

The Potential Demographic Significance of Unmet Need

By Charles F. Westoff and Akinrinola Bankole

The controversial question of the potential fertility decline that would result from the satisfaction of the unmet need for contraception is of fundamental importance for population policy. Estimates of the amount and kinds of unmet need that could realistically be satisfied—based on Demographic and Health Survey data collected in 27 developing countries between 1990 and 1994—suggest that fertility could be expected to decline by an average of 17% in the 13 Sub-Saharan African countries included in the analysis and by 18% in the remaining 14 countries. These declines would represent an average of 30% of the distance to replacement fertility in the Sub-Saharan countries and would cover more than 50% of the distance to replacement in some other countries, indicating that the satisfaction of unmet need would have a significant demographic impact.

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One of the current controversies in population policy debates revolves around the question of whether the level of what is called “unmet need for family planning” is high enough to produce a significant reduction of fertility if that need were satisfied. One school of thought,¹ which was prominent in the Cairo deliberations and found its way into the conference’s Plan of Action, holds that a substantial number (120 million) of women wish to postpone or avoid further childbearing but are not practicing contraception. It is not made clear how this unmet need is to be satisfied, but the impression is somehow communicated that a large demand exists and that the key to meeting it lies on the supply side.

A second school of thought² maintains that “unmet need empirically does not have the large potential fertility consequences some might expect” because, among other reasons, many women classified as having an unmet need do not really “need” family planning; for example, they may be opposed to its use, or have infrequent sexual activity, or have health concerns. Thus, it is not a lack of access to family planning services that explains the

prevalence of need but faulty measurement and some confusion between supply and demand.

The truth lies somewhere between these points of view. Our analysis is directed toward estimating how high levels of contraceptive use would be if unmet need were satisfied and toward estimating the fertility rates that would be implied by those levels of use.

Data and Measurement

This analysis is based mostly on data from the second round of the Demographic and Health Surveys (DHS) but also includes information from a few countries surveyed in the early stages of the third round. The surveys in all 27 countries were conducted in the 1990s. Our estimates of the demand for family planning are confined to currently married women.

The first step in this analysis is to estimate potential contraceptive use—defined as the sum of unmet need and contraceptive prevalence—so we begin with the classification of unmet need. Although this measure has been refined in recent years, the definitions used to determine which women are in need remain similar to those used in an earlier comparative report based on the first round of the DHS.³ The main modifications relate to the classification of women as infecund* and to the definition of an unwanted pregnancy for currently pregnant or amenorrheic women.[†] The basic concept, however, remains the same: Women considered to have an unmet need are those who are fecund and wish to postpone their next birth or avoid any further childbearing but are

not practicing contraception. Women who are currently pregnant or amenorrheic are classified as being in need if they report that their pregnancy was unintended (either unwanted or mistimed).

To estimate potential use, we first adjust the proportions in need as suggested by Bongaarts.⁴ The main adjustment needed is to the proportion of women defined as having an unmet need for means of spacing births. The basic definition leads to an overestimation of this group because it fails to take into account the exit from need of women who will become users but will later deliberately interrupt contraceptive practice to have another child.[‡] In other words, women with an unmet need for means of spacing births are not a permanent addition to the potential contraceptive prevalence rate (CPR), because during pregnancy and postpartum amenorrhea they will not be users. The reduction estimated by Bongaarts is 30%.⁵

A minor adjustment (a reduction of 3%) in the percentage with an unmet need for means of ending childbearing has also been incorporated to compensate for the reduction in exposure to the risk of an unwanted birth because the last wanted birth would occur later as the proportion practicing contraception to space births increases. The estimates of total demand are aggregated from the separate adjusted calculations of the need for means of spacing births and the need for means of ending childbearing.

*The duration since the last menstrual period has been changed from six weeks to six months, which reduces the number classified as infecund. In addition, women not classified as infecund by any other behavioral criterion who said that they were menopausal or that they could not become pregnant for other reasons were also included in the infecund category.

†Because of an ambiguity in the phrasing of the question on the planning status of the current pregnancy, significant proportions of pregnant or amenorrheic women in some countries who reported that the pregnancy had not been wanted at all also reported that they wanted another child. Such pregnancies have been reclassified as “mistimed” rather than “unwanted.” This change does not affect the overall estimate of unmet need, but it does reclassify some women as needing spacing methods who would otherwise be classified as needing means of ending childbearing.

‡The proportion currently using a method to space births already reflects the net balance of entries and exits.

Charles F. Westoff is professor of sociology and demography and Akinrinola Bankole is on the professional research staff, both of the Office of Population Research, Princeton University, Princeton, New Jersey, USA. The authors would like to acknowledge the help of many colleagues at the Demographic and Health Surveys (DHS). The article also benefited from a reading by John Bongaarts. The work on unmet need has been supported by the U.S. Agency for International Development, The Rockefeller Foundation and the Andrew Mellon Foundation. This article was adapted from *Unmet Need: 1990–1994*, DHS Comparative Studies, No. 16, Macro International, Calverton, Md., USA, 1995.

Table 1. Current contraceptive prevalence rates and estimated rates implied by three models of satisfaction of unmet need, with associated total fertility rates (TFRs) and percentage reductions in fertility rates; by country

Country and year of survey	Contraceptive prevalence				TFR				% reduction in TFR		
	Current rate	Need satisfied			Current rate	Need satisfied			Need satisfied		
		Maximum	Minimum	Realistic		Maximum	Minimum	Realistic	Maximum	Minimum	Realistic
Sub-Saharan Africa											
Burkina Faso (1993)	7.9	33.0	16.9	21.9	6.9	5.2	6.3	6.0	24.7	8.8	13.7
Cameroon (1991)	16.0	30.4	23.5	25.3	5.9	4.6	5.2	5.1	22.4	12.3	15.6
Ghana (1993)	20.3	45.9	38.1	38.4	5.5	4.6	5.2	5.1	16.0	6.3	6.7
Kenya (1993)	32.8	61.1	53.1	53.4	5.3	3.4	3.9	3.9	36.2	25.9	26.2
Madagascar (1992)	16.7	43.5	34.1	36.0	6.1	4.0	4.7	4.5	34.1	23.6	25.7
Malawi (1992)	13.0	40.4	32.5	32.2	6.7	4.8	5.4	5.4	27.9	19.8	19.5
Namibia (1992)	28.9	45.9	37.7	40.1	5.6	4.4	5.0	4.8	20.6	10.6	13.5
Niger (1992)	4.5	18.2	9.9	12.5	7.4	6.4	7.0	6.8	13.1	5.4	7.8
Nigeria (1990)	5.9	22.4	12.3	16.3	6.0	4.9	5.6	5.3	18.6	7.2	11.7
Rwanda (1992)	21.1	50.4	43.9	42.9	6.2	4.2	4.6	4.7	32.3	25.2	24.1
Senegal (1992–1993)	7.4	29.6	18.5	21.8	6.0	4.5	5.2	5.0	25.7	13.1	16.8
Sudan (northern) (1989–1990)	8.7	28.5	15.7	24.3	4.7	3.4	4.2	3.7	28.3	9.7	22.2
Tanzania (1991–1992)	10.4	31.7	20.4	23.7	6.2	4.7	5.5	5.3	23.9	11.4	15.1
Zambia (1992)	15.2	38.8	30.8	31.2	6.5	4.9	5.4	5.4	25.0	16.6	17.0
North Africa/Near East											
Egypt (1992)	47.1	66.4	57.9	59.0	3.9	2.6	3.2	3.1	33.9	19.1	21.0
Jordan (1990)	40.0	58.5	48.2	50.4	5.6	4.0	4.7	4.5	28.6	16.1	18.8
Morocco (1992)	41.5	58.3	50.7	52.7	4.2	3.1	3.6	3.5	26.5	14.1	17.4
Turkey (1993)	62.6	72.5	68.7	69.0	2.5	1.9	2.1	2.1	25.2	15.6	16.4
Asia											
Bangladesh (1993–1994)	44.8	59.5	56.3	55.8	3.4	2.4	2.6	2.7	28.7	22.3	21.3
Indonesia (1991)	49.7	61.2	54.7	56.7	3.0	2.2	2.7	2.5	25.5	10.7	15.2
Pakistan (1990–1991)	11.9	38.1	19.0	26.7	5.4	3.6	4.9	4.4	33.0	8.8	18.6
Philippines (1993)	40.0	61.6	48.5	52.7	4.1	2.6	3.5	3.2	35.9	14.1	21.1
Latin America											
Bolivia (1994)	45.3	66.6	56.9	59.8	4.8	3.3	4.0	3.8	30.3	16.5	20.6
Colombia (1990)	66.1	76.2	73.5	73.5	2.9	2.2	2.4	2.4	24.0	17.6	17.6
Dominican Republic (1991)	56.4	70.6	66.3	66.6	3.3	2.3	2.6	2.6	30.2	21.3	21.9
Paraguay (1990)	48.4	60.9	54.2	56.1	4.7	3.8	4.3	4.1	18.7	9.0	11.8
Peru (1991–1992)	59.0	73.1	69.1	69.7	3.5	2.5	2.8	2.8	27.5	19.7	20.8

Because we are aware of the heterogeneity of the different kinds of “unmet need,” we develop three models of the kinds and amount of unmet need that theoretically could be satisfied. Using the results from these models—based on assumptions that should provide the maximum, minimum and most realistic estimates of potential use—we then estimate the implied total fertility rates (TFRs) and the reductions in fertility associated with those estimates.

Models of Potential Use

Our first model, which assumes (unrealistically) that all unmet need can be satisfied, is presented mainly to establish the maximum potential level of contraceptive use. In the Sub-Saharan African countries, average prevalence under the maximum assumption would rise to 37% from the current average of 15% (the difference between the two—22%—is the average extent of unmet need). Outside of this region, the hypothetical increases are also substantial, although the relative increases are not as dramatic because they start from a higher base. A notable exception is Pakistan, where contraceptive prevalence would increase from 12% to 38% under the model’s extreme assumption (Table 1).

While the first model indicates the maximum level of contraceptive prevalence—the level that might be expected if all unmet need were satisfied—the second estimates the minimum level. This model accepts women’s reported intentions at face value and assumes that if a woman defined as being in need reports that she does not intend to use a method at any time in the future or is uncertain about future use, she will, in fact, not use a method. The resulting estimates of demand thus include current users plus those women in need who say that they intend to use a method. Women who do not intend to use a method or who are uncertain are assumed in the second model to have no need (in the same sense as women who are trying to become pregnant).

In all 27 countries, the proportion of women who are in need but do not intend to use a method (or who are uncertain) is far from negligible: It ranges from a low of 21% in Bangladesh to a high of 74% in Pakistan (Figure 1, page 19). (This contrast is dramatic evidence of the success of the comprehensive family planning program efforts in Bangladesh and the absence of such program efforts in Pakistan.) The average proportion for all countries is 45%.

Thus, on average, almost half of all married women who say that they want to space future births or to end childbearing also say that they do not intend to practice contraception or are not certain.

Although the estimates of potential use in the second model show the smallest increases over current prevalence rates, there are still substantial increases in many countries. For example, prevalence would nearly double in most of the Sub-Saharan African countries, increasing on average from 15% to 28%. In the other countries, the increases are more modest, typically showing an absolute gain of around eight percentage points.

The second model assumes that no women defined as in need who currently do not intend to use a method will change their minds and become users. What explains the inconsistency between wanting to control fertility and apparently not intending to take any action to do so? The DHS-II included a question asking women why they did not intend to use a method. One of the most common responses, especially for women classified as having an unmet need for spacing methods, is that they want more children. Although such a response seems inconsistent with the unmet need classification

and is not very revealing, it does suggest an ambivalence about childbearing and its timing. Indeed, most such responses are concentrated among women categorized as having an unmet need for spacing methods, which suggests that the preferred timing of the next birth is not firmly decided.

Other reasons offered with some frequency are lack of information about methods, opposition for religious or other reasons, concern about side effects, infrequent sex or difficulty getting pregnant, and to a lesser extent, unavailability (which includes "hard to get," "costs too much" and "inconvenient"). Significantly, this latter cluster of reasons was the least frequently offered. Thus, diverse kinds of program responses are indicated.⁶ The importance of what we term "ambivalence" about childbearing—a feeling that also might be present among women who say they want another child soon—is much greater in Sub-Saharan Africa than elsewhere.

The first two models make different assumptions about the future contraceptive behavior of women in need who say that they intend to use a method; those models assume that all women who intend to use in fact follow through on that intention, an assumption that is clearly exaggerated. On the other hand, some fraction of those who do not intend to use a method (or are uncertain) will use one. The third model contains the following assumptions: that among women who need a means of spacing births, 20% of those who intend to use a method will not use one; that among women who need a means of limiting births, 10% of those who intend to use a method will not use one; that women in need who do not intend to use because they see themselves at low risk will not use; and that half of the remaining women who do not intend to use a method will not use one. These assumptions constitute our best guess or most realistic expectation of the amount of unmet need that can be satisfied.

The set of assumptions in the third model yields estimates of potential use quite close to those for the second model, which is the most conservative of the three (Table 1). Thus, the third model also turns out to be a very conservative estimate of what the level of contraceptive use would be if unmet need were satisfied. The mean value for the Sub-Saharan African countries is 30%; for all of the remaining countries it is 58%.

Implications for Fertility

We now have estimates of the potential use of family planning under three different sets of assumptions about the amount and

kinds of unmet need that might be satisfied. The remaining task is to derive the TFRs that would be implied by those levels of use.

To do so, we exploit the high correlation between contraceptive prevalence and the fertility rate that has repeatedly been documented across countries.⁷ We have assembled the most recent national survey estimates of these two parameters for 86 different countries. The overall correlation is .94. We use the regression equation $TFR_i = 7.1789 - 0.0682(CPR_i) + e_i$ and substitute our potential prevalence estimates for the CPR.

This procedure has one problem, however. For a few of the more than 80 estimates of fertility that we have made for the three models, the estimated TFR with unmet need satisfied turns out to be higher than the current TFR, clearly an absurd result. The root of the problem is that 12% of the overall variance of fertility is not accounted for by contraceptive practice alone. This unexplained variance is caused in part by the operation of proximate determinants of fertility such as age at marriage, postpartum insusceptibility and abortion. Errors of measurement also play a part: The TFR is subject to errors of both displacement and omission of births and to misreporting of contraceptive use. Moreover, the CPR is a current status measure, while the TFR is based on the three-year or five-year period preceding the interview.

We have resolved this problem by calculating the TFR that would result from the various potential use estimates if the observed TFR were perfectly predicted by the CPR. This involves adjusting the TFRs derived from our equation by adding the regression residual.

The results, shown in Table 1, indicate that substantial reductions in fertility could be realized by satisfying unmet need, even with the conservative assumptions in two of our models. Focusing first on the Sub-Saharan African countries, the most likely reduction would average 17%; the maximum but unrealistic expectation would be a reduction of 25%. In the third model, the average TFR in the Sub-Saharan countries would decline from 6.1 to 5.1 lifetime births per woman. Because such a high proportion of demand in Sub-Saharan Africa is for means of spacing births rather than for means of ending childbearing, the net fertility effect of satisfying unmet need may be less there than in other regions of the world.

Outside of Sub-Saharan Africa, there is greater variation in the levels of fertility, although the estimated relative declines would be similar. In Pakistan, the TFR

could be expected to decline from 5.4 to 4.4 (an 18.6% decline) under the realistic assumptions of the third model, while in Turkey, which has already experienced a substantial fall of fertility, the current TFR of 2.5 could drop to 2.1 (a 16% reduction). For all countries outside of Sub-Saharan Africa, the expected decline under the most realistic set of assumptions would average 18%.

Distance to Replacement

Another way to view the demographic implications is to examine the percentage of the distance to replacement-level fertility (a TFR of approximately 2.1 births per woman in the more developed countries*) that would be covered if unmet need were satisfied according to the most realistic set of assumptions (Figure 2). Because the elimination of unmet need in Turkey would theoretically reduce the TFR to 2.1, the entire distance to replacement would be covered. Some other countries with low current fertility, such as Colombia, the Dominican Republic and Peru, would also see a substantial narrowing of the distance to replacement.

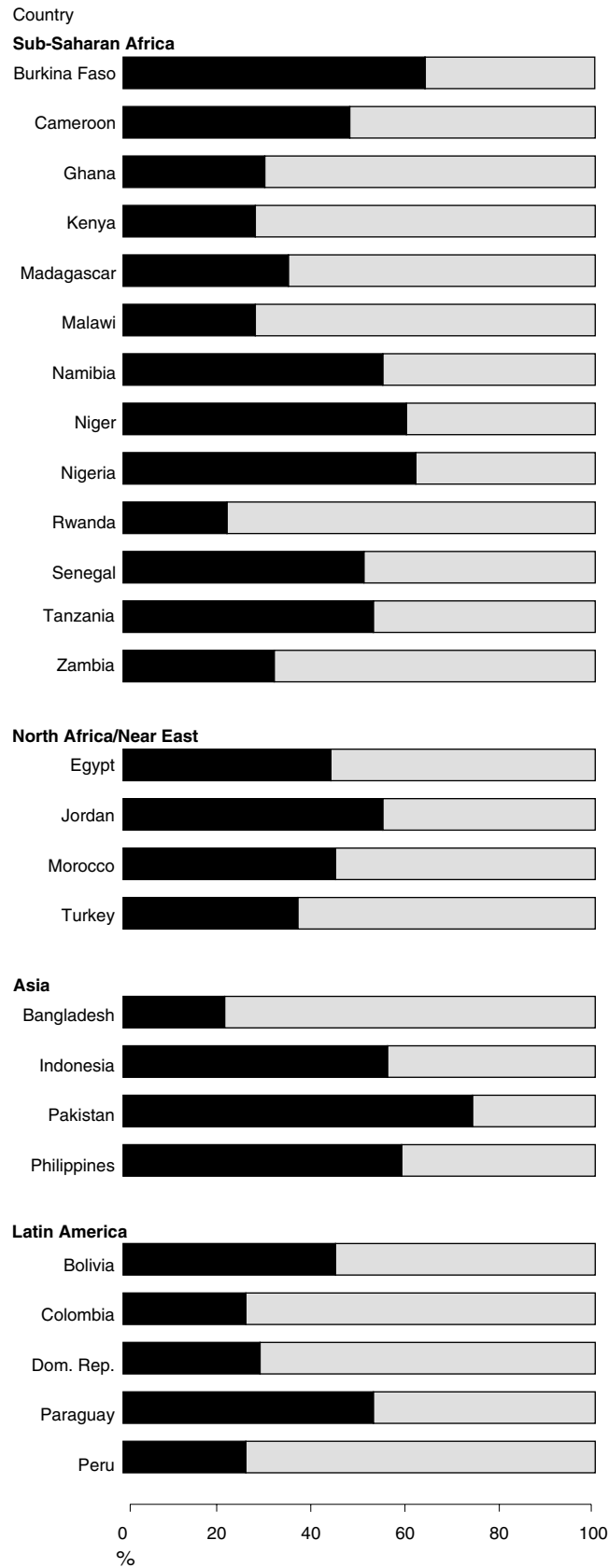
Similar results would occur for Bangladesh and Indonesia, where more than 75% of the distance to replacement would be realized. In Sub-Saharan Africa, the average effect would be to cover 30% of the distance to replacement. In general, these estimates indicate that a potentially significant demographic effect could be realized by satisfying existing unmet need, even under the conservative assumptions of the third model.

Conclusions

One of the important population policy questions today is whether the level of unmet need for family planning in developing countries is high enough to have a significant impact on fertility if that need were satisfied. In this article, we have attempted to estimate the demand for family planning and to assess its importance for the reduction of fertility. We have gone beyond the

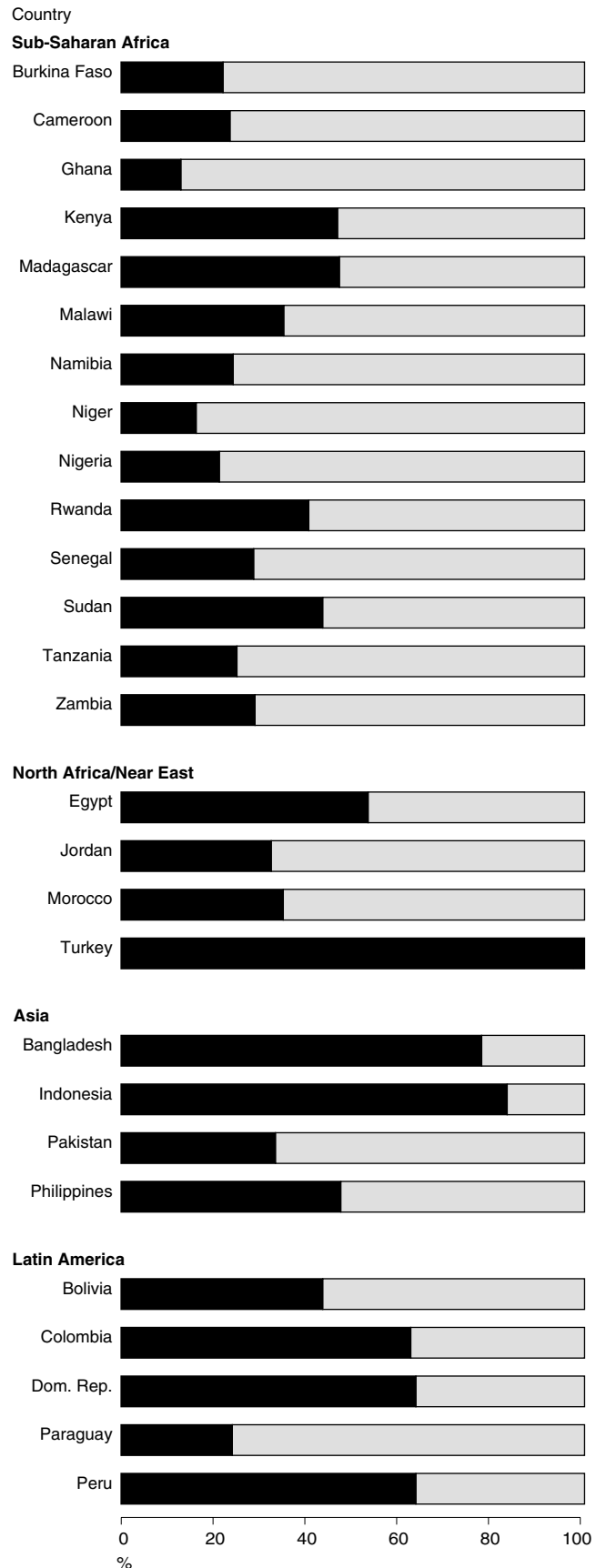
*The estimate of approximately 2.1 as the TFR needed for the replacement of generations is appropriate for low-mortality countries only. In many developing countries, especially those in Africa, the higher mortality rate for females before and during the childbearing years implies that higher levels of fertility are needed for replacement. We estimate that an average TFR of 2.6 is required for replacement in Sub-Saharan Africa. This estimate is derived from the mortality rates for female children under five years of age as measured in the DHS. These mortality rates are used to select the closest corresponding life table from the model life tables to derive estimates for the survival of females to the midpoint of the childbearing years (calculated from the actual age distribution in the current fertility schedule).

Figure 1. Percentage of women in need who do not intend to practice contraception



Note: Percentages include women who do not know their intention.

Figure 2. Percentage of the distance to replacement fertility that would be covered if unmet need were satisfied according to the assumptions of Model 3



standard assumption that all unmet need can be satisfied and have taken into account the fact that many women classified as being in need say that they do not intend to practice contraception or are uncertain.

We have constructed three different sets of assumptions about how much need can be satisfied. The most realistic of these indicates an average potential reduction of 18% in the TFR that could be achieved by satisfying unmet need in these countries. For the Sub-Saharan African countries, the fertility rate would be expected to decrease from 6.1 to only about 5.1, on average, but in some other countries it would probably drop to fairly low levels. In the most realistic model, the reduction would cover more than 50% of the distance to replacement in some countries and would average 30% in the countries of Sub-Saharan Africa.

The policy implications seem clear. The amount of unmet need is great enough to have a significant impact on fertility if it were satisfied, even given conservative assumptions. The program responses required are complex, however, and go far beyond supply, cost or access, which, based on the reasons offered by women who do not intend to use any method, are now the least important obstacles. Family planning program efforts and increases in the proportion of women practicing contraception may themselves reduce some of the ambivalence observed.

The other side of the argument remains equally cogent, however. The satisfaction

of unmet need by itself will leave fertility very high, especially but not exclusively in Sub-Saharan Africa, where a demand for fewer children has not yet been generated. Judging from several decades of experience in Asia and Latin America, this demand could develop rapidly.

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Resumen

La cuestión controversial de la reducción potencial de la fecundidad que resultaría de atender una necesidad anticonceptiva insatisfecha es de fundamental importancia para la política demográfica. Los cálculos de la necesidad insatisfecha que en realidad podría ser atendida

—basada en los datos de las Encuestas Demográficas y de Salud recabados en 27 países en desarrollo, entre 1990 y 1994— sugieren que se podría lograr una disminución de la fecundidad en un promedio del 17% en trece países del África Subsahariana incluidos en el análisis, y en un 18% en los 14 países restantes. Estas disminuciones representarían un promedio del 30% del trayecto hacia la fecundidad de reemplazo en los países subsaharianos y cubriría más del 50% del trayecto hacia el reemplazo en algunos otros países, lo cual indicaría que si se atiende la necesidad insatisfecha se podría lograr un impacto demográfico significativo.

Résumé

La question controversée de l'éventuelle baisse de fécondité qui résulterait de la satisfaction du besoin insatisfait de contraception est d'importance cruciale en matière de politique démographique. Les estimations de l'étendue du besoin insatisfait qui pourrait avec réalisme être satisfait—sur la base des données d'Enquêtes démographiques et de santé recueillies dans 27 pays en développement entre 1990 et 1994—suggèrent qu'on peut s'attendre à ce que la fécondité baisse, en moyenne, de 17% dans les 13 pays d'Afrique subsaharienne compris dans l'analyse et de 18% dans les 14 autres pays. Ces baisses représenteraient une moyenne de 30% du parcours vers la fécondité de remplacement dans les pays d'Afrique subsaharienne et couvriraient plus de 50% du parcours dans certains autres pays, ce qui témoigne de la forte répercussion démographique qu'aurait la satisfaction du besoin insatisfait.

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