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Understanding Unmet Need

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Preface and Acknowledgments

Over 100 million women in the developing world today risk unwanted pregnancies. This unmet need poses a serious challenge to public health policy makers and reproductive health program planners. It also provides a powerful rationale for funding and organizing effective family planning programs.

A clearer understanding of the concept of unmet need can help focus family planning program efforts toward specific audience segments and tailor information, education, and communication (IEC) to reach these intended audiences effectively. That understanding may guide the design of family planning projects by helping to identify the reasons for unmet need among specific audiences and by suggesting ways to develop and fine-tune family planning approaches that are user-friendly and community-oriented.

This Working Paper presents original theoretical and empirical analysis of the reasons for the existence of unmet need in 44 countries surveyed by the Demographic and Health Surveys between 1985 and 1994. In addition to a review of the literature, it summarizes much of the background research undertaken for a recent issue of *Population Reports*, "Meeting Unmet Need: New Strategies." That issue examined the concept of unmet need, its prevalence, and implications for program planning. This Working Paper is an important addition to the discourse on the concept of unmet need and will help program planners develop effective family planning and reproductive health strategies.

Dr. Bhushan spent 10 years in the Indian Administrative Service as the Director of the Medical, Health, and Family Welfare Department for the government of Rajasthan and prior to that was Director of Sanitation, Water, Guineaworm Control, and Community Health Projects in Rajasthan, India. A recipient of the William H. Draper Fellowship, Dr. Bhushan completed his doctoral degree at Johns Hopkins in the Interdepartmental Public Health Economics Program. His dissertation was on "Contraceptive Use and Unmet Need: A Microeconomic Model and Its Application to Egypt." He was also an Associate in the Department of Population Dynamics at the Johns Hopkins School of Hygiene and Public Health and a Researcher in the Research and Evaluation Division at the Center for Communication Programs. His innovative work in the area of unmet need formed the basis of the *Population Reports* issue, "Meeting Unmet Need: New Strategies," as well as this Working Paper. Dr. Bhushan is currently a Project Economist with the Asian Development Bank in the Philippines.

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Abbreviations

CBD	community-based distribution
DHS	Demographic and Health Surveys
GDP	Gross Domestic Product
HDI	Human Development Index
IEC	information, education, and communication
IUD	intrauterine device
JHU/PCS	Johns Hopkins University/Population Communication Services
KAP	knowledge, attitudes, and practices
WFS	World Fertility Survey

Summary

Unmet need for family planning has been one of the most widely discussed family planning concepts in recent years. The term “unmet need” describes the condition of fecund women of reproductive age who do not want to have a child soon or ever but are not using contraception.

Addressing unmet need through family planning programs has been proposed as a major strategy for fertility reduction in developing countries. Meeting unmet need, however, requires that policy makers and program managers know the reasons that some couples do not use contraceptives even when they do not want children. Most research on unmet need to date has concentrated on issues of definition and measurement. Only a handful of studies explore the causes of unmet need.

This paper presents a theoretical economic model of unmet need and evaluates the findings of various micro- and macro-level studies on the causes of unmet need. It also undertakes further analysis of Demographic and Health Surveys (DHS) data to advance knowledge about the determinants of unmet need.

Theoretical Basis of Unmet Need

The conventional microeconomic approach to fertility behavior does not adequately explain the concept of unmet need; however, certain modifications in conventional model specification can help explain its existence.

The conventional microeconomic approach is based on the premise that couples *have* children in order to maximize their utility. There is an important difference, however, between consumer behavior and fertility behavior. A consumer does not ordinarily become the owner of a product until and unless he/she consciously decides to acquire it. Therefore, a situation in which a consumer acquires an unwanted book, for example, is unlikely. In contrast, a couple is likely to have children until, and unless, they actively do something to prevent it. This is comparable to belonging to a book club or subscribing to a magazine which comes regularly until specifically cancelled. This paper argues that modeling the decision to *avoid* children rather than to *acquire* them is a more appropriate specification for the analysis of reproductive behavior.

Furthermore, people decide to regulate fertility on the basis of the *perceived* cost of contraceptive use, rather than its actual cost. Contraceptive use entails both monetary and nonmonetary costs. Nonmonetary costs may actually be a much bigger deterrent to contraceptive use than monetary costs. This paper shows that the existence of unmet need can be better explained if contraceptive cost is broadly defined to include the nonmonetary costs, as suggested by Easterlin (1975).

Under the above model specification, need for family planning will be unmet when the following two conditions exist: (a) the demand for contraception responds to the perceived cost of contraception and (b) the perceived cost of contraception is relatively high. Theoretically, both conditions can exist. Whether these conditions actually exist in a given study is an empirical question.

Women's Reported Reasons for Unmet Need

An analysis of the reasons for unmet need can best begin with the views expressed by women themselves. The Demographic and Health Surveys (DHS) conducted since 1990 ask women with unmet need who say they do not intend to use contraceptives (about half the women with unmet need) about the principal reason for their decision. Although these responses are limited in coverage and scope, they do provide some indication of the factors that prevent women from practicing contraception even when they do not wish to

become pregnant. Throughout this paper, reasons for unmet need reflect only the statements of women with unmet need who do not intend to use contraception.

According to the DHS, the reasons that women with unmet need do not intend to use contraception include: lack of knowledge; ambivalence about future childbearing; and disapproval of family planning. Together, these reasons account for nearly two-thirds of all reasons given. Other, less frequently mentioned reasons, are fear of side-effects and low risk of conception. The price of contraceptives and their unavailability are mentioned by an extremely small proportion of women.

The reasons for unmet need can be grouped into two categories:

- weak motivation for fertility control and
- high perceived cost of contraception.

Weak Motivation for Fertility Control

Reasons related to weak motivation include:

- ambivalence about future childbirth and
- perceived low risk of conception.

By definition, women with unmet need want to avoid another child. But analysis of DHS data finds that many of these women are ambivalent about their future childbearing. In addition, many women do not think that they are at risk of becoming pregnant, either because they are not sexually active or because they consider themselves to be infertile. Ambivalence about future childbearing and perceived inability to become pregnant together account for 20% to 40% of the reasons for unmet need among those who do not intend to use family planning in countries surveyed between 1990 and 1994. Lack of motivation is an especially dominant reason for unmet need in sub-Saharan African countries.

Ambivalence about future childbearing is especially common among women with unmet need for spacing births. A large proportion of unmet need in sub-Saharan African countries is for spacing. In these countries, on average, 30% of unmet need is due to apparent ambivalence about future childbearing. Thus, a significant portion of unmet need in sub-Saharan Africa may not be amenable to any change in the perceived cost of contraception. In countries outside this region, about one-fifth of unmet need arises from weak motivation.

A substantial proportion of older women, especially those whose unmet need is for limiting (i.e., bearing no more children), do not feel the need to use contraception because they think they are infertile or they seldom have sex. In most of the surveyed countries, the proportion of women who do not consider themselves in need is less than 10% of all women with unmet need. This reason, however, accounts for a large share of unmet need in Egypt, Jordan, and Turkey, where 17% to 18% of all women with unmet need do not feel that they are at risk of becoming pregnant.

High Perceived Cost of Contraception

The monetary cost of contraception does not account for the existence of unmet need.

Factors that contribute substantially to its existence are:

- the fear of side effects (physiological costs) and
- societal and familial disapproval of family planning (social costs).

Further analysis of DHS data finds that unmet need is less related to conventional measures of the availability of contraceptives, such as the distance from and time taken to reach the nearest service center than to

qualitative and cognitive aspects of service availability—more specifically, the number of methods available and knowledge of contraceptive methods—which are significantly related to unmet need.

This study's findings suggest that controlling for socioeconomic development reduces the strength of the relationship between range of method choice on one hand and unmet need or percentage of potential demand unmet on the other, but the relationship remains statistically significant. With control for socioeconomic development, the data suggest that widespread availability of one additional contraceptive method in a country should increase contraceptive prevalence by 3.3 percentage points. Of this increase, more than half (1.8 percentage points) comes from meeting unmet need (see page 26 for the analysis). From this analysis, it can be concluded that expansion of contraceptive choices should be one strategy for meeting unmet need.

When directly asked about the reason for not using or not intending to use contraceptives, more women cite lack of knowledge than any other reason. Supplementary analysis leads to the conclusion that increasing knowledge about contraceptives and their sources is crucial for meeting unmet need.

In answer to DHS questions, only a small proportion of women cite fear of side effects or husband's disapproval of family planning as their principal reasons for not intending to use contraception. In-depth analysis of the available data presents a different picture, however. Fear of side effects, both real and perceived, has a significant effect on the level of unmet need. In 15 countries selected for analysis, on average approximately 10% of all women with unmet need had actually discontinued using contraception due to side effects. At the same time, more than half of women with unmet need who do not intend to use contraceptives due to the fear of side effects actually had *never* used any contraceptives.

Similarly, husbands' opposition emerges as a prominent reason for unmet need, although women themselves do not cite it as their principal reason for not intending to use contraceptives. Husbands may oppose contraception because they are more pronatalist^{ie} than their wives, or they may not approve of specific contraceptives, or both. Sometimes women think that their husbands oppose contraceptive use when in fact they approve. Thus, lack of communication about family planning between husbands and wives also contributes to unmet need. Women with unmet need also are characterized by low status and weak bargaining power within the household.

Chapter I. Introduction

Surveys over the last four decades have shown consistently that many women in developing countries do not use contraceptives even though they do not wish to have more children. Recent estimates from Demographic and Health Surveys (DHS) confirm the existence of this gap between desired fertility and actual reproductive behavior in each of the 44 countries surveyed. These estimates suggest, however, that the gap varies considerably among countries and regions (see Appendix A). The discrepancy between women's stated desires and observed behavior, commonly referred to as "unmet need," has been at the center of attention in the population literature for the last few years. (See box 1.1 for a definition of unmet need.)

Surveys find that many sexually active women want to avoid becoming pregnant but, nevertheless, do not use any method of contraception. This discrepancy between stated fertility preferences and actual behavior was referred to as the "KAP-gap" in the earlier literature. The concept—now usually called unmet need for family planning—and its empirical measurement have been further refined by researchers, in large part through the contributions of Charles Westoff. (For details, see Robey et al., *Population Reports*)

Box 1.1: A Definition of Unmet Need for Family Planning

J-43.) The measurement of unmet need, however, remains a contentious issue, since there is no universally accepted definition of unmet need.

This paper adopts the DHS definition of unmet need (see Appendix B for survey instruments used to identify unmet need). **According to the standard DHS definition, the unmet need group includes all fecund women who are married or living in union, and thus presumed to be sexually active, who either do not want any more children or who wish to postpone the birth of their next child for at least two more years but are not using any method of contraception.** The unmet need group also includes all pregnant married women whose pregnancies were unwanted or mistimed or who unintentionally became pregnant because they were not using contraception. Similarly, women who have recently given birth and are not yet at risk of becoming pregnant because they are amenorrheic have an unmet need if their pregnancies were unintended. In this formulation, women who became pregnant unintentionally because of contraceptive method failure are not considered to have an unmet need for family planning (Westoff and Ochoa 1991; Westoff and Bankole 1995).

There have been some criticisms of this definition. Ruth Dixon-Mueller and Adrienne Germain (1992) have pointed out that the concept of unmet need can apply to all sexually active people, whether married or not. Further, even contraceptive users themselves may have an unmet need if they are using an ineffective method, using a method incorrectly, or using a method that is unsafe or unsuitable for them. They argued that the concept of unmet need should not be restricted to women, but also should be applied to men. Govindaswamy and colleagues (1993) suggest that high-risk groups such as very young and old women who do not realize the potential complications of their childbearing should also be considered to have unmet need.

Bongaarts (1991) objects to the DHS definition because it provides a current-status measure rather than a steady-state measure. He suggests an alternative formulation in which the level of unmet need in a country equals the amount of additional contraceptive use needed to achieve women's fertility preferences. Bongaarts' method yields lower estimates of unmet need than those of DHS because it accounts for the fact that women with a current unmet need for spacing births will eventually want to have another birth and thus will drop out of the unmet need category.

Notwithstanding the above, largely valid, contentions, the DHS definition of unmet need appears to be appropriate for program purposes because of its simplicity and modest data requirements. Furthermore, it identifies women who may currently need contraceptive information or services. This paper, therefore, uses the DHS definition in its analysis.

The existence of unmet need has been used by some observers to argue for further government investment in, and a new direction for, family planning programs. As expressed by women themselves in surveys, unmet need provides a powerful humanitarian rationale for family planning programs. Sinding and colleagues (1994), for example, argued that family planning programs should attempt to meet unmet need rather than pursue government targets reflecting demographic considerations. The concept of unmet need could be used by program planners to develop better-focused new programs and to fine-tune existing programs to address people's specific needs.

Meeting unmet need, however, is contingent on two factors. First, policy makers and program managers should know why couples do not use contraceptives even when they do not want children. Second, programs should be able to reach couples with unmet need and the reasons for it should be amenable to program effort. To the extent that reasons for unmet need reflect deficiencies in the supply or quality of contraceptive information and services, program managers can endeavor to remove those obstacles. In contrast, if unmet need is primarily rooted in the normative costs of contraception arising from current societal roles or in weak motivation for fertility control, improved service delivery alone will not be sufficient. In such cases, an appropriate program response might well involve well-designed communication programs. Communication activities might address these social issues, making people more aware of the benefits of small families and spacing between births and changing social norms.

The importance of research in developing a strategy for unmet need seems obvious. It is surprising, then, that "research on the reasons why survey respondents are not using a method in spite of their stated intention to space or limit births is

scarce” (World Bank 1994). Similarly, Casterline and colleagues (1995) note that, “Given the social welfare and demographic significance of unmet need for family planning, it is striking how little is known about its causes.” Some recent, localized studies provide valuable insights into the causes of unmet need in different settings (Casterline *et al.* 1995; Ramarao and Townsend 1995; Robey *et al.* 1996). Several macro-scale studies offer an overview of the causes of unmet need in developing countries (Bongaarts and Bruce 1995; Stover and Heaton 1995).

This paper covers micro- and macro-level studies on the causes of unmet need and provides a new in-depth analysis of DHS data. For purposes of exposition and background, the paper begins with a discussion of the theoretical underpinnings of unmet need. A theoretical framework is proposed and used to assess the empirical evidence concerning unmet need.¹

¹ Because of data limitations, the empirical analysis is restricted mostly to unmet need among married women.

Chapter II. Unmet Need: A Theoretical Explanation

Why does unmet need exist? Conventional microeconomic models do not provide a consistent or convincing explanation of the prevalence of unwanted fertility. The microeconomic framework, which views reproductive responses through the calculus of optimizing behavior, has been a major tool for the analysis of fertility behavior for the last three decades. Microeconomic analysis assumes that couples have perfect, or complete and accurate information about the benefits from and the costs of both children and contraception. Under the basic assumptions of this framework, couples decide to have an additional child only when the net benefits from having the child or the difference between the future streams of benefits and costs are positive and greater than those of alternative investments. Avoiding the monetary costs of contraception is one of the benefits of childbearing. However, many authors note that the cost of contraception constitutes a very small proportion of a household budget.² Therefore, conventional economic analyses conclude that unwanted fertility cannot exist in any significant measure because the cost of avoiding a child is extremely small relative to the cost of having and rearing a child.

Thus, conventional economic analysis does not even admit to the possibility of undesired outcomes, much less explain them. Pritchett (1994, p.25) argues:

People purchase cars as long as the net benefit per dollar is greater than that from other goods, which implies that the net benefit at the optimal consumption level is very much smaller than either the gross cost or gross benefit. One could ask, how many additional cars would people buy if motor oil were free? Not many. Of course, that is not to say that people make decisions about children the way they do about cars, but the principle—that small components of cost have small effects—is the same.

How, then, does one explain the prevalence of unwanted fertility and unmet need? One explanation could be that the estimates of unmet need are artifacts of survey questions. It could be argued that many women actually do want children or are indifferent about future childbearing, but they report that they do not want more children merely to supply the expected response to surveys (a phenomenon called “courtesy bias”). The consistent findings, both qualitative and quantitative, over time and across many countries cast doubt on this contention (Westoff and Ochoa 1991; Westoff and Bankole 1995, Casterline *et al.* 1995). Moreover, the wide prevalence of induced abortion even where it is legally prohibited also provides compelling after-the-fact evidence of unmet need (Coeytaux 1993).

The conventional microeconomic approach is unable to account for unmet need because of the wrong specification of the analytical model and certain unrealistic assumptions. Rooted primarily in consumer theory, the microeconomic approach is based on the premise that couples acquire children in order to maximize their own utility. Conventional microeconomic theory also assumes at least implicitly that couples have perfect information about the relationship between sexual intercourse and conception, about available methods of contraception, and about the further cost and benefits of children and contraception. Moreover, most microeconomic formulations adopt a lifetime approach, in which couples make fertility decisions once and for all. Such a treatment of the fertility decision-making process and the underlying assumptions do not lend themselves to explaining unmet need. The following modification in conventional model specification can help explain the existence of unmet need (for a detailed discussion, see Bhushan 1995):

- Decision-making about fertility is a continuous, sequential process, not a static one made to last throughout life.
- People decide about fertility regulation on the basis of the *perceived*, rather than *actual*, costs and benefits to them, and on the *perceived* probability of conception. The implicit point here is that they do not have perfect information about contraception or about the probability of conception.
- Couples generally make the negative decision *not to conceive* rather than the positive choice *to conceive*.

² According to some estimates, the monetary cost of contraception accounts for less than one percent of the household budget of even in the poorest economies of the world (Lewis 1986; Pritchett 1994). There appears to be almost no disagreement in the literature over the fact that the economic costs of contraception—broadly defined to include both the direct and the time costs of contraception—are indeed very small in most settings. In fact, periodic abstinence methods do not cost anything at all in economic terms. In countries where government-sponsored family planning programs provide monetary incentives for contraception, the economic cost of contraception might in fact be negative.

Sequential Decision-Making

Conventional microeconomic models take a lifetime, or static view of fertility decisions. In other words, they rest on the assumption that couples enter the conjugal union with clear and fixed expectations from life and at that point make a one-time decision about the number of children they wish to have. That decision, it is assumed, holds good for the couples' lifetime. This assumption disregards the role of feedback from the experiences of life into decision-making and the evolution of reproductive decisions as life progresses. In fact, fertility decisions are made sequentially; a decision about the next birth depends, at least in part, upon the outcome of previous decisions and the success or failure experienced in carrying out those decisions. Factors such as the births and deaths of their children and the sex composition of surviving children can have a profound impact on a couple's fertility desire (Westoff 1991; Bankole and Westoff 1995; Ezech et al. 1996). Also, a couple's economic and social circumstances can change in unforeseeable ways. Viewing the decision-making process as sequential rather than as static is more realistic for the analysis of fertility decisions.

Another reason that the sequential decision-making framework is appropriate for understanding unmet need for family planning is that unmet need is a current-status measure and not a lifetime measure. Couples may go in and out of three stages during their reproductive lives: 1) they do not want to prevent a first or next birth (*no need*), 2) they want to prevent a next birth and use contraception (*met need*), and 3) they want to prevent a next birth but do not use contraception (*unmet need*). Static, or lifetime models may be useful for explaining the total number of unwanted births, but not for accounting for unmet need. In contrast, sequential models can easily explain why some couples *currently* have unmet need.

Perceived Cost of Contraception

Another shortcoming of the conventional microeconomic approach is that it takes into account only the economic cost of contraception. Such economic analysis either disregards entirely the noneconomic costs or subsumes them under the general rubric of "preferences" or "tastes." In either case, the role of noneconomic factors in causing unmet need is obscured. If, however, the costs are defined in a broad sense to include nonmonetary factors as well (as suggested by Easterlin 1975), the existence of unmet need can be better explained.

Fertility decisions derive from the perceived rather than actual costs of contraception and the perceived probability of conception. Unlike the actual economic cost, the perceived cost of contraception can be quite substantial and can entail sociological, psychological, and physiological costs³ (Bogue 1983; Schearer 1983). The perception of costs associated with contraceptive use depends upon the characteristics of a couple and their community. For example, for women whose husbands approve of family planning, the disutility associated with contraceptive use may be lower than that for those whose husbands do not approve. Similarly, educated women may know more about contraceptives and feel more confident in approaching service providers than poorly educated women. Consequently, the perceived costs of contraception may differ. A relatively high perceived cost of contraception—cost defined in broad terms to include health, sociological, and psychological considerations—may lead to unmet need.

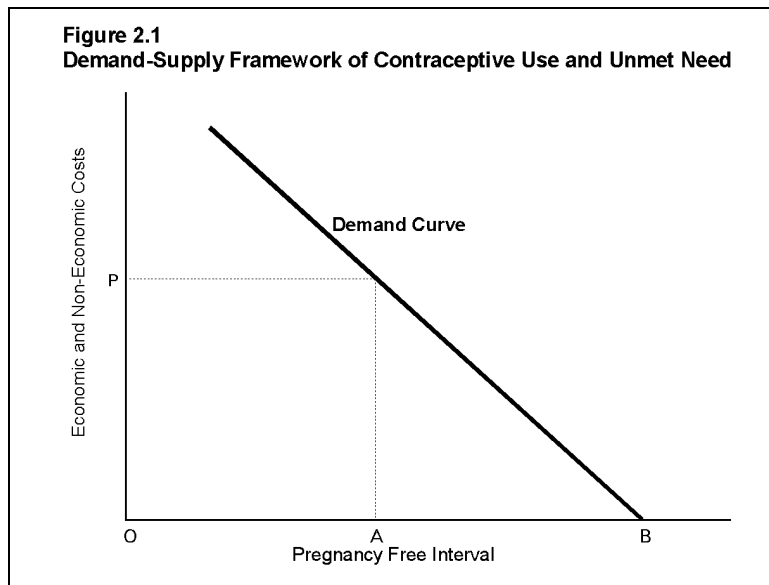
The perceived probability of conception also differs. Some women think that they are too young or too old to conceive. Some couples think that infrequent sexual intercourse does not lead to conception. If couples think that the probability of conception following unprotected intercourse is low, they are less likely to use contraceptives, even if they do not want children, and thus they will have unmet need.

Modeling Fertility Decisions

The conventional approach to fertility behavior draws upon neoclassical consumer theory, in which people choose to *acquire* goods that yield satisfaction. Microeconomic theory posits that couples decide to have a next child if the net

³ These noneconomic costs are not the same for all contraceptive methods. For example, the noneconomic costs associated with periodic abstinence are entirely different from those associated with voluntary sterilization or oral contraceptives. Furthermore, the perceived cost of a given contraceptive may be different for different couples. For example, the irreversibility of sterilization may be a more important factor for a couple who are ambivalent about future fertility than for a couple who definitely do not want any more children.

benefits of the than those of investments. seen, having a a good are not A consumer does become the owner good—say, a unless he to acquire it. situation in which acquires an unlikely. In active couple is child unless they something to



child are greater competing However, as can be child and acquiring parallel actions. not ordinarily of a consumer book—until and consciously decides Therefore a a consumer unwanted book is contrast, a sexually likely to have a actively do prevent it.

Clearly, fertility decisions are not parallel to the acquisition of goods, since the “default” conditions differ in the two situations. In fact, fertility decisions are analogous to membership in a book club in which a person automatically gets the “book of the month” by mail every month unless he explicitly communicates a refusal. In this case, a person might receive an unwanted book. Situations such as inertia, lack of information (for example, when was the last date for conveying refusal of the book?), or even the unavailability of postage stamps might lead to ownership of an unwanted book. Note that the factors affecting acquisition of a book in this situation work in the opposite direction from those under the conventional specification. For example, under the conventional specification lack of knowledge and inertia lead to a person’s not buying a book, whereas under the changed specifications these factors result in the ownership of an unwanted book.

The book-purchase analogy can be extended to parallel contraceptive failure and induced abortions. A person can receive a book even after conveying refusal, due to a factor such as postal mishandling (analogous to contraceptive failure). Similarly, he has the option of returning the book by incurring the additional expenditure of shipping and handling, if he is strongly against having the book. Modeling the decision to *avert* birth rather than *acquire* a child, therefore, seems to be a more appropriate specification for the analysis of reproductive behavior.

Theoretical Model of Unmet Need

With the above specifications, it is possible to formulate a more realistic microeconomic model for contraception and unmet need. Couples have a potential demand for contraception if they stand to gain in well-being by preventing a next birth for a certain period. Preventing a birth entails a cost. Couples choose that level of contraception at which the marginal gain in utility from preventing a next birth is equal to the marginal disutility of contraception. Note that the new specifications make it more appropriate to discuss demand for contraception rather than demand for children. The demand for contraception and unmet need can be conveniently illustrated with a modified demand-supply framework (Figure 2.1).

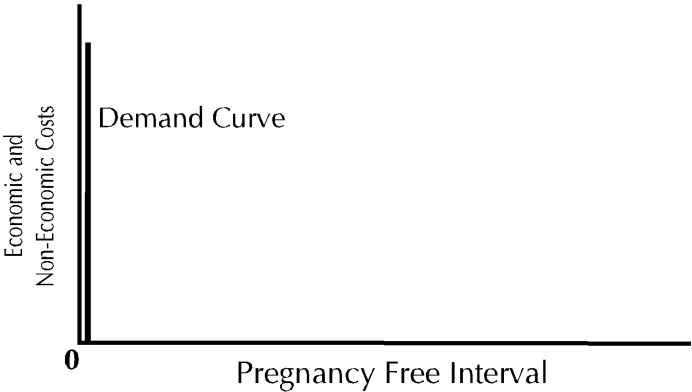
The demand for contraception is derived from the demand for preventing a birth, which may be conveniently quantified as a pregnancy-free interval. That demand is based on the economic framework that balances the expected returns of having an additional child at a certain time with the associated monetary and nonmonetary costs, given preferences, family resources, contraceptive methods available, perceived probability of conception, and prices (for a detailed derivation, see Bhushan 1995). The downward sloping demand curve for contraception indicates that, for this representative couple, the lower the perceived cost of contraception, the longer they will use contraception, other factors being equal. If contraception is perceived as being without costs, the couple will use contraceptives for duration OB. If, however, the perceived cost of contraception is positive—say, OP—the couple will use contraceptives for duration OA. The difference between the duration for hypothetical no-cost contraception and for actual contraception, AB, is *unmet need*.

It can be seen in this formulation that contraceptive use and unmet need are determined by the interplay of two factors: the slope or the shape of the demand curve and the perceived cost of contraception. The slope of the demand curve represents the motivation for fertility regulation, a steeper curve signifying relatively higher motivation. Three types of situations are represented in Figures 2.2a through 2.2c. Figures 2.2a and 2.2b represent couples with perfectly inelastic demand curves for avoiding the birth of a next child. However, there is an important difference between the two couples. Figure 2.2a represents a couple who do not want to delay the birth of a next child. In contrast, Figure 2.2b represents a couple who want to delay for a certain time, represented by L, irrespective of the cost. In other words, their demand differs greatly even though that demand is equally (and perfectly) inelastic. Clearly, in either of the cases, unmet need for contraception cannot exist. A third possibility, illustrated in Figure 2.2c, lies between the above two extremes. The demand curve is not perfectly inelastic and the perceived cost of contraception is greater than zero. The couple represented by the figure has unmet need.

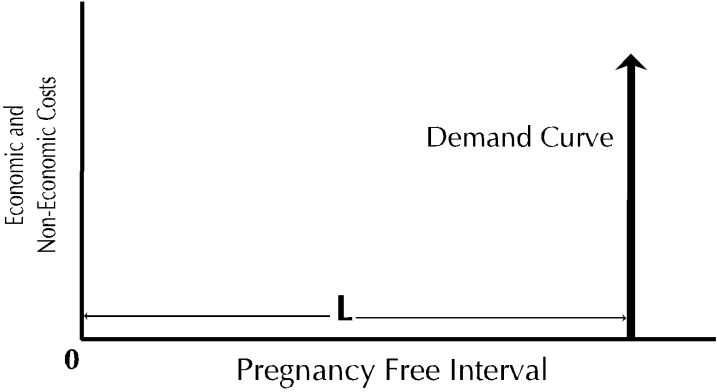
Thus, the framework suggests that unmet need exists when the following two conditions are met: the demand curve is not perfectly inelastic and the perceived cost of contraception is relatively high. The relative importance of the two conditions in determining the level of unmet need is an issue for empirical inquiry. In some situations, weak motivation may be the predominant reason for unmet need; in others, contraceptive costs may dominate decision-making. From a policy point of view, it is important to explore the contribution of the two conditions to the existence of unmet need. It is also useful to understand the factors that affect both perceived costs and motivation, and the efficacy of program interventions in influencing these factors. Empirical evidence related to some of these questions is discussed in detail in the following section.

Figure 2.2 Three Types of Demand for Contraception

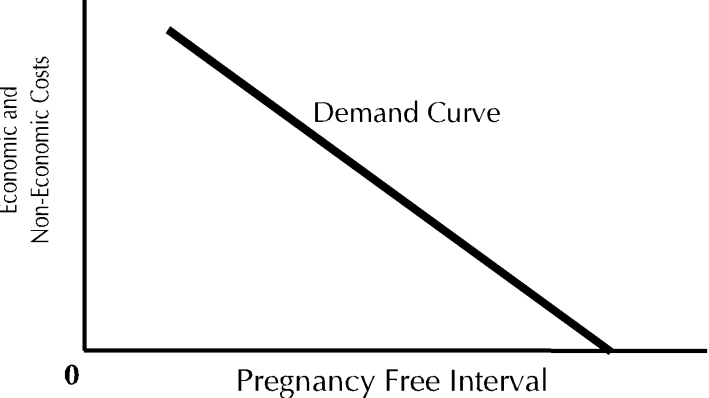
A.
Do not want to delay births.



B.
Want to delay next birth regardless of cost.



C.
Want to delay births depending on costs. Has unmet need.



Chapter III. Unmet Need: What Do Women Say?

Women with unmet need for family planning, by definition, want to avoid pregnancy, either for a finite time or indefinitely. Why, then, do they not use contraception? While it is difficult to understand the reasons completely, the first place to begin an analysis of the reasons for unmet need is in the views that women themselves express.

Demographic and Health Surveys conducted since 1990 ask women with unmet need who say they do not intend to use contraceptives what their principle reason is for not intending to do so. They do not, however, ask women with unmet need who *do* intend to use contraceptives why they are not already using them. Thus, the question is addressed to only a subset of women with unmet need.

The data regarding the principal reasons for unmet need have some serious limitations (Bongaarts and Bruce 1995; Westoff and Bankole 1995). Usually, a woman does not use contraception for multiple reasons; the DHS allow only one response. Furthermore, women often may not reveal the real reasons because of embarrassment, politeness, or other cultural constraints and instead substitute what they regard as more acceptable responses (Bongaarts and Bruce 1995; Casterline *et al.* 1995; Nag 1984).

These limitations notwithstanding, the responses do provide some indication of the factors that prevent women from practicing family planning even when they wish not to become pregnant. Table 3.1 (see page 10) presents the principal reasons given by women with unmet need for their lack of intention to use contraceptives. The data come from DHS conducted in 24 countries between 1990 and 1994 (Westoff and Bankole 1995).

The reasons that women with unmet need give most often for not intending to use contraception fall into three categories: (1) wants children; (2) lack of knowledge; and (3) disapproval of family planning. Together, these responses account for nearly two-thirds of all reasons given. Other reasons mentioned less frequently are fear of side effects and low risk of conception. The price of contraceptives and their unavailability are mentioned by a very small proportion of women.

The most common reason given by women with unmet need for not intending to use contraception is that they want more children. This response is inconsistent with these same women's statements, in answer to an earlier question, that they do not want another child now. Westoff and Bankole (1995) classify this apparently inconsistent reason as ambivalence about childbearing. This response comes chiefly from women who have unmet need for spacing and it may indicate ambivalence about the timing of the next child.

Disapproval of family planning consists of many subcategories such as respondent opposes, partner opposes, others oppose, and religion is against family planning. These categories together account for a substantial proportion of the reasons given by women for not intending to use contraception in most countries.

The pattern of reasons that women cite reveal considerable variation across regions and among countries. Lack of information is much more important in Latin America and sub-Saharan Africa than in other regions. Ambivalence toward future childbearing is particularly important in sub-Saharan Africa. Although in Kenya and the Philippines fear of side effects of contraception is the most frequently given reason for not intending to use, few women give this reason in answer to DHS questions in most other countries.

Table 3.1
Main Reasons Married Women with Unmet Need Do Not Intend to Use Contraception

Country	Total % Who Do Not Intend to Use*	% Total	Hard to Get	Costs Too Much	Side Effects	Health Concerns	Opposed to Family Planning	Partner Opposed	Religion Opposed	Others Opposed	Wants Children**	Lack of Knowledge	Fatalistic	Infrequent Sex	Difficult to Get Pregnant	Inconvenient	Other Reasons	Don't Know
Saharan Africa																		
Algeria	64.0	100	2.1	1.4	2.5	1.8	1.7	3.2	3.6	0.4	28.4	23.1	2.1	10.1	7.3	1.3	1.3	9.6
Angola	54.9	100	4.5	1.8	4.5	1.6	1.4	2.0	2.7	0.0	53.6	4.9	7.3	0.9	6.3	0.7	1.0	7.8
Burkina Faso	30.5	100	0.7	0.4	15.1	4.8	3.7	1.5	4.8	0.4	21.4	19.9	3.3	5.5	9.6	2.6	1.5	4.8
Cameroon	27.9	100	0.6	0.0	22.2	9.3	7.1	6.5	9.5	0.6	13.5	5.6	1.0	2.6	13.1	2.5	3.5	2.3
Cote d'Ivoire	35.5	100	0.8	2.6	3.6	4.3	2.2	2.2	1.4	1.2	31.2	29.8	1.4	1.5	5.2	7.1	3.3	1.9
Ethiopia	28.5	100	0.0	1.3	6.9	7.7	1.9	4.6	0.0	0.6	28.2	13.6	6.2	1.2	18.2	1.3	2.3	5.9
Ghana	48.4	100	0.9	0.0	3.1	7.1	3.7	2.0	2.4	0.0	44.1	16.7	0.5	0.5	6.2	0.0	3.8	9.0
Guinea	60.3	100	2.4	2.1	0.5	1.7	0.2	3.2	2.3	0.5	40.5	24.0	3.1	1.8	10.1	4.2	2.0	1.3
Guinea-Bissau	62.1	100	1.4	0.9	5.2	1.6	4.6	2.5	13.8	0.5	41.5	15.5	5.7	1.9	0.1	1.0	1.6	2.2
Kenya	21.9	100	0.0	0.4	17.1	8.3	0.4	4.5	5.1	0.9	21.5	4.8	8.2	5.0	11.1	2.9	7.5	2.0
Lesotho	50.3	100	0.4	0.2	3.9	2.8	4.3	3.9	12.3	0.9	34.0	12.5	11.6	1.3	4.3	2.2	1.3	4.1
Malawi	53.0	100	4.2	0.1	9.0	1.7	12.4	7.4	0.5	0.1	26.9	12.8	6.0	3.2	7.1	2.4	1.9	4.4
Mali	32.3	100	1.6	0.7	8.1	2.1	4.4	9.3	1.9	0.3	21.3	15.3	1.8	1.2	21.0	3.5	3.9	3.7
North Africa & Near East																		
Egypt	43.8	100	0.0	0.2	5.3	15.5	0.8	6.3	1.4	0.1	12.0	0.3	12.7	13.0	25.3	0.5	3.5	2.4
Iran	54.9	100	0.0	0.2	7.4	11.5	1.1	8.0	6.8	0.2	11.2	2.0	9.1	2.6	27.1	1.5	6.1	5.1
Italy	44.8	100	0.2	0.7	18.5	18.0	0.7	11.7	4.1	0.2	23.9	6.3	0.7	8.0	3.9	0.5	2.2	0.0
Jordan	37.0	100	1.1	0.4	5.0	3.1	0.4	4.9	6.9	0.0	14.0	4.3	5.4	12.5	32.6	1.6	3.7	4.0
Lebanon	21.5	100	0.0	0.0	7.3	10.0	0.0	15.2	17.5	1.1	7.3	2.5	7.6	8.0	14.3	0.0	4.8	4.3
Libya	56.3	100	0.6	1.9	6.6	15.4	3.6	11.3	0.5	2.1	21.3	9.2	3.2	4.7	11.5	1.1	1.6	5.4
Pakistan	74.1	100	0.5	0.9	5.6	2.3	1.7	11.3	18.1	0.1	30.3	11.5	3.3	1.4	7.1	0.3	2.4	3.0
Saudi Arabia	59.5	100	0.8	0.8	32.8	14.6	4.3	0.0	5.4	0.0	10.6	8.1	0.7	0.0	17.6	2.5	1.4	0.4
America & Caribbean																		
Argentina	45.5	100	2.0	1.7	8.6	18.4	4.5	3.3	6.3	0.0	2.6	34.2	0.0	6.0	4.9	0.6	2.4	4.5
Brazil	28.7	100	0.3	2.1	4.4	16.5	5.7	4.9	4.1	0.0	24.4	5.9	2.7	1.5	13.1	0.0	10.4	4.0
Colombia	26.2	100	0.6	2.3	5.3	15.5	0.8	6.2	1.6	0.8	2.2	16.6	5.2	8.0	13.4	0.8	15.7	4.7

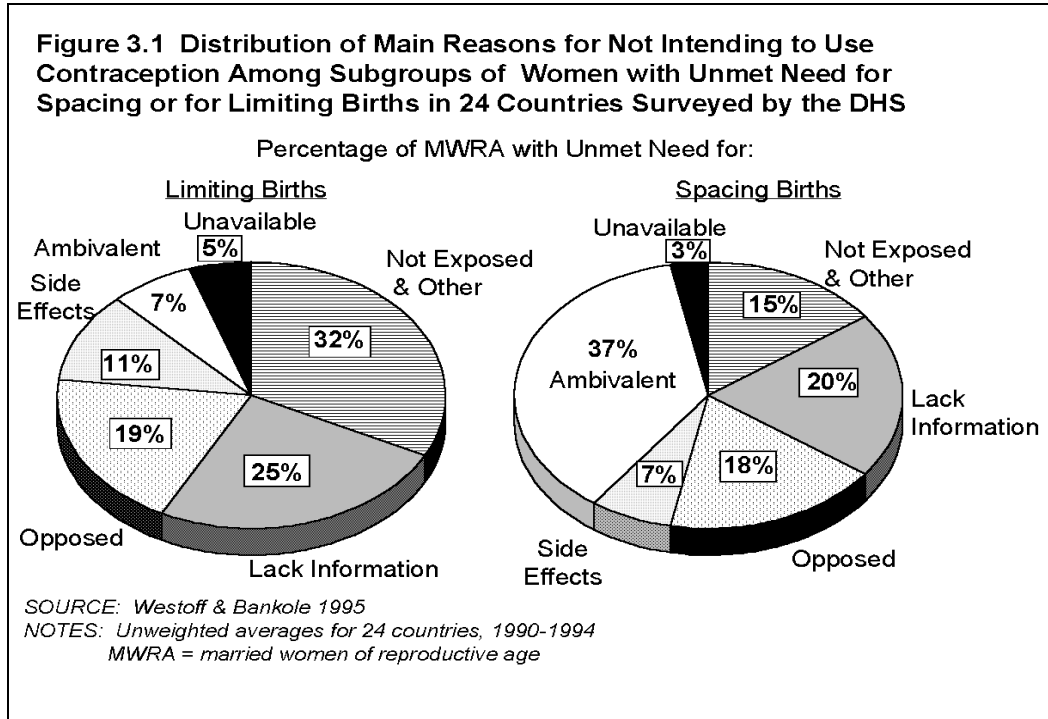
SOURCE: Demographic and Health Surveys 1990-1994

NOTES: *Among all married women with unmet need. Includes women who do not know their intention.

**Category includes women with unmet need for spacing births.

The reasons offered by women whose unmet need is for spacing births differ substantially from those cited by women whose unmet need is for limiting births (see Figure 3.1, page 11). Among women with unmet need for spacing, ambivalence about future childbearing is by far the most important reason for not intending to use contraception. In contrast, among women with unmet need for limiting, lack of exposure and lack of knowledge, ambivalence is the primary reason for only 7.

Thus, women who want to limit births appear to be more strongly motivated than potential spacers.



Note that the distribution of reasons discussed above applies only to women with unmet need *who do not intend to use a contraceptive*, a group that is a fraction of all women with an unmet need (see second column, Table 3.1). Women with unmet need give somewhat different answers when asked why they are not currently using contraception than when they are asked about their intentions. Women with unmet need were asked about their reasons for not *now* using contraception in DHS conducted before 1990. While lack of knowledge remains an important reason, fewer women cited ambivalence about childbearing or their own disapproval of family planning as their main reason for not using contraception. Instead, they were more likely to cite health concerns and husband's disapproval (Bongaarts and Bruce 1995). It is unclear why the reasons given by those not intending to use should differ from current non-users. Perhaps it is because the responses come from different sets of countries and surveys.

Unavailability of contraceptives is not cited as a major reason for unmet need. Lack of knowledge, however, may contribute to a high perceived cost of contraception. Familial and societal disapproval does play a major role. Further, there is evidence that a substantial proportion of unmet need may be due to lack of motivation—in other words, a highly elastic demand curve.

In the following discussion reasons for unmet need are analyzed in greater depth, using mostly DHS data. Since there are deficiencies in the information from direct questions about reasons for not intending to use contraception, data from other questions also are used for the analyses. Consistent with the theoretical microeconomic framework presented in the previous chapter, the reasons are divided into two categories: (1) those related to weak motivation, or highly elastic demand for avoiding pregnancy; and (2) those related to high perceived cost of contraception.

Chapter IV. Weak Motivation for Fertility Control

Couples have weak motivation for fertility regulation if their perceived benefits from preventing the birth of a next child are slight (i.e., they are indifferent about regulating fertility) or their perceived chances of conceiving are slight. As noted, a substantial proportion of unmet need can be attributed to these two categories of reasons (Casterline *et al.* 1995; Westoff and Bankole 1995).

Weak Fertility Preferences or Ambivalence About Future Childbearing

In answers to separate DHS questions, many women say that they do not want to be pregnant but also do not intend to use contraceptives because they want children. It is difficult to explain this apparent inconsistency since the surveys do not seek clarification from respondents. The inconsistency may reflect ambivalence about the desired timing of the birth of their next child, as Westoff and Bankole (1995) conclude. Alternatively, some women with unmet need for spacing may be under the impression that contraceptives can be used only for limiting family size and not for spacing. Other possible explanations include rationalization, courtesy bias, and misunderstanding the meaning of one or both relevant questions.

In their in-depth study in the Philippines, Casterline and colleagues (1995) found that weak fertility preference was a reason for unmet need, especially among potential spacers, but in itself explained only a small part of unmet need. Weakly held fertility preferences become a substantial obstacle to the adoption of contraception only when combined with other factors that discourage contraception, especially a husband's opposition.

In the DHS, ambivalence about future childbearing can be inferred not only from the apparently inconsistent responses about reasons for not intending to use family planning (as discussed above), but also from answers to questions about attitude towards pregnancy. In some DHS conducted between 1985 and 1990, respondents were asked whether they would be "happy, unhappy, or indifferent" if they became pregnant in the next few weeks. Women who are highly motivated to avoid the birth of the next child would be expected to be "unhappy" if they were to become pregnant.

The distribution of women with unmet need by their reported feelings about pregnancy is presented in Table 4.1 (on the next page). From 1% to 18% of women with an unmet need for limiting reported that they felt "happy" at the prospect of pregnancy. The corresponding figure for women with an unmet need for spacing is much higher; 24% to 50% said they would be "happy" to become pregnant. The responses suggest that these women's desire to avoid future childbearing is questionable. Perhaps the apparently contradictory responses reflect these women's relative ambivalence to future childbearing. Alternatively, some of these responses may reflect courtesy bias; it may not be socially acceptable to say that you would be unhappy to become pregnant. Nevertheless, a higher percentage of women with an unmet need for limiting appear to be strongly motivated to avoid pregnancy than women with an unmet need for spacing.

It appears, therefore, that weak motivation to avoid a next birth may explain a great deal of unmet need, especially among women with unmet need for spacing. Thus, unmet need statistics overestimate the number of women who currently are likely to use contraceptives even with better information, better services, or more choice of methods. Programs that increase motivation by promoting the benefits of small and well-spaced families are more likely to reach this group of women with unmet need.

Table 4.1

Unmet Need and Future Childbearing: Responses Among Women with Unmet Need About Becoming Pregnant in a Few Weeks

Country & Survey Date	Women with Unmet Need for Spacing			Women with Unmet Need for Limiting		
	Happy	Unhappy	Indifferent	Happy	Unhappy	Indifferent
Botswana 1988	30	59	11	7	89	4
Sri Lanka 1987	36	57	8	1	92	7
Thailand 1987	45	22	32	10	59	31

Egypt 1988	43	40	17	2	89	9
Morocco 1987	27	58	15	5	83	12
Bolivia 1989	25	53	21	5	85	10
Colombia 1986	50	31	19	10	78	12
Dominican Republic 1986	50	28	22	18	56	26
Guatemala 1987	48	19	33	14	67	18
Peru 1986	26	50	24	6	79	15
Trinidad & Tobago 1987	24	54	22	8	84	9

SOURCE: Demographic and Health Surveys, 1986-1988

Perceived Low Risk of Conception

If a woman believes that she faces little risk of becoming pregnant, she is unlikely to be highly motivated to use contraception. A woman may perceive her probability of conception to be low for several reasons, including infrequent sexual activity, low perceived fecundity, or lack of knowledge about the relationship between sexual intercourse and conception. This last reason is likely to be particularly important among adolescents.

Infrequent sexual activity and perceived low fertility are two of the main reasons that women with unmet need give in surveys for not using or not intending to use contraceptives. Older women with unmet need for limiting family size are particularly likely to believe that they face a low risk of pregnancy. Because they believe that they are unlikely to become pregnant, they do not think they need to use contraceptives. In some countries surveyed, particularly Egypt, Jordan, Turkey, and Zambia, one-fifth to one-third of women with unmet need who did not intend to use contraceptives perceived their risk of pregnancy as low. In the Philippines, Casterline and colleagues (1995) found that many women with an unmet need say that they rarely have sex, and many see themselves as too old to conceive easily.

Many young women are sexually active but do not use contraceptives because they think that: they are too young to get pregnant; cannot get pregnant from their first sexual intercourse; or infrequent sex does not lead to pregnancy (Boohene *et al.* 1991, Kane *et al.* 1993, Kiragu 1989, Makinwa-Adebusoye 1992; Tanko and Ekwempu 1994). For example, 13% of sexually active Kenyan high school-aged women did not use contraceptives because they thought they were too young to get pregnant, and 16% of high school-aged men thought that they were too young to make women pregnant (Kiragu 1989). Many young women and men know that sexual intercourse can cause pregnancy, and yet they do not use contraceptives because they think it will not happen to them (Zabin and Clark 1981). Such an attitude is aptly summed up by the statement of a Colombian teenager:

....many of my friends have had sex with their boyfriends and not one of them has become pregnant. I believe that my teachers and parents say that if you have sexual relations you get pregnant only to scare us and to keep us from having them. (Quoted in Yinger *et al.* 1992)

Thus the perception of low risk of pregnancy may be accurate for some women, particularly older women, and inaccurate for others, particularly younger women. Again, it appears that some proportion of the estimates of unmet need is artificial because it does not represent an actual need for contraceptives: Family planning programs need not be concerned with older women who are sexually inactive or infecund. Programs have much to offer, however, to young people who have unprotected sex because they think they are not at risk. Programs can educate young people about the chances and risks of getting pregnant and about sexually transmitted diseases (McCauley and Salter 1995).

Overestimated Unmet Need?

Estimates suggest that, on average, approximately one-third of reported unmet need among women who do not intend to use contraception can be discounted, since it is attributable to weak motivation for fertility control. Table 4.2 presents an estimate of this proportion for countries surveyed between 1990 and 1994. The table divides this apparently overestimated unmet need between women who are ambivalent about the birth of a next child and those who consider themselves not in need of contraception since they are not exposed to the risk of pregnancy.

The proportion of the first group is estimated on the assumption that conflicting answers to related survey questions indicate ambivalence or uncertainty about future decision making. Unweighted averaging of the responses about attitudes towards early pregnancy shows that 37% of women with an unmet need for spacing and 7% of those with an unmet need for limiting give conflicting answers and so may be ambivalent about future childbearing.

The proportion of women with unmet need who perceive themselves as having little or no risk of pregnancy consists of all women who do not intend to use contraceptives due to infrequent sexual intercourse or perceived low fertility. It is assumed that women who intend to use contraceptives do so because they consider themselves to be fecund and sexually active. Table 4.2 may overestimate the percentage of women who are not exposed, since some of these women may actually be at risk of conception. The overestimation cannot be sizable, however, since the total number of women in this category is small in most countries.

Table 4.2 shows that an estimated 20% to 40% of unmet need is due to weak motivation for fertility control in the countries surveyed between 1990 and 1994. In sub-Saharan African countries, weak motivation appears to be an especially common reason for unmet need, accounting for 40% of unmet need in Burkina Faso and Niger, and more than 30% in all the other countries except Madagascar. The weak motivation in these countries stems primarily from weak preferences about future childbearing. The average percentage of unmet need attributable to weak motivation is 24% in Latin American countries, 30% in Asian countries, and 33% in North Africa and Near Eastern countries. A substantial proportion (17-18%) of the women categorized as having unmet need in Egypt, Jordan, and Turkey report themselves to be sexually inactive or perceive themselves to be infecund. Thus, in these countries weak motivation arises not so much from an ambivalence to future childbearing but more from a perceived low risk of conception.

Table 4.2

Percentage of Unmet Need Due to the Lack of Motivation for Fertility Control in 27 Countries

Region & Country	Ambivalent About Future Child- Bearing*	Not Exposed to Risk of Pregnancy	Total
Africa			
Burkina Faso	29	11	40
Cameroon	30	4	34
Ghana	28	5	33
Kenya	26	4	30
Madagascar	23	2	25
Malawi	29	6	35
Namibia	27	3	30
Niger	33	7	40
Nigeria	30	1	31
Rwanda	26	4	30
Senegal	30	3	33
Sudan	28	8**	36
Tanzania	28	5	33
Zambia	29	7	36
Near East and North Africa			
Egypt	17	17	34
Jordan	21	18	39
Morocco	20	5	25
Turkey	17	17	34
Asia			
Bangladesh	24	5	29

Indonesia	24	9	33
Pakistan	23	6	29
Philippines	22	10	32
Latin America & Caribbean			
Bolivia	15	5	20
Colombia	18	4**	22
Dominican Republic	22	4	26
Paraguay	23	8**	31
Peru	16	6	22

SOURCE: Demographic and Health Surveys, 1990-1994

NOTES: *Assumes that overall, 37% of women with unmet need for spacing and 7% of women with unmet need for limiting are ambivalent about avoiding the birth of their next child. Percentages in this column reflect the mean values of the proportion of women with reported unmet need to limit or space births who also say that they would feel "happy" at becoming pregnant in the next few weeks.

**Comparable data for these countries were not available. Estimates are based on regional averages of the reasons for not intending to use contraceptives.

Chapter V. Perceived Cost of Contraception: An Overview

Use of contraception is not free. It entails both monetary and nonmonetary costs. Even if a woman wanted to prevent a next pregnancy, she would use contraceptives only if the disutility from using contraceptives were less than the welfare gain in avoiding the pregnancy. Thus, the perceived costs of fertility regulation may play an important role in reproductive decision-making.

Empirical analysis of the effect of contraceptive costs on unmet need is complicated by certain conceptual and measurement issues. How should contraceptive costs be defined? More important, how should they be measured? Measuring the monetary costs of contraception may be straightforward, but how should the nonmonetary costs be accounted for?

Many researchers have discussed at length definitions of the perceived costs of contraception (Bogue 1983; Hermalin 1983; Schearer 1983; Easterlin and Crimmins 1985; Robinson and Cleland 1992). On the basis of this substantial literature, the costs of contraception can be classified into three categories: economic costs; physiological and psychological costs; and social, familial, and personal costs, as shown below.

Components of the perceived cost of contraception can be categorized as follows:

Box 5.1: Classification of Perceived Costs of Contraception

1. Economic Costs

- Search and information acquisition
- Out-of-pocket cost
- Travel and time costs
- Recurrent follow up and revisit costs

2. Physiological and Psychological Costs

- Discomfort
- Fear of permanent or serious damage to health
- Anxiety over contraceptive failure
- Perceived irreversibility of method

3. Social, Familial, and Personal Costs

- Threat to social norms*
 - Nonconformity with religious and moral beliefs
 - Social disapproval and fear of sanction
- Threat to familial harmony*
 - Disharmony in the extended family
 - Need to communicate with spouse about sex
 - Spousal opposition to contraception
- Threat to personal adjustment*
 - "Loss of inner control"
 - Threat to sexual pleasure and spontaneity
 - Fear of approaching service providers
 - Violation of modesty and privacy in sexual matters
 - Contravention of expected gender role

Quantifying and measuring contraceptive costs for empirical analysis is difficult if not impossible. The lack of a common denominator for combining and comparing disparate cost components is one problem. In addition, some costs, such as those of limited availability and side effects, may vary with the contraceptive method, while others, such as social, familial, and personal, may be common to all methods.

Various indirect measures have been used in empirical research on the influence of perceived cost on reproductive behavior. In the literature, the knowledge of contraceptives, their availability, their perceived side effects, and societal and religious approval of contraception are some of the measures that are used to represent costs (Hermalin 1983).

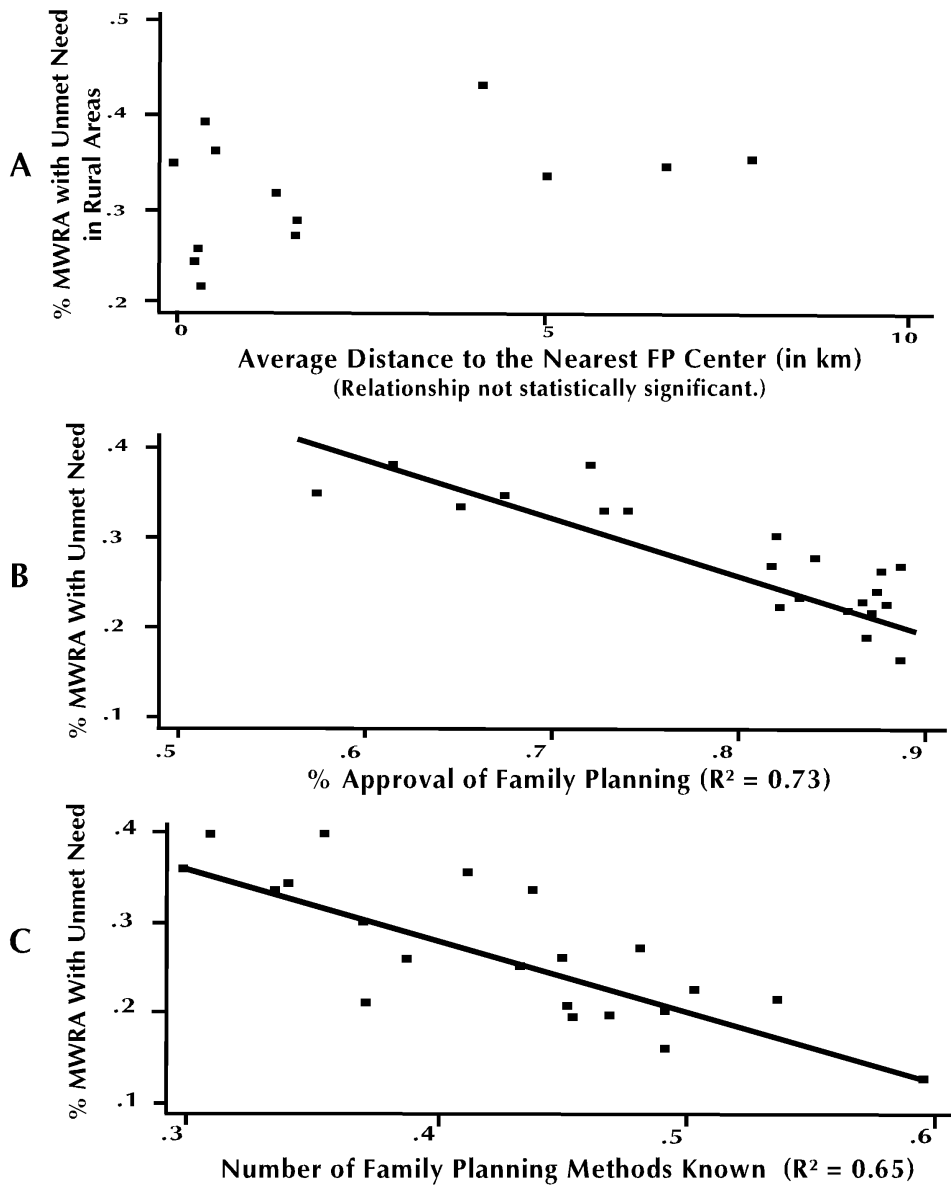
In general, two techniques have been used for analyzing the relationship between the perceived cost of contraception and unmet need. One technique is to create an index of perceived total cost, using varying measures for the different types of costs described above. Such an index could be used to study the response of unmet need to changes in cost. The other technique is to treat each of the different types of costs separately and examine the reproductive responses of couples to each type.

Several studies have developed an index of contraceptive costs. Easterlin and Crimmins (1985) use the number of contraceptive methods known by a woman as a proxy for the perceived cost of contraception. Their assumption is that women who know about a greater number of methods face a lower perceived cost of contraception. Similarly, in a study of rural Egypt using the 1988 DHS, Bhushan and Sirageldin (1995) constructed a variable representing “averseness to contraception” from certain characteristics of the respondents. The study is based on the assumption that perceived cost cannot be observed directly. People fall at various points on a continuum of the “averseness towards contraception,” with the extremes being “absolutely averse” and “not averse at all.” While the point where a person belongs on this continuum is not directly observable, it can be imputed by observing other responses of individuals that are closely related to their feelings towards contraception. These characteristics include their stated approval of contraception, their knowledge about contraception, and the extent of spousal communication about family planning. The factor analysis technique is then used to identify the factors representing the perceived cost of contraception that underlie these characteristics. The study shows that the index of perceived cost is significantly related to the level of unmet need. A decrease of 1 percent in the perceived cost index leads to a decrease of 0.2% in unmet need.

The above treatment combines the disparate components of contraceptive cost into one unit, facilitating an examination of the relative effects of fertility preferences (the “demand” factors) and the contraceptive costs (the “supply” factors) on reproductive behavior. However, the method may not be appropriate from a policy point of view, since a policy-maker might be more interested in knowing what types of costs influence unmet need and what possible interventions can effectively address these specific costs.

The disaggregation of costs also is important because the reproductive response of couples varies according to the different types of costs. Figures 5.1a, b, and c present data from the 1988 Egypt DHS that illustrate this point. These figures plot the prevalence of unmet need with respect to measures for three types of costs at the governorate level in rural Egypt. The measures of costs are: (a) the average distance to the nearest family planning service center; (b) the average level of approval of family planning; and (c) the average number of contraceptive methods known by residents. The average distance to the nearest family planning service center, which represents an aspect of the monetary cost of contraception, is *not* significantly related to the level of unmet need in rural Egypt. In contrast, approval of family planning and knowledge of contraceptive methods have statistically significant and negative relationships with unmet need. Although it is difficult to infer any causal relationships from these bivariate macro-level associations, they surely indicate that the various components of contraceptive costs have different relationships with unmet need.

Figure 5.1 Three Types of Contraceptive Cost, Governorate Level Data for Rural Areas, Egypt, 1988



SOURCE: Bhushan 1995.

In the subsequent analysis, the effects of different types of costs on unmet need are examined separately. The findings of various studies on costs are summarized, and additional data are presented to reach more specific conclusions. The discussion is limited by the data available and, therefore, does not exactly follow the typology of costs presented in Box 5.1. The different types of perceived costs examined in the next three chapters are:

- Costs related to availability,
- Costs related to health concerns and fear of side effects,
- Costs related to social, cultural, or familial disapproval of family planning.

Chapter VI. Perceived Cost of Contraception: Availability of Family Planning Services

Widespread availability of contraceptives reduces the economic costs of contraception to the user. Therefore, unmet need would be expected to decrease with an increase in the availability of contraceptives. The empirical validation of this evidently simple proposition turns out, however, to be fairly complex. One of the difficulties lies in the definition and measurement of availability. Four major components of availability identified in earlier work are economic, geographic, qualitative, and cognitive (Jones 1989; Bruce 1990).

The *economic* and *geographic* aspects of service availability relate to constraints of financial cost and physical access and can be quantified with relative ease. Moreover, both economic and geographic aspects of services can be reduced to the same denominator, since geographic access can be treated in economic terms as travel costs and opportunity costs. Such quantifiable costs of using services include the price of the contraceptives, the opportunity cost of the time involved in travel and waiting, and the direct travel costs.

In contrast, *qualitative* aspects of availability are, almost by definition, difficult to quantify, since they relate to the type of services and when and how they are available. Access to services has little meaning unless it is known just what services are actually offered. Also, service quality varies enormously. Similarly, *cognitive* availability refers to the knowledge people must have about contraceptive methods and services in order to be able to use the service. Cognitive availability is a precursor to the actual use of the services.

The evidence from countries with sufficient data suggests that economic and geographic availability of contraceptives do not significantly influence unmet need. In contrast, the qualitative and cognitive aspects of availability appear to be very significant determinants.

Geographical and Physical Availability

Only a handful of recent studies explore the relationship between geographic availability of services and unmet need, with all concluding that geographic availability of services does not have much influence. While geographic access may have been important in the 1970s and 1980s, it is clearly less so in the 1990s. For example, Bongaarts and Bruce (1995) show in their cross-national analysis that distance to the nearest family planning service center is not a major determinant of unmet need. Similarly, Casterline and colleagues (1995) find that in the Philippines contraceptive users are not different from women with unmet need in terms of their access to family planning services. A similar conclusion can be drawn from data on rural Egypt (Bushan 1995) (see Figure 5.1, page 19).

While only a few studies explore the influence of contraceptive availability on unmet need, numerous studies have addressed the relationship between availability of contraceptives and their use. These studies suggest the following relationship between availability and unmet need: If availability of services does not influence contraceptive use, it cannot affect unmet need. In contrast, if availability does affect contraceptive use, an increase in contraceptive use would decrease unmet need unless the improvement in availability also increases demand.

Most of the research relating availability and contraceptive use draws on the data from World Fertility Surveys (WFS) and DHS, which included questions for individual respondents about the *perceived* availability of services. In addition, some of these surveys collect community-level information to assess the *actual* availability of services. Much of the research using these data focuses on the economic and physical availability of services, taking the distance or travel time to the nearest service center or the price of contraceptives as proxies for the availability of services (Schwartz *et al.* 1989; Schultz 1991; Tsui and Ochoa 1992). The findings from some of these studies published since 1985 are summarized in Appendix C.

The results generally show that the physical and economic availability of services has a statistically significant effect on contraceptive use, but the influence is usually small from the policy point of view. Factors such as the price of

contraceptives and the distance and travel time to the nearest service center do not appear to be major determinants of contraceptive use and, therefore, would not much influence unmet need.

Since the economic cost of contraceptives accounts for a small proportion of the total household budget, it is consistent with microeconomic theory that prices should have a modest impact on the use of contraceptives and on unmet need. According to consumer theory, the demand for a consumer good is relatively price-inelastic if the total expenditure on its consumption is a small part of the household budget. A classical parallel example is the price equals elasticity of salt. It is not difficult to predict that a change in the price of salt would have only a slight effect on its consumption, given its low cost relative to the household budget. It seems plausible to assume that many households would not have an “unmet need” for salt because of its price. In contrast, the demand for salt might be considerably influenced by people’s perceptions about its ill effects on health.

Similar reasoning can be applied to other variables such as distance and travel time to service centers. If the density of service centers is already quite high (and thus the cost of access low), as is the case in much of South America, North Africa, and Asia, a slight change in travel time or in the opportunity cost of using the services will have a relatively small effect on their level of utilization. Thus, the availability of services, as measured by the distance to service centers, will not be a major factor in determining unmet need. If service centers are sparsely located, as is the case in most of sub-Saharan Africa, the distance and travel time may influence unmet need. However, there is no documented consistent evidence in this regard. Even in such cases, the distance would be a major determinant of unmet need only if travel costs and opportunity cost of travel time constitute a substantial portion of the household budget.

Therefore, access to services, as measured by the distance or travel time to the nearest service center, probably has either no relationship or at most a weak relationship with unmet need. This finding also helps explain why many women do not use a family planning service center that is the closest to their homes: 38% of female family planning users in Nigeria, 24% in Peru, and 51% in Ghana, for example, do not use the service points closest to their homes (Bongaarts & Bruce 1995). Similarly, in Egypt 42% of women use family planning services that are located outside their communities (Bongaarts and Bruce 1995). The main reason that women gave for not using the nearest service centers was their lack of high-quality services. Clients tend to go to service centers that offer better and wider choices of services (Sayed 1991).

Qualitative Aspects of Availability

Family planning services vary enormously in quality. An analysis of service availability is not meaningful, therefore, unless the content, range, and the mode of delivery of such services also are considered. The range and quality of services may be more important determinants of contraceptive behavior than proximity of a service facility.

Defining and quantifying the quality of family planning services has received much attention in the literature. For example, Judith Bruce includes six components in quality of service: (1) choice of methods; (2) information given to clients; (3) technical competence of providers; (4) proper counseling; (5) follow-up and continuity mechanisms; and (6) an appropriate “constellation” of services (Bruce 1990). Research undertaken to explore the influence of these components on reproductive behavior has focused primarily on contraceptive use rather than unmet need.

Better information about contraceptives and appropriate counseling (Bruce’s second and fourth components of quality) help recruit new contraceptive users and discourage discontinuation. Gallen and colleagues (1987), among others, report that, in various studies, counseling and expanded client education are consistently associated with greater adoption and longer use of family planning.

Expanding the choice of contraceptives (Bruce’s first component of quality) unequivocally raises contraceptive prevalence, often by meeting unmet need (Berelson and Freedman 1976; Phillips *et al.* 1988; Pariani *et al.* 1991; Foreit 1991). Berelson and Freedman studied the effect of adding a new contraceptive method on contraceptive prevalence in five countries: Hong Kong, India, South Korea, Taiwan, and Thailand. The introduction of each new contraceptive method resulted in a net increase in contraceptive prevalence by meeting the existing latent demand for contraception, i.e., unmet need. Similarly, broadening the choice of contraceptive methods increased contraceptive prevalence in the

Matlab area of Bangladesh in a very short time. The provision of injectables in early 1977 raised contraceptive prevalence from 7% to 20%, and the introduction of tubal ligation in 1988 was associated with an increase in contraceptive prevalence of 10 percentage points. These sharp gains in contraceptive prevalence cannot be explained on the basis of changes in fertility preferences or demand, but rather they are attributable to “the existence of accumulated unmet need” and the program's ability to meet such need by providing appropriate methods (Phillips *et al.* 1988).

In a study of 72 countries, Jain (1989) found that contraceptive prevalence is higher in countries offering many contraceptive methods than in those with only one or two methods. Contraceptive prevalence is 12 percentage points higher for each additional contraceptive method available, controlling for the level of socioeconomic development.

Why does expansion of contraceptive choice increase contraceptive use? Each contraceptive method has a different perceived cost associated with it. Some contraceptives (e.g., pills) may have a high recurrent monetary cost, while others (e.g., IUDs) may have high initial costs. The nonmonetary costs of different methods also vary. For example, many societies associate much higher social costs with permanent methods (i.e., sterilization) than with temporary methods. Moreover, different potential users have different perceptions of a method's costs. Some people want to space the next birth, while others want to limit the size of their families and have no more children. Thus, whether one uses a contraceptive method depends upon the fit between fertility preferences and the available choices, from which the couples choose the option with the least net cost. Expansion of choice provides different cost-options to users and thus satisfies a wider range of fertility preferences. In other words, a wider choice of contraceptives increases a couple's likelihood of finding a low-cost contraceptive method for a given fertility preference. Similarly, the introduction of new methods also decreases overall contraceptive discontinuation, since it provides options for switching to a more acceptable method.

The main conclusion from the foregoing discussion is that, although unmet need does not respond appreciably to physical and economic availability of contraceptives, it does respond to the quality of services in important ways. This conclusion has been based thus far mostly on studies that explore the relationship between the availability of services and contraceptive use. The conclusion drawn from these studies is confirmed by directly analyzing data on unmet need from 47 countries.

This analysis explores the relationship between unmet need and the strength of various components of family planning program inputs, including the quality of care. It treats unmet need as a dependent variable and explains its variance on the basis of the various components of family planning program effort and socioeconomic development.

There is one problem, however, in treating unmet need as a dependent variable. Unmet need is best understood in relation to potential total demand, or motivation for fertility regulation. Potential total demand for contraception is the sum of unmet need, contraceptive use, and contraceptive failure. The fraction of potential demand unmet is estimated by dividing unmet need by potential demand. Unmet need can be low in two entirely different settings: (1) in places where motivation for fertility regulation is low; and (2) in places where motivation for fertility regulation is high but it is easy to implement one's preferences. For example, Niger and Bangladesh have almost the same levels of unmet need (18.7% and 18.0%, respectively), but the two countries are at very different stages in the fertility transition. In Bangladesh 64% of women do not want another child, while in Niger only 23.1% of women want to prevent another pregnancy. A higher percentage of women in Bangladesh (72%) have been able to implement their fertility preferences than in Niger (20%). Comparable levels of unmet need, as a proportion of all married women of reproductive age, conceal the great difference in these two countries seen when women with unmet need are considered as a proportion of all those who want to prevent another pregnancy.

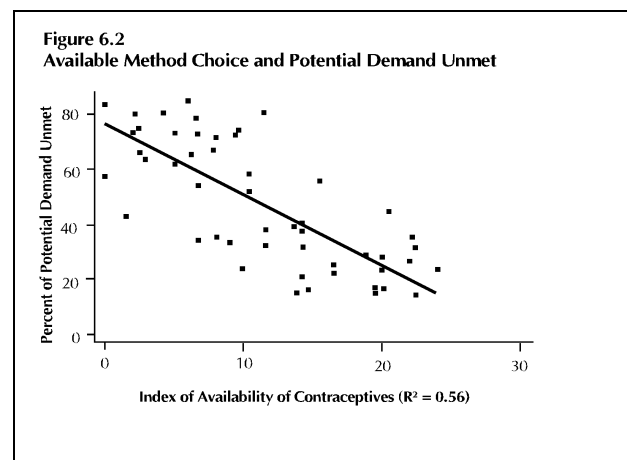
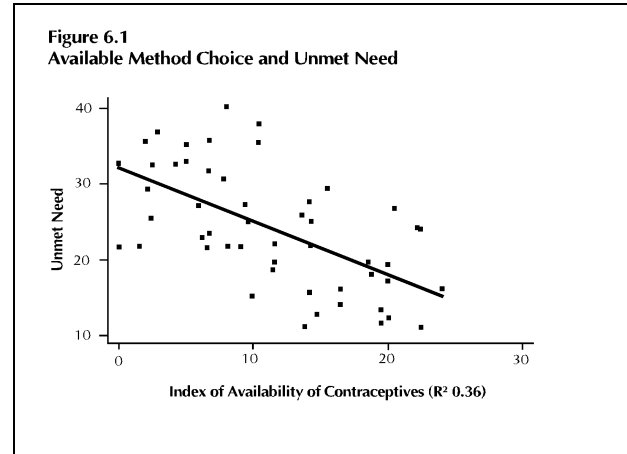
To avoid such misleading comparisons, the present analysis will be undertaken using the proportion of potential demand that is unmet as the dependent variable. The values of these variables are taken from DHS conducted between 1986 and 1994 (Westoff and Ochoa 1991; Westoff and Bankole 1995).

Family planning program inputs and levels of socioeconomic development are the explanatory variables in the analysis. The data for the program inputs are taken from a study of 1989 family planning program effort by Mauldin and Ross

(1991). Building on the work of Lapham and Mauldin (1972, 1984, 1985), the authors estimate scores for 30 indicators of family planning effort in 103 developing countries. The indicators are grouped by aspects of program effort: (a) policy and stage-setting activities; (b) service and service-related activities; (c) record-keeping and evaluation; and (d) availability and accessibility of contraceptives. The analysis examines separately the relationship of each of these four groups to levels of unmet need as a proportion of potential total demand.

The policy and stage-setting component consists of eight indicators of program inputs related to government policies, laws regarding family planning programs, in-country budget, and leadership of the program. The service and service-related component consists of 13 indicators related to types of service delivery systems (home visits, postpartum, social marketing, etc.), involvement of private agencies, administrative set-up, and management of programs. The record-keeping and evaluation component consists of indicators about the management information system and its use for improvement in program delivery.

The availability and accessibility component of the program effort scores indicates the availability of six fertility regulation methods: male and female sterilization, IUD, pills, condom, and induced abortion. A 5-point index is used to assess the availability of each method, a score of zero indicating that the method is not available and a score of 4 indicating its widespread availability in the country. Availability and accessibility scores are based on the subjective evaluations of experts in the field. A maximum score of 24 indicates that all six methods are widely available. This approach does not necessarily indicate, however, that all couples have equal and easy access to all of these methods. The approach also underplays within-country and between-community variations in the accessibility of contraceptives (see Hermalin and Entwisle 1985 for details). Furthermore, the index does not take into account some new and increasingly popular methods such as injectables and *Norplant*® implants. Nevertheless, it *does* provide a relative measure of range of method choice and availability.



Since the level of socio-economic development influences reproductive behavior in important ways, the analysis controls for this factor. Average per capita income has conventionally represented the level of socio-economic development. It has been argued lately that indicators of development should also incorporate social aspects related to the quality of human life, such as education and health. Accordingly, the United Nations has developed the Human Development Index (HDI) consisting of three aspects of socioeconomic development: *longevity*, as measured by life expectancy at birth; *knowledge*, as measured by a combination of adult literacy and mean years of schooling; and *standard of living*, as measured by real GDP per capita, adjusted for purchasing power (United Nations 1990). The present analysis uses the 1990 estimates of the HDI as the variable representing socioeconomic development.

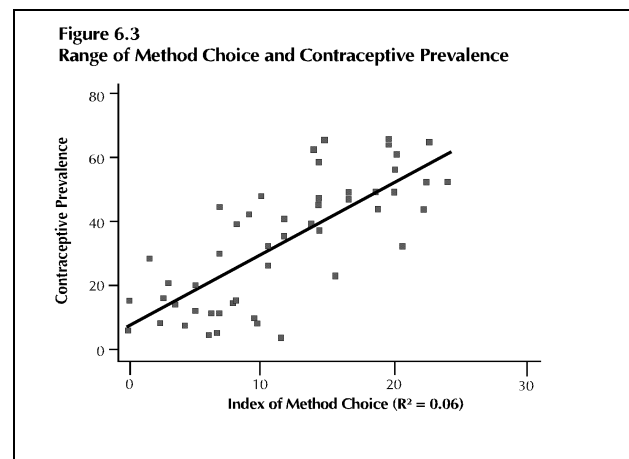
The relationships between method choice on one hand and, on the other, unmet need, the percentage of potential demand unmet, and contraceptive prevalence are depicted in Figures 6.1, 6.2, and 6.3, respectively. Range of method choice is negatively related to both unmet need and the percent of potential demand unmet (Figures 6.1 and 6.2). The bivariate

relationship between the range of method choice and unmet need as a percentage of married women of reproductive age (Figure 6.1) has an R^2 of 0.36, which indicates a moderate statistical fit between the two variables. Clearly, many other factors influence unmet need. As discussed, the level of demand is one of the factors that explain unmet need. The relationship between the range of method choice and the percentage of potential total demand unmet (Figure 6.2) implicitly controls for the varying levels of potential total demand in different countries. As expected, under these conditions the range of method choice explains a much larger proportion of the variance in unmet need ($R^2=0.56$).

As expected, and as shown in many other studies, the availability of a wide range of contraceptive methods is positively related to contraceptive prevalence (Table 6.1), both with controls for economic development (columns 1a) and without (columns 2b). The estimated correlation coefficient of the range of method-choice is 2.27. Although different from the estimate of 2.95 obtained by Jain (1989), the two estimates are close even though the two studies use data from different sets of countries and time periods. This study uses the family planning program index for the year 1989, while Jain uses 1982 figures. Family planning programs have become much stronger during the 1980s in almost every region of the world. Overall, there has been a 13% increase in scores for availability and accessibility (range of method choice) between 1982 and 1989. Contraceptive availability has increased in all the countries included in this analysis. As programs mature, the incremental effect of the marginal improvement in the availability of methods is likely to diminish. In other words, an increase from two to three methods has more impact than an increase from six to seven. Therefore, it seems plausible that coefficient estimates are lower in this analysis than in Jain's study.

Table 6.1
The Effect of Contraceptive Availability on Unmet Need and Contraceptive Use

Dependent Variable	Unmet Need		Percent of Potential Demand Unmet		Contraceptive Use	
	1a	2b	1a	2b	1a	2b
Availability	-.70 (- 5.27)	-.44 (- 2.29)	- 2.53 (- 7.97)	-.93 (- 2.63)	2.27 (8.49)	.82 (2.94)
Human Development Index (HDI)*	-	- 11.32 (- 1.87)	-	- 68.66 (- 6.13)	-	62.32 (7.09)



Constant	32.09 (18.27)	34.06 (16.94)	75.76 (18.09)	87.69 (23.59)	7.81 (2.22)	- 3.02 (- 1.03)
R ²	0.36	0.41	0.56	0.76	.60	0.80

NOTES: All calculations by Bhushan.

1a = Without control of socioeconomic development

2b = Controlling for socioeconomic development

* Human Development Index (HDI) based on United Nations 1990

() = t-statistic

(N = 47)

A comparison of the coefficients in the bivariate regression analysis is interesting from a policy point of view. An increase of one point in the range of method choice index that indicates availability is associated with an increase of about 2.27 percentage points in contraceptive use, a decrease of 0.7 percentage points in unmet need, and a decrease of 2.53 percentage points in the percentage of potential unmet demand. The relatively smaller coefficient in the bivariate relationship between availability and unmet need appears to result from the positive association of increased method choice with potential demand.⁴ It may be more revealing to consider the relationship between range of availability and percentage of potential demand unmet, since this controls for such confounding. The widespread availability of one additional method in a country (4 points on the method choice index) would be associated with an increase of 9 percentage points in contraceptive prevalence and a decrease of 10 percentage points in the percentage of potential demand unmet. With potential demand held constant, this translates into a decrease of 5.9 percentage points in unmet need.⁵

Interestingly, the other three components of program effort—policy and stage-setting, service and service-related activities, and record-keeping and evaluation—were not found to be associated with unmet need, percentage of potential demand unmet, or contraceptive use, whether treated separately and included in the model one at a time or included as a group by combining their scores. They also do not reduce the effect of the method-choice index on unmet need or on percentage of potential demand unmet. The results of the analysis are given in Appendix D. These results are consistent with Jain's findings on the effect of family planning program effort on contraceptive use (Jain 1989).

It is surprising to find that the program effort component related to service and related activities—which covers the types of delivery systems available, such as social marketing, community-based, and postpartum programs—is not related to unmet need. It might be expected that this component would be negatively related to unmet need, since it represents an aspect of the physical reach of family planning programs. However, it appears that quality, rather than mere physical presence of services, is more important for meeting unmet need.

Socioeconomic development affects reproductive behavior by influencing fertility preferences and the capability of people to adopt contraception. Since the countries included in the analysis are at different levels of development, the bivariate relationship between the method-choice index and unmet need may not represent the true strength of the relationship. Therefore, the influence of range of method choice on unmet need is now assessed, while controlling for the socioeconomic development of countries. As discussed, the HDI is used to estimate the independent effect of the range of method choice on unmet need. The results of the analysis are presented in column 2b of Table 6.1.

The results suggest that controlling for socioeconomic development reduces the strength of the relationship between range of method choice on one hand and unmet need or percentage of potential demand unmet on the other, but the relationship remains statistically significant. With control for socioeconomic development, the estimated coefficients suggest that widespread availability of an additional contraceptive method will lead to an increase in contraceptive

⁴ Other things being equal, increase in contraceptive use decreases unmet need, whereas increase in potential demand increases unmet need. Since range of method choice is associated positively with contraceptive use and negatively with unmet need, the relationship between unmet need and range of method choice represents the counteracting effects of the two relationships.

⁵ Average level of potential total demand is 59% in the countries included for analysis.

prevalence of 3.3 percentage points (.82 x 4 points on the method choice index). Of this increase, more than half (1.8 percentage points) comes from meeting unmet need. From this analysis, it can be concluded that expansion of contraceptive choices should be one strategy for meeting unmet need.

Cognitive Aspects of Availability

Obviously, couples must know about contraceptives and where to obtain them in order to use available services. Lack of knowledge about contraceptives is one of the most important reasons for unmet need (see Figure 3.1, page 11). Westoff and Bankole (1995) find this factor to be prominent in almost all sub-Saharan countries and in many others outside that region. They conclude that lack of knowledge is a critical cause of unmet need in countries with low contraceptive prevalence and even in some countries with high levels of contraceptive prevalence, such as Peru and Bolivia.

People make decisions on the basis of their perceptions about, rather than the actual, availability of services. They can use services only if they know about them, their location, and their hours of service. Teachman and colleagues (1983) found that the perceived availability of contraceptives played a major role in determining unmet need in South Korea and Mexico. In South Korea, among women who perceived that contraceptives were not available, 85% had unmet need for limiting compared with only 42% to 46% with unmet need among women who know of a source of contraceptives. The corresponding figures for Mexico were 77% and 47% to 49%. The effect of the perceived availability of contraceptives on unmet need was stronger than that of education and rural-urban residence. We present here some additional empirical evidence on the effect of the cognitive aspect of availability on unmet need.

One problem in studying the relationship between knowledge of contraceptives and unmet need is the definition of knowledge. What does knowledge of contraceptives mean? In DHS and its precursors, “knowledge” means being able to name or, when prompted, being able to recognize the name of a method, and nothing more. Many women counted as having knowledge of a method may have heard about it but still not know how to use it or where to get it. Categorizing respondents into two groups, according to whether or not they have knowledge of contraceptives, conceals wide variation in the quality of that knowledge from nonexistent to extremely detailed. Various definitions of knowledge have been used in the population literature to compensate for this variation. For example, Bongaarts and Bruce (1995) create a knowledge index that combines the ability to identify and spontaneously mention the name of a modern contraceptive, knowledge about its source, and opinion about its side effects.

The present study defines knowledge as the number of contraceptive methods known by the respondent. The rationale for using this definition is that awareness about not just one or two methods but about a wide range of contraceptives is essential for informed choice. With knowledge about a wider range of contraceptives, a woman can more easily select a contraceptive appropriate for her life-cycle stage and acceptable to her partner. Knowledge of a variety of methods also ensures that she can more easily switch to another method should she become dissatisfied with her current method.

Table 6.2 presents the level of unmet need and potential demand unmet among women with three different levels of knowledge about contraceptive methods: those who know fewer than four contraceptive methods; those who know between four and six methods; and those who know more than six methods. The data show a clear pattern: the proportion of potential demand unmet is consistently lower in groups who know more contraceptive methods. For example, in Turkey 77% of the potential demand is not met among women who know about “fewer than four” contraceptive methods. The percentage falls to 45 and 21, respectively, among women who know about “four to six” methods and about “more than six methods.”

Table 6.2
Level of Unmet Need and Potential Demand Unmet by Number of Contraceptive Methods Known

% Unmet Need		% Potential Demand Unmet			
<u>Number of Methods Known</u>					
0-3	4-6	More than 6	0-3	4-6	More than 6

Africa						
Botswana 1988	27	29	22	73	49	33
Ghana 1994	34	43	33	52	45	33
Kenya 1993	32	42	32	83	73	53
Madagascar 1992	35	33	21	88	74	50
Malawi 1992	32	35	39	77	53	47
Rwanda 1992	38	40	38	55	43	36
Zambia 1992	29	31	32	74	50	42
Asia						
Indonesia 1987	20	16	9	39	24	11
Indonesia 1991	18	14	8	87	60	32
Pakistan 1991/92	30	34	29	83	69	51
Philippines 1993	39	32	24	94	70	39
Sri Lanka 1987	22	16	9	65	32	14
Thailand 1987	20	12	9	45	23	13
Latin America						
Bolivia 1989	45	30	16	75	44	21
Brazil 1986	32	18	8	44	23	10
Colombia 1986	23	21	9	39	31	11
Dominican Republic 1986	26	26	16	49	37	22
Dominican Republic 1991	35	26	14	93	74	44
Ecuador 1987	36	27	13	59	38	18
El Salvador 1985	40	28	18	91	48	24
Guatemala 1987	35	29	17	71	40	21
Peru 1986	49	28	12	62	38	17
Trinidad and Tobago 1987	17	17	12	37	28	17
Near East & North Africa						
Egypt 1988/89	29	26	15	43	32	18
Morocco 1987	27	23	17	40	27	20
Morocco 1992	26	22	15	77	49	26
Tunisia 1988	28	24	13	70	42	19
Turkey 1992	21	13	8	77	45	21

SOURCE: Demographic and Health Surveys 1985-1994

A similar pattern is observed for unmet need, but the relationship is not consistent across all countries. In all the surveyed countries outside sub-Saharan Africa and Pakistan, unmet need decreases with increases in the number of contraceptive methods known. There is no clear pattern in most of the surveyed sub-Saharan African countries and Pakistan, although women who know about more than six methods generally have the lowest unmet need.

These results suggest a negative relationship between knowledge of contraceptives and unmet need. This evidence, however, should be interpreted with caution. It cannot be directly inferred that greater knowledge of contraceptives leads to lower unmet need. There are two potential problems in such an inference. First, there may be other underlying factors, such as education and urban residence, which both increase knowledge about contraceptives and decrease unmet need. If so, the observed relationship between knowledge of contraceptives and unmet need could be merely a manifestation of that underlying relationship. This problem can be partially overcome by controlling for some of these factors. Accordingly, we estimate the distribution of unmet need by knowledge of contraceptives only for rural women with no education. The patterns of unmet need and potential demand unmet remain unchanged (see Table 6.3).

Table 6.3
Knowledge of Contraceptive Methods and Unmet Need Among Rural Women with No Education

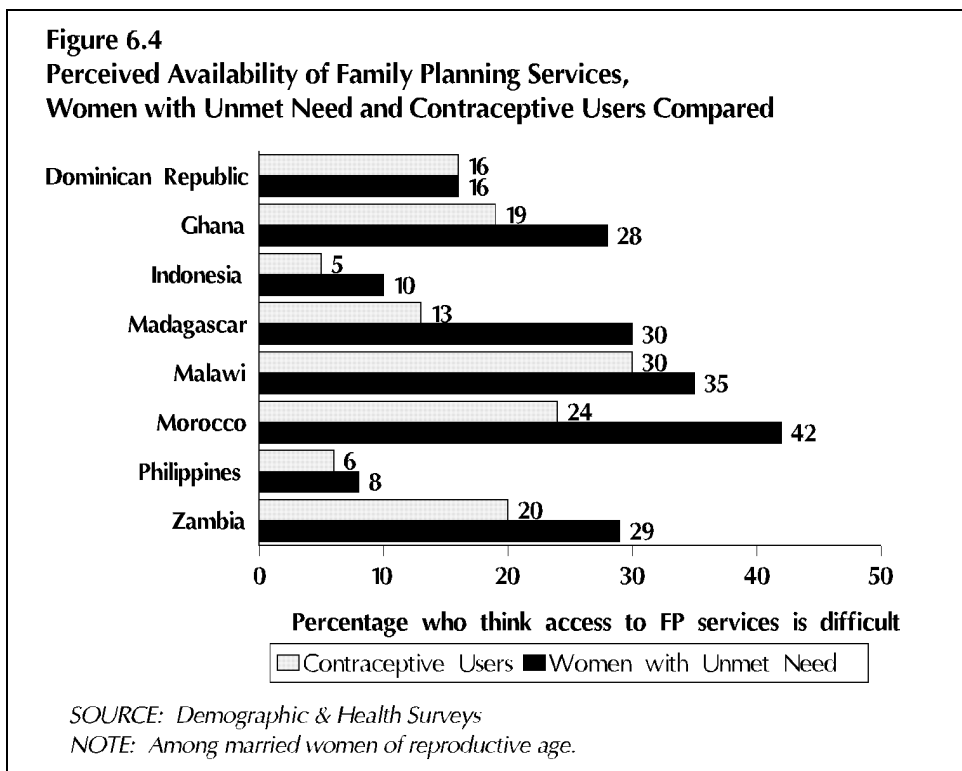
	% With Unmet Need by Number of Methods Known		
	0-3	4-6	More than 6
Africa			
Botswana 1988	30	56	14
Ghana 1994	31	41	39
Kenya 1993	31	39	33
Rwanda 1992	34	43	45
Zambia 1992	31	28	28
Asia			
Indonesia 1991	18	14	8
Pakistan 1991/92	30	34	30
Sri Lanka 1987	31	54	15
Latin America			
Bolivia 1989	92	7	1
Dominican Republic 1986	46	36	18
Dominican Republic 1991	35	26	14
Ecuador 1987	71	24	5
El Salvador 1985	50	38	13
Guatemala 1987	84	13	3
Peru 1986	82	16	3
Near East & North Africa			
Egypt 1988/89	61	35	3
Morocco 1987	40	40	20
Morocco 1992	30	28	21
Turkey 1992	27	21	17

SOURCE: Demographic and Health Surveys 1985-1994

Another problem with the interpretation of the results is that the direction of causation is not clear. It is reasonable to assume that contraceptive users will know more about contraceptive methods than nonusers. Therefore, the proportion of nonusers will, in general, be lower among women with good knowledge of contraceptive methods than among those with poor knowledge. The proportion of women with unmet need is therefore likely to be lower in this group, even if there is no casual relationship between knowledge and unmet need. The problem of direction of causality is difficult to address in a macro-level analysis. A longitudinal study could address this problem, since in such a study the timing of knowledge, contraceptive use, and unmet need could be observed and the sequence of causation established. No such data are available, however. Some efforts have been undertaken to establish the direction of causality in cross-sectional data by using appropriate econometric techniques, but the usefulness of these techniques needs to be established through further research (Bhushan 1995).

Notwithstanding the problems cited above, macro-level evidence of the strong association between knowledge of contraceptives and unmet need does suggest a causal relationship between the two variables. In DHS data on Egypt, knowledge of contraceptive methods is negatively related to unmet need, even after controlling for the effect of intended contraceptive use on knowledge (Bhushan 1995). Other, similar studies may throw more light on the issue.

Some additional evidence showing an influence of the perceived availability of contraceptive services on unmet need is available. In some of the DHS, respondents were asked whether family planning services were easily accessible. In seven of eight countries analyzed, women with unmet need are more likely than women who are contraceptive users to say that services are difficult to reach (see Figure 6.4). However, the influence of this perceived cost varies. In Morocco and Madagascar, for example, there is a large difference in perception of the availability of services between the two groups. In the Philippines, Indonesia, and the Dominican Republic, in contrast, the difference is very small or nonexistent. These countries may have a wide network of service facilities, and information about these facilities may be widely diffused in society, so that women do not perceive availability to be an obstacle to using contraception.



Even in countries where perceived availability is not a problem on the whole, there may be some sub-groups or geographical pockets that contradict this finding. For example, in Indonesia and the Philippines, perceived availability differs substantially between women with unmet need and contraceptive users for certain sub-groups. Among uneducated women in Indonesia, 19% of those with unmet need, compared with only 9% of contraceptive users, find the services difficult to reach. The corresponding figures for the Philippines are 25% for the unmet need group and 12% for contraceptive users. National averages may conceal wide disparities between different regions and subgroups within a country.

In summary, perceived lack of availability of contraceptives may be a cause of unmet need in some settings. The reasons that some couples find services difficult to reach may include the actual lack of services, lack of knowledge about services, and lack of confidence in reaching the services and dealing with the service providers. To design appropriate responses, programs will need to analyze the reason for women's perception of lack of availability. For example, if people do not know about services, communication promoting service sites would be in order. In contrast, if perceived lack of access is more a matter of social distance than of physical distance, changes in the service delivery mechanisms and the behavior of providers could make potential clients feel more welcome.

Chapter VII. Perceived Cost of Contraception: Health Concerns and Fear of Side Effects

Survey-based direct inquiries into the causes of unmet need do not consistently show that health concerns or the fear of side effects of contraceptive methods play any notable role in determining unmet need (Table 3.1, page 10). However, more in-depth analysis presents a quite different picture. Previous studies (Bongaarts and Bruce 1995; Nag 1984) and the evidence presented in this section point to the important role played by health concerns in discouraging couples from adopting or continuing contraception. Also, analysis suggests that the perceived health risks of various contraceptive methods account for a greater share of unmet need in societies with high contraceptive prevalence (Ross 1994).

Health concerns and the fear of side effects can discourage contraceptive use among otherwise motivated people in either of two ways. Some users of contraceptives may experience some side effects or discomfort or else attribute discomfort to contraceptives, leading them to discontinue use. Others may avoid starting contraception at all because they fear side effects. Their fear may be based on the experiences of others, or they may be based on unfounded rumors.

Discontinuation

Extensive empirical evidence shows high rates of contraceptive discontinuation in developing countries. Over half of women using oral contraceptives and one-third of IUD users discontinue their method within a year of starting (Cornelius 1986). A woman may discontinue a contraceptive because she wants to conceive. However, if discontinuation stems from dissatisfaction with her current contraceptive, a woman will have an unmet need and will be at risk of an unwanted pregnancy unless she quickly switches to another method. Evidence from various studies suggests that side effects and health concerns, both major and minor, are one of the main reasons for discontinuing contraceptive use (Belsey 1988; Stover and Heaton 1995; Hassan and Fathalla 1994).

Those who have discontinued contraception comprise a significant proportion of women with unmet need—on average, approximately 40% (Westoff and Bankole 1995). Many discontinued contraceptive use due to health reasons or side effects. Table 7.1 reports the percentage of women with unmet need who have discontinued contraceptive use due to health reasons in 15 surveyed countries. The percentages vary from a low of 2% in Sri Lanka to a high of 18% in Morocco. Thus, in some countries almost one-fifth of the unmet need is attributable to contraceptive discontinuation in response to side effects.

In some countries, a substantial proportion of dropouts report a lack of suitable alternative contraceptives, insufficient counseling and follow-up services, or both. Women who receive counseling from service providers and are forewarned about the side effects of various methods use the method longer than women who are not counseled (Gallen *et al.* 1987; Family Health International 1991). Husbands' support in coping with any initial problems with contraception also is a crucial factor in contraceptive continuation (Belsey 1988; Hassan *et al.* 1994). These observations suggest that, to reduce drop-out rates, programs should emphasize appropriate counseling and make greater efforts to involve male partners.

Fear of Side Effects Among Never-Users

Women may also have unmet need because of *fears* of side effects of contraceptives, rather than actually experienced side effects. A substantial proportion of women who cite health concerns related to the use of a contraceptive method have never actually used the method. Table 7.2 shows that in eight countries roughly half or more of women with unmet need who do not intend to use contraceptives because of fear of side effects have never used contraception. Their concerns are obviously based on information about other people's experiences, whether actual or rumored.

Program strategies to address the fear of side effects depend upon the basis of the concerns. If the concern is due to actual, experienced side effects or legitimate health reasons, proper pre-adoption information, counseling and effective follow-up would help. Furthermore, health concerns about a specific method need not be an insurmountable barrier to any contraceptive use; programs should help potential users find the most appropriate method, taking into account their

specific concerns while providing accurate pertinent information to dispel any misconceptions (Bongaarts and Bruce 1995).

If concerns are based on rumors, the program strategy should be to organize communication activities (Liskin 1987). Rumors can be addressed at all levels through the mass media, with accurate information about the methods available in the community; through direct refutation of widespread rumors, especially by satisfied users; and through counseling and other one-on-one contacts at the interpersonal level.

Table 7.1
Proportion of Women with Unmet Need Who Discontinued Contraceptive Use Due to Side Effects

Country	% Who Discontinued Due to Side Effects
Botswana 1988	10
Indonesia 1987	14
Philippines 1993	6
Sri Lanka 1987	2
Thailand 1987	6
Egypt 1988	12
Morocco 1987	18
Tunisia 1988	11
Turkey 1992	11
Brazil 1986	9
Colombia 1986	3
Dominican Republic 1986	15
Ecuador 1987	5
Peru 1986	4
Trinidad and Tobago 1987	10

SOURCE: Demographic and Health Surveys, 1986-1993

Table 7.2
Proportion of Women Who Have Never Used Contraceptives and Who Do Not Intend to Use Due to Fear of Side Effects

Country	% Never Users with No Intention to Use Contraceptives
Ghana 1994	63
Madagascar 1992	70
Malawi 1992	67
Zambia 1992	69
Indonesia 1991	48
Philippines 1993	78
Morocco 1992	52
Dominican Republic 1991	71

SOURCE: Demographic and Health Surveys, 1992-1994

Chapter VIII. Perceived Cost of Contraception: Social, Cultural, or Familial Disapproval of Contraception

A person's intention to behave in a particular way and his/her behavior depend upon two sets of factors, one personal and the other representing social influence. Personal factors include the individual's own positive or negative evaluation

of the behavior, while social influence refers to the person's belief that specific individuals or groups think he/she should or should not adopt the behavior (Fishbein and Ajzen 1975). The relative importance of personal and social factors to adopting a certain behavior varies, both by person and by type of behavior.

It would be expected that social influence plays an extremely important role in deciding people's reproductive behavior, since there are fairly well-defined social norms about the desirable number, sex, and timing of children. Similarly, social norms and cultural beliefs influence the type of contraceptives a couple should or should not use. Reproductive decisions are influenced by the attitudes about fertility and contraception of those with whom a person interacts most often (Rogers and Kincaid 1981). Survey and focus-group research find that social disapproval of contraception plays a major role in creating unmet need.

Social and Religious Disapproval

A comparison between women with unmet need and those who use contraceptives by various indicators of social approval of contraception is given in Table 8.1. The data for this table are taken from two micro-level studies in Bangladesh and the Philippines (Mitra and Associates and Johns Hopkins Population Communication Services 1992; Casterline *et al.* 1995). Women who use contraceptives generally perceive greater social support for contraception than women with unmet need. Women with unmet need are less likely themselves to approve strongly of contraception and less likely to have friends and relatives who approve strongly.

Although influencing social norms and cultural beliefs through family planning programs is difficult in the short run, it is not impossible. A pilot project in Trishal Thana of Bangladesh shows that programs can be instrumental in creating a supportive social environment for contraceptive use (Kincaid *et al.* 1993). Building on in-depth research, discussion groups have been formed in several villages. These groups, called *Jiggasha* (meaning "to inquire" in Bangla) consist of, among others, opinion leaders, village women, the community-based depot-holder of contraceptives, and the Family Welfare Assistant. *Jiggasha* groups provide a forum for regular discussions on contraception and related issues. Research indicates that this process empowers women to take family planning decisions that previously would have to have been made without social support. Cleland (1994) noted that *Jiggasha* have marked effects even in the absence of household visits by the Family Welfare Assistant, demonstrating that such programs can provide social support to users of a kind that does not arise from services and communication approaches that assume a passive role on the part of clients.

Box 8.1: Influencing Social Norms to Meet Unmet Need: An Example from Bangladesh

Table 8.1
Social Approval of Contraceptive Use in Bangladesh and the Philippines, Women with Unmet Need and Contraceptive Users Compared

BANGLADESH (Trishal Thana 1991)*	Women With Unmet Need	Contraceptive Users
Percentage who approve family planning	89	99
Percentage who think their husbands approve of family planning	65	93
Percentage who think their <i>bari</i> heads approve of family planning	57	82
Percentage who think religion approves of family planning	54	70

planning	Percentage who think people in their village approve of		Percentage who think people in their village disapprove of	
family planning	85		92	
PHILIPPINES**	Spacers		Limiters	
	User	Unmet Need	User	Unmet Need
Percentage who themselves "strongly approve" family planning	78	65	83	63
Percentage whose relatives "strongly approve" family planning	70	64	72	51
Percentage whose friends "strongly approve" family planning	75	64	73	57

SOURCES: * Mitra & Assoc. & JHU/PCS 1992

** Casterline *et al.* 1995

Religious opposition to contraceptive use is not a major reason for unmet need in most countries. Casterline and colleagues (1995) reached this conclusion in their in-depth study in the Philippines. In Bangladesh, Nigeria, Pakistan, and Senegal, however, survey data suggest that perceived religious opposition discourages some women from adopting contraception. In these countries, more than 10% of women with unmet need do not intend to use contraceptives because of religious reasons (see Table 3.1, page 10). In Egypt and Bangladesh, women with unmet need are more likely to think that religion is against contraceptive use than women who use contraceptives.

Objections from Husbands

The husband's involvement is important in all matters related to contraceptive use, such as the decision to seek contraception, the type of contraceptive used, and the length of contraceptive practice. When women are directly asked about their reasons for not intending to use contraceptives, objection from husbands does not emerge as an important cause of unmet need. However, analysis of DHS data shows that husbands' attitudes toward family planning play an important role in the existence of unmet need. Women with unmet need are more likely to have:

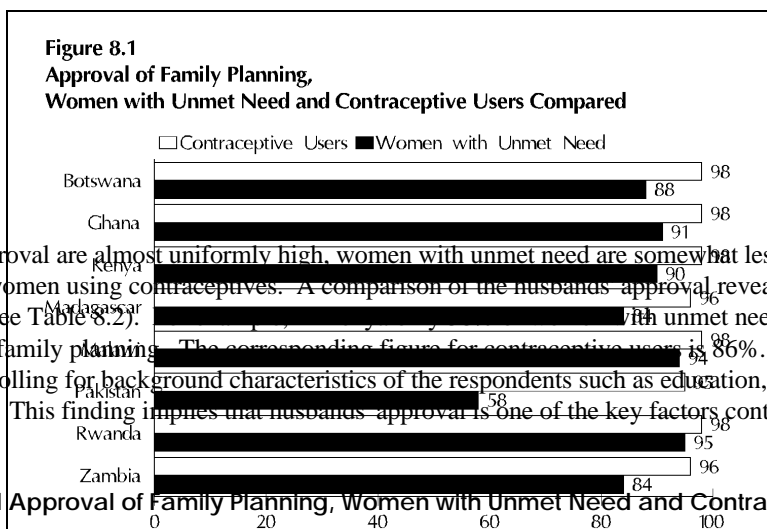
- Husbands who want more children;
- Husbands who are opposed to contraception;
- Poorer communication on family planning issues with their husbands; and
- Less "bargaining power" in their relationships with their husbands.

Husbands' Fertility Preferences. Husbands sometimes oppose contraception because they want more children than their wives do. Many studies show that men and women often disagree over desired family size. In general, men want more children (Isiugo-Abaihe 1994; Lloyd 1993; Mason and Taj 1987; Mott and Mott 1985). In case of disagreement between husband and wife about desired family size, the husband's views usually prevail, even overriding the preferences of an educated wife (Casterline *et al.* 1995; Ezeh 1993). Casterline and colleagues found that the more pronatalistie attitude of husbands is one of the main reasons for unmet need in the Philippines. The mismatch between their own and their husbands' fertility preferences is one factor that distinguishes women with unmet need from women who are using contraceptives. Casterline and colleagues report that 54% of women with unmet need for spacing have husbands who want the next birth rather soon, compared with 25% of women who are using contraceptives for spacing. Similarly, 46% of women with unmet need for limiting have husbands who want to have another child, compared with 23% of women who are using contraception for limiting (Casterline *et al.* 1995).

Husbands' Disapproval of Contraception. Studies show that husbands also may oppose contraception for various other reasons. For some men, the perceived "cost" of contraception is too high. They may be suspicious about the wife's possible infidelity if she is protected from the risk of pregnancy through contraception (Schuler *et al.* 1994). In Puerto Rico—and many other places—some husbands disapprove of contraceptives because they do not want their wives examined by male service providers (Nag 1984). Other reasons for a husband's objection to contraceptive use

include the desire to control his wife's behavior, religious disapproval, and his fear that she may experience side effects (Schuler *et al.* 1994).

The following analysis highlights the importance of the husband's attitude towards family planning in shaping the reproductive behavior of women. The data for the analysis come from eight DHS⁶ in which respondents were asked about their own and their husbands' attitudes towards family planning. The responses of women with unmet need are compared with those of women who use contraceptives. Figure 8.1 compares the respondents' approval of family planning in the two groups, and Table 8.2 compares husbands' approval.



Although levels of approval are almost uniformly high, women with unmet need are somewhat less likely to approve of family planning than women using contraceptives. A comparison of the husbands' approval reveals greater differences in all eight countries (see Table 8.2). The corresponding figure for contraceptive users is 86%. These differences persist even after controlling for background characteristics of the respondents such as education, age, and the area of residence (not shown). This finding implies that husbands' approval is one of the key factors contributing to unmet need.

Table 8.2
Husband's Perceived Approval of Family Planning, Women with Unmet Need and Contraceptive Users Compared

	Women With Unmet Need			Contraceptive Users		
	Disapprove	Approves	Do not know	Disapprove	Approves	Do not know
Botswana 1988	9	88	3	1	98	1
Ghana 1994	13	63	24	9	81	10
Kenya 1993	22	58	18	9	86	4
Madagascar 1992	17	54	29	9	88	3
Malawi 1992	12	74	14	5	12	3
Pakistan 1991/92	35	35	29	9	85	6

⁶ Countries were selected based on whether the recorded data contained the information necessary to estimate unmet need at the individual level and questions about approval of family planning were asked. The selected countries were: Botswana (1988), Ghana (1994), Kenya (1993), Madagascar (1992), Malawi (1992), Pakistan (1991-92), Rwanda (1992), and Zambia (1992).

Rwanda 1992	15	70	16	7	87	5
Zambia 1992	26	57	17	10	85	4

SOURCE: Demographic and Health Surveys, 1988-1994

Women with unmet need are also less likely to know whether their husbands approve of family planning. For example, in Madagascar only 3% of contraceptive users did not know their husbands' views about contraception, while 29% of women with unmet need did not know if their husbands approved of family planning. This suggests a lack of spousal communication about family planning among women with unmet need.

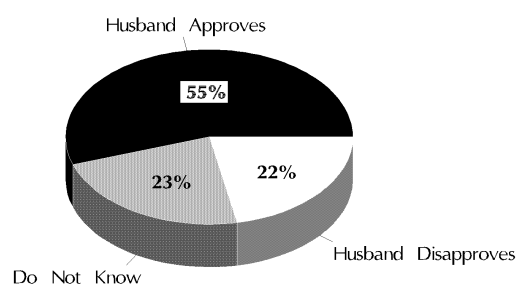
Table 8.3
Husband-Wife Communication About Family Planning in the Last 12 Months, Women with Unmet Need and Contraceptive Users Compared

	Women with Unmet Need			Contraceptive Users		
	Never	Once	More Often	Never	Once	More Often
Botswana 1988	32	39	29	17	52	31
Ghana 1994	56	19	25	28	23	49
Kenya 1993	35	34	31	14	32	54
Madagascar 1992	49	22	29	16	21	63
Malawi 1992	40	34	27	12	39	49
Pakistan 1991/92	77	19	4	35	49	16
Rwanda 1992	28	19	53	11	16	73
Zambia 1992	37	32	31	18	39	42

SOURCE: Demographic and Health Surveys, 1988-1994

Lack of Husband-Wife Communication. The absence of spousal communication also appears to be an important contributing factor to unmet need. Table 8.3 compares the patterns of husband-wife communication in the last 12 months between women with unmet need and those who use contraceptives. Women with unmet need communicate less frequently with their husbands about family planning. This gap is crucial, since many women who think that their husbands disapprove of contraceptive use may not have discussed the issue with them. Many women think that their husbands disapprove of family planning when, in fact, the husbands do approve. In Tanzania, for example, 45% of married women either did not know about their husbands' views (23%) or thought their husbands disapproved of family planning (22%) when in fact their husbands did approve (see Figure 8.2) (Ngallaba *et al.* 1993).

Figure 8.2
Wives' Perceptions of Husband's Approval of Family Planning Among Those Whose Husbands Approve of Family Planning in Tanzania



SOURCE: Ngallaba et al. 1993 (TDHS 1992)

Skewed Gender Relations. Women's reluctance to implement their preferences by overriding the opposition of their husbands and other family members appears to be a significant reason for unmet need. Evidence from surveys in which husbands were also interviewed shows that women with unmet need are more likely to have domineering husbands who think that decisions about issues such as reproduction, contraception, and wife's labor force participation should be taken by them and not by their wives or jointly.

An example from Egypt—where husbands were asked who should have the last word in decisions about family size, contraceptive use, visits to friends and relatives, household budget, children's education and marriage plans, and wife's employment—illustrates this point (see Table 8.4) (Sayed *et al.* 1992). Husbands of women with unmet need are less likely to believe in a joint decision on these important family issues than husbands of contraceptive users. These differences are significant even after controlling for background characteristics such as education, age, and residence in rural or urban areas or in Upper Egypt or elsewhere. It may be inferred that women with unmet need find it difficult to implement their fertility preferences when they are characterized by low gender status and weak "bargaining power" within households. Unless women have a stronger say in deciding about their own fertility, unmet need will persist.

Unmet Need of Women vs. Unmet Need of Couples. The concept of unmet need should be defined for couples as well as for women. In most cases, fertility affects the cost and benefit calculus of both the partners because they are often responsible for bringing up their children together and both derive utility from children. At the same time, however, since there may be a discordance between the fertility desires of the two partners, one partner may have unmet need for contraception while the other does not. Moreover, partners also may differ in their views about contraceptive use since it entails different costs for each. Therefore, contraceptive use may be determined by the level of convergence of the partners' fertility desires, levels of respective perceived cost of contraception, and their respective bargaining powers.

Table 8.4

Husbands' Views on Who Should Make Decisions About Specific Issues: A Comparison of Responses Among Contraceptive Users and Couples with Unmet Need, Egypt 1991

Issue*	Contraceptive Users		Couples with Unmet Need	
	Husband	Both	Who Should Decide?	
			Husband	Both
Visit to Friends or Relatives	55	42	71	26

Household Budget	62	26	79	14
Having Another Child	32	61	51	41
Children's Education	38	57	55	41
Children's Marriage Plans	37	49	55	35
Use of Family Planning Methods	28	64	46	46
Wife's Employment	74	22	82	14

SOURCE: Sayed *et al.* 1992

NOTES: *All differences are significant (with a p-value of 0.05 or less) even after controlling for the background characteristics such as the place of residence, education of husband, and education of wife. (N=1522)

Analysis of Male Perspectives. While the husband's perspective appears to be an important factor in causing unmet need, relevant research and data are scarce. Studies (including this study) usually analyze the men's perspective through women's survey responses. However, women's perceptions of their husbands' approval may not reveal the entire picture. Moreover, questionnaire-based surveys have serious limitations in estimating the importance of the social and familial influence. As Nag (1984) notes, it can be difficult for respondents to tell the interviewer anything about the opposition they face because of the potential for repercussions. A comparison of the findings of two studies in the Philippines illustrates this point. In their in-depth study based largely on focus-group research, Casterline and colleagues (1995) found husbands' disapproval to be the most important explanation of unmet need. In contrast, data from the Philippines DHS show that less than 1 percent of women with unmet need report that they do not intend to use contraceptives because of opposition from their husbands. Further analysis is required to understand the complexities involved in male-female negotiations over sexuality and fertility. Such analysis will need to employ diverse methods including both in-depth surveys and qualitative studies involving men.

Family planning programs usually focus mainly on women, often neglecting men in their strategies. To meet unmet need, family planning programs should strive to involve men in family planning decision-making, engage their interest, encourage their support, and promote husband-wife communication. Services and communication strategies must reach both women and men, both as individuals and as couples. Service facilities should provide a welcoming environment for men. In particular, many programs have achieved a marked increase in contraceptive use and a decline in discontinuation by involving male partners in counseling (Finger 1994; Terefe and Larson 1993).

Programs have also achieved desirable changes in contraceptive decision-making through the mass media (Piotrow *et al.* 1992). Many men want to know more about contraception and family planning. For example, a survey in Bendel State, Nigeria, found that, even among men who were not currently using any method, over 90% of unmarried men and 75% of married men were interested in family planning information (Rimon and Tweedie, 1994). Creatively designed communication programs can address the information needs of men, promote male participation in reproductive decisions, and encourage husband-wife communication.

Chapter IX. Conclusion

The literature reviewed and the additional empirical evidence presented in this paper make clear that unmet need for contraception is not a monolithic or undifferentiated concept. The nature of unmet need varies from couple to couple and from place to place. Some women have unmet need primarily because they have ambiguous fertility preferences. Others think contraception is too costly in the widest sense, compared with the benefits of avoiding a next pregnancy. In other words, women with unmet need vary widely in the intensity of their fertility preferences and their perception of the costs of contraception. Thus, some couples will start using contraceptives if certain costs are decreased, while others will respond only slightly to such changes.

Reasons for unmet need vary among and within countries. This study shows that in countries with low contraceptive prevalence, much of the estimated unmet need is primarily attributable to low motivation for fertility control and lack of information about contraceptives. In contrast, in countries with high levels of contraceptive prevalence, factors such as the fear of side effects and familial opposition to family planning are more important. In a few surveyed countries, perceived religious disapproval of contraception appears to play a role. Given the wide variation in the reasons, it is difficult to generalize about the determinants of unmet need. Nevertheless, some broad observations can be made.

Couples would be motivated to use contraception only if they want to prevent the birth of a next child and they perceive the woman to be at risk of becoming pregnant. Women with unmet need, by definition, want to prevent a next pregnancy, at least within the next two years. But analysis of the data shows that some of these women are ambivalent about future childbearing. Also, many women do not think that they are at risk of becoming pregnant because either they are not sexually active or they consider themselves to be infecund. These two reasons, ambivalence about their future childbearing and perceived inability to become pregnant, account for 20% to 40% of unmet need in countries surveyed by DHS between 1990 and 1994.

Lack of motivation is a dominant reason for unmet need in sub-Saharan African countries, accounting for 40% of unmet need in Burkina Faso and Niger and between 31% and 36% in all other sub-Saharan countries except Madagascar. The unweighted country average percentage of unmet need attributable to lack of motivation is 24% in Latin American countries, 30% in Asian countries, and 33% in Near Eastern and North African countries.

Women with unmet need for spacing are especially ambivalent about their future childbearing. A large proportion of unmet need in sub-Saharan African countries involves spacing. On average, 30% of unmet need in these countries is due to ambivalence about future childbearing and, therefore, may not be responsive to changes in the perceived costs of contraception. In countries outside this region, about one-fifth of the unmet need springs from weak fertility preferences.

A substantial proportion of older women, especially those with unmet need for limiting, do not feel the need for contraception. In most of the countries surveyed, women who do not consider themselves at risk for pregnancy constitute less than 10% of all women with unmet need. However, in Egypt, Jordan, and Turkey, 17% to 18% of all women with unmet need do not feel that they are at risk.

The evidence suggests that a considerable proportion of unmet need is attributable to the perceived high cost of contraception when costs are defined as both monetary and nonmonetary. The monetary cost of contraception does not account for much of the existing unmet need. In contrast, nonmonetary costs, particularly the fear of side effects (physiological costs) and societal and familial disapproval of family planning (social costs), contribute substantially to unmet need.

Unmet need in the 1990s is less related to conventional geographic measures of contraceptive availability—the distance from and time taken to reach services, or the price of contraceptives—than it is to the qualitative and cognitive aspects of services, such as knowledge about contraceptive methods and the number of methods available. This study estimates that widespread availability of one additional contraceptive method in a country would lead to an increase in contraceptive prevalence of 3.3 percentage points. Of this increase, more than half comes from meeting unmet need. When asked directly, many women cite lack of knowledge as the primary reason for not using or not intending to use

contraceptives. Supplementary analysis undertaken in this paper also leads to the conclusion that increasing knowledge about contraceptives and their sources is crucial to reducing unmet need.

In surveys only a small proportion of women with unmet need cite fear of side effects or husbands' disapproval of family planning as their principal reasons for not intending to use contraception. An in-depth analysis of the available data, however, presents a different picture. Fear of side effects, both real and perceived, is found to have a significant effect on unmet need. An average of approximately 10% of women with unmet need in 15 selected countries had discontinued using contraception due to side effects. However, more than half of women with unmet need who do not intend to use contraceptives because they fear side effects have never actually used any contraceptives.

Similarly, husband's attitudes emerge from in-depth studies as an important reason for unmet need even though women themselves do not cite spousal approval as their principal reason for not intending to use contraceptives. Compared with women who do use contraceptives, however, women with unmet need are more likely to have husbands who do not approve of contraception. Husbands often oppose contraception because they are more pronatalist than their wives, or because they do not approve of contraceptive use, or both. Sometimes, women think that their husbands oppose contraceptive use when in fact they approve.

Large-scale surveys are useful in understanding the broad prevalence of unmet need and its reasons. They have limitations, however, in explaining the existence of unmet need because of the complexity of the concept. Much unmet need has sociocultural underpinnings. Large-scale surveys, with their objective of collecting standardized, recordable, and comparable quantitative information, do not fully capture the intricacies of the reasons that women do not use contraceptives even when they do not want children. In addition, since reproductive behavior is a very personal matter, the quality of the information gathered—on husbands' attitudes, for example—remains suspect. Furthermore, fertility preferences are fluid; therefore women move in and out of having unmet need. Cross-sectional data are not ideal for studying the factors affecting women's fertility preferences and contraceptive behavior. More in-depth micro-level studies, which use both qualitative and quantitative techniques and which collect longitudinal information, will improve our understanding of the reasons for unmet need and enhance the ability of family planning programs and providers to reduce unmet need.

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Appendix A

Unmet Need Among Married Women of Reproductive Age in 44 Countries, Demographic and Health Surveys, 1985-1994

Region, Country & Date of Survey	Numbers with Unmet Need (in Thousands)	% Unmet Need			% Contraceptive Use		
		Total	Spacing	Limiting	Total	Spacing	Limiting
AFRICA							
Botswana 1988	27	27	19	7	33	18	15
Burkina Faso 1992-93	522	33	24	9	16	11	5
Burundi 1987	201	25	18	7	9	6	3
Cameroon 1991	347	22	17	4	16	11	5
Ghana 1994	759	33	24	9	20	11	10
Kenya 1993	1101	36	22	13	33	10	23
Liberia 1986	131	33	20	13	7	4	3
Madaqascar 1992	551	32	17	15	17	6	10
Malawi 1992	498	36	26	9	13	7	6
Mali 1987	435	23	17	6	12	8	4
Namibia 1992	22	22	15	7	29	11	18
Niger 1992	243	19	16	2	5	4	1
Nigeria 1990	3928	22	17	5	6	3	3
Rwanda 1992	332	37	24	13	21	10	11
Senegal 1992-93	350	29	23	7	7	4	3
Sudan 1989-90	940	25	18	7	9	5	4
Tanzania 1991-92	1065	27	19	8	10	6	5
Uganda 1988-89	707	27	20	7	5	2	3
Zambia 1992	368	31	23	8	15	9	6
Zimbabwe 1994	207	15	9	6	48	27	21
NEAR EAST & NORTH AFRICA							
Egypt 1992	1818	22	7	15	47	8	39
Jordan 1990	110	22	10	12	40	12	29

Morocco 1992	650	20	9	11	42	14	27
Tunisia 1988	217	20	11	9	50	14	36
Turkey 1992	1062	11	4	8	63	12	51
ASIA							
Banqladesh 1994	4,400	18	10	8	45	11	34
India 1992	31,005	20	9	11	41	3	37
Indonesia 1991	4427	14	8	6	50	19	31
Nepal 1991	970	28	12	15	23	1	22
Pakistan 1990-91	5738	32	17	15	12	2	10
Philippines 1993	2512	26	13	13	40	9	31
Sri Lanka 1987	332	12	7	5	62	13	49
Thailand 1987	999	11	6	6	66	16	50
LATIN AMERICA							
Bolivia 1994	235	24	6	17	45	11	35
Brazil 1986	3034	13	5	8	66	18	48
Colombia 1990	545	12	4	7	66	20	46
Dominican Republic 1991	171	17	9	8	56	11	46
Ecuador 1987	411	24	11	13	44	12	33
El Salvador 1985	182	26	14	12	47	8	39
Guatemala 1987	382	29	16	13	23	5	18
Mexico 1987	3133	24	11	13	53	14	39
Paraguay 1990	395	15	8	7	48	24	25
Peru 1991-92	471	16	4	11	59	14	45
Trinidad and Tobago 1987	32	16	8	8	53	19	34

SOURCE: DHS tabulation, Westoff & Bankole 1995

NOTES: Subtotals may not add precisely to totals due to rounding.

Potential total demand = contraceptive use + unmet need

% of potential total demand unmet = unmet need divided by potential total demand

Appendix B

DEMOGRAPHIC AND HEALTH SURVEYS: INSTRUMENTS USED TO IDENTIFY UNMET NEED

Unmet need for contraception is determined among all married women of reproductive age (or those who are living together with a man) who are not using contraception, on the basis of the following questions:

IF THE WOMAN IS CURRENTLY PREGNANT:

Q: At the time you became pregnant, did you want to become pregnant then, did you want to wait until later or did you want no more children at all?

Then (No Need)
 Later (Unmet Need for Spacing)
 Not At All (Unmet Need for Limiting¹)

IF THE WOMAN IS CURRENTLY AMENORRHEIC:

Q: At the time you became pregnant with [name of the last child], did you want to become pregnant then, did you want to wait until later or did you want no more children at all?

Then (No Need)
 Later (Unmet Need for Spacing)
 Not At All (Unmet Need for Limiting¹)

¹ A significant proportion of women who report the pregnancy as never wanted, respond to a later question by saying that they wanted more children in the future. These inconsistent cases were moved from the category "need for limiting" to the category "need for spacing."

IF THE WOMAN IS NEITHER PREGNANT NOR AMENORRHEIC:

First of all it is determined whether the woman is fecund or not. Infecund women include all those who: (a) reply to the fertility preference questions given below that they were unable to become pregnant; (b) report that they did not intend to use contraception because they have reached menopause; (c) are not pregnant and have not menstruated in the last six months; and (d) are in union for at least five years, have not used contraception, and have not been fertile. Fecund women are categorized as having unmet need on the basis of the following questions:

Q: Would you like to have another child or would you prefer not to have any (more) children?

Have A (Another) Child	(Not in Need)
No More/None	(Unmet Need for Limiting)
Can't Get Pregnant	(Infecund)
Undecided	(Need for spacing)

Q: How long would you like to wait from now before the birth of (a/another) child?

Year and Month	(If two years or more, unmet need for spacing)
Soon/Now	(Not in need)
Can't Get Pregnant	(Infecund)
Other	(Status unclear)
Do Not Know	(Need for spacing)

Appendix C

Findings from Selected Studies on Availability of Family Planning Services and Contraceptive Use

Author & Year	Place	Findings
Bhushan 1995	Egypt	Availability of family planning services affected contraceptive use, but the strength of influence was slight.
Guilkey <i>et al.</i> 1995	Tunisia	Availability of a hospital and a doctor within 5 kilometers was significantly related to contraceptive use.
Cochrane and Guilkey 1991	Colombia	Access to family planning services, as measured by given indicators, was not significantly related to contraception.
Cochrane and Guilkey 1995	Tunisia	Access to pharmacies and hospitals increased the use of pills and condoms in the urban areas, and the presence of doctors increased IUD use.
Cochrane and Guilkey 1992	Zimbabwe	One of seven indicators of access (presence of community based distribution volunteer) was related to contraceptive use.
Entwisle <i>et al.</i> 1989	Egypt	Density of service providers was related to contraceptive use only for some age groups.
Hermalin 1989	Costa Rica	Availability of contraceptive method was not related with contraceptive use.
Huber and Harvey 1989	3 African, 3 Asian Countries and 4 Latin American Countries	Community-based distribution and clinic services were not cost-effective in promoting contraception.
Jones 1989	Egypt and the Philippines	In the Philippines, travel time to the nearest service center was found associated with use of any contraceptive method except condoms. In Egypt, travel time influenced use of pills but not of IUDs.
Lerman <i>et al.</i> 1991	Indonesia	High prices discourage use of IUD and injectables, but encouraged use of pills and sterilization, implying that these women are seeking quality of care.
Lewis 1986	Cross-national	Price of contraceptives was found to affect their use, the influence was slight.
Molyneaux <i>et al.</i>	Indonesia	Presence of field workers and visits of mobile

1989		teams had significant impacts on contraceptive use, most notably on IUD use.
Oliver 1994	Ghana	Average distance to a service facility was associated with contraceptive use. Impact was smaller for educated women than for the uneducated. Price of contraceptives did not affect the demand.
Pitt <i>et al.</i> 1993	Indonesia	Family Planning clinic location was not significantly related to fertility.
Pullum 1991	Rural Guatemala	Time and distance to the nearest service centers were significant factors in explaining contraception, but their statistical effect was reduced when socio-economic background was controlled for.
Schultz 1993	Cross-national	Price of oral contraceptive weakly related to fertility.
Shaffer Davis 1988	Rural Morocco	Price of pills negatively related to their use.
Simmons <i>et al.</i> 1988	Rural Bangladesh	Female family planning workers have been able to increase contraceptive use by addressing the obstacles that cause unmet need.
Schwartz <i>et al.</i> 1989	Jamaica, Thailand, and the Philippines	Contraceptive and time costs were statistically significant in the choice of contraceptive method, but the effect was small.
Tsui and Ochoa 1992	Colombia, the Dominican Republic, Ecuador, and Guatemala	Physical access to family planning services was not consistently related to contraceptive use.
Wilkinson <i>et al.</i> 1992	Zimbabwe	Presence of facility in area influenced contraceptive use. In rural areas pill use was related to the average number of hours of family planning services, however.

Appendix D

An Analysis of Various Components of Family Planning Program Effort and Unmet Need

Program Component	Unmet Need				Contraceptive Use				Percentage of the Potential Demand Unmet			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Policy (A)	-.24	-	-	-	.40	-	-	-	-.52	-	-	-
Evaluation (B)	-	-.01	-	-	-	.87	-	-	-	-1.14	-	-
FP Services (C)	-	-	-.07	-	-	-	.31*	-	-	-	-.42*	-
(A) + (B) + (C)	-	-	-	-.05	-	-	-	.17*	-	-	-	-.23*
HDI**	-20.7	-21.5	-20.4	-20.3	80.0	77.6	76.4	77.2	-88.6	-85.3	-83.5	-84.8
Constant**	37.1	33.6	34.7	34.4	-7.9	-6.1	-7.4	-8.4	94.3	91.9	94.0	95.1
R ²	0.37	0.34	0.35	0.35	0.78	0.78	0.79	0.79	0.74	0.74	0.75	0.75

NOTES: All calculations by Bhushan.

*These coefficients are statistically significant at the level of 0.05. However, the coefficients become insignificant when the availability score is included in the model as an independent variable.

**Constant terms and coefficients of HDI are statistically significant at the level of less than 0.001 in all the equations.

HDI = Human Development Index (World Bank 1994)