achievement in three basic dimensions of human development—longevity, education and standard of living. The index is estimated from four individual indicators: life expectancy at birth, mean years of schooling for individuals aged 25 or older, expected years of schooling for a child of school entrance age and gross national income per capita.

*Data on the availability of implants were not collected in these surveys, and data on the availability of safe abortion were excluded in creating measures of access to and composition of methods, because abortion is not a contraceptive method and was unlikely to be related to current or past use of modern methods.

A dummy variable for region of residence as a proxy for regional differences was created by coding countries in Sub-Saharan Africa as 1 and others as 0. We used 2009 FPE and HDI data because the latest DHS data used in this analysis were for 2010.

Analysis

The DHS data for each country were analyzed by using sample weights. We estimated percentages and means of the various indicators; averages for regions were estimated by using the weighted number of women in each country. We ran several simple and multiple regression analysis models to identify associations between the explanatory or independent variables of method access, method composition, region and HDI index and the outcome or dependent variables of contraceptive prevalence, method mix and the projected contribution of contraceptive discontinuation to unmet need in the future. We did not use the percentage of past users among women with current unmet need as a dependent variable in the regression analysis because several

factors contributing to the variation in this index are the same as those contributing to differences in contraceptive prevalence. This index increases with rising contraceptive prevalence ($r=0.86$; $p<.001$) because unmet need is included in the denominator and unmet need decreases with rising contraceptive prevalence ($r=-0.57$; $p<.001$).

RESULTS

Descriptive Findings

On average, 36% of women in the 34 countries were using a modern method at the time of the survey (current users), 27% had an unmet need for a modern method and the remaining 37% had no need for contraception (Table 1, page 135). Nineteen percent of women had used a modern method earlier but were not using one at the interview (past users): Ten percent had an unmet need at interview and 8% did not. The overall group with current unmet need (27%) was made up of past users (10%) and never-users (17%). Thus, 38% of women who are currently classified as having an unmet need had used a modern

TABLE 2. Selected indicators among married women of current and past use of modern methods, and of unmet need, by country

Country	Survey	% of married women			Past users with unmet need as % of women with unmet need	Past users with unmet need as % of ever-users
		Currently using method	Used method in past but not using now	Have unmet need		
Sub-Saharan Africa						
Swaziland	2006–2007	49.3	39.8	26.4	85.4	25.3
Zimbabwe†	2005–2006	58.6	26.7	17.2	74.8	15.1
Malawi	2010	42.3	32.1	29.9	64.3	25.8
Zambia	2007	32.8	35.1	34.8	61.3	31.4
Kenya	2008–2009	39.1	28.5	31.4	54.9	25.5
Rep. of the Congo	2005	11.1	46.1	49.7	52.3	45.4
Ghana	2008	15.8	31.8	40.0	45.0	37.8
Madagascar	2008–2009	29.9	20.6	27.9	38.8	21.4
Tanzania†	2004–2005	19.6	21.3	30.7	34.4	25.8
Uganda†	2006	17.7	22.9	43.9	32.6	35.3
Liberia	2007	9.6	17.2	35.7	27.6	36.8
Nigeria	2008	9.6	13.8	25.1	26.2	28.1
Senegal†	2005	9.5	15.6	33.2	24.8	32.8
Benin	2006	6.2	15.6	37.6	22.4	38.6
Sierra Leone	2008	6.7	11.9	29.2	22.2	34.9
Mali	2006	6.2	12.3	27.0	18.6	26.7
Guinea	2005	4.7	10.7	24.6	17.5	28.2
Democratic Rep. of the Congo	2007	5.1	12.3	40.4	16.4	38.4
Ethiopia†	2005	13.7	9.3	37.0	13.7	22.0
Niger	2006	5.0	6.7	22.5	11.2	21.5
Other						
Dominican Rep.	2007	72.8	18.6	10.9	81.8	9.7
Bangladesh	2007	47.5	31.9	25.1	73.7	23.3
Indonesia	2007	57.4	24.3	17.2	72.9	4.8
Jordan	2009	42.0	32.8	30.6	71.4	29.2
Egypt	2008	57.8	21.7	14.3	71.0	12.8
Peru	2007–2008	48.1	34.2	34.8	66.1	27.9
Honduras	2005–2006	57.1	23.2	25.5	59.8	19.0
Philippines	2008	35.9	28.7	38.4	54.9	32.6
Haiti	2005–2006	24.4	31.2	42.9	51.8	40.0
Nepal†	2006	44.3	20.8	28.5	50.0	21.9
Cambodia†	2005	27.1	25.7	38.1	45.6	32.9
Bolivia	2008	33.2	28.0	46.7	43.2	33.0
Pakistan	2006–2007	21.8	17.1	33.1	34.7	29.5
India	2005–2006	48.6	9.0	21.7	27.0	10.2

†The latest DHS did not include information with which to estimate past users of modern methods. Notes: For each region, countries are listed in declining order of past users with unmet need as a percentage of women with unmet need. All percentages are based on analysis conducted using standard recode files of DHS surveys; 31 of these 34 countries are among the 69 poorest countries for the London Summit target of 120 million women. Figures may be slightly different from those included in reference 11.

method in the past. The relevant discontinuation rate (past users with unmet need as a percentage of ever-users) was estimated to be 19% for all countries combined.

Important regional differences were found. For example, the current use of modern methods in the 20 Sub-Saharan African countries was lower than that in the 14 countries from other regions (18% vs. 47%), and unmet need was higher (31% vs. 25%). The proportion of past users with unmet need in the two regions was about the same (10–11%). However, the proportion of past users among women with unmet need in Sub-Saharan Africa was lower than in other regions (32% vs. 43%). Conversely, the proportion of never-users among women with unmet need in Sub-Saharan Africa was higher than in other regions (68% vs. 57%), and the relevant discontinuation rate in Sub-Saharan Africa was also higher (27% vs. 16%).

Variations among countries were even more pronounced. For example, past users accounted for at least 50% of unmet need in 16 of the 34 countries (Table 2). In another seven countries, past users accounted for 33–46% of the unmet need, and in six countries, for 22–28%. Indeed, this proportion was less than 20% in only five countries. The relevant discontinuation rate (i.e., past users with unmet need as a percentage of ever-users) also varied considerably, from 5% in Indonesia to 45% in the Republic of the Congo.

Contraceptive Access and Use

Both access to and composition of available methods varied by country and region. The access to available methods ranged from 1.6 in the Philippines to 3.9 in Nepal (not shown). Composition scores indicate that long-acting and permanent methods were least available in Haiti and most available in India (12 vs. 54). Access to and composition of available methods were positively correlated ($r=0.55$; $p<.001$). Women in Sub-Saharan Africa had lower access than women in other regions, regarding both access to available methods (2.7 vs. 3.1) and relative availability of long-acting and permanent methods (27 vs. 36). However, the regional difference in access to methods available was not significant ($r=-0.35$; $p<.10$), whereas the regional difference in relative availability of long-acting and permanent methods was significant ($r=-0.52$; $p<.01$).

The relationship between the number of methods available in a country and contraceptive use is well established,^{5,15,16} and was also confirmed in our analysis. Table 3 presents associations between the access to and the composition of available methods and contraceptive use and method mix. Contraceptive prevalence increased with both access to and composition of methods available in a country, as shown by the positive correlation (0.6 for each) and regression coefficients (12.1 and 0.8, respectively). Although there was no association between access and method mix, an increase in the relative availability of long-acting and permanent methods was associated with a method mix with a higher proportion of these methods, as shown by the positive correlation (0.7) and regression coefficient (1.8).

TABLE 3. Correlation and regression coefficients from multiple regression analysis identifying associations between measures of women's modern method use and measures of access to modern methods in 34 countries

Variable	Modern method use		Method mix	
	Correlation	Regression	Correlation	Regression
Access to no. of methods	0.57**	12.12*	0.30†	-3.45
Composition (relative access to long-acting/permanent methods)	0.57**	0.81*	0.66***	1.78***
Constant		-30.5		-20.2
R ²		0.418		0.442

* $p<.05$. ** $p<.01$. *** $p<.001$. † $p<.10$. Notes: Method mix=use of long-acting and permanent methods as percentage of all modern method use. Regression coefficients represent the magnitude of net change in the outcome variable that is expected with a one-unit change in the explanatory variable after controlling for the other variable included in the analysis.

Further analysis showed that a higher level of contraceptive use was related to the rising use of multiple methods (Figure 1). Contraceptive use was estimated at between 7% and 34% when only short-acting modern methods were considered. The availability and use of long-acting reversible methods were estimated to contribute another 0.4–11 percentage points to contraceptive prevalence, and the availability and use of permanent methods another 0.3–15 percentage points.

Contraceptive Discontinuation and Access

No association was found between the HDI, reflecting countries' socioeconomic conditions, and average relevant discontinuation rates (Table 4, page 138). In contrast, method access, method composition and region were associated with contraceptive discontinuation. Expanding access by adding one method or its equivalent was associated with an eight-percentage-point decrease in contraceptive discontinuation (model 1). A 10-point increase in the composition score was associated with a six-percentage-point decrease in discontinuation (model 2). Obviously, simply

FIGURE 1. Contraceptive method mix in 34 countries, by level of contraceptive use

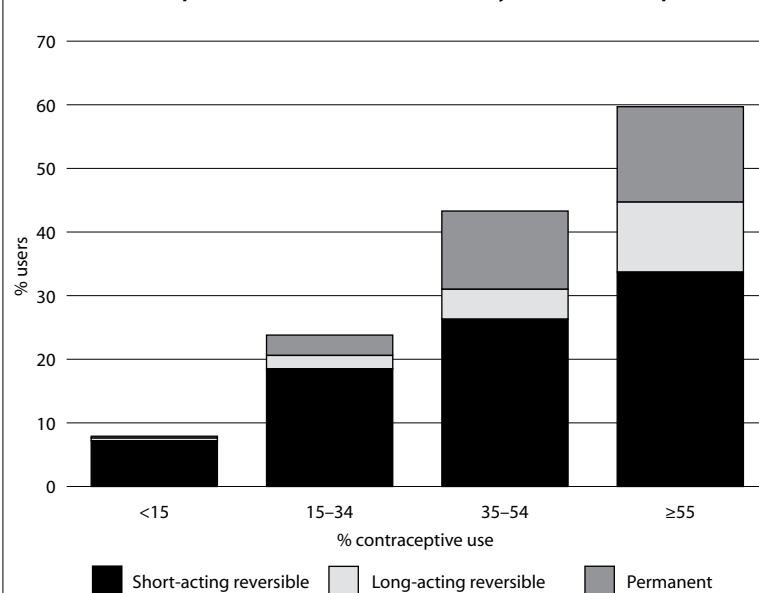


TABLE 4. Correlation and regression coefficients from simple and multiple regression analyses identifying associations between contraceptive discontinuation resulting in unmet need and access to and composition of modern methods, region and Human Development Index (HDI) in 34 countries

Variable	Correlation coefficient	Regression coefficient							
		1	2	3	4	5	6	7	8
Access to no. of methods	-0.54**	-8.32**	na	na	-7.38*	na	-5.62*	-5.58*	-6.02*
Composition (relative access to long-acting/permanent methods)	-0.52**	na	-0.56**	na	na	-0.50*	-0.34†	-0.29	-0.33
Sub-Saharan Africa	0.35**	na	na	6.51*	3.75	1.93	na	1.75	2.83
HDI 2009	-0.15	na	na	na	na	na	na	na	11.25
Constant		51.2	44.6	23.3	46.3	41.7	54.1	51.4	47.5
R ²		0.295	0.272	0.120	0.331	0.280	0.366	0.373	0.398

*p<.05. **p<.01. †p=.07. Notes: Regression coefficients in a simple regression analysis represent the magnitude of observed change in the outcome variable that is expected with a one-unit change in the explanatory variable; regression coefficients in a multiple regression analysis represent the magnitude of net change in the outcome variable that is expected with a one-unit change in the explanatory variable after controlling for the other variables included in the analysis. na=not applicable.

making methods available is unlikely to reduce relevant contraceptive discontinuation unless they are used. Furthermore, the regression coefficient for access and method discontinuation did not remain statistically significant after controlling for contraceptive use (-1.2; p<0.7—not shown); the regression coefficient for composition and method discontinuation, while remaining significant, decreased from 0.56 to -0.63 after controlling for method mix. Thus, the effects of access to and composition of available methods on relevant discontinuations are transmitted through the use of these methods.

The regression coefficients of both access and composition were reduced after controlling for regional differences, but remained significant (models 4 and 5). However, the net effect of access but not of composition remained significant when both access and composition were controlled for (models 6–8).

The level of contraceptive discontinuation relevant to unmet need in Sub-Saharan Africa was significantly higher than in other regions, as indicated by the regression coefficient of 6.5 (model 3). However, when models were adjusted for access to or composition of available methods (models 4 and 5, respectively), or both (model 7), this difference was no longer significant. Hence, it appears that the higher discontinuation observed in Sub-Saharan Africa than in other regions can be attributed in part to differences in the number and composition of available methods.

DISCUSSION

High contraceptive discontinuation among current users, as well as high discontinuation in the past that contributed to current unmet need, will add to unmet need in the future. This cross-country analysis estimated that past users with unmet need for modern methods accounted for 38% of all women with current unmet need (32% in Sub-Saharan Africa and 43% in other regions). This implies that the FP2020 goal of providing modern methods to 120 million women with unmet need includes about 45 million (0.38×120 million) individuals who started using contraceptives but stopped before they were interviewed. Hypothetically, overall unmet need could have been lower

by 10 percentage points (17% instead of 27%) and use of modern methods could have been higher by 10 percentage points (46% instead of 36%) if all past users with current unmet need (accounting for 10% of all women) had continued contraceptive use or resumed use after they had discontinued their method.

Indeed, without a reduction in the rate of contraceptive discontinuation, the task of adding 120 million additional users to the estimated 258 million current users will be even more challenging. This study estimated that past users with unmet need represent 19% of ever-users, which provides an indirect estimate of the potential contribution of contraceptive discontinuation among current users to unmet need in the future. If current contraceptive users experience this level of discontinuation, 258 million current users could contribute up to 49 million (0.19×258 million) cases of unmet need in the future if they discontinue family planning use in the coming years despite a continuing need for contraception. Hence, high contraceptive discontinuation in the past and present could contribute up to 94 million (45 million+49 million) future cases of unmet need. It should be noted that these numbers exclude women who switch methods or who no longer have a need for a modern method after discontinuing use. A focus on encouraging past users with unmet need to resume use and supporting current users in continuing their use of the same method or changing to a different one appears to be essential in reducing unmet need in the future.

What about women who have never used contraceptives but currently have an unmet need? Persuading these women to start using a method for the first time would also reduce unmet need. However, such a focus would not substantially reduce unmet need in the future without a concomitant reduction in the high rate of contraceptive discontinuation^{6,7,9} we project would occur among them once they initiate use.

Our findings suggest that one way to reduce discontinuation is to expand contraceptive choice by increasing access to multiple methods. Indeed, full availability of one method or its equivalent was shown to be associated with an eight-percentage-point reduction in the level

of discontinuation resulting in unmet need. For example, the availability of short-acting reversible methods (the pill, the injectable and condoms) would help to meet the need of women who want to space their children; availability of long-acting reversible methods (the IUD and implant) would help those who want to delay having their next child for a longer period and those who may want to limit their childbearing but are not ready to adopt a permanent method. Availability of sterilization would help women who are sure they want to stop childbearing. Furthermore, an expansion in the number and composition of available methods is likely to increase contraceptive use by attracting never-users, as well as by facilitating switching among methods.

The introduction of long-acting and permanent methods in countries where they are not available could reduce average discontinuation rates through a change in the method mix, but only if these methods are used. Another cross-country analysis¹⁵ has shown that although method-specific use increases with a method's availability in a country, the relationship between the two is modest. For example, IUD use remained close to zero in countries where up to 30% of women had access to the method. Moreover, these results were based on cross-country analysis and experience with the introduction of a method or a group of methods may differ across countries.

Higher contraceptive discontinuation in Sub-Saharan Africa in part reflects the fact that methods, especially long-acting and permanent ones, are less widely available than in other regions. However, simply making long-acting and permanent methods available in Sub-Saharan Africa may not increase their use, because both unmet need and total demand for limiting childbearing in this region are lower than elsewhere.¹¹ Increased use of such methods in this region may also require a shift in women's intentions from spacing to limiting childbearing.

A second strategy that may be more applicable to reducing contraceptive discontinuation is to improve the quality of care and client-provider interactions. For example, promotion of a client-oriented approach to service delivery has improved client-provider interactions through training providers in the Philippines,¹⁷ through the SAHR (Salutation, Assess, Help, Reassure) program in Pakistan (*sahr* means "dawn" in Urdu),¹⁸ and through use of Balanced Counseling Strategy¹⁹ in Guatemala, Mexico and Peru. Moreover, improved quality of care received at the time of contraceptive initiation has subsequently increased method continuation and reduced unwanted childbearing.²⁰⁻²⁶ For example, a longitudinal study in the Philippines²⁰ demonstrated that 63% of women who received higher-quality information at contraceptive initiation continued to use contraceptives, compared with 53% of those who received lower-quality information. Similarly, 16% of women who had received low-quality care subsequently had an unwanted birth, compared with about 8% of those who had received high-quality care. These relationships remained significant after analyses controlled for respon-

dents' and husbands' demographic and socioeconomic characteristics. Another longitudinal study in Senegal²¹ also found that women who received good quality of care at the time of contraceptive initiation were more likely than others to be using a method about 18 months later.

While these and other longitudinal studies have shown that better quality of care received at the time of contraceptive initiation is associated with higher subsequent contraceptive continuation and lower unwanted fertility, experimental studies—the gold standard for drawing inferences about causation—have failed to document any significant effect of interventions on contraceptive continuation. For example, five out of six randomized control trials included in a Cochrane review²⁷ found no significant effect of interventions on adherence to hormonal contraceptive use. Although the sixth study showed a significant improvement in contraceptive continuation, the study suffered from high loss to follow-up. However, five of these studies were conducted in developed countries and two had samples of fewer than 100 women. A comparison of experimental and control groups in the Philippines study²⁰ also did not find a significant effect of the provider-level intervention on client-level behavior. The failure to find significant effects of interventions in experimental studies sometimes generates skepticism regarding the role of improved quality in increasing contraceptive continuation.^{28,29} Two main reasons for the lack of such findings are that the quality of care at baseline in both groups may be high to begin with, and the improvement in the quality of care from the intervention may be too small to make a significant difference in client behavior.²⁰ Nevertheless, a World Health Organization study⁹ stressed the need to improve service quality, particularly counseling, as a means of reducing high discontinuation rates.

A third strategy that has potential for reducing contraceptive discontinuation is the future improvement in the design and efficacy of contraceptive technology. Features likely to increase continuation include greater ease of use, freedom from side effects, privacy, affordability and perhaps independence from a provider.^{30,31} For example, newer technologies, such as vaginal rings, that could be dispensed through pharmacies and community workers may be more acceptable to women and may be used for a longer period. In addition, newer, progestin-based contraceptives are not only more effective, but also have fewer side effects.^{31,32}

Each of these three strategies has limitations. The first strategy, expanding method choice, is based on evidence from cross-country studies and is not supported by country-specific evidence from experimental or even longitudinal studies of the extent to which method addition improves contraceptive continuation, reduces unmet need or reduces unwanted fertility. For the second strategy, the country-specific evidence of the association between quality of care, including client-provider interactions, and improved contraceptive continuation is based on longitudinal (panel) studies, not experimental ones. Finally, im-

proved contraceptive technology may be promising, but still lies in the future. Moreover, country-specific evidence will be unavailable for some time. So, what can be done now programmatically to improve contraceptive continuation and reduce unmet need?

In our view, efforts are needed to expand choice by adding currently unavailable methods and by accumulating country-specific evidence from longitudinal and experimental studies. Meanwhile, given the constraints and costs of adding new methods and within the context of methods already available, the best strategy would appear to be the improvement of quality of care and client-provider interactions at health facilities or during home visits.

Four groups of women are likely to contribute to unmet need in the future: past users with current unmet need, current users with met need, never-users with current unmet need and women who currently have no contraceptive need but may develop a need in the future because of changes in their fertility preferences or behavior. To promote contraceptive use, community and health workers can use algorithms or technology to identify women with current contraceptive need and classify them in these groups during community outreach or when women visit health facilities to obtain contraceptive supplies or check-ups or to choose a method for the first time. Health workers can then provide them with appropriate information and contraceptive services. Such a strategy can use or operationalize the concept of unmet need by encouraging past users with unmet need to resume contraceptive use, encouraging current users with met need to maintain use or shift to a different method if the original one is no longer suitable, and helping never-users with unmet need to select a method that is appropriate to their circumstances.

Conclusions

While many earlier studies^{2,5-7,9} have recognized the importance of reducing high contraceptive discontinuation, the present study is the first one to empirically estimate its potential contribution to current and future unmet need. While expanding contraceptive choice is unlikely to reduce method-specific discontinuation of methods already available, it can substantially reduce discontinuation of contraceptives overall by encouraging switching whenever a woman's current method has become unsuitable. The high level of contraceptive discontinuation in the past has already generated tens of millions of cases of unmet need, and if method discontinuation is not dramatically reduced, an even greater number of cases may be added to unmet need in the coming years. Clearly, enabling past users with unmet need to resume contraceptive use and helping women with currently met need to achieve their reproductive intentions through sustained use can be an effective strategy to reduce unmet need in the future.

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RESUMEN

Contexto: La Cumbre sobre planificación familiar llevada a cabo en Londres en 2012 estableció la meta de proveer anticonceptivos modernos a 120 millones de mujeres con necesidades no satisfechas de anticoncepción para el año 2020. La reducción de la alta tasa de discontinuación de anticonceptivos mediante la facilitación del cambio de método jugará un rol crítico en el logro de esa meta.

Métodos: Se utilizaron datos de las Encuestas Demográficas y de Salud de mujeres casadas de 34 países, las cuales fueron realizadas entre 2005 y 2010, para estimar la contribución potencial de la discontinuación en el uso de anticonceptivos a las necesidades no satisfechas actuales y futuras. Se creó un indicador de la relevancia de la discontinuación calculando la proporción de antiguas usuarias con necesidades no satisfechas de métodos modernos entre las usuarias que alguna vez usaron esos métodos. La aplicación de análisis de regresión identificó asociaciones entre este indicador y el acceso a una mezcla de métodos.

Resultados: La proporción de mujeres que habían discontinuado el uso de un método y subsecuentemente tuvieron necesidades no satisfechas en el momento de la encuesta equivale al 38% del total estimado de necesidades no satisfechas. Estas antiguas usuarias representaron el 19% de las mujeres que alguna vez habían usado métodos modernos. Tanto el acceso a los métodos como la composición de métodos disponibles se asociaron con una reducción en la tasa de relevancia de la discontinuación. El nivel de discontinuación en África subsahariana fue significativamente más alto que en otras regiones,

en parte, debido a diferencias en la disponibilidad de métodos.

Conclusiones: Los altos niveles en la discontinuación de anticonceptivos han contribuido en el pasado a decenas de millones de casos de necesidades no satisfechas, y la discontinuación en usuarias actuales contribuirá a que ocurran más casos en el futuro. Permitir que las antiguas usuarias con necesidades no satisfechas reanuden el uso de un método, y alentar a las usuarias actuales a continuar con el uso del mismo o de otro método podría ser una estrategia efectiva para reducir las necesidades no satisfechas en el futuro.

RÉSUMÉ

Contexte: En 2012, le Sommet de Londres sur la planification familiale s'est donné pour objectif d'apporter d'ici 2020 la contraception moderne à 120 millions de femmes présentant un besoin non satisfait. La réduction du haut taux d'abandon de la contraception par facilitation du passage d'une méthode à une autre jouera un rôle critique à cet égard.

Méthodes: Les données d'EDS menées entre 2005 et 2010 sur les femmes mariées de 34 pays ont servi à estimer la part potentielle représentée par l'abandon de la contraception dans le besoin non satisfait actuel et futur. Un indicateur d'abandon pertinent a été obtenu en calculant la proportion des utilisatrices passées présentant un besoin de méthodes modernes non satisfait parmi les femmes ayant jamais pratiqué la contraception. Les analyses de régression ont identifié des associations entre cet indicateur, d'une part, et l'accès aux méthodes et leur composition, d'autre part.

Résultats: Les femmes qui avaient abandonné la pratique d'une méthode et présentaient un besoin non satisfait au moment de l'enquête représentent 38% du besoin non satisfait total estimé. Ces anciennes utilisatrices représentent 19% des femmes ayant jamais utilisé la contraception moderne. Tant l'accès aux méthodes disponibles que leur composition sont associés à une réduction du taux d'abandon pertinent. Le niveau d'abandon en Afrique subsaharienne est significativement supérieur à celui des autres régions, en partie en raison des différences de disponibilité des méthodes.

Conclusions: Les hauts taux d'abandon passé de la contraception ont contribué à l'apparition de dizaines de millions de cas de besoin non satisfait; l'abandon parmi les utilisatrices actuelles contribuera à celles de nouveaux cas encore dans le futur. Aider les utilisatrices passées présentant un besoin non satisfait à reprendre leur pratique contraceptive et encourager celles actuelles à poursuivre la pratique de leur méthode ou d'une autre pourraient offrir une stratégie efficace d'amoin-drissement du besoin non satisfait à venir.

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