

Unmet Need and Unintended Fertility: Longitudinal Evidence from Upper Egypt

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CONTEXT: Although unmet need for family planning is a standard measure for evaluating programs' effectiveness in meeting the reproductive needs of individuals, its validity and accuracy in identifying women most at risk of unintended pregnancy have been questioned.

METHODS: Women who participated in the 1995 Egypt Demographic and Health Survey in two governorates in Upper Egypt (Assuit and Souhag) were followed for two years (N=2,444); in-depth data on their fertility preferences, contraceptive use and births were gathered in 1996 and 1997. Transitions among contraceptive need categories from 1995 to 1997 are examined, and rates of unintended (mistimed and unwanted) births are calculated according to contraceptive need status at baseline.

RESULTS: In the aggregate, unmet need increased by six percentage points, from 28% to 34%. This change was the net outcome of 14% moving out of unmet need and 20% moving into unmet need (i.e., substantial satisfaction of unmet need was offset by increased demand for contraception). The rate of unintended fertility was far higher among women with unmet need at baseline than among contraceptive users in 1995. Women with unmet need made up about one-quarter of the baseline sample, but they contributed almost one-half of mistimed and unwanted births during the two years. The majority of unintended births were to women who had never practiced contraception, whereas fewer than one-fifth were to women with recent contraceptive experience (including contraceptive failure).

CONCLUSIONS: Unmet need for family planning remains a useful tool for identifying and targeting women at high risk of unintended pregnancy.

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Unmet need for family planning—i.e., use of no method despite sexual exposure and an expressed desire to avoid pregnancy—characterizes an estimated 17% of married women in the developing world.¹ Unmet need has been a central concept in international population discourse for two decades.² Because this measure focuses on women (or men) who are motivated to practice contraception, it offers a relatively realistic indication of the unsatisfied (or “latent”) demand for contraception; satisfying this demand is a readily endorsed policy objective in that it aligns public policy with the expressed reproductive interests of individuals.

Demographic surveys now routinely produce estimates of the prevalence of unmet need for family planning on the basis of algorithms that are conceptually straightforward but somewhat complicated to implement.³ The convention is to classify sexually active women into four exclusive categories according to their need for contraception: no need because of infecundity; no need because of a desire to become pregnant soon; no need because of current contraceptive practice (met need); and unmet need.

Doubts remain, however, about both the validity and the utility of the concept.⁴ Here, we examine two questions that can be addressed only by observing women over time. The first concerns the stability of contraceptive need categories: Do women remain in the same category (no need or unmet

need) for extended periods of time, or do they shift frequently between categories? If women tend to fall in the same category at successive interviews over several years, this consistency would provide some reassurance that the classification procedure is valid. Alternatively, substantial shifting among categories might cause doubt about the meaningfulness of the classification scheme.

The issue of stability has important implications for programmatic efforts to reduce unmet need. If categories of contraceptive need remain relatively stable, for example, then it may be cost-effective for programs to develop on-the-ground techniques for identifying women with unmet need, who would then be targeted for recruitment efforts and services.

Moreover, the stability of need categories has implications for evaluating the success of program investments. An overarching goal of family planning programmatic effort is to help women move out of unmet need; the extent to which this goal has been achieved can be ascertained only approximately by comparing successive cross-sectional aggregate distributions. Indeed, a stable or even increasing level of unmet need in the aggregate can coexist with significant shifting out of unmet need at the individual level.⁵ (This occurs when the rate of increase in the desire to avoid pregnancy outpaces the rate of conversion of unmet

need into no need, a situation probably common in the early and middle stages of fertility transition.⁶) Only an analysis of individual-level transitions can accurately assess the success of policies and programs intended to satisfy unmet need.

The second question concerns the relationship between contraceptive need categories and unintended pregnancy. To what extent are unintended pregnancies concentrated among women with unmet need? From one perspective, this question answers itself: Except for those resulting from contraceptive failure, unintended pregnancies by definition occur to women with an unmet need for contraception at the time of conception.^{7*} To be sure, contraceptive failures constitute a substantial fraction of unintended pregnancies; in a few countries, such pregnancies equal or even exceed those caused by nonuse.⁸

Some recent literature, however, views unintended pregnancies within a short interval (i.e., two or three years) among women who were users at the beginning of the interval as outcomes of inadequate or incomplete contraceptive use, not as consequences of unmet need. From this perspective, pregnancies that result from genuine contraceptive failures and pregnancies that follow contraceptive discontinuation are both regarded as outcomes of failed contraceptive practice.

This perspective was presented by Anrudh Jain, whose analysis of Peruvian data from a 29-month follow-up survey found that a majority of the unintended pregnancies during the period occurred to women who were contraceptive users at the first interview.⁹ Jain therefore concluded that targeting women with unmet need—i.e., recruiting nonusers—should be a lower program priority than providing contraceptive users with the information and services they need to continue practicing contraception effectively for as long as they wish to avoid pregnancy. Similarly, Ann Blanc and colleagues analyzed retrospective calendar data from the Demographic and Health Survey (DHS) program and found that in most developing countries, the unwanted fertility rate could be more than halved if births resulting from contraceptive failure and method discontinuation (i.e., those occurring within 24 months after use ended) were eliminated.¹⁰ In this case as well, the researchers interpreted their data as supporting an emphasis on maintaining effective practice among current users, rather than on recruiting nonusers.

This significant programmatic recommendation is grounded in a presumed relationship between contraceptive need status and the risk of unintended pregnancy. Because a great deal is at stake in terms of program priorities and investments, the issue deserves further consideration. We are aware of only two studies[†] that have examined prospectively the relationship between contraceptive need status and the risk of unintended pregnancy—an analysis by Charles Westoff and Akinrinole Bankole of follow-up data collected in Morocco from 1992 to 1995¹¹ and Jain's study of Peruvian data collected from 1991–1992 to 1994.¹²

Our study adds to that list with data collected from 1995

to 1997 in Assuit and Souhag, two governorates in Upper Egypt, the portion of Egypt stretching south from Cairo to the border with Sudan. Compared with the rest of Egypt, Upper Egypt is characterized by higher rates of fertility, lower levels of desire to stop childbearing and lower contraceptive prevalence: According to the 1995 Egyptian DHS (EDHS), the total fertility rate was 4.7 lifetime births per woman in Upper Egypt and 3.6 in the country as a whole; the percentage of currently married women who desired no more children was 59% in Upper Egypt and 65% in Egypt overall, and the levels of contraceptive prevalence were 32% and 48%, respectively.¹³ More directly germane to this study, the percentage of currently married women with an unmet need for contraception was 22% in Upper Egypt and 16% in Egypt as a whole.

The prevalence of unmet need was even higher in Assuit and Souhag (more than 30% of married women). These relatively high levels of unmet need (and the correspondingly low contraceptive prevalence) are not surprising, given that these two governorates, along with the others in Upper Egypt, are the least developed of Egypt's 26 governorates—that is, they are impoverished, predominantly rural areas with poor housing conditions and little access to and limited use of social services. School enrollment and completion rates are lower than in other areas of Egypt, and the gender differentials in these rates are the largest in the country. By the mid-1990s, reducing unmet need in these governorates was a major priority of the Egyptian national family planning program; in this article, we analyze data from an in-depth study whose overarching rationale was to investigate the reasons for nonuse of contraceptives in Assuit and Souhag.¹⁴

DATA AND METHODS

Following the 1995 EDHS, two further rounds of data collection, known as the Egypt In-Depth Study (EIS), were carried out in the governorates of Assuit and Souhag. The EIS covered a period of nearly two years and was characterized by remarkably low loss to follow-up. Of the 2,516 women who were eligible for both rounds, 2,444 were successfully interviewed twice, yielding a retention rate of 97%.[‡] The 2,444 women interviewed in both rounds constitute the sample for analysis.

With the 1995 national EDHS serving as a baseline survey, there were three rounds of interviewing in total: The

*A pregnancy that had been wanted at the time of conception might later be reported as mistimed or unwanted, however. Such situations, created by a change in preference after conception, are very rare in most settings and would be next to impossible to address programmatically.

†Other studies have examined the association over time between fertility intentions, contraceptive practice and fertility, but do not explicitly investigate the relationship between unmet need for family planning and unintended fertility.

‡By comparison, 72% of the 1992 Moroccan DHS respondents who were eligible for the three-year prospective study were reinterviewed in the 1995 Moroccan Panel Survey. The retention rate is worse in Jain's analysis; 59% of respondents in the 1991–1992 Peruvian DHS participated in the 29-month follow-up. (Sources: Curtis SL and Westoff CF, Intention to use contraceptives and subsequent contraceptive behavior in Morocco, *Studies in Family Planning*, 1996, 27(5)239–250; and Jain A, reference 5.)

EDHS data were collected in November 1995 through January 1996; Round 1 EIS interviews were conducted in October and November of 1996; and Round 2 EIS interviews occurred in October 1997. The time elapsed between the first and third interviews was 22 months for roughly one-half the sample and 23 months for the other half. The lengthy, detailed questionnaires covered many facets of fertility-related attitudes and behaviors (with an emphasis on contraception), such as fertility preferences, access to and quality of family planning services, contraceptive side effects and health concerns about methods, exposure to the risk of pregnancy and the husband's role in family planning decision-making. A description of the EIS design and questionnaire and an extensive analysis of the EIS data are presented elsewhere.¹⁵

At each EIS round, interviewers filled in a monthly calendar for the period since the previous interview with information on respondents' experience of pregnancy, amenorrhea, contraceptive use and reasons for discontinuation of use. Respondents were also asked the standard DHS items about their preferences for future births and about the intendedness of any pregnancies that had occurred since the last interview. Intendedness is measured retrospectively through women's responses to a direct question about whether they considered a birth to be on time, mistimed or unwanted.*

For our analysis, we categorize women's contraceptive need at each of the three interviews on the basis of the standard algorithm developed by Westoff,¹⁶ which has been used in DHS reports with only minor changes over the past 15 years.¹⁷ This algorithm uses information on three variables—current fecundity status, fertility preferences and contraceptive use. We assign women to one of the following six groups: having no need for contraception because of infecundity (determined through women's perceptions and data showing no births or contraceptive use for five years); having no need because the woman wishes to become pregnant soon; using contraceptives to space births; using contraceptives to limit births; having an unmet need for contraception to space births; and having an unmet need for contraception to limit births.

An important feature of the Westoff algorithm is the classification of pregnant and postpartum amenorrheic women by the wantedness of their current or recent pregnancy; those

*Intendedness can also be determined prospectively (using the questionnaire item on whether the respondent wants another birth and, if so, how soon). However, prospective fertility preferences are essential to constructing contraceptive need status, so using the same item to determine the intendedness of subsequent births would introduce circularity into the analysis of the relationship. Thus, the use of prospective data could erroneously strengthen the impression that unmet need leads to unintended births. In any case, use of prospective measures of intendedness did not alter the major patterns in the relationship between unmet need and unintendedness.

†This downward bias is offset by an upward bias created by classifying all pregnant and amenorrheic women with a mistimed pregnancy as having unmet need, when some of these women would have wanted a pregnancy by the time of the interview. It can be assumed that the downward bias exceeds the upward bias in most settings. (Source: Bongaarts J, The KAP-gap and unmet need for contraception, *Population and Development Review*, 1991, 17[1]:292–313.)

TABLE 1. Percentage distribution of women, according to contraceptive need category, by survey, Assiut and Souhag, Egypt, 1995–1997

Category	1995 EDHS	1996 EIS (Round 1)	1997 EIS (Round 2)
Unmet need*	28.2	31.8	34.4
For spacing	10.5	10.5	12.5
For limiting	17.7	21.3	21.9
Met need†	24.3	26.2	28.3
Using to space	5.1	5.2	5.4
Using to limit	19.2	21.0	22.9
No need	47.5	42.0	37.3
Wants pregnancy soon‡	37.8	28.1	22.7
Infecund§	9.7	13.9	14.6
Total	100.0	100.0	100.0

*Among nonpregnant and nonamenorrheic women, those who are fecund and want to postpone their next birth or stop childbearing but are not practicing contraception. Among pregnant or amenorrheic women, those whose current or most recent pregnancy was mistimed (unmet need for spacing) or unwanted (unmet need for limiting). †Current users who want to postpone their next birth (using to space) or stop childbearing (using to limit). Among pregnant or amenorrheic women, those whose current or most recent pregnancy resulted from contraceptive failure. ‡Among nonpregnant and nonamenorrheic women, fecund nonusers who want another birth within two years. Among pregnant or amenorrheic women, those whose current or most recent pregnancy was wanted and on time. §Nonpregnant, nonamenorrheic women who have been unable to get pregnant or who have had no birth during the five years preceding the survey and did not practice contraception during that time. Note: N for each survey sample is 2,444.

who indicate that the pregnancy was mistimed or unwanted and did not result from contraceptive failure are classified as having an unmet need for family planning. Given that women with unmet need probably spend a disproportionate amount of time being pregnant or amenorrheic, a virtue of this approach is that it allows pregnant and amenorrheic women to be classified as having unmet need. The extent of unmet need among these women is almost certainly underestimated,† however, because of women's general reluctance to label a past birth as mistimed or, even worse, as unwanted.¹⁸

RESULTS

Changes in Unmet Need over Time

The percentage of women with unmet need increased by six points from baseline (1995 EDHS) to Round 2 (1997) of the EIS (from 28% to 34%, Table 1); the percentages of women using a method and of those who were infecund increased by four and five points over the period, respectively. In interpreting these increases, it should be kept in mind that the sample represents a cohort of women as they aged and had births over a two-year period. Hence, increases in infecundity occurred almost by necessity, and increases in unmet need and contraceptive use were also quite likely as women achieved their desired numbers of children (particularly sons) over time.

The especially large increase in infecundity in the one-year interval between the 1995 EDHS and the 1996 EIS (Round 1) is puzzling and may raise doubts about comparability, but we believe this can be explained by the eli-

TABLE 2. Percentage distribution of 1997 EIS respondents by current contraceptive need category, according to need category in 1995

1995 category	N	1997 category						Total
		Unmet need for spacing	Unmet need for limiting	Using to space	Using to limit	No need; wants pregnancy soon	No need; infecund	
Unmet need for spacing	256	24.3	21.7	10.3	7.8	33.6	2.3	100.0
Unmet need for limiting	432	6.9	48.6	1.6	23.9	8.3	10.7	100.0
Using to space	124	7.2	9.7	22.6	25.9	34.6	0.0	100.0
Using to limit	470	1.2	20.3	4.6	69.2	3.0	1.7	100.0
No need; wants pregnancy soon	925	21.1	16.3	5.1	7.8	38.6	11.1	100.0
No need; infecund	237	1.3	4.7	0.8	3.0	7.9	82.3	100.0

Note: See previous table for definitions of categories of contraceptive need.

gibility criteria for participation in the EIS.* A more intriguing feature of Table 1, which was less predictable in advance, is the change in levels of unmet need and no need over time. The 15-point decrease in the proportion of women who were not in need because they wanted a pregnancy soon can be viewed as reflecting roughly equal increases in unmet need, contraceptive use and infecundity.

The six-point increase in unmet need is, at first glance, an undesirable outcome. However, this aggregate-level outcome could be the result of distinct individual-level processes that could be interpreted in markedly different ways. For example, the increase could mean that women originally classified in 1995 as having an unmet need for contraception remained in that category in 1997 and were joined by women initially classified as having a met need or wanting a pregnancy soon. Alternatively, the movement of women from unmet need into met need (or no need, due to infecundity) could have occurred at a relatively high rate but been outpaced by the movement into unmet need of women who were classified in 1995 as having no need because they wanted to become pregnant soon. Under the first scenario, there was no satisfaction of unmet need, whereas under the second, the unmet need of a subset of women was satisfied, but the increase in contraceptive practice was unable to match the

increase in demand. The rates at which women discontinued contraceptive use are also a factor in these scenarios.

Which of these fundamentally different scenarios explains the aggregate-level trends in Table 1 can be ascertained only through an examination of individual-level transitions. Overall, roughly one-half of the women with unmet need (to space or limit births) have shifted out of that category by 1997 (Table 2), indicating that a large fraction of women in these areas of Upper Egypt move out of unmet need relatively quickly. For women categorized in 1995 as having an unmet need to space births, the most common 1997 classification was having no need because of wanting a child soon. From a programmatic perspective, this transition is entirely acceptable, provided that an unintended pregnancy did not occur in the interim. Almost half of women who at baseline had an unmet need to limit births remained in that category in 1997, whereas about one-quarter shifted into met need. Nevertheless, this surprisingly large satisfaction of unmet need over the brief period of two years is unobservable in the aggregate-level trend of increasing unmet need shown in Table 1.

In contrast to the relatively high rate of transition out of unmet need, little movement occurred out of met need. About two-thirds of women who were practicing contraception at baseline to limit births were still using a method at the third interview, almost all of them to limit births. As might be expected, women who were using a method at baseline to space births were more likely to change categories; even so, almost one-half were still using a method

TABLE 3. Percentage distribution of interviewed women by changes in category of contraceptive need between 1995 and 1997

Change	%
From unmet need	13.5
To met need	6.4
To no need	7.1
To unmet need	19.7
From met need	5.0
From no need	14.7
Other transitions	7.9
No change	58.9
Total	100.0

Note: In this table, the two unmet need categories are combined, as are the two met need categories and the two no-need categories.

*Women who reported being menopausal in the 1995 EDHS were ineligible for the EIS and were excluded from the analysis at the outset. Hence, the category "infecund" in Table 1 in the 1995 EDHS column refers only to women classified as infecund using criteria other than self-reported menopause. The corresponding figures in the 1996 EIS and 1997 EIS columns, in contrast, include women who reported being menopausal at each round, and are larger for this reason. In addition, because there is a random element in the self-reporting of menopause, some women who said they were menopausal at the 1996 EIS could reappear as fecund in the 1997 EIS, which resulted in only a slight increase in the proportion classified as menopausal or infecund between the two EIS rounds. However, such a transition from self-reported menopause to fecund could not have occurred between the 1995 EDHS and the 1996 EIS, because of the exclusion from the EIS of women who reported being menopausal in the 1995 EDHS.

TABLE 4. Percentage of all women who had at least one live birth between 1995 and 1997, and percentage distribution of women who gave birth by intendedness status, according to contraceptive need category in 1995

1995 contraceptive need category	% of women with a live birth	Intendedness status			
		All births on time	All wanted, ≥ 1 mistimed	≥ 1 births unwanted	Total
All	42.1	56.1	18.5	25.5	100.0
Unmet need for spacing	69.7	50.8	34.9	14.3	100.0
Unmet need for limiting	39.7	26.8	14.8	58.4	100.0
Using to space	40.5	50.0	30.0	20.0	100.0
Using to limit	12.5	23.8	5.2	71.0	100.0
No need; wants pregnancy soon	59.2	70.8	15.2	14.0	100.0
No need; infecund	9.7	*	*	*	na

*Fewer than 50 infecund women had a live birth. Notes: Live births were those delivered in the period from the month after the 1995 EDHS was fielded through the month of the 1997 EIS (Round 2) interview. Intendedness status was determined by responses to EIS Round 1 or 2 interviews. na=not applicable.

at follow-up (roughly equally divided between using to space and using to limit). Interestingly, the most stable category, no need because of infecundity, did not retain all women who were thus classified in 1995, since 18% reported being fecund in 1997. Finally, although the stability of fertility preferences is not the subject of this article, Table 2 indicates a high degree of stability, with few women shifting from not wanting another birth to wanting another birth.

Overall, 59% of the 1997 EIS respondents were in the same category at the first and third interview (Table 3, page 109). Some 41% were in a different category—20% moved into unmet need (15% from no need and 5% from met need), and 14% moved out of unmet need (roughly the same proportion moved into met need as moved into no need). Only 8% made other transitions.

How stable is contraceptive need? The answer depends on the standard used. Statistical measures of agreement suggest moderate stability. The Kappa measure,¹⁹ for example, is 0.4 for agreement between the first and third interviews. This indicator of moderate stability conforms to our interpretation of the data: Women were more likely to fall into the same category at baseline and two years later than to change categories. However, two years is a small fraction of a woman's reproductive career, and the fact that roughly 40% of women changed categories indicates considerable dynamism in contraceptive need.

Unmet Need and Unintended Fertility

We now consider how well contraceptive need status at one point in time predicts the subsequent incidence of unintended births. The issue may be approached through two questions: First, does the risk of an unintended birth vary across categories of contraceptive need? Second, which contraceptive need subgroups have disproportionate numbers of unintended births? In the period between the first and third interviews, 42% of the women had at least one live birth (Table 4). This probability was highest among women who had an unmet need for spacing at baseline (70% gave birth) and, as would be expected, it was lowest among women who were classified as infecund (10%). The proportion of women who gave birth by 1997 was only slight-

ly higher among those who said at baseline that they were using contraceptives to limit births (13%).

Indeed, the value of contraception is evident in the far lower proportions giving birth among women with met need than among those with unmet need—13% vs. 40% among women wishing to limit births, and 41% vs. 70% among women wishing to space births. Although the birthrate of 41% among users who wanted to space their next birth at baseline may seem high, 50% of these births were considered “on time.”

The proportion of women with at least one mistimed birth was highest among those who had an unmet need for spacing or who were using a method to do so (35% and 30%, respectively); unwanted births were most common among women who had an unmet need for limiting or who were using a method to do so (58% and 71%, respectively). These patterns are to be expected, if prospective and retrospective fertility preferences were reported consistently. Overall, a woman's contraceptive need category proves to be a reasonably good predictor of her fertility over the two years studied.

Since a general policy aim of reproductive health programs is to reduce the incidence of unintended births, the subgroups of women contributing the largest share of unintended births need to be identified and targeted for services. Each subgroup's share is the product of its fraction of the overall population and its rate of unintended fertility. In the data from Upper Egypt, women who wanted a pregnancy soon contributed the largest share of mistimed births (43%, Table 5), although women with an unmet need to space births also contributed a sizable proportion (34%). Almost one-half of unwanted births, normally of greater policy concern than mistimed births, occurred to women with unmet need—40% among women with an unmet need for limiting and 9% among those with an unmet need for

TABLE 5. Percentage distribution of births occurring between 1995 and 1997, by intendedness status, according to women's contraceptive need category in 1995 and contraceptive history at conception

Contraceptive need and history	All (N=1,110)	On time (N=680)	Mistimed (N=177)	Unwanted (N=253)
Need				
Unmet need for spacing	17.2	16.1	33.6	8.8
Unmet need for limiting	16.5	8.2	14.9	39.7
Using to space	4.6	4.3	6.7	4.0
Using to limit	5.6	2.5	1.1	17.0
No need; wants pregnancy soon	54.0	66.7	43.1	27.7
No need; infecund	2.1	2.2	0.6	2.8
History				
Never-use	73.6	80.2	77.1	53.4
Use discontinued before conception				
1–3 mos.	6.7	4.9	7.3	11.0
4–6 mos.	2.9	1.7	3.9	5.1
≥ 7 mos.	13.6	11.4	10.0	22.2
Contraceptive failure	3.2	1.8	1.7	8.3
Total	100.0	100.0	100.0	100.0

spacing. In contrast, 21% of unwanted births occurred to women who were using a contraceptive method at baseline; the share of unwanted fertility accounted for by women who wanted a birth soon was even higher (28%). Overall, then, women with unmet need accounted for nearly half of both mistimed and unwanted births.

Of course, some nonusers who had unmet need or who wanted a pregnancy soon at baseline may have been users shortly before their 1995 interview. To address the argument that contraceptive users should be the programmatic focus if the aim is to reduce unintended fertility, we consider more closely the association between women's broader contraceptive experience and unintended fertility by classifying births in terms of the woman's contraceptive history leading up to the birth. Most of the unintended births in the sample occurred to women who had never used contraceptives—77% of mistimed births and 53% of unwanted births (bottom panel of Table 5). A further 10% of mistimed births and 22% of unwanted births were to women who had discontinued use seven or more months before conception. That is, only 20% of unintended births (13% of mistimed births and 24% of unwanted births) occurred to women with recent contraceptive experience (including the 2% of mistimed births and the 8% of unwanted births that resulted from contraceptive failure*). The message is unmistakable: In these two governorates of Upper Egypt, the main source of unintended births is women detached from contraception because they never used it or because they discontinued use months before becoming pregnant.

DISCUSSION AND CONCLUSIONS

Over the past two decades, the goals of official family planning policies of many countries have shifted from an emphasis on increasing contraceptive prevalence (and reducing fertility) to satisfying unmet need (and reducing unintended fertility). This shift away from demographic targets toward meeting individuals' needs and aspirations is clearly articulated in the Programme of Action of the 1994 International Conference on Population and Development.²⁰ This change has complicated the task of evaluating whether policy goals have been achieved: Unmet need and unintended fertility, because they involve fertility preferences, are intrinsically more difficult to assess reliably than contraceptive use and total fertility. In particular, programs may enjoy considerable success in satisfying individuals' unmet need while the overall prevalence of unmet need increases because of a growing demand for fertility regulation.

The data from Upper Egypt confirm this scenario. Roughly one-half of respondents with unmet need at baseline no longer had unmet need two years later. These women constituted 14% of the entire sample. Certainly, this represents excellent progress toward eliminating unmet need, especially considering the brief observation period. But because 20% of the EIS sample were newly classified as having unmet need during the same period, the overall prevalence of unmet need increased by six percentage points.

The EIS data clearly demonstrate the value of examining

unmet need dynamics at the individual level, as illustrated by a previous study using longitudinal data from Morocco.²¹ A balanced assessment of a program's success in meeting the contraceptive needs of a population can be achieved only through individual-level analysis. It would be unreasonable to expect emerging demand for fertility regulation to be converted instantaneously into contraceptive practice. A lagged response seems inevitable; thus, success in satisfying unmet need can easily be obscured by larger increases in the fraction of women who wish to avoid pregnancy but are not using a family planning method. This occurred among the Egyptian respondents in our study—the proportion of women who shifted into unmet need from wanting a child soon was slightly higher than the total proportion that shifted out of unmet need (15% vs. 14%, Table 3).

Reducing unmet need for family planning is not an end in itself, but is pursued to achieve the underlying goal of reducing unintended pregnancies. If a focus on unmet need is not an effective strategy for reducing unintended pregnancies, then any emphasis on unmet need—in research or in the formulation of population policies and programs—would be misplaced. Jain concluded that such a focus is misplaced after finding that, in Peru, contraceptive users and women who want a child soon accounted for more unwanted births during a two-year observation period than did women with unmet need.²² In our study, in contrast, women with unmet need contributed the largest share of the unintended births; thus, in Upper Egypt, it is sensible to recommend that women with unmet need be targeted in interventions to reduce unintended fertility.

The discrepancy in the studies' findings can be attributed, in part, to basic differences in reproductive behavior: Levels of current and past contraceptive use are substantially higher in Peru than in Egypt (especially Assuit and Souhag), and the EIS respondents used more effective methods than the Peruvian respondents. For example, at baseline, contraceptive prevalence was 50% in the Peruvian study and 24% according to EDHS data for Assuit and Souhag, with 21% of Peruvian respondents using a traditional method, compared with only 5% of the Upper Egypt respondents. The proportions of women with unmet need were 18% in Peru and 28% in Assuit and Souhag.

But do these differences in contraceptive behavior entirely explain the different recommendations? Is the situation in Upper Egypt so atypical that the population field should accept Jain's argument, even though it does not apply in this specific case? What are the lessons to be applied more broadly?

Recent cross-national analyses of DHS data provide some helpful information. From Westoff's reappraisal of contraceptive need status in the 1990s,²³ we learn that national

*On the face of it, contraceptive failure being linked to 2% of "on-time" births (Table 5) is contradictory. However, women were questioned about whether a conception resulted from contraceptive failure and whether it was wanted at separate points in the interview. If a woman wanted another child but was relatively indifferent about when she wanted one, she might correctly report that contraceptive failure led to the conception and that she was satisfied with the timing nonetheless.

rates of contraceptive use as high as 50% (as in Jain's data and as in Egypt's national rate of 48%) are rare in Sub-Saharan Africa, but common in Asia and Latin America. At the same time, low prevalence levels, such as the 24% found in Assuit and Souhag, are common in Sub-Saharan Africa (e.g., 22% in Ghana, 23% in Togo and Uganda, 26% in Tanzania and Zambia, etc.), but are rare elsewhere (although some Asian nations have similarly low levels of contraceptive use). Unmet need of 25% or greater is found in all regions, but is most common in Sub-Saharan Africa. In short, the levels of contraceptive use and unmet need that characterize EIS respondents are found in a few major populations in Asia (e.g., Pakistan) and are common in Africa. As for the association between unmet need and contraceptive experience, in a majority of countries in all regions, between 40% and 75% of women with unmet need have never used a method; this is almost always the case in Sub-Saharan Africa. Egypt is not exceptional in this respect, with 42% of all women with unmet need having never used a method.

DHS data also provide insights on why women do not use contraceptives.²⁴ The reasons for nonuse do not fundamentally differ between never-users and past users. Both groups of women are most likely to cite opposition (spousal, religious or other social and psychological anxieties about use), followed closely by fear of side effects and other health concerns. A further substantial fraction cite a low risk of conception (because of infrequent sex, low perceived fecundability, etc.). Fear of side effects and other health concerns are more commonly mentioned by past users than by never-users; this is hardly surprising, as many DHS analyses show that side effects and health concerns are the predominant reason given for contraceptive discontinuation.²⁵ It should be mentioned, however, that never-users cite similar fears and concerns.

Despite the considerable variability by country in the reasons of never-users and past users for not practicing contraception, the two subgroups strongly resemble each other overall.* The same cluster of reasons for nonuse found in other settings predominates among EIS respondents—low perceived fecundability, concern about side effects and the husband's opposition.²⁶

From our analysis of the EIS data and our brief overview of cross-national DHS analyses, we arrive at the following five conclusions. First, because women with unmet need contribute a substantial fraction of unintended births in most settings[†] and account for a majority of such births when contraceptive prevalence is low and unmet need is high, a strong justification remains for programs placing a

*The DHS data do not attempt to measure the strength of women's reasons for nonuse. Jain, however, makes the plausible argument that despite the overall similarity in reasons for nonuse provided by past users and never-users, the fact that past users once practiced contraception indicates that concerns over initiating use are less salient to past users than to never-users. (Source: Jain A, Population Council, New York, personal communication, Oct. 19, 2002.)

†In Jain's Peruvian data, by comparison, women with unmet need and users contribute about equally to the incidence of unwanted births over the 29-month observation period—47% and 53%, respectively.

high priority on serving women with unmet need.

Second, the *rate* of unintended pregnancy is relatively high among women with unmet need. Indeed, the available empirical evidence indicates that this rate is typically far higher among women with unmet need than among other subgroups. Thus, the return on programmatic investments in women with unmet need—i.e., the achieved reduction in unintended births—should be relatively high. Offsetting this potential high return, however, is Jain's supposition that recruiting women with unmet need requires more effort per woman than retaining contraceptive users. Whether it is more cost-effective to invest programmatic effort in women with unmet need or in contraceptive users is an empirical question that merits rigorous research.

We do not feel that the available evidence demonstrates that contraceptive adoption among women who wish to avoid pregnancy is harder to achieve than extending use or improving it among current users. What should not be in dispute is that costs and cost-effectiveness cannot be ignored when deciding to stress one strategy or the other. In the absence of valid data on financial and time costs, there is little choice but to assume that the two strategies cost roughly the same per woman; therefore, the higher rate of unintended fertility among women with unmet need implies that programmatic efforts to reduce unmet need will be more cost-effective than those to retain users.

Third, the appropriate strategies for recruiting women with unmet need and prolonging use among current users may not differ markedly because the major obstacles to contraceptive use are the same in both groups in most settings. In particular, reasons for nonuse that can be addressed through improved quality of care—i.e., fear of side effects, lack of access, desire for more effective or more convenient methods—apply in force to both past users and never-users. Moreover, greater method choice could not only extend contraceptive use among users but also promote contraceptive adoption among women with unmet need.²⁷ Two further studies of the longitudinal Moroccan data analyzed by Westoff and Bankole demonstrate that accessibility and certain features of services affect both contraceptive adoption and discontinuation.²⁸

Fourth, although contraceptive failure contributes only 8% of unwanted births in the EIS data (reflecting widespread reliance on effective methods in Assuit and Souhag), it is a major source of unwanted fertility in many countries. (For example, it contributes at least one-quarter of unwanted births in eight of 15 countries, according to an analysis by Blanc and colleagues.²⁹) Preventing contraceptive failure involves encouraging women to adopt more effective methods and to use them consistently and correctly. Strategies for reducing levels of unmet need and lowering rates of contraceptive failure differ in character; we agree with Jain's argument that a programmatic focus on reducing unmet need is unlikely to lower failure rates. Thus, where contraceptive failure contributes significantly to unintended fertility, adjusting program strategies in the direction advocated by Jain is reasonable.

Fifth, whereas the level of unwanted fertility in our study was relatively low among women who at baseline wanted a birth soon, these women nonetheless contributed 28% of unwanted births over the two-year period. Thus, women who are not currently in need but soon may be constitute a third major subgroup deserving programmatic attention. Providers should be aware that young women may pass into and out of need rather quickly, and at moments that often will not coincide with their contacts with providers. These women and their partners need to be as well informed as possible about method options and about where they can obtain appropriate services and supplies when the need arises.

Certainly, as contraceptive prevalence rises, reduction of unmet need recedes as a policy and program priority, and serving the needs of users moves to the fore. Although this transition in priorities is undoubtedly under way in much of the developing world, the data from Upper Egypt analyzed here clearly demonstrate that unmet need remains a valid concern in many settings, most notably in Sub-Saharan Africa, but also in some parts of South Asia, West Asia and North Africa. In these settings, women with unmet need at the beginning of an interval are likely to be the major source of unintended pregnancies over the next few years; this was certainly the case in Upper Egypt in the late 1990s. Although prospective data are unavailable for most countries, the EIS information and Jain's Peruvian data suggest that this finding can be assumed to apply to most populations where contraceptive prevalence is lower than 60% and unmet need exceeds 15%. This describes most of the countries in Westoff's most recent DHS cross-national analysis.³⁰ For these reasons, it seems premature to scrap unmet need for family planning as a useful tool for policymakers, program managers and researchers.

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RESUMEN

Contexto: Si bien la necesidad insatisfecha de servicios de planificación familiar es una medida estándar para evaluar la eficacia de los programas de salud reproductiva, se ha cuestionado su validez y exactitud para identificar a las mujeres que se encuentran en el mayor nivel de riesgo de tener un embarazo no planeado.

Métodos: A las mujeres de dos gobernaciones del Alto Egipto (Assuit y Souhag) que participaron en la Encuesta Demográfica y de Salud (EDS) en Egipto de 1995, se les hizo un seguimiento durante dos años; se recopilaron datos en 1996 y 1997 de 2,444 mujeres sobre sus preferencias de fecundidad, uso de anticonceptivos e hijos nacidos. Se examinaron las transicio-

nes entre las categorías de necesidad de anticonceptivos desde 1995 a 1997, y se estimaron las tasas de nacimientos no planeados (fuera de tiempo y no deseados) según las categorías de necesidad de anticonceptivos en el momento de la encuesta línea de base (EDS de 1995).

Resultados: En el conjunto, la necesidad insatisfecha aumentó en seis puntos, del 28% al 34%. Este cambio fue el resultado neto del 14% saliendo de la necesidad insatisfecha y el 20% entrando a la necesidad insatisfecha (es decir, la satisfacción sustancial de la necesidad insatisfecha fue compensada por una mayor demanda de anticonceptivos). La tasa de fecundidad no planeada fue muy superior entre las mujeres que presentaban una necesidad insatisfecha en la encuesta línea de base que entre las usuarias de anticonceptivos en ese momento. Las mujeres con una necesidad insatisfecha constituía la cuarta parte de la muestra en 1995, pero ellas contribuyeron casi la mitad de los nacimientos fuera de tiempo o no deseados durante el periodo de seguimiento. La mayoría de los nacimientos no planeados los tuvieron las nunca-usuarias de la anticoncepción, mientras que menos de un quinto de dichos nacimientos ocurrieron entre las mujeres con experiencia reciente con la anticoncepción (incluidas las fallas de anticonceptivos).

Conclusiones: La necesidad insatisfecha de planificación familiar continúa siendo una herramienta útil para identificar y centrar la atención en las mujeres que se encuentran en alto riesgo de tener un embarazo no planeado.

RÉSUMÉ

Contexte: Bien que le besoin non satisfait de planning familial constitue une mesure standard d'évaluation de l'efficacité des programmes à répondre aux besoins individuels de procréation, sa validité et sa précision quant à l'identification des femmes courant le plus grand risque de grossesses non planifiées ont été mises en doute.

Méthodes: Les participantes à l'Enquête démographique et de santé égyptienne de 1995 ont été suivies, dans deux gouvernorats de Haute Égypte (Assiout et Sohag), pendant deux an-

nées (N=2.444). Des données approfondies ont été recueillies en 1996 et 1997 sur leurs préférences de fécondité, leur pratique contraceptive et leur nombre de naissances. Les transitions entre les catégories de besoin contraceptif sont examinées de 1995 à 1997, et les taux de naissances non planifiées (inopportunes et non désirées) sont calculés en fonction de l'état de besoin contraceptif de base.

Résultats: Dans l'ensemble, le besoin non satisfait a augmenté de six points de pourcentage, passant de 28% à 34%. Cette hausse représente le produit net des 14% extraits du besoin non satisfait et des 20% y ayant accédé (la satisfaction substantielle du besoin non satisfait ayant été effacée par la demande accrue de contraception). Le taux de fécondité non planifiée s'est révélé largement supérieur parmi les femmes présentant un besoin non satisfait à la base que chez les utilisatrices de la contraception dès 1995. Les femmes dont le besoin n'était pas satisfait représentaient environ un quart de l'échantillon de base, mais étaient associées à près de la moitié des naissances inopportunes ou non désirées durant les deux années à l'étude. La majorité des naissances non planifiées était liée aux femmes qui n'avaient jamais pratiqué la contraception. Moins du cinquième l'était en revanche à celles qui l'avaient pratiquée récemment (échec contraceptif compris).

Conclusions: Le besoin non satisfait de planning familial demeure un instrument utile d'identification et de ciblage des femmes présentant un risque élevé de grossesse non planifiée.

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