

Barriers to Fertility Regulation: A Review of the Literature

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The evidence in the demographic and family planning literature of the range and diversity of the barriers to fertility regulation in many developing countries is reviewed in this article from a consumer perspective. Barriers are defined as the constraining factors standing between women and the realistic availability of the technologies and correct information they need in order to decide whether and when to have a child. The barriers include limited method choice, financial costs, the status of women, medical and legal restrictions, provider bias, and misinformation. The presence or absence of barriers to fertility regulation is likely an important determinant of the pace of fertility decline or its delay in many countries. At the same time, barriers inhibit women's ability to avoid unintended pregnancy. Problems of quantifying barriers limit understanding of their importance. New ways to quantify them and to identify misinformation, which is often concealed in survey data, are needed for future research. (STUDIES IN FAMILY PLANNING 2006; 37[2]: 87–98)

The presence or absence of barriers to fertility regulation is likely an important determinant of the pace of fertility decline or its delay in many countries. The United Nations Programme of Action, adopted at the 1994 International Conference on Population and Development (ICPD) in Cairo, called on “all countries . . . to identify and remove all the major remaining barriers to the utilization of family-planning services.” Moreover, it set the goal of “public, private and non-governmental family-planning organizations to remove all programme-related barriers to family-planning use by the year 2005 . . .” (United Nations 1994). Nonetheless, barriers remain, and in order to make greater progress toward removing them, it is necessary to develop a clearer picture of the varied forms of barriers to fertility regulation that need to be overcome. Having a more comprehensive view of the barriers can be important as a guide to policymakers who, through their decisions, sometimes inadvertently inhibit access to family planning.

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The demographic and family planning literature contains many references to barriers that limit the practice of contraception, especially among people with low income in resource-poor settings in developing countries. The evidence is scattered, however, and has not been assembled systematically. This review highlights the range and diversity of the barriers to fertility regulation that remain in many developing countries. We define “barriers” as the constraining factors that hinder realistic availability of the technologies and/or the correct information that women need if they want to have control over whether and when to have a child. By “technologies,” we mean any product or technical service that is required for a fertility-regulation method, including the full range of family planning methods and safe abortion.

We do not look at programs or clinics or clients, because these terms all relate to particular organized services or subsidies. Instead, we examine barriers from the consumers' perspective, considering whether the individual—and specifically the individual woman—can obtain fertility-regulation methods easily if she wants them, from any convenient source, not necessarily from a particular location or service provider.

Although some barriers to fertility regulation exist nearly everywhere, and are a significant problem in the United States (Gelberg et al. 2002), this review focuses primarily on low-income women in the developing world and the barriers they must surmount in order to meet their fertility goals.¹ In comparison with richer women

or with men, poor women and their children often suffer disproportionately from the consequences of an unintended birth. Economically marginalized women in low-resource settings often have limited freedom, if any, to obtain the technologies and information they need to manage their own fertility. At the same time, they suffer high rates of maternal mortality and morbidity, of which a significant portion is due to lack of realistic access to fertility-regulation methods (Hogberg 1985). Many men, as well, would like to find ways to control the size of their families, but lack effective options. On a larger scale, recognition is growing that steps to economic development, including efforts to reduce poverty, are hindered by persistently large average family size (Birdsall et al. 2001).

One reason that barriers to contraception have not received the attention they deserve is the problem of quantifying them. For example, it is difficult to weigh the sort of bias guiding a provider who declines to give an unmarried woman a contraceptive. Moreover, the controversy associated with the issue of abortion and the lack of reliable data, especially where the procedure is illegal, has reduced the emphasis on abortion in the literature to a level lower than its importance warrants. The intrinsic difficulties in quantifying the barriers standing between potential consumers of fertility regulation and the technologies and information they need in no way diminish the importance of these barriers, however.

The Range of Barriers

The combined effect of several inhibiting factors barring women from easy access to fertility regulation may be subtle yet so influential that even those couples with a strong desire to space or limit their family size may not be able to achieve their goals. "Access" in the family planning literature is most often used in a narrow sense, referring only to the geographic presence of contraceptives or services. This use of the term does not take into account, however, medical restrictions, financial costs, provider bias, incorrect information, or the sheer unavailability of method options, all of which frequently inhibit access to family planning.

Geography and Method Choice

Mahmood and Ringheim (1996), using 1990–91 Demographic and Health Survey (DHS) data, conclude that contraceptive use or nonuse correlates most closely with a woman's knowledge of sources of supplies. A number of studies have shown a close correlation between the

travel time from a woman's home to any health clinic and the likelihood that she will use a contraceptive (Rodríguez 1978; Chamratrithong and Kamnuasilpa 1984; Ross et al. 1989; Bertrand et al. 2001). In Bangladesh, couples were two and a half times less likely to practice contraception if acquiring a method required traveling for 30 minutes or more to a clinic (Levin et al. 2000).

Using both empirical and simulated data, Jain (1989) found that increasing the number of family planning methods available in a country increased the overall practice of contraception and accelerated fertility reduction. An early study of five countries noted that each new method of contraception offered in a national family planning program resulted in a net increase in contraceptive prevalence in each of these countries (Freedman and Berelson 1976). Yet Ross (1995:242) points out that an evaluation by Mauldin and Ross (1991) of family planning programs in 98 developing countries revealed that "couples have essentially no access to the pill in some 19 countries, to the IUD in 30, to female sterilization in 37, nor to vasectomy in 61."

Dixon-Mueller and Germain (1992) make the point that the standard definition of unmet need overlooks the woman who is using a contraceptive method that is ineffective or inappropriate for her. These writers also distinguish between discontinuation of a contraceptive method and discontinuation of contraception. If discontinuation is due to dissatisfaction with a particular method, the barrier may be the lack of satisfactory alternatives to switch to, along with the unavailability of safe abortion to back up the method.

Financial Costs

The prices of contraceptives vary widely in different markets and between branded and generic products. The literature on a consumer's ability to pay for contraceptives in the developing world is thin (Matheny 2004), and is virtually nonexistent in the case of abortion.

When asked whether cash prices influenced family planning choices, respondents in rural Bangladesh put little emphasis on cost (Levin et al. 2000). Molyneux (2000) found that increasing contraceptive prices in Indonesia by 100 percent decreased use by only 3 to 5 percent (cited in Matheny 2004). Ciszewski and Harvey (1994) found, however, that an average price rise of 60 percent for condoms in the Bangladesh social marketing program caused sales to drop by 46 percent. This relationship was confirmed in Haiti by Donald and Harvey (1992), where a price increase also decreased sales. Harvey (1994:57) concludes, "Since lowering prices always seems to increase sales or use of services, the potential

for improved coverage by the simple act of lowering prices is considerable," and he emphasizes that "[t]here appears to be no exception to this rule."

Using data from Brazil, Lewis (1986) found that moderate price reductions increase product and service demand, surmising that full cost recovery would represent a barrier for low- and moderate-income consumers. Also in Brazil, Janowitz and her colleagues report, "[T]he variability in the proportion of women sterilized postpartum was almost perfectly explained by a linear model with main effects for parity and for the patient's ability to pay for services" (Janowitz et al. 1982b:526). In Bihar, India, Gopalakrishnan (2003) found that a 25 percent rise in the price of female sterilization led to a 32 percent drop in the number of procedures performed.

Using data on price and volume of social marketing sales across many countries, Harvey (1999) concludes that individuals will spend up to 1 percent of their disposable income to purchase contraceptive protection. When, for example, this rule is applied to Africa, using data on income displayed by quintile, 97 percent of Africans would be unable to pay the full cost of modern methods of contraception (Green 2002). By contrast, in high-income settings, raising condom prices may increase their use because more expensive condoms are perceived to be of higher quality (Levin et al. 2000).

Status of Women

Commonly, women's decisions to practice contraception are considered to be influenced by culture and religious traditions. We suspect, however, that culture may influence women's family planning options more than their preferences, because culture often manifests itself through providers' biases or medical barriers to use. Where the status of women is low, social barriers to accessing family planning methods can be more formidable than financial costs. Working in Matlab, Bangladesh, Phillips and his colleagues (1996) describe a common situation for many young women who, in order to seek help for a problem with a contraceptive, must discuss any visit to a clinic with their husbands. The husband, in turn, will talk about it with his mother. By the young wife's calculation, the social costs of managing a contraceptive problem actually may be greater for her than the cost of bearing and rearing another child (Phillips et al. 1996).

In the Punjab, Pakistan, Casterline and his colleagues (2001) made detailed measurements of various perceived costs of practicing contraception and of the motivation to do so. They found that two main obstacles to using a contraceptive were: (1) the woman's perception that such use would conflict with her husband's preferences and

attitudes toward family planning and (2) her perception of the social or cultural costs of using a method. Another recent study from Pakistan (Stephenson and Hennink 2004) also found psychosocial barriers to be the most important self-reported obstacle to the practice of family planning among the urban poor, whereas physical and economic barriers were reported much less frequently. The psychosocial barriers were defined as religious interpretations and value systems that limit the mobility and decisionmaking abilities of women, who were dominated by the men and older women (especially mothers-in-law) in the family.

Medical Barriers

Shelton and his colleagues (1992:1,343) define medical barriers as "practices, derived at least partly from a medical rationale, that result in a scientifically unjustifiable impediment to, or denial of, contraception." Shelton (2001:153) describes medical practice as typically hierarchical, conservative, and slow to change, and medical professional culture as having "a tradition of strong norms for work routines, division of labor and even rituals . . . [paying] little attention to . . . communicating well with clients . . . and [insulating] health staff from clientele."

The evidence base for medical eligibility criteria for starting and continuing contraceptive use is well reviewed by the World Health Organization (WHO 2004). Women are often subjected to unnecessary medical procedures, however, as a prerequisite for gaining access to contraceptive methods, procedures that are frequently conducted without evidence to support their necessity (Cottingham and Mehta 1993). Oral contraceptives, in particular, are often difficult to obtain because such barriers are in place. Konje and Ladipo (1999) note that providers can be overzealous in their control of contraceptive supplies and can impose inappropriate contraindications for their use. In many countries, some providers deter nulliparous women from obtaining oral contraceptives or IUDs. A study in Senegal focusing on first-time oral contraceptive users found that women were required to pay between US\$55 and \$216 (equivalent to five months' income per capita) for tests prior to being given oral contraceptives (Stanback et al. 1994). The blood tests required (including fasting glucose, liver-function tests, blood lipids, and tests for erythrocyte sickling) are not a routine part of clinical care even in the most sophisticated settings in industrialized countries.

Checklists were introduced in the 1970s to circumvent the prerequisite for a medical prescription for oral contraceptives, permitting paramedical workers and

workers in community-based distribution (CBD) systems to distribute the pill. The nonmedical distribution of the pill in Thailand played a pivotal role in launching the rapid adoption of contraception in that country (Rosenfield 1971; Nortman 1972; Rosenfield and Limcharoen 1972). Unfortunately, even checklists can become a medical barrier. For example, “headaches” and “severe headaches” are difficult to evaluate, and too readily they can be deemed contraindications. In the early 1970s, the case for over-the-counter (OTC) distribution of oral contraceptives was made in both industrialized (Smith and Kane 1975; Department of Health and Social Security 1976)² and developing countries (Kleinman 1974). With the passage of time, the evidence in favor of selling the pill over the counter in developed countries has become even stronger (Trussell et al. 1993).

Arbitrary requirements for return visits to the providing clinic are another type of medical barrier. In clinical studies of IUD use conducted in 13 clinics in nine countries, Janowitz and her colleagues (1994) found that fewer than 1 percent of follow-up visits revealed any unsuspected underlying risk. This requirement for routine visits simply inconveniences women and costs professionals’ time that could be better used.

The non-evidence-based requirement that women be menstruating (as a proof that they are not pregnant) at the time they start using hormonal methods or IUDs is common, even though simple history-taking provides effective ways of excluding the possibility of pregnancy (Stanback et al. 1999). Provider surveys, use of “simulated clients” (women who ask for a particular service and then report their experience to a researcher outside the clinic), situation analyses, and exit interviews from Cameroon, Ghana, Jamaica, Kenya, and Senegal have demonstrated that a substantial proportion (67 percent of nonmenstruating women in Cameroon and 78 percent in Kenya) are denied a family planning method as a result of this scheduling requirement (Stanback et al. 1997; Stanback et al. 1999). Compounding the problem of access, only 16 percent of doctors in Kenya felt it was safe to give a menstruating woman a packet of pills to start at a later date, according to a recent study; doctors in Ghana and Senegal also were reluctant to provide women with their first packet of pills in advance (Stanback and Janowitz 2003).

Eligibility and accessibility barriers can interact to prevent clients from undergoing sterilization. In Brazil, of 1,256 women requesting sterilization, 925 were “approved” for surgery (mainly because of their age and parity), but only “the most persevering” 595 women had, in fact, undergone the operation three months later (Lassner et al. 1986:197). A similar study conducted in Honduras found that only 42 percent of women who re-

quested sterilization in Tegucigalpa and 21 percent who did so in San Pedro Sula underwent the procedure immediately (Janowitz et al. 1983). A follow-up study conducted two years later found that of those women seeking sterilization who were not sterilized at the time of the baseline study, only 33 percent in the Tegucigalpa group and 15 percent in the San Pedro Sula group had obtained the operation they wanted (Janowitz et al. 1985). In Campinas, Brazil, a follow-up of 481 women requesting sterilization found that only 58 percent obtained the operation and 18 percent had experienced an additional pregnancy because they were unable to obtain the procedure (Janowitz et al. 1982a). Egypt and Indonesia do not permit tubal ligation because the government considers the procedure to be a “mutilation,” according to Islamic culture, whereas many other Islamic countries, including Bangladesh, Iran, Morocco, Pakistan, and Tunisia, include voluntary sterilization in the range of contraceptive methods they offer.

Developing countries are not alone in putting up barriers to method access. Currently, in the United States, where female sterilization is one of the two most widely chosen contraceptive methods, many poor women are refused voluntary sterilization for bureaucratic reasons, such as the failure to carry a certificate stating that they consented to postpartum voluntary sterilization 30 days before the operation (Loose 1998). In Japan, after the government received the initial application for distribution of oral contraceptives, 36 years elapsed before they were approved. The government’s first objection was that Japanese women were physiologically different from Western women; a later objection was that the pill’s availability would accelerate the spread of HIV. In 1998, the registration was postponed again when a department of the Ministry of Health, composed of 198 men and only six women, demanded additional studies on the possible relationship between endocrine-disrupting chemicals in the environment and oral contraceptives. The pill was finally approved in 1999, shortly after Viagra had been granted approval in six months (Potts 2003).

Provider Bias

Service providers sometimes deny access to a family planning method as a result of their own prejudices about the method or its delivery system. The power of provider bias to constrain access to contraception in many countries must be underscored continuously. In Istanbul, researchers found that “during family planning consultations the health care professional did not recommend OCs as the first choice of contraception and focused instead on health conditions that restrict the use of the pill. This

was one of the main reasons why women did not choose the pill as their method of contraception" (Karavus et al. 2004:97). In Nepal, Schuler and her colleagues (1985) conducted a study using simulated clients and found that "the clients' 'modern' goal of limiting family size is subverted by the very services that were created to support this goal" (page 260). Provider biases were greatest against poor, low-caste clients. A remark characteristic of this bias was, "[Y]ou must want for a son, even if you bear seven or eight daughters. You must satisfy your husband by making him the father of a son. Go on having babies until you produce a son" (Schuler et al. 1985:268).

One in five family planning field-workers in Pakistan believe that couples should have at least two sons before they begin practicing contraception, and almost half believe that no one younger than 21–25 should use the pill (Shelton et al. 1999). In the United States of 50 years ago, surgeons often refused to accommodate a woman's voluntary request for sterilization unless her age times her parity equaled at least 120. When voluntary sterilization was first offered in Indonesia in the 1980s, the same ill-conceived "120 rule" was put in place. In Zambia, young people seeking emergency contraception (EC) from clinics found providers to be unwelcoming and judgmental (Bullock 1997; Ahmed et al. 1998). In 2001, in the Afghan refugee camps in northern Pakistan, family planning providers asked each woman coming to the service whether she had her husband's permission to practice contraception. The same women could obtain family planning methods in the bazaar without such interference, and surveys show that 6 percent of the refugee women went to the local market for their injectable contraceptive, whereas only 4 percent used the family planning service (Tomeczuk 2000). In Ghana, interviews with a purposive sample of providers known for creating barriers to services revealed a wide variety of restrictions impeding access to family planning methods, including marriage requirements and minimum-age restrictions imposed for reasons reflecting providers' personal attitudes (Stanback and Twum-Baah 2001).

Side Effects, Misinformation, and Fear

Side effects, lack of accurate information, and misinformation commonly interact to create a disproportionate fear of fertility-regulation methods. Most contraceptives have side effects, and these can be a barrier to adoption or a reason for discontinuing a method. Perceptions of side effects are often based on misinformation, however (for example, the idea that the pill causes cancer or that the IUD will float around in the stomach).

Fear of side effects is widespread (Bongaarts and Bruce 1995; Casterline et al. 1997; Asturias de Barrios et al. 1998; Viswanathan et al. 1998; Yinger 1998; El-Zanaty et al. 1999; Stash 1999). In two studies conducted in Pakistan, fear of side effects was found to be one of the most important explanations for nonuse of contraceptives (Shah and Shah 1984; Hashmi et al. 1993). Fears abound that side effects could be uncomfortable, costly, and interfere with spousal sexual relations, and that some side effects of contraceptive use are not in accord with religious beliefs (Casterline and Sinding 2000).

A woman's social environment can influence her perception of a method's side effects. For example, some women may need to avoid methods associated with increased or irregular vaginal bleeding if their religion forbids participation in religious rites during menstruation. In communities where amenorrhea is perceived as harmful to a young woman, any method with this side effect will be unpopular (Konje and Ladipo 1999). In South Africa, where many men prefer "dry sex,"³ vaginal wetness was recorded as the second most common side effect (after amenorrhea) by women using progestogen-only injectable contraceptives (Smit et al. 2002), and it was a reason for discontinuing use.

The demographic literature often makes little distinction between actual side effects and the perception of harmful impacts on health from practicing contraception. In a study conducted in Mexico (Grubb 1987), 26–60 percent of oral contraceptive users stopped using the pill because they were worried about its safety. Another group of women who had never practiced contraception reported that they had chosen not to use the pill for safety reasons. In Mali, some women fear that oral contraceptives and injectables can cause permanent infertility (Castle 2003). In conversations held outside a clinic in Kenya, women expressed the fear that birth-control pills can form a mass in a woman's stomach or cause a variety of diseases (Rutenberg and Watkins 1997). In both developed and developing countries, many women perceive the use of oral contraceptives to be more dangerous than being pregnant, and in a study conducted in eight developing countries, 50–70 percent of women thought that use of the pill posed considerable health risks (Grubb 1987). A prominent obstacle to contraceptive use revealed by the qualitative interviews in the study conducted in Punjab, Pakistan, by Casterline and his colleagues (2001) was women's fears of the detrimental side effects of contraceptives on health. Casterline and his colleagues (1997:181) report that in the Philippines, "[w]omen with an unmet need were more likely to view the pill and tubal ligation as more or equally harmful to health, compared with pregnancy." In cases such as

these, in which women express fear of health risks from practicing contraception, misinformation may be the real barrier. Furthermore, in places where this kind of misinformation is widespread, an individual who has avoided using a method because she fears for her health has made a rational decision.

Many countries have maintained the prescription-only status of low-dose combined oral contraceptives, in spite of their safety record. Often, in the developing world, prescription status does not prevent sales of the pill. Even when it is available in shops without a prescription, however, legal requirements continue to create information barriers. Mexico's birth-control pill packets do not contain instructions because it is presumed that the user will have received the information she needs from her prescribing doctor. In Uganda and many other countries, health workers inform their clients that the pill is sold by prescription only and fail to provide information about safety. When clients learn of the pill's prescription-only status, they interpret this as an indication that the drug must be dangerous. In Japan, 70 percent of women are afraid to use oral contraceptives as a consequence of decades of negative propaganda about the method disseminated before it was approved in 1999 (Potts 2003 and 2005).

Sometimes providers are as misinformed as their clients who are users or potential users of contraceptives (Bruce 1990). In Kenya, for example, some staff do not accept that a contraceptive method can be started during the period of postpartum amenorrhea (Stanback et al. 1999). As a practical problem in developing-country settings where educational levels are low, lack of information and misinformation can lead to deliberate misinformation. For example, some religious spokesmen in Africa exaggerate the failure rate of condoms. The impact of incorrect messages is found in the industrial world as well, as exemplified by Japan, where after the pill was finally approved, all women using the method were required to undergo frequent medical examinations, leading women to believe it posed a danger to health. As noted above, 70 percent of Japanese women remain afraid to use this method, and, in fact, only one of 150 fertile Japanese women use it (Potts 2003).

Lack of knowledge is clearly a significant barrier to fertility regulation. In their analysis of the single question posed in the Demographic and Health Survey about "contraceptive knowledge," Bongaarts and Bruce (1995) found that in 13 countries, one-fourth of all women surveyed indicated lack of knowledge as a reason for not practicing family planning, slightly exceeding the proportion who reported a fear of side effects (20.4 percent). In order to probe more deeply, the authors calculated a

"combined knowledge index" from the available DHS questions, which included questions about recognition of contraceptive methods, knowledge of sources for obtaining them, and knowledge of their side effects. They conclude that "the principal reasons for nonuse are lack of knowledge, fear of side effects, and social and familial disapproval" (Bongaarts and Bruce 1995:57).

Inadequate information has inhibited growth of realistic access to vasectomy for men. In Brazil, de Castro (1987) notes that most family planning programs are biased toward women and have little or no experience with male contraception. On the client side, a commonly held belief is that vasectomy is a form of castration. (Pillai and Kelley 1992). One important study conducted in São Paulo, Brazil, showed that mass-media advertising can be remarkably effective in providing information needed to increase the demand for vasectomy services (Foreit et al. 1989).

Emergency contraception provides a contemporary example of constrained access due to lack of information. Even today, most women, whether in Mali, Pakistan, or the United States, do not know that oral contraceptives can be used after unprotected intercourse to forestall a pregnancy. Although birth-control pills can be purchased over the counter in most developing countries, few organizations and agencies have attempted to inform the hundreds of millions of women around the world about this simple, safe option for inhibiting pregnancy; consequently, this option remains largely unexploited.

Abortion

Although women who can afford to visit a private doctor can obtain a confidential, safe abortion in any country, regardless of religion or rules, barriers to this option are formidable for low-income women in most developing countries. Poor women seeking an abortion can face exorbitant expense, sexual exploitation, pain, imprisonment, and death. In 1967, Kingsley Davis wrote, "despite its emphasis on technology, current policy does not utilize . . . all birth-control measures. . . . Induced abortion, for example, is one of the surest means of controlling reproduction, and one that has been proved capable of reducing birth rates rapidly. . . . Yet this method is rejected by nearly all national and international . . . programs" (page 732). In the subsequent 40 years, few experts have been so straightforward; today, the political hostility that would greet such a statement would be greater by far than it was when Davis wrote.

The importance of clients' confidentiality, even where abortion is legal, results in a paucity of data concerning

the extent of reliance on the procedure. The uneven data and the controversy surrounding abortion severely inhibit demographic analysis. Interestingly, were the controversy minimized, this is one method of fertility regulation for which barriers to use would be more easily quantifiable, permitting regression analysis of its impact. Montagu has performed a regression analysis on the contraceptive prevalence rate (CPR) and total fertility rate (TFR) of 53 countries without access to safe abortion and of 36 countries where safe abortion is available. These unpublished data show that for any CPR the TFR is likely to be one birth fewer in those countries where safe abortion is not available (Montagu and Campbell 2002).

As a consequence of the controversy and ambiguous data related to abortion, the impact of abortion is commonly underestimated. The data that exist suggest that globally an estimated 46 million induced abortions were performed in 1995, of which some 26 million were legal and approximately 20 million were illegal (Henshaw et al. 1999). The abortion rate is similar for developed regions (39 per 1,000 women aged 15–44) and developing regions (34 per 1,000), implying “a lifetime average of about one abortion per woman” (AGI 1999:27). Given a global TFR of fewer than three children per woman and an average of one abortion per woman, clearly abortion is a key variable in achieved family size. Abortion and contraceptive practice interact, and the role of induced abortion varies over the course of each country’s demographic transition. Ultimately, in all societies where women, on average, have the number of children they want, ideal family size is achieved by means of a combination of contraception and abortion (Potts et al. 1977). An analysis of the availability of safe abortion in 170 countries found that none had achieved replacement-level fertility without access to safe abortion, either directly, as in most developed countries, or indirectly, as in Malta or Ireland, from which women travel to a neighboring country to terminate a pregnancy (Campbell and Adams 2001). For example, an estimated 5,000 women a year travel from Ireland to the UK to obtain a safe abortion (Lech 2004).

Discussion

A realistic appreciation of the nature, extent, and significance of the barriers standing between couples and the information and technologies they need if they wish to control the size of their families is important for several reasons. These barriers are responsible for a substantial proportion of unwanted and unintended births. An understanding of these consequences is likely to affect the

academic interpretation of the demographic transition and should influence government policies and programs and the allocation of funds for reproductive health and family planning. Above all, barriers to fertility regulation have enormous implications for the health and welfare of hundreds of millions of women and their families (Potts 1997).

Mason (1997:446) notes, “[E]xceptions to all the major theories of fertility transition have indeed been found, and the field consequently suffers from a sense of malaise caused by our apparent inability to explain one of the most important demographic phenomena in human history.” We suspect that the presence or absence of barriers may have a greater influence on the rate of decrease in family size or the delay thereof, as observed across contemporary developing and developed countries, than any other single variable. Casterline and his colleagues (2001:107), recognizing the power of barriers, refer to the important work of Robinson and Cleland:

[S]urprisingly little research has been conducted (especially quantitative empirical research) on the full array of hypothesized contraceptive costs (Robinson and Cleland 1992). In part, the lack of such research can be explained by the difficulty of measuring these costs; indeed, some of them are intrinsically nearly impossible to measure. The conclusion is hard to avoid, however, that the scant empirical attention to the magnitude of contraceptive costs and their effects on contraceptive decisionmaking reflects less than full respect for the potential power of the various possible obstacles to contraceptive use.

Although measuring barriers to fertility regulation will always be more difficult than measuring the factors influencing literacy or income, and although the data for such measurement will never match the larger, smoother data sets describing exogenous factors correlating with fertility, improving quantification would be a valuable effort. In particular, new ways of quantifying the barriers are needed.

In the analysis of reproductive behavior, we suggest that more attention be given to misinformation. The calculus of conscious choice (Coale 1973) in relation to family size is severely narrowed when the information women receive is inaccurate, as we find in many countries around the world. Experiencing side effects of contraceptive methods does cause discontinuation of the methods. Most demographic studies, however, have been slow to recognize the distinction between real side effects and women’s fear of potential damage to their health from contraceptive use, often categorized under side effects.

Two steps could be taken to overcome this problem. The first would be to review studies in which side effects have been found to be a leading cause of low contraceptive prevalence rates. This review should control for incorrect information in the responses to surveys in which the language that either describes or implies perceived harmful health impacts of contraceptive methods may be obscuring the distinction between side effects and health fears. The second step would be to introduce questions into future surveys to test whether the respondent addressing questions about desired family size has accurate information regarding the safety of contraceptive methods, and to control for respondents' incorrect perceptions. If both of these steps were taken, we suspect that experience of side effects would be revealed as a relatively small barrier to fertility regulation and that misinformation may, in fact, be one of the leading barriers.

Next, we suggest that barriers to fertility regulation should be given greater salience in policy discussions of reproductive health and family planning. Historically, most developed countries required more than a century to remove the legal, social, commercial, and scientific barriers to fertility regulation that were in place universally in the nineteenth century (Mohr 1978; Potts and Campbell 2003). Tsui (2001) describes the historical role of policies and programs in bringing modern contraceptive technologies into widespread use, and Campbell (1998) has documented how several schools of thought have influenced domestic and international policies on population and family planning. Policy discussions need to incorporate a broader conception of the remaining barriers to fertility regulation.

The ICPD Programme of Action took a bold step in stating:

Governments should make it easier for couples and individuals to take responsibility for their own reproductive health, by removing unnecessary legal, medical, clinical and regulatory barriers to information and to access to family-planning services and methods. (United Nations 1994: paragraph 7.20).

Unfortunately, the failure to meet the ICPD goal of removing "all programme-related barriers to family-planning use by the year 2005" is symptomatic of the depth and sway of such barriers. Barriers to fertility regulation are often remarkably pervasive and difficult to remove. For example, an International Symposium on Laboratory Testing Prior to Contraception held in Dakar in 1990 recognized that the costly tests required in several francophone countries prior to granting women access to oral contraceptives placed them at risk of mor-

bidity and mortality several orders of magnitude greater than any possible benefit of the tests. Agreement was reached at the symposium to eliminate routine laboratory screening for hormonal contraception, yet a follow-up survey conducted in Senegal four years later found that although the government had decided to cease the screenings, many physicians preferred to keep them (Stanback et al. 1994).

Part of the resistance to removing barriers may be due to professional inertia or perceived threats to existing financial interests, but a number of barriers are found across time and in different cultures, suggesting that they may represent universal predispositions and gender biases. When the rules concerning fertility regulation are not science-based, they are susceptible to male hierarchies exercising control over women, and especially over their reproduction (Potts 2003 and 2005). The Egyptian government's proscription of tubal ligation as a "mutilation" existing alongside its continued tolerance of female genital mutilation is a stark example of gender bias in family planning. Medical barriers, which, as described above, are an especially common constraint on women's access to means of spacing or limiting births, are easily imposed patriarchal rules inhibiting women's control of their reproductive lives.

One way of looking at barriers to fertility regulation is to compare societal and individual attitudes toward death control and birth control. Declines in mortality over the past 200 years were achieved with the introduction of new technologies and their associated information, resulting in the availability of cleaner water, better hygiene, vaccines, and improved nutrition. Saving children's lives is a priority for most people, and taking the many steps required to achieve this goal has generated little controversy. In contrast, in many parts of the world, enabling women to have the technologies and information they need in order to manage their reproductive lives and reduce their likelihood of dying young engenders controversy and debate. Consequently, the realistic availability of fertility-regulation methods continues to be delayed in many countries.

Medical and clinical barriers can be reduced through governments' adherence to evidence-based rules and through a commitment to ensuring that providers are not driven by their own biases in deciding who can obtain a particular method. One unnecessary regulation in many countries is keeping oral contraceptives available only by prescription. Some developing countries (for example, China, Egypt, India, and Thailand) have made the switch to over-the-counter sales, but commercial pressures and the controversies concerning family planning have inhibited Western manufacturers from seek-

ing approval for OTC sale of the pill.⁴ The continued prescription-only status of this method in the United States and Europe is particularly unfortunate because many developing countries assume that such status is retained in the West for safety reasons and, consequently, maintain the prescription-only status themselves. As noted above, even in countries where oral contraceptives are sold legally only with a prescription but are, in fact, available over the counter, prescription-only status is a signal to women that the pills must be dangerous.

The weight given to barriers to fertility regulation influences decisions regarding whether public money is allocated for family planning services and contraceptive commodities or to indirect determinants of family size. Removing barriers to improve access to contraceptives is seen as contributing to the single purpose of better service for the client by the United States Agency for International Development (USAID 2005) and its cooperating agencies, undertaken to reach the goal of "maximiz[ing] access and quality." However, the absence of adequate supplies of modern contraceptive commodities is becoming more serious by the day. Speidel (2005) has shown that only 13 percent of the ICPD financial target for international support of family planning in developing countries by 2005 has been met, and commodity purchases of contraceptives are not keeping pace with the growing number of women of childbearing age and expected increases in contraceptive prevalence. When contraceptives are unobtainable, the induced abortion rate is likely to rise. Westoff (2005) has shown that in 12 Asian and Eastern European countries, when contraceptive prevalence rises, the abortion rates decline.

Above all other considerations is the impact on women of the barriers that separate them from the information and technologies they need to decide whether and when to have a child and the effect of this separation for their health and their families' health and well-being. This review has focused on women rather than on couples because when the barriers to family planning are difficult or impossible to surmount, women are the ones who suffer the consequences of unintended pregnancy, including the resulting high rates of morbidity and mortality that persist in many low-resource settings around the world.

Conclusion

Although studies of barriers to fertility regulation are scattered and have not been drawn together previously, the literature is rich, providing a compelling account of the many obstacles that couples, and women in particu-

lar, face in seeking to space their childbearing or limit their family size. Whatever the origin of the many barriers to fertility regulation, the difficulties that poor women encounter when seeking clinical family planning services that, ostensibly, are designed to help them are burdensome. Indeed, in light of the range and extent of these barriers in some settings, the fact that any significant number of women manage to plan their families is a testimony to the strength of their desire to control their childbearing. In other settings, the barriers may be impenetrable, so that the option of family planning is nonexistent. As Cottingham and Mehta (1993) point out, women should not be required to undergo long, tedious, sometimes humiliating, and unnecessary medical procedures in order to be able to use contraceptives safely. Women must have many opportunities opened to them, including education; fair treatment in matters of occupation, income, property, and divorce; and a voice in civic matters. Here, we have addressed only a woman's need to escape the tyranny of unintended pregnancy, but it is one without which the others cannot be achieved.

Notes

- 1 The needs of rich women are a lesser concern in this investigation because in virtually every country, regardless of the local culture, religion, or laws, the wealthy have relatively unconstrained access to safe fertility-regulation methods, including safe abortion.
- 2 An expert group in England recommended permitting social workers and nurses to dispense oral contraceptives, but the recommendation was not implemented, probably because it coincided with a decision to pay family physicians a separate service fee for prescribing the pill.
- 3 Vaginal wetness is perceived to be in poor taste and even sexually repulsive.
- 4 OTC pharmaceuticals typically sell for half to two-thirds of the price of prescription drugs, so no financial incentive exists for a company to change its product to OTC status.

References

- Ahmed, Yusuf, Mulima Ketata, and John Skibiak. 1998. "Emergency contraception in Zambia: Setting a new agenda for research and action." Nairobi: Population Council.
- Alan Guttmacher Institute (AGI). 1999. *Sharing Responsibility: Women, Society and Abortion Worldwide*. New York: AGI. <<http://www.guttmacher.org/pubs/sharing.pdf>>. Accessed 10 May 2006.
- Asturias de Barrios, Linda, Idalma M. De Rodas, Isabel Nieves, Jorge Matule, and Nancy Yinger. 1998. *Unmet Need for Family Planning in a Peri-urban Community of Guatemala City*. Washington, DC: International Center for Research on Women.

- Bertrand, Jane T., Eric Seiber, and Gabriela Escudero. 2001. "Contraceptive dynamics in Guatemala: 1978–1998." *International Family Planning Perspectives* 27(3): 112–136.
- Birdsall, Nancy, Allen C. Kelley, and Steven Sinding. 2001. *Population Matters—Demographic Change, Economic Growth, and Poverty in the Developing World*. New York: Oxford University Press.
- Bongaarts, John and Judith Bruce. 1995. "The causes of unmet need for contraception and the social content of services." *Studies in Family Planning* 26(2): 57–75.
- Bruce, Judith. 1990. "Fundamental elements of the quality of care: A simple framework." *Studies in Family Planning* 21(2): 61–91.
- Bullock, Joan. 1997. "Raising awareness of emergency contraception." *Community Nurse* 3(7): 28–29.
- Campbell, Martha M. 1998. "Schools of thought: An analysis of interest groups influential in international population policy." *Population and Environment* 19(6): 487–512.
- Campbell, Martha M. and Kimberly Adams. 2001. "Is replacement level fertility possible without access to abortion?" Poster for the annual meeting of the International Union for the Scientific Study of Population: Salvador, Brazil, 20–24 August.
- Casterline, John B., Aurora E. Perez, and Ann Biddlecom. 1997. "Factors underlying unmet need for family planning in the Philippines." *Studies in Family Planning* 28(3): 173–191.
- Casterline, John B., Zeba A. Sathar, and Minhaj ul Haque. 2001. "Obstacles to contraceptive use in Pakistan: A study in Punjab." *Studies in Family Planning* 32(2): 95–110.
- Casterline, John B. and Steven W. Sinding. 2000. "Unmet need for family planning in developing countries and implications for population policy." *Population and Development Review* 26(4): 691–723.
- Castle, Sarah. 2003. "Factors influencing young Malians' reluctance to use hormonal contraceptives." *Studies in Family Planning* 34(3): 186–199.
- Chamrathirong, Aphichat and Peerasit Kamnuasilpa. 1984. "How family planning availability affects contraceptive use: The case of Thailand." In *Survey Analysis for the Guidance of Family Planning Programs*. Eds. John Ross and Regina McNamara. Liège, Belgium: Ordina Editions. Pp. 219–235.
- Ciszewski, Robert L. and Philip D. Harvey. 1994. "The effect of price increases on contraceptive sales in Bangladesh." *Journal of Biosocial Science* 26(1): 25–35.
- Cleland, John. 2001. "Potatoes and pills: An overview of innovation-diffusion contributions to explanations of fertility decline." In *Diffusion Processes and Fertility Transition*. Ed. John B. Casterline. Washington, DC: National Academy Press. Pp. 39–65.
- Coale, Ansley J. 1973. "The demographic transition." *International Population Conference, Liège, 1973*. Volume 1. Liège, Belgium: International Union for the Scientific Study of Population. Pp. 53–72.
- Cottingham, Jane and S. Mehta. 1993. "Medical barriers to contraceptive use." *Reproductive Health Matters* May(1): 97–100.
- Davis, Kingsley. 1967. "Population policies: Will current programs succeed?" *Science* 158(3,802): 730–739.
- De Castro, Marcus P. 1987. "Creating a male contraceptive service." *Network* 8(4): 6.
- Department of Health and Social Security. 1976. *Report of the Joint Working Group on Oral Contraceptives*. London: Her Majesty's Stationery Office.
- Dixon-Mueller, Ruth and Adrienne Germain. 1992. "Stalking the elusive 'unmet need' for family planning." Commentary. *Studies in Family Planning* 23(5): 330–335.
- Donald, Maria and Philip Harvey. 1992. "The impact of price reductions on condom sales in Haiti." Washington, DC: DKT Reports, Findings.
- El-Zanaty, Fatma, Ann Way, Sunita Kishor, and John Casterline. 1999. *Egypt Indepth Study on the Reasons for Nonuse of Family Planning: Results of a Panel Survey in Upper Egypt*. Cairo: National Population Council.
- Foreit, Karen G., Marcus Paolo P. de Castro, and Eliane F. Duarte Franco. 1989. "The impact of mass media advertising on a voluntary sterilization program in Brazil." *Studies in Family Planning* 20(2): 107–116.
- Freedman, Ronald and Bernard Berelson. 1976. "The record of family planning programs." *Studies in Family Planning* 7(1): 3–40.
- Gelberg, Lillian, Barbara Leake, Michael C. Lu, et al. 2002. "Chronically homeless women's perceived deterrents to contraception." *Perspectives on Sexual and Reproductive Health* 34(6): 278–285.
- Gopalakrishnan, Krishnamurthy (Gopi). 2003. *Internal Management Report*. Bihar, India: Janani Program, DKT International.
- Green, Russell A. 2002. "Empty pockets: Estimating the ability to pay for family planning." Paper presented at the annual meeting of the Population Association of America, Atlanta, 9–11 May.
- Grubb, Gary S. 1987. "Women's perception of the safety of the pill: A survey in eight developing countries." *Journal of Biosocial Science* 19(3): 313–321.
- Harvey, Philip D. 1994. "The impact of condom prices on sales in social marketing programs." Commentary. *Studies in Family Planning* 25(1): 52–58.
- . 1999. *Let Every Child Be Wanted: How Social Marketing is Revolutionizing Contraceptive Use Around the World*. Westport, CT: Auburn House.
- Hashmi, Sultan S., Khushnood Alam, and Aysha Sheraz. 1993. *Non-users and Unmet Need for Contraception*. Islamabad: National Institute of Population Studies.
- Henshaw, Stanley K., Susheela Singh, and Taylor Haas. 1999. "The incidence of abortion worldwide." *International Family Planning Perspectives* 25(Supplement): S30–S38.
- Hogberg, Ulf. 1985. "Maternal mortality—A world wide problem." *International Journal of Gynecology & Obstetrics* 23(6): 463–470.
- Jain, Anrudh K. 1989. "Fertility reduction and the quality of family planning services." *Studies in Family Planning* 20(1): 1–16.
- Janowitz, Barbara, Deborah L. Covington, Michael Brown, and Milton Nakamura. 1982a. "Interval sterilizations: A substitute for postpartum procedures: An example from Southeast Brazil." *Social Science & Medicine* 16(22): 1,979–1,983.
- Janowitz, Barbara, Joanne E. Higgins, Deborah C. Clopton, Milton S. Nakamura, and Michael L. Brown. 1982b. "Access to postpartum sterilization in southeast Brazil." *Medical Care* 20(5): 526–534.
- Janowitz, Barbara, David Hubacher, Thomas Petrick, and Nootan Dighe. 1994. "Should the recommended number of IUD revisits be reduced?" *Studies in Family Planning* 25(6): 362–367.
- Janowitz, Barbara, Joaquin A. Nunez, Deborah L. Covington, and Christine E. Colvin. 1983. "Sterilization in Honduras: Assessing the unmet demand." *Studies in Family Planning* 14(10): 252–259.

- . 1985. "Why women don't get sterilized: A follow-up of women in Honduras." *Studies in Family Planning* 16(2): 106–112.
- Karavus, Melda, Sanda Cali, Sibel Kalaca, and Dilsad Cebeci. 2004. "Attitudes of married individuals toward oral contraceptives: A qualitative study in Istanbul, Turkey." *Journal of Family Planning and Reproductive Health Care* 30(2): 95–98.
- Kleinman, Ronald L. 1974. *Family Planning Handbook for Doctors*. London: International Planned Parenthood Federation.
- Konje, Justin C. and Oladipo A. Ladipo. 1999. "Barriers to uptake and use of modern methods of contraception in developing countries." *International Journal of Obstetrics and Gynaecology* 65(3): 287–294.
- Lassner, Karen Johnson, Barbara Janowitz, and Cecilia Maria Bessa Rodriguez. 1986. "Sterilization approval and follow-through in Brazil." *Studies in Family Planning* 17(4): 188–198.
- Lech, Medard M. 2004. "Contraception in Europe: Accessibility and availability." *The Journal of Family Planning and Reproductive Health Care* 30(3): 151–154.
- Levin, Ann, Bruce Caldwell, and Barkat-e-Khuda. 2000. "Demand for family planning services in rural Bangladesh: Effect of cash prices and access." Paper presented at the International Union for the Scientific Study of Population Seminar on Family Planning Programmes in the 21st Century, Dhaka, Bangladesh.
- Lewis, Maureen A. 1986. "Do contraceptive prices affect demand?" *Studies in Family Planning* 17(3): 126–135.
- Loose, Cindy. 1998. "Birth control and bureaucracy: Poor women seeking sterilization face a snarl of red tape." Washington, DC: *The Washington Post*. 19 February: A1 and A11.
- Mahmood, Naushin and Karin Ringheim. 1996. "Factors affecting contraceptive use in Pakistan." *Pakistan Development Review* 35(1): 1–22.
- Mason, Karen. 1997. "Explaining fertility transitions." *Demography* 34(4): 443–454.
- Matheny, Gaverick. 2004. "Family planning programs: Getting the most for the money." *International Family Planning Perspectives* 30(3): 134–138.
- Mauldin, W. Parker and John A. Ross. 1991. "Family planning programs: Efforts and results, 1982–89." *Studies in Family Planning* 22(6): 350–367.
- Mohr, James C. 1978. *Abortion in America: The Origins and Evolution of National Policy, 1800–1900*. New York: Oxford University Press.
- Molyneaux, John. 2000. *The Evolution of Contraceptive Pricing in Indonesia*. Final report to the POLICY Project. Jakarta, Indonesia: Rand Corporation.
- Montagu, Dominic and Martha M. Campbell. 2002. "The impact of access to abortion on TFR across 82 countries." Poster presented at the annual meeting of the Population Association of America, Atlanta, 9–11 May.
- Nortman, Dorothy. 1972. *Population and Family Planning Programs: A Factbook*. New York: Population Council.
- Nullis, Clare. 2001. "WHO, UNICEF say Afghan polio immunization campaign went well." *Associated Press*. 9 November 2001.
- Phillips, James F., Mian Bazle Hossain, and Mary Arends-Kuenning. 1996. "The long-term demographic role of community-based family planning in rural Bangladesh." *Studies in Family Planning* 27(4): 204–219.
- Pillai, Vijayan K. and Ann C. Kelley. 1992. "Men and family planning: Toward a policy of male involvement." *Janasamkhya* 10(1–2): 21–30.
- Potts, Malcolm. 1997. "Sex and the birth rate: Human biology, demographic change, and access to fertility-regulation methods." *Population and Development Review* 23(1): 1–39.
- . 2003. "Two pills, two paths: A tale of gender bias." *Endeavour* 27(3): 127–130.
- . 2005. "Why can't a man be more like a woman?: Sex, power, and politics." *Obstetrics & Gynecology* 106(5): 1,065–1,070.
- Potts, Malcolm and Martha M. Campbell. 2003. "History of Contraception." In *Gynecology and Obstetrics CD-ROM 2003 Edition*, Volume 6. Ed. John J. Sciarra. Philadelphia: Lippincott Williams and Wilkins.
- Potts, Malcolm, Peter Diggory, and John Peel. 1977. *Abortion*. Cambridge: Cambridge University Press.
- Robinson, Warren and John Cleland. 1992. "The influence of contraceptive costs on the demand for children." In *Family Planning Programmes and Fertility*. Eds. James F. Phillips and John A. Ross. Oxford: Clarendon Press. Pp. 106–122.
- Rodríguez, Germán. 1978. "Family planning availability and contraceptive practice." *International Family Planning Perspectives* 4(3): 100–115.
- Rosenfield, Allan. 1971. "Family planning: An expanded role for paramedical personnel." *American Journal of Obstetrics and Gynecology* 110(7): 1,030–1,039.
- Rosenfield, Allan and C. Limcharoen. 1972. "Auxiliary midwife prescription of oral contraceptives: An experimental project in Thailand." *American Journal of Obstetrics and Gynecology* 114(7): 942–949.
- Ross, John A. 1995. "The question of access." Commentary. *Studies in Family Planning* 26(4): 241–242.
- Ross, John A., Marjorie Rich, and Janet P. Molzan. 1989. *Management Strategies for Family Planning Programs*. New York: Center for Population and Family Health, Columbia University School of Public Health.
- Rutenberg, Naomi and Susan Cotts Watkins. 1997. "The buzz outside the clinics: Conversations and contraception in Nyanza Province, Kenya." *Studies in Family Planning* 28(4): 290–307.
- Schuler, Sidney Ruth, E. Noel McIntosh, Melvyn C. Goldstein, and Badir Raj Pande. 1985. "Barriers to effective family planning in Nepal." *Studies in Family Planning* 16(5): 260–270.
- Shah, Nasra M. and Makhdoom A. Shah. 1984. "From non-use to use: Prospects of contraceptive adoption." In *Fertility in Pakistan: A Review of Findings from the Pakistan Fertility Survey*. Eds. I. Alam and B. Dinesen. Netherlands: International Statistical Institute. Pp. 149–162.
- Shelton, James D. 2001. "The provider perspective: Human after all." *International Family Planning Perspectives* 27(3): 152–153, 161.
- Shelton, James D., Marcia A. Angle, and Roy A. Jacobstein. 1992. "Medical barriers to access to family planning." *The Lancet* 340(8,831): 1,334–1,335.
- Shelton, James D., Lois Bradshaw, Babar Hussein, Zeba Zubair, Tony Drexler, and Mark Reade McKenna. 1999. "Putting unmet need to the test: Community-based distribution of family planning in Pakistan." *International Family Planning Perspectives* 25(4): 191–195.
- Smit, Jennifer, Lynn McFadyen, Khangelani Zuma, and Eleanor Preston-Whyte. 2002. "Vaginal wetness: An underestimated problem experienced by progestogen injectable contraceptive users in South Africa." *Social Science & Medicine* 55(9): 1,511–1,522.

- Smith, Michael V. and Penny Kane. 1975. *The Pill Off Prescription*. London: Birth Control Trust.
- Speidel, J. Joseph. 2005. *Population Donor Landscape Analysis*. Los Altos, CA: David and Lucile Packard Foundation, International Grantmaking in Population, Sexual and Reproductive Health and Rights. Unpublished.
- Stanback, John and Barbara Janowitz. 2003. "Provider resistance to advance provision of oral contraceptives in Africa." *Journal of Family Planning and Reproductive Health Care* 29(1): 35–36.
- Stanback, John, Zahida Qureshi, Christine Sekadde-Kigundu, Brigitte Gonzales, and Tara Nudley. 1999. "Checklists for ruling out pregnancy among family planning clients in primary care." *The Lancet* 354(9,178): 566.
- Stanback, John, Jason B. Smith, Barbara Janowitz, and Fadel Diadihiou. 1994. "Safe provision of oral contraceptives: The effectiveness of systematic laboratory testing in Senegal." *International Family Planning Perspectives* 20(4): 147–149.
- Stanback, John, Andy Thompson, Kathleen Hardy, and Barbara Janowitz. 1997. "Menstruation requirements: A significant barrier to contraceptive access in developing countries." *Studies in Family Planning* 28(3): 245–250.
- Stanback, John and K.A. Twum-Baah. 2001. "Why do family planning providers restrict access to services?" *International Family Planning Perspectives* 27(1): 37–41.
- Stash, Sharon. 1999. "Explanations of unmet need for contraception in Chitwan, Nepal." *Studies in Family Planning* 30(4): 267–287.
- Stephenson, Rob and Monique Hennink. 2004. "Barriers to family planning service use among the urban poor in Pakistan." *Asia-Pacific Population Journal* 19(2): 5–26.
- Tomeczuk, Basis. 2000. "Summary from a reproductive health survey among Afghan refugees in Palestine." Unpublished technical report.
- Trussell, James, Felicia Stewart, Malcolm Potts, Felicia Guest, and Charlotte Ellertson. 1993. "Should oral contraceptives be available without prescription?" *American Journal of Public Health* 83(8): 1,094–1,099.
- Tsui, Amy Ong. 2001. "Population policies, family planning programs, and fertility: The record." In *Global Fertility Transition*. Eds. Rodolfo A. Bulatao and John B. Casterline. *Population and Development Review* Supplement to Volume 27. New York: Population Council. Pp. 184–204.
- United Nations. 1994. *United Nations International Conference on Population and Development (ICPD) Programme of Action of the UN ICPD*. <<http://www.iisd.ca/cairo/program/p07007.html>>. Accessed 10 May 2006.
- United States Agency for International Development (USAID). 2005. MAQ Initiative (Maximize Access and Quality). <http://www.usaid.gov/our_work/global_health/pop/techareas/serviceaccess/index.html>. Accessed 10 May 2006.
- Viswanathan, Hema, Sona Godfrey, and Nancy Yinger. 1998. *Reaching Women: A Study of Unmet Need in Uttar Pradesh, India*. Washington, DC: International Center for Research on Women.
- Westoff, Charles F. 2005. "Recent Trends in Abortion and Contraception in 12 Countries." *DHS Analytical Studies* No.8. Calverton, MD: ORC Macro. <<http://www.measuredhs.com/pubs/pdf/AS8/AS8.pdf>>. Accessed 10 May 2006.
- World Health Organization (WHO). 2004. *Medical Eligibility Criteria for Contraceptive Use: Third Edition*. Reproductive Health and Research Series. Geneva: WHO. <<http://www.who.int/reproductive-health/publications/mec/mec.pdf>>. Accessed 10 May 2006.
- Yinger, Nancy V. 1998. "Unmet need for family planning: Reflecting women's perceptions." Washington, DC: International Center for Research on Women.

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