The Impact of Programs to Increase Contraceptive Use Among Adult Women: A Review of Experimental And Quasi-Experimental Studies

By Douglas Kirby

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**CONTEXT:** Because rates of unintended pregnancy, abortion and unintended birth are very high among adult women in the United States, it is important to identify interventions that can increase contraceptive use in this population.

**METHODS:** PubMed, PsycINFO and POPLINE were searched for experimental or quasi-experimental studies published between 1990 and 2005 that evaluated policies or programs designed to increase contraceptive use or reduce pregnancy among adult women in the United States. In addition, relevant journals were searched, experts were asked to provide further citations and several subsequently published articles were included.

**RESULTS:** Only 11 studies that assessed programs, and none that assessed policies, were found. The evaluated interventions offered pregnancy and STD prevention counseling (one study); provided contraceptives in settings other than family planning clinics (two studies); had women initiate contraceptive use during the medical visit (two studies); provided advance supplies of emergency contraception (four studies); or implemented systems to remind injectable contraceptive users about their next injection (two studies). The interventions generally had positive, albeit short-term, effects on contraceptive use; none reduced pregnancy rates. Programs that gave women a contraceptive during the visit were the most effective at increasing method use. Advance provision of emergency contraception increased the likelihood of its use and did not affect regular contraceptive use.

**CONCLUSIONS:** Very few studies have evaluated interventions to increase contraceptive use among adult women. A research plan that rigorously assesses the impact of different approaches to increasing contraceptive use among adult women should be an integral part of any long-term effort to prevent unintended pregnancy in the United States.

The rate of unintended pregnancy in the United States is among the highest in the industrialized world. About half of all pregnancies, or nearly three million pregnancies each year, are unintended. These unintended pregnancies lead to 1.3 million abortions and 1.4 million unplanned births annually.

Although people often associate unintended pregnancy with teenagers, rates are also high among older women. For example, in 2002, the estimated unintended pregnancy rate among women 20 or older was 39 per 1,000.* Among women aged 25–29 who had given birth during the previous five years, 16% had had a mistimed birth and an additional 10% had had an unwanted birth. Among women aged 30–44 who had given birth during the previous five years, the proportions were 9% and 13%, respectively.

In addition, older women actually have many more unintended pregnancies than teenagers do, because the vast majority of women of childbearing age are 20 or older. For example, in 2000, an estimated 91% of all abortions were obtained by women 20 or older. Similarly, estimates based on the 2002 National Survey of Family Growth (NSFG) suggest that women 20 or older had 84% of all unwanted births.†

Given that most adult women are sexually active and are likely to remain so, the most promising method of reducing the number of unintended pregnancies would be to increase their use of effective contraception. This raises several very important questions: What is known about the impact of policies and interventions designed to increase contraceptive use and reduce unintended pregnancy among adult women? Which policies and interventions are effective? Which are not?

The family planning literature contains numerous studies of contraceptive effectiveness among women, use of contraceptives generally (and use of particular methods), and factors affecting contraceptive use and nonuse. Many of these studies are based on public records (e.g., birth records) or on large, nationally representative surveys (e.g., the NSFG), and are basically demographic. While these studies are informative and helpful, they typically do not provide strong evidence for the impact of interventions designed to increase...
contraceptive use and thus do not answer the important questions above.

Much more relevant are studies that have attempted to measure the impact of policies and programs. Some of these studies have not used experimental designs, but have attempted to estimate the impact of changes in policies or programs or of other naturally occurring changes. For example, researchers attempted to measure the effects that Family PACT—a large, state-funded effort to increase the number of reproductive health care providers in California and to reduce the cost of reproductive health care services to low-income women—had on contraceptive use, pregnancies, abortions and births. Because a good comparison group did not exist, the researchers had to make various assumptions about what women would have done had Family PACT not been implemented. These assumptions may have led to overestimates of the program’s impact. More generally, studies without experimental or strong quasi-experimental designs cannot provide strong evidence of causation.

Consequently, to provide a better understanding of the impact of policies and programs on contraceptive use and pregnancy, the purpose of the current study was to identify and summarize studies that employed an experimental or strong quasi-experimental design to measure the impact of any kind of policy or intervention on adult contraceptive use or pregnancy.

METHODS

The inclusion criteria for this review were determined in part by the decision to exclude studies with particular features. For example, although interventions designed to prevent transmission of HIV and other STDs may increase condom use and reduce the incidence of unintended pregnancy, they are not included in this review for several reasons. The approaches used to reduce individuals’ number of sexual partners, increase condom use, and promote STD testing and treatment are quite different from the approaches employed to increase use of contraceptives (particularly those requiring prescriptions); studies of policies and programs to prevent STDs typically do not measure the impact on overall contraceptive use; and the results of such studies have been summarized elsewhere.25–27

Similarly, interventions that strive to reduce adolescent pregnancy are not the focus of this review, because many programs for teenagers emphasize both abstinence and contraception, and are therefore quite different from most programs for adult women; moreover, studies of these interventions, too, have been summarized elsewhere.28 Instead, this review focuses on interventions designed to increase overall contraceptive use among females of all ages, but especially adult women.

Consistent with these concerns, studies had to meet the following criteria to be included in this review. The policies or programs being examined had to have been implemented in the United States and designed to increase contraceptive use to prevent unintended pregnancy (i.e., not designed to increase condom use primarily to prevent STDs), and the samples had to include adults (as opposed to only teenagers), consist of at least 50 participants and have a mean or median age of at least 20. In addition, the research methods had to include a reasonably strong experimental or quasi-experimental design, incorporating both intervention and comparison groups and both pretest and posttest data collection, and assess intervention effects on some measure of contraceptive use or pregnancy. Finally, the study had to have been published in 1990 or thereafter; studies published before then would have less relevance for programmatic decisions today.

Three strategies were employed to find studies meeting these criteria. First, three databases (PubMed, PsycINFO and POPLINE) were searched for articles published from January 1990 through December 2005, and the titles and abstracts of thousands of potentially relevant articles were reviewed. In addition, past issues of 16 pertinent journals* published during the same time frame were searched. Finally, more than 20 leaders in the field were sent preliminary lists of studies and asked for additional references of articles meeting the criteria above. Although the systematic search covered the period from 1990 to 2005, subsequently published articles were also included if they met the inclusion criteria and were found by the reviewer.

RESULTS

Only 11 studies were identified that met the specified criteria (Table 1, page 36). The study samples generally were ethnically and racially diverse, but quite young. In only two of the 11 samples was the mean or median age greater than 26.

The programs that were evaluated in the 11 studies fell into five categories: providing pregnancy and STD counseling during and after clinic enrollment (one study); providing contraceptive use in settings other than traditional family planning clinics (two studies); having women start hormonal contraceptive use during the medical visit (“quick start”) rather than at the beginning of the next menses (two studies); providing advance supplies of emergency contraception (four studies); and implementing contraceptive reminder systems (two studies). Notably, none of the studies measured the impact of changes in any state or federal policies.

*The 16 journals were Adolescence; American Journal of Community Psychology; American Journal of Public Health; Archives of Pediatrics & Adolescent Medicine; Contraception; European Journal of Obstetrics, Gynecology and Reproductive Biology; Human Reproduction; Journal of Adolescent Health; Journal of Family Planning and Reproductive Health Care; Journal of Marriage and the Family; Journal of Pediatric and Adolescent Gynecology; Journal of Sex Research; Journal of Women’s Health; Obstetrics & Gynecology; Perspectives on Sexual and Reproductive Health; and Women’s Health Issues.
Pregnancy and STD Counseling

One study measured the impact of providing reproductive health counseling; it did not find significant effects on behavior.29 In this randomized trial, 764 women were assigned to receive either pregnancy and STD prevention counseling or general health counseling (e.g., counseling on smoking, diet and exercise). Women in the intervention group received pregnancy and STD prevention counseling during their first clinic visit and again, either in person or by phone, two months later. Both counseling sessions were based on the principles of motivational interviewing, a technique that emphasizes the expression of empathy and the development of the client’s self-efficacy to achieve her stated goals. Participants’ contraceptive use was assessed at baseline and at two, eight and 12 months; occurrence of pregnancy and STDs was assessed at 12 months. Contraceptive use did not differ between the intervention and control groups at any of the three follow-up periods. Similarly, at 12 months, the groups did not differ in pregnancy or STD rates.

Services in Alternative Settings

Two studies measured the impact of providing initial family planning services in alternative settings. Both found positive effects on contraceptive use.

The first study examined the impact of providing initial family planning services at an STD clinic.30 The program provided individual counseling about all contraceptive

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### TABLE 1. Selected characteristics of experimental and quasi-experimental studies of interventions to increase contraceptive use among adult women, by type of intervention, 1990–2007

<table>
<thead>
<tr>
<th>Type and study</th>
<th>Setting/sample</th>
<th>Intervention</th>
<th>Design</th>
<th>Measure</th>
<th>Result/significance‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy/STD prevention counseling</td>
<td>Three primary health clinics in North Carolina; N=764 women aged 16–44; 62% white, 27% black</td>
<td>Intervention group received pregnancy and STD prevention counseling at baseline and 2 months later; control group received general health counseling</td>
<td>Experimental; questionnaires at baseline and at 2, 8 and 12 months</td>
<td>Contraceptive use</td>
<td>ns</td>
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<tr>
<td>Contraceptive initiation in alternative settings</td>
<td>Urban STD clinic in Denver; N=877 women aged ≤19–49; 40% white, 30% Hispanic, 26% black</td>
<td>Intervention group received enhanced contraceptive counseling, initial supply of contraceptives and a facilitated referral to a reproductive health care provider; intervention and control groups both received condoms and a list of providers for reproductive health care</td>
<td>Experimental; interviews at 4, 8 and 12 months</td>
<td>Contraceptive use</td>
<td>ns</td>
</tr>
<tr>
<td>Clarke et al., 2006</td>
<td>Adult correctional facility in Rhode Island; N=224 low-income women aged 18–35 (mean, 25); 53% white</td>
<td>Intervention group was offered contraceptives two weeks prior to release; intervention and control groups both received reproductive health education and referrals for contraceptive services at a community health clinic</td>
<td>Phased quasi-experimental; control group received services during phase 1 (7 mo.); intervention group received services during phase 2 (15 mo.); outcomes assessed via chart review</td>
<td>Contraceptive use four weeks after release</td>
<td>39% vs. 4%*</td>
</tr>
<tr>
<td>Quick start of contraception</td>
<td>Family planning clinics in New York City; N=250 low-income women; mean age, 22; 87% Hispanic</td>
<td>Intervention group took the first pill at clinic; control group was instructed to take the first pill after the visit</td>
<td>Quasi-experimental; group assignment determined by clinician preference; follow-up interviews 6 weeks later</td>
<td>Started second pack of pills</td>
<td>88% vs. 74%*</td>
</tr>
<tr>
<td>Murthy et al., 2005</td>
<td>Hospital clinic in Pittsburgh; N=60 women; median age, 20; 77% white, 22% black, 1% Hispanic</td>
<td>Intervention group started contraceptive patch during clinic visit; control group started patch on first day of next menses; both received a 4-month supply of patches, written instructions, prescription for EC and telephone reminder at 6 weeks</td>
<td>Experimental; patch use assessed at clinic visit at beginning of fourth cycle</td>
<td>Patch use during third cycle</td>
<td>ns</td>
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</table>
methods; supplied women with oral contraceptives, depot medroxyprogesterone acetate (DMPA) or diaphragms either at the time of enrollment or during an early follow-up visit; reviewed with participants the services of reproductive health providers in the community; set up an appointment with the provider chosen by the patient; and followed up with the patient to be sure that she kept the appointment. A total of 877 women were randomly assigned to the program or to a control group that received customary information about contraception; both groups received condoms and a booklet with a list of providers. Participants were interviewed after four, eight and 12 months. Results indicated that at four and eight months, women in the intervention group were more likely than those in the control group to have received care from the provider, to be using effective contraception; and to have attended follow-up visits.

### TABLE 1. Selected characteristics of experimental and quasi-experimental studies of interventions to increase contraceptive use among adult women, by type of intervention, 1990–2007 (continued)

<table>
<thead>
<tr>
<th>Type and study</th>
<th>Setting/sample</th>
<th>Intervention</th>
<th>Design</th>
<th>Measure</th>
<th>Result/significance†</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advance provision of EC</strong></td>
<td>Jackson et al., 2003(^{35})</td>
<td>Inner-city public hospital in San Francisco; N=370 low-income women; mean age, 26; 72% Hispanic</td>
<td>Intervention group received a regimen of EC plus a short educational session on EC; intervention and control groups both received routine contraceptive education</td>
<td>Experimental; telephone interviews at 6 and 12 months</td>
<td>EC use ns; Condom use ns; Consistent contraceptive use ns; Change to less effective method ns; Unplanned pregnancy ns</td>
</tr>
<tr>
<td></td>
<td>Raine et al., 2005(^{36})</td>
<td>Four family planning clinics in San Francisco and Daly City, California; N=2,117 mixed-income women aged 15–24 (mean, 20); 31% white, 22% Asian, 20% Hispanic, 15% black</td>
<td>Group A received three packets of EC; Group B received instructions on how to receive free EC from 13 participating pharmacies; control group was instructed to return to the clinic to receive EC when needed</td>
<td>Experimental; questionnaires and pregnancy and STD tests at baseline and 6 months</td>
<td>EC use ns; Condom used at last sex Frequency of unprotected sex ns; Consistency of pill use ns; Changed method ns; Frequency of sex ns; No. of partners ns; Frequency of condom use ns; Consistent condom use ns; Pregnancy STDs ns</td>
</tr>
<tr>
<td></td>
<td>Raymond et al., 2006(^{37})</td>
<td>Four family planning clinics in Nevada and North Carolina; N=1,490 women aged 14–24 (median, 20); 70% white</td>
<td>Intervention group received two packets of EC to use when needed and free replacements if needed; control group received instructions on how to obtain EC from clinics for the usual cost</td>
<td>Experimental; questionnaires at baseline and at 6 and 12 months</td>
<td>Median no. of EC uses 2 vs. 0** Median no. of hours between sex and EC use 12 vs. 36** Frequency of sex ns Contraceptive use in last month ns Condom use in last month ns Pregnancy STDs ns</td>
</tr>
<tr>
<td></td>
<td>Walsh and Frezieres, 2006(^{38})</td>
<td>31 clinics in California; N=1,130 women aged 15–41; 30% white, 29% Hispanic, 21% Asian, 20% black</td>
<td>Intervention group received one regimen of EC; intervention and control groups both received a packet of information about EC</td>
<td>Experimental; telephone interviews at 3–9 months</td>
<td>EC use ns; EC use within 12 hours of sex ns Contraceptive use ns Unprotected sex ns Condom failure ns Hormonal method use ns Pregnancy ns</td>
</tr>
<tr>
<td><strong>Contraceptive reminder systems</strong></td>
<td>Madlon-Kay, 1996(^{45})</td>
<td>Family clinic in St. Paul; N=184 low-income women aged 13–50 (mean, 23); 69% white, 21% black, 6% Hispanic</td>
<td>Intervention group was sent a postcard with the dates for their next DMPA injection and Pap test; intervention and control groups both received appointment cards for their next injection</td>
<td>Phased quasi-experimental; intervention and control groups received services during phase 1 (14 mo.); intervention group received services during phase 2 (11 mo.); outcomes from chart review</td>
<td>On-time injections ns; Injections by end of 14-day grace period 76% vs. 64* 96% vs. 87**</td>
</tr>
<tr>
<td></td>
<td>Keder, Rulin and Gruss, 1998(^{44})</td>
<td>Hospital clinic in Pittsburgh; N=250 low-income women; mean age, 21; 68% black, 32% white</td>
<td>Intervention group members were sent a letter two weeks prior to each scheduled DMPA injection and were telephoned if they failed to keep their appointment; treatment and control groups both received written appointment cards for next injection</td>
<td>Experimental; outcomes assessed at one year</td>
<td>DMPA continuation ns On-time injections ns</td>
</tr>
</tbody>
</table>

\(^{*} p<.05. \ **p<.01. \ ***p<.001. \ t\ p<.10. \ †Results for intervention group are listed first, followed by results for control group. \ §Comparison is between group A and control group; comparison between group B and control group was not significant. Notes: ns=not significant; EC=emergency contraception; DMPA=depot medroxyprogesterone acetate.
contraceptives and to be using dual protection (both hormonal contraception and condoms). At 12 months, however, the two groups did not differ on these outcomes. Similarly, the proportion of participants who became pregnant did not differ between the intervention group and the control group (24% vs. 28%—not shown).

The second study, which used a quasi-experimental design, examined the short-term impact of offering contraceptive services to women in a correctional facility two weeks prior to their release versus referring women to services in the community within two weeks of their release.31 Four weeks after release, 39% of the women who had been offered services during incarceration had initiated contraception, compared with only 4% of the women who had been offered referrals for postrelease services. After the researchers controlled for differences in women's background characteristics, the odds of beginning contraceptive use were 21 times as high among women offered contraceptive services while incarcerated as among women offered referrals for services in the community after release (not shown). Thus, providing contraceptive services in the correctional institution appeared to dramatically increase the initiation of contraceptive use, at least in the short term.

Quick Start

When women are prescribed oral contraceptives, the traditional protocol has been for them to wait until their next menses to begin taking the pills. At their clinic visit, they may be encouraged to use another (generally less effective or less acceptable) type of contraceptive in the interim.

Two studies have measured the impact of starting hormonal contraception immediately (“quick start”); the first found positive effects in the short term, while the second failed to find significant effects at multiple time points.

In a quasi-experimental study, physicians instructed 250 patients to begin taking oral contraceptives either during or after the clinic visit.32 A prospective analysis of telephone follow-up interviews revealed that women who took their first pill in the clinic were more likely to begin the second pack of pills than were those who took their first pill later (adjusted odds ratio, 2.8; 95% confidence interval, 1.1–7.3—not shown).

The second study, a randomized trial involving only 60 women, measured the impact of women’s starting use of the contraceptive patch immediately versus starting on the first day of their next period.33 Both the intervention and the control groups received a phone call at six weeks to ensure that the second patch cycle had been initiated. Continuation rates were assessed during the first week of the fourth patch cycle. The continuation rates for the second cycle were 97% and 93% for the intervention and control groups, respectively; for the third cycle, continuation rates were 93% and 90%, respectively (not shown). The differences between groups were not significant, perhaps in part because of the very small sample size. In addition, the very high continuation rates in the control group left little room for improvement, and any impact of the quick start may have been diluted by the reminder phone calls made to both groups. Thus, it is difficult to reach any clear conclusion from this study.

A third study of the quick-start approach is not included in this review because participants’ mean and median ages were unknown, and may have been less than 20. That study, conducted by the principal investigator in the first quick-start study, used a more rigorous experimental design and involved 1,716 women at three family planning clinics.34 It found that women who started taking oral contraceptives in the clinic were more likely than those who did not to begin their second pack of pills, but they were not significantly more likely to still be using oral contraceptives three months after their initial visit. In addition, the quick-start regimen had no significant impact on pregnancy.

Advance Provision of Emergency Contraception

Four studies measured the impact of making emergency contraception available to women before they actually need it. All four found that advance provision significantly increased the use of the method.

The first study, which used an experimental design, included 370 women and found that those who were given contraceptive education and one regimen of emergency contraception in advance were four times as likely to use it during one year of follow-up as were women who were given only contraceptive education (17% vs. 4%).35 The two groups did not differ in their rates of switching to other, less effective methods of contraception or in consistency of use, suggesting that providing emergency contraception in advance did not lead to less effective or less consistent contraceptive use. Notably, the sample consisted mostly of low-income Hispanic women, a group with a high pregnancy rate.

The second study measured emergency contraception use and other outcomes among 2,117 women randomly assigned to receive either three packets of emergency contraception at the clinic, instructions on how to obtain emergency contraception from 13 participating pharmacies if needed or instructions to return to the clinic for emergency contraception if needed.36 After six months, women who had received emergency contraceptive pills in advance were more likely to have used emergency contraception than were those given instructions to return to the clinic if they needed the method. These two groups did not differ in sexual behavior (such as frequency of sex, number of partners, or frequency or consistency of condom use), but women in the advance provision group were less likely to have used a condom the last time they had sex (47% vs. 54%). Women who were instructed to go to a pharmacy if emergency contraception was needed and those instructed to return to the clinic did not differ on any measured outcome.

The third study measured the impact of providing two packets of emergency contraception and, if needed, free
replacements to young women in Nevada and North Carolina. Again, an experimental design was used, and over a 12-month period, women who received emergency contraception in advance were more likely to use it than were women who received only instruction on how to obtain emergency contraception from the clinic at regular cost. Rates of contraceptive use, frequency of sex, and incidence of pregnancy and STDs did not differ between the two groups.

The final advance provision study involved 1,130 clients at 31 family planning clinics in California. Participants were randomly assigned to receive either a packet containing information about emergency contraception and two levonorgestrel pills or a packet containing emergency contraception information only. At follow-up, women who had received emergency contraception in advance were significantly more likely to have used emergency contraception than were women who had received information only (19% vs. 12%). The two groups did not differ in their contraceptive and risk-taking behavior.

These results are similar to those found in two studies of teenagers in the United States and in studies of women in other countries.

Reminder Systems
Two studies measured the impact of sending DMPA users reminders to obtain shots. One reminder system significantly increased the proportion of women who received their shots on time, while the other did not.

In the first study, each patient, at the time of her initial injection, was given a wallet-size card with the date of the next injection. Each patient in the intervention group was also sent a reminder postcard that included the dates of her next injection and her next Pap test. The researchers reviewed the charts of 184 women; about half had received injections before the reminder system was put in place, the remainder afterward. Following the implementation of the reminder system, the proportion of injections administered on time increased from 64% to 76%, the proportion administered by the end of the 14-day grace period rose from 87% to 96%. These changes were statistically significant.

The second study, a prospective, randomized trial involving 250 women, sought to determine whether an intensive reminder system would improve 12-month compliance in women receiving DMPA injections. After each injection, all women in the study were given appointment cards for their next injection, 12 weeks later. However, women in the intervention group were also sent a reminder letter two weeks before the next injection. Women in the intervention group who failed to keep their appointments were contacted by phone, multiple times over the course of the year, if necessary. At the one-year follow-up, the rate of injection continuation and the rate of on-time injections did not differ between the two groups.

DISCUSSION
This review found 11 studies that used experimental or quasi-experimental designs to measure the impact of interventions to increase contraceptive use among adult women. The interventions fell into five groups of programs.

Interventions that gave women a method of contraception during the visit or even started women on a method immediately during the visit were most effective at increasing use of that method, at least in the short run. Specifically, both studies that evaluated the impact of providing oral contraceptives in nontraditional settings found that this approach had a positive effect on contraceptive use for as long as eight months. Similarly, all four studies that evaluated advance provision of emergency contraception found that this approach increased use of the method for up to one year. Finally, one of the two studies measuring the impact of the quick-start approach to hormonal contraceptive use found that it increased use for two cycles, although the second study found no effect during the third cycle.

In general, these findings are consistent not only with each other, but also with common sense. They suggest that women who are motivated to obtain and use contraceptives are more likely to start using them if they receive them during a clinic visit than if they have to wait until a later time, when they might not be so focused on their reproductive health.

Some of these interventions were designed to help women obtain or start using their methods of contraception more quickly, but they did not address many of the reasons that women give for failing to use contraceptives. For example, they did not address women’s motivation to avoid pregnancy, women’s beliefs that they are not at risk for pregnancy (e.g., because they do not expect to have sex or they have sex infrequently) or their concerns about contraceptive use and its side and health effects.

Consequently, one might not expect these programs to have a long-term impact on contraceptive use—and indeed, the improvements in contraceptive use seen in these studies sometimes disappeared as length of follow-up increased. Moreover, although some of the studies probably lacked sufficient power to detect any impact on pregnancy, none of the six studies that assessed pregnancy rates found significant effects.

Thus, implementing these interventions more broadly will likely increase contraceptive use in the short run and might reduce unintended pregnancy to a small degree in the short run. On the other hand, it is not likely to reduce unintended pregnancy markedly.

Findings were mixed in the two studies involving reminder systems; one found an impact on compliance with DMPA injections, but the second did not. While it is not certain why the results between these two studies differed, the second study had a stronger design (a randomized trial vs. a two-phase quasi-experimental design) and measured impact for a much longer period of time (12 vs. three months).
Any review of this type—no matter how thorough the search—will undoubtedly fail to find a few studies meeting the specified criteria, and that is undoubtedly true of this review. Nevertheless, what is most striking about the results of this review is not the findings just described, but rather the extremely small number of studies that have evaluated the impact of interventions on contraceptive use among adult women. This review found only 11 such studies. Furthermore, most of this research focused on relatively young women. In nine of the 11 studies, the mean or median age was 26 or less. In addition, this review found no studies measuring the impact of state or federal policies.

By contrast, dozens of studies with experimental designs have measured the impact of interventions to increase condom use or change other sexual behaviors among adults to prevent STDs, and more than 100 studies have examined interventions to prevent pregnancy or STDs among adolescents. For example, research has examined the impact of educational programs, media campaigns, teenage clinics, interactive videos, peer or opinion-leader programs, and youth development programs on the prevention of pregnancy or STDs among teenagers. Studies of corresponding interventions for adults to prevent unintended pregnancy either do not exist or have not been published in professional journals.

The relative paucity of studies to prevent unintended pregnancy among adult women undoubtedly reflects the widespread concern in the United States about the threat of HIV and other STDs during the past two decades. This concern has been manifested in the huge growth in funding for programs and research on HIV and other STDs, the increase in the number of relevant conferences and research journals, and the general professional interest in these issues. The lack of studies of programs to increase contraceptive use and reduce unintended pregnancy among adult women also reflects the stagnation of federal funding for family planning in the United States.* There are many reasons for this stagnation, but they are beyond the scope of this review. The paucity of studies with good experimental and quasi-experimental designs also reflects a lack of interest or commitment to research using these particular methods. After all, as noted earlier, numerous studies have examined women’s use of contraceptives and overall reproductive health; however, the vast majority of them have employed other research methods. Finally, the absence of strong experimental or quasi-experimental studies of the impact of state or federal policies may reflect the challenges of using such approaches when policies are implemented either statewide or nationwide; for example, it may not always be feasible to randomly assign women to intervention or control groups when a state or national program is implemented.

Given the number of unintended pregnancies among women in the United States and the wide-ranging impact of these pregnancies, this lack of research is deplorable. Although other kinds of studies can provide guidance concerning potentially effective methods of reducing unintended pregnancy, the lack of a comprehensive set of studies employing experimental designs to measure the impact of different types of interventions severely limits our knowledge about how to proceed. Clearly, a well-developed research plan that rigorously assesses the effects of various approaches to increasing effective contraceptive use among adult women should be an integral part of any long-term effort to reduce unintended pregnancy in the United States.

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