

Americans' Opinions on Population Issues Are Strong, Although Their Knowledge of the Issues Is Poor

Four-fifths of Americans support U.S. funding for voluntary family planning programs in developing countries, yet about half favor congressional measures that have limited such funding, according to the results of a national public opinion survey on world population issues.¹ The survey's findings also indicate that although 66% of U.S. residents are aware that women's lives are saved when abortion is legal, opinions on funding for abortion both abroad and in this country are divided. Furthermore, while the public has clear opinions about "family planning," people have varying notions about what that term implies.

The survey was conducted to determine Americans' knowledge of global population trends, attitudes toward U.S. funding to address population issues in this and other countries, and opinions on family planning and abortion. Public opinion researchers conducted the survey by telephone in August and September 1998, completing 1,500 interviews with U.S. residents aged 16 years and older. After the researchers adjusted for age, gender and racial differences between the sample and the U.S. population, the sample was nationally representative. The survey included roughly 60 variables related to attitudes and opinions about international economic assistance and population issues.

Attitudes About Global Issues

Americans are not very knowledgeable about global population trends. Most respondents could not correctly estimate the world's population, which was 5.9 billion when the survey was conducted. Only 14% thought it was 5–6 billion. The same proportion thought it was at least five times the correct size, and nearly 40% said they did not know the size of the world population. In addition, Americans overestimate how quickly the world population is growing. If current growth rates continue, the 1998 population is expected to double in 50 years, but only 20% of survey participants who said that the world population is growing gave a fig-

ure in that range. More than 60% thought the doubling would occur in 40 years or less and nearly 20% did not know or refused to answer. Furthermore, while there is a perception among researchers and some policymakers that low fertility rates in developed countries are a more pressing problem than high fertility rates in developing countries, only 23% of U.S. residents believe (and only 9% strongly believe) that people in developed countries are having too few children.

Three in five Americans (59%) approve of U.S. economic assistance to other countries. Given a selection of 15 possible priorities for the use of U.S. funds abroad, 33–39% of U.S. residents rank each of the following as being the highest priority: increasing infant and child survival rates, protecting the global environment and improving children's health. Thirty percent assign highest priority to helping women in poor countries avoid unintended pregnancies, 25% to improving women's health, 22% to helping countries slow their population growth and 19% to improving women's status.

When asked for their opinions on U.S. support of specific health and humanitarian programs, 80–91% of Americans say they approve of U.S. funding of voluntary family planning programs in developing countries and of efforts to help women support themselves and their families financially, reduce domestic violence against women, improve women's general health, encourage men to take an active role in family planning, give girls in developing countries the same educational opportunities as boys and improve the rate of infant and child survival. The proportion characterizing themselves as strongly in favor of these programs ranges from 45% (for voluntary family planning programs) to 72% (for programs to give girls equal educational opportunities). Opinions about U.S. funding for voluntary, safe abortion services in developing countries are just about evenly divided: Fifty percent of U.S. residents approve, and 47% disapprove.

Despite Americans' general support of U.S. funding for family planning (80%) in developing countries and for voluntary, safe abortion (50%), half favor Congress's votes since 1995 to reduce U.S. funding for family planning by 30%, and 44% agree with the legislature's votes to prevent the United States from funding family planning services offered by overseas providers that perform abortions with non-U.S. funding. Slightly more than one-third (36%) approve congressional actions to withhold United Nations dues for the past 12 years.

Even though Americans are split on funding for abortion, 66% believe that when abortion is legal, women's lives are saved, including 41% whose belief in that statement is very strong. Sixty-five percent think that when abortion is legal, too many women routinely use it as a means of birth control, and 53% say that it encourages more sexual activity among teenagers and unmarried couples. Forty-nine percent say that legal contraception encourages more sexual activity among teenagers and unmarried couples, and 47% say that most legal abortions are a last resort for women whose birth control method has failed.

The researchers also measured the public's attitudes about the relationship between abortion and family planning in developing countries. Fifty-two percent of Americans believe that introducing family planning services in countries where they have not been available would cause the number of abortions to decline, 27% think that it would have no impact on the number of abortions and 15% say that it would cause an increase in the number of abortions.

Attitudes About Domestic Issues

Regarding family planning and abortion in their own country, 83% of U.S. residents believe that family planning is available to most people in the United States. The vast majority (86–87%) say that the government should provide family planning services to poor women (56% strongly favor this policy) and that health insurers should cover family planning services

(64% strongly favor this policy).

As with providing funding for abortion services in other countries, U.S. residents are divided on providing government funding for abortion services for poor women in this country: Fifty-one percent oppose such funding, and 47% favor it. Americans' attitudes on whether abortion should be legal are not as clearly divided as their opinions on abortion funding. Some 31% say abortion should be generally available to those who want it; 21% believe that it should be available with stricter limits than are now in place; 37% favor restricting abortion to cases of rape, incest and where it is necessary to save the woman's life; and 11% say that abortion should not be permitted at all.

"Birth Control" and "Family Planning"

To determine what "birth control" and "family planning" mean to the general public, the researchers asked respondents to define these terms and then, in a separate question, directly asked them whether the terms include abortion. The results show that 71% of men and women consider "birth control" a technical term for methods of contraception and the results of using them. For 25%, "birth control" means to provide information or education. The term is a behavioral concept to another 24%, who say it expresses "being responsible" and "reducing unwanted pregnancy." Fewer than 10% associate the term with a variety of other concepts, including sexual freedom, prenatal or health care, and clinics; 6% specifically mentioned abortion when asked to define this term.

"Family planning" has broader connotations for Americans than birth control: Only one-quarter (23%) say it is a synonym for birth control. Almost half (48%) believe that it has to do with reducing unwanted pregnancy and having control over and choice about pregnancy, while 14% associate family planning with prenatal and health care. The term suggests contraceptive methods or abortion to 15%; 7% specifically mentioned abortion when asked about the term. Only 3% say family planning is related to moderating population growth. When asked directly whether family planning and birth control include abortion, 33% say birth control includes it and 46% say family planning does.

Conclusions and Implications

The authors discuss the implications their findings have for how researchers and others communicate population information to the general public. For example, they conclude that news stories focusing on

numbers do not have as great an impact on the public as would presentations of population information in the context of individual- and family-level quality-of-life issues, such as achieving desired family size. The authors also recommend that communicators link population growth and high fertility to issues that Americans care more about, such as economic development, the environment, and women's and children's health. The report is available online at <<http://www.rand.org/publications/MR/MR1114>>.—*B. Brown*

Reference

1. Adamson DM et al., *How Americans View World Population Issues: A Survey of Public Opinion*, Santa Monica, CA: RAND, 2000.

Very Short and Very Long Interpregnancy Intervals Raise Odds of Prematurity

Women who conceive less than 18 months after giving birth are about 10–50% more likely to have a very or moderately premature infant than are women whose interpregnancy intervals are between 18 and 59 months. Women for whom the interval between a delivery and the next conception is 60 months or more have a similarly elevated risk of giving birth prematurely. Fifty-five percent of women in the study on which these findings are based fell into one of these two categories of risky interpregnancy intervals.¹

To explore the relationship between interpregnancy interval and prematurity, researchers used information from a nationwide data set linking births and infant deaths. They analyzed 289,842 singleton infants born between January 1, 1991, and September 1, 1991, to Hispanic women of Mexican origin and white non-Hispanic women who had had at least one previous live birth. Women from these ethnic groups were chosen because they have similar prematurity rates. The researchers accounted for possible community and temporal influences on birth outcomes by matching Hispanic and white women who lived in the same county and delivered in the same month in a one-to-one ratio.

Infants were defined as extremely premature if they had a gestational age of less than 23 weeks, very premature if they were born at 23–32 weeks' gestation, moderately premature at 33–37 weeks, term at 38–42 weeks and postterm at more than 42 weeks. After comparing maternal characteristics and prematurity rates according to interpregnancy interval (as calcu-

lated from birth certificate data), the researchers conducted logistic regression analyses to assess the independent effects of various factors on the risk of having a very or moderately premature infant.

Thirty-seven percent of women had interpregnancy intervals of less than 18 months (which were further categorized as less than six months, 6–11 months and 12–17 months). Forty-six percent had intervals of 18–59 months (categorized in the bivariate analyses as 18–23 months, 24–29 months, 30–35 months, 36–47 months and 48–59 months). The remaining 18% had intervals of 60 months or longer.

Women with short interpregnancy intervals had more risk factors than women whose interpregnancy intervals were 18–59 months. Those with less than 12 months between a delivery and the next conception were significantly more likely to be Hispanic (45–63%) than were women whose intervals were in the 18–59-month range (43–53%). Women whose interpregnancy intervals were less than 18 months were younger, were less educated, had higher parity and had received less prenatal care than women whose intervals were 18–59 months. For example, 50–67% of those with the shortest intervals were aged 26 or younger, compared with 33–46% of those with 18–59-month intervals; 21–26% and 17–20%, respectively, had had more than three children. The proportions who received inadequate prenatal care were 24–42% among women with short intervals, compared with 18–20% among those with intervals of 18–59 months.

The risk profile of women with interpregnancy intervals of more than 59 months differed little from that of women with intervals of 18–59 months. These women were significantly more likely to be Hispanic and were older than women with 18–59-month intervals.

At the bivariate level, women whose interpregnancy intervals were less than 18 months were significantly more likely to give birth prematurely than women whose intervals were 18–59 months. Some 13–15% of births to women with short interpregnancy intervals were moderately premature, and 1–2% were very premature. Among women with 18–59-month intervals, 11–13% of births were moderately premature and 1% were very premature.

In the logistic regression analysis, the investigators took into account all factors that were significant at the bivariate level, plus the woman's birthplace (United States vs. elsewhere), whether she had previously had an infant who was premature or small for gestational age, and

the sex of the most recent baby. Women with short interpregnancy intervals were significantly more likely to have had a very premature infant (odds ratios, 1.3–1.5) and to have had a moderately premature infant (1.1–1.2) than were women with intervals of 18–59 months. Those with interpregnancy intervals longer than 59 months were also at increased risk of having had a very premature infant (1.5) or a moderately premature infant (1.1).

The risk of having very and moderately premature infants was also somewhat elevated (odds ratios, 1.1–1.3) for Hispanic women, women with 9–11 years of education (as compared with 12 years of schooling), women who had borne more than three children (as opposed to two) and those who had a boy. Somewhat higher risks (1.5–4.9) were found for women 15–17

years of age, as compared with ages 18–26, and for women who had previously had an infant who was premature or small for gestational age. Women who had had inadequate prenatal care (as classified according to the Kotelchuck Adequacy of Prenatal Care Utilization Index) were significantly more likely than those with adequate care to have a very premature (4.0) or moderately premature infant (2.2); the risks of these outcomes were sharply higher among women who had had “adequate plus” care (11.4 and 6.9, respectively). By contrast, women who were 27–34 years old, were foreign-born or had more than 12 years of education had significantly reduced odds of having had a premature infant (0.6–0.9).

The investigators point out that while short interpregnancy intervals are associated with an elevated risk of low birth

weight, findings regarding their effect on prematurity have been inconclusive. Although the researchers acknowledge that the results of their study do not prove causality and that other factors were associated more strongly with risk, they conclude that both short and long intervals are associated with an elevated risk of prematurity. They suggest that since “interpregnancy intervals are a potentially modifiable risk factor for low birth weight, ...childbearing women and health care providers should be informed about the importance of family planning and pregnancy spacing.”—*L. Gerstein*

Reference

1. Fuentes-Afflick E and Hessol NA, Interpregnancy interval and the risk of premature infants, *Obstetrics & Gynecology*, 2000, 95(3):383–390.

An Elevated Breast Cancer Risk Following a First Birth Declines with Time; Later Pregnancies Do Not Affect Risk

Women’s risk of breast cancer is modestly increased following their first full-term pregnancy, but it then falls gradually and is not affected by subsequent pregnancies. Moreover, the risk related to a first birth is especially elevated among older women: With every five-year increase in the age at which a woman has her first full-term pregnancy, her odds of developing breast cancer rise by 7%. These findings, which are consistent with results of earlier work, are derived from analyses of a large data set that permitted the researchers to control for a more comprehensive set of breast cancer risk factors than had been possible previously.¹

To address the sometimes conflicting results of studies based on small samples and limited numbers of risk factors, analysts pooled data from two large, population-based case-control studies conducted in four states (Maine, Massachusetts, New Hampshire and Wisconsin). For each study, women with breast cancer were identified through statewide cancer registries, and women of the same age with no history of the disease were randomly selected to serve as controls. All women participated in telephone interviews, in which they provided extensive information on their background characteristics and reproductive history. The analyses are based on data for 9,891 women aged 20–79 with breast cancer and 12,271 controls interviewed between 1988 and 1996.

Although the studies involved different age-groups (one was based on women aged 20–74 and the other on women

50–79), background characteristics for women in both, regardless of their disease status, were similar. About nine in 10 women had had at least one full-term pregnancy (defined as a pregnancy lasting six or more months and ending in a live birth or a stillbirth): Roughly one in 10 had had one, nearly half had had 2–3 and about a quarter had had 4–9. Fewer than one in five women in all subgroups had been younger than 20 when they first gave birth, about two-thirds had been in their 20s and roughly one in 10 had been 30 or older. Similarly, the distributions according to women’s age at their last full-term pregnancy were similar for all subgroups: About one in 10 had been younger than 25, one-quarter each had been in their late 20s and early 30s, and the remainder had been 35 or older.

After combining the data from the two studies, the analysts used logistic regression techniques to examine factors in women’s breast cancer risk, controlling for the study and site, as well as the woman’s age, education, age at menarche, menopausal status and age at menopause, parity, lifetime duration of lactation, alcohol consumption, body mass index and family history of breast cancer. According to the results for the overall sample, each five-year increase in a woman’s age at first full-term pregnancy raised her breast cancer risk by 7% (odds ratio, 1.07), but age at subsequent pregnancies was not a significant factor. The analyses also suggest that breast cancer risk declined as a woman’s parity increased. For example, the odds ratio

went from 0.83 among women who had had 3–4 full-term pregnancies to 0.78 among those who had had five and 0.71 among those who had had six.

Analyses that included only women who had had at least two full-term pregnancies and that controlled for the same set of variables revealed that the likelihood of developing breast cancer rose by 13% for every five-year increase in a woman’s age at her first full-term pregnancy and by 7% for every five years that her age at her last full-term pregnancy increased (odds ratios, 1.13 and 1.07, respectively). However, when women’s age at second and later full-term pregnancies was taken into account, the effect of age at first full-term pregnancy was reduced (odds ratio, 1.08), and the impact of age at last full-term pregnancy was no longer statistically significant.

Similar analyses based on women who had had only two full-term pregnancies underscore the importance of age at the first: When all variables were taken into account, a woman’s risk of breast cancer rose by 15% for every five-year increase in her age at her first full-term pregnancy (odds ratio, 1.15) but was not affected by her age at her last full-term pregnancy.

In addition to exploring the effects on breast cancer risk of a woman’s age at her first full-term pregnancy, the analysts examined the influence of birthspacing. They found that in general, for women who had had five or fewer full-term pregnancies, the interval between births had no effect on the risk of breast cancer, regardless of the woman’s age at her first

full-term pregnancy. At higher parities, however, closely spaced births had a protective effect for young women. For example, women who were 20 at the time of their first full-term pregnancy and who had had seven or more births were 10% less likely than nulliparous women to develop breast cancer if their births were spaced three years apart, but their risk was reduced by almost 40% if their births were separated by only one year.

In their final set of calculations, the analysts found that the risk of breast cancer is elevated after a woman has one birth, but the increase in risk diminishes over time. Thus, shortly after delivering, women who give birth only once may be as much as 50% more likely than nulliparous women to develop breast cancer (depending on their age); however, after about 30 years, their risk is indistinguishable from that of their nulliparous counterparts. Unfortunately, as the analysts point out, this finding implies that women who have a first full-term pregnancy while in their 30s have an elevated risk of breast cancer during the high-risk ages.

According to the analysts, the size of their study and the broad array of risk factors examined add weight to their findings that other research has lacked. In discussing the results, they note that both hormonal and tissue changes that occur with an early first full-term pregnancy may contribute to lowering a woman's risk of breast cancer. Furthermore, they observe that the "negligible effect" of a woman's age at subsequent births suggests that these changes provide long-term protection.—*D. Hollander*

Reference

1. Chie W-C et al., Age at any full-term pregnancy and breast cancer risk, *American Journal of Epidemiology*, 2000, 151(7):715-722.

Some Effects of Home Nurse Visits to Women in Memphis Endure After the Visits End

Socioeconomically disadvantaged women in Memphis reaped several long-term benefits from a program in which they received home visits by a nurse during their first pregnancy and for two years after delivering. In the 54 months after giving birth, they had fewer additional pregnancies and were less likely to have closely spaced pregnancies than were women who received a less-intensive intervention. They also spent 3-4 fewer months receiving public assistance than mothers who had not had nurse

visits. The home visit program, which reproduced a successful intervention conducted in central New York, was the first such program to demonstrate enduring benefits for low-income women.¹

In 1990-1991, researchers enrolled participants in a trial of the program, which was designed to help women improve their health-related behaviors, parental caregiving skills and life-course outcomes (pregnancy planning, educational achievement and employment). Low-income women obtaining prenatal care from an obstetric clinic in Memphis were recruited for the trial if they were less than 29 weeks pregnant, they had had no previous live births and they had no chronic illnesses that increase the risk of fetal growth retardation or preterm delivery. In addition, participants had to meet at least two of the following criteria: being unmarried, having fewer than 12 years of schooling and being unemployed. Participants were randomly assigned to one of four groups, each of which received a different combination of interventions.

To assess the program's long-term effects, analysts examined outcomes for two of the study groups: One (consisting of 228 women) had received free transportation for scheduled prenatal visits; developmental screening services for their children at ages six, 12 and 24 months; and home visits by a nurse during pregnancy, a postpartum visit in the hospital and a series of home visits through the child's second birthday. The comparison group (with 515 women) had received the transportation subsidy and screening for their children, but no nurse visits. Data come from interviews conducted with the women at scheduled intervals up to 54 months after delivery and from state public assistance records.

Overall, the two groups of women had similar profiles when they entered the study. About nine in 10 women in each group were black, virtually all were unmarried and fewer than one in 10 lived with the child's father or another partner. On average, the women were about 18 years old and had had 10 years of schooling; roughly one-third lived in a census tract that was below the poverty line. Women in the home visit group were less likely than others to live in a household whose head was employed, and they had less discretionary income. The two groups had comparable levels of psychosocial resources and support.

During the 54 months after their first child was born, women in the home visit group had significantly fewer pregnancies

(1.15) than those who had received the less-intensive intervention (1.34). The average interval between the first and second births was longer among women who had received nurse visits (30.3 months) than among those in the comparison group (26.6), and the likelihood of having conceived within six months after a birth was lower (22% vs. 32%). Other measures related to reproductive history did not differ between the groups. In some cases, however, the lack of statistical significance probably reflects the infrequency of an outcome, and the findings suggest clinically important results: The incidence of abortion and of newborns' admission to neonatal intensive care was marginally lower among women who had had nurse visits than among others, and these differences are consistent with the reduction in subsequent pregnancies.

While the program had no long-term effects on women's educational achievement, employment history or overall socioeconomic status, it was associated with reduced reliance on public assistance. Women in the home visit group had spent fewer months receiving Aid to Families with Dependent Children (AFDC) and food stamps (32.6 and 41.6, respectively) than had those in the comparison group (36.2 and 45.0, respectively).

At the end of the study period, the two groups still were equally likely to be unmarried, but those who had had nurse visits were significantly more likely than others to be living with a partner (43% vs. 32%) and to be living with their child's father (19% vs. 13%). Furthermore, the partners of women in the home visit group had been employed significantly more of the time (35.2 months, on average) than had men whose partners had not received this intervention (26.5).

To determine the extent to which the program effects endured after the program ended, the analysts compared data on pregnancies and public assistance during the first 24 months after women delivered (when home visits were still occurring) with data from the next three years (after the visits had ended). These comparisons revealed that women in the program had significantly fewer pregnancies than those in the comparison group while the nurses were visiting but not once the intervention ended; however, they had fewer closely spaced pregnancies only after the visits ceased. The program's effects on receipt of AFDC were the same in both periods, but its beneficial impact on receipt of food stamps was confined to the three years after the visits ended.

According to the investigators, social interventions aimed at improving low-income parents' economic situation and caregiving skills generally "have failed or produced only minimal effects." A home visit program involving a mostly white, semirural sample of women in central New York was the exception, yielding long-term benefits for both the women and their children. Although the effects were smaller when the same intervention was initiated in Memphis, where participants were urban and predominantly black, they were generally consistent with the results in New York. Programs based on home visits by nurses thus may be a promising means to improve low-income families' economic self-sufficiency and their children's health.—*D. Hollander*

Reference

1. Kitzman H et al., Enduring effects of nurse home visitation on maternal life course: a 3-year follow-up of a randomized trial, *Journal of the American Medical Association*, 2000, 283(15):1983–1989.

Has There Been a Talk About Sex? Teenagers and Their Mothers Often Disagree

Nine in 10 women surveyed in Philadelphia said that they had talked to their teenage son or daughter about sex, but only two-thirds of the young people agreed. The likelihood that a teenager would report having had such a discussion was reduced if the mother had reservations about talking to her child about sex—particularly if she was concerned that her child would think she was prying or would not want to hear what she had to say. Different factors, however, affected a mother's likelihood of reporting communication with her teenager about sex; embarrassment about discussing the subject and fearing that her child would not take her seriously exerted the strongest influence.¹

The survey was conducted among 751 randomly selected unmarried black 14–17-year-olds and their mothers (or, in some instances, another female caregiver with whom the adolescent lived). Using a self-administered questionnaire, young people and their mothers reported on their background characteristics and their level of agreement with a variety of statements reflecting their satisfaction with their relationship, their degree of communication about sex and their concerns about discussing sex. Researchers conducted correlational and regression analyses to assess, from both the mothers' and the teenagers'

perspectives, the factors that hamper parent-child communication about sex.

Teenage participants were 15 years old, on average; 94% were in school. Among mothers, the average age was 40, the median family income was \$16,000 per year and 44% worked full-time. Half of mothers had no more than a high school education, and only one-third were married and living with their husband.

More than 90% of mothers said that parents should begin talking to their children about sex when their children are 14 or younger. In all, 88% agreed with the statement "I have talked with my teen about sex": Seventy-three percent agreed strongly, and 15% moderately. Despite this self-reported openness on the mothers' part, however, only 66% of young people agreed—46% strongly and 20% moderately—that such communication had taken place. In a series of correlational and regression analyses, the investigators found that the more satisfied teenagers were with their relationship with their mother, the more likely both the parent and the young person were to say that they had discussed sex.

Mothers' Perspectives

To explore mothers' reservations about talking to their teenagers about sex, the survey asked their level of agreement with 21 statements regarding their ability to explain matters, whether their child would cooperate, the potential efficacy of a discussion on this topic, logistical constraints and their fear that broaching the topic would encourage the adolescent to have sex. The most prevalent reservations (with levels of agreement reaching 24–25%) were that a discussion about sex would embarrass the teenager and that the teenager might ask a question that the mother could not answer. Concerns that their child would think they were prying, would not take them seriously and would not be honest were mothers' next most common reservations (15–18%). Mothers were least likely to be concerned that it would be difficult to find the time for a conversation about sex, that their child would ask them too many personal questions and that the discussion would spark an argument (7% each).

Results of correlational analyses indicate that a mother's reservations about discussing sex with her child were generally associated with a lower likelihood of the teenager's reporting such a discussion. Sixteen of the 21 measures were significantly correlated with the teenager's report of communication about sex, but most of the

correlations were small. The mother's fears that her child would consider her nosy and that the teenager would not want to hear what she had to say had the strongest effects (coefficients, $-.17$ and $-.16$, respectively). All 21 measures, by contrast, were significantly correlated with mothers' perceptions of communication about sex, and the effects were greater. The factors with the largest impacts were being embarrassed (.25) and being concerned that the adolescent would not take her seriously ($-.26$).

The researchers conducted a series of moderated multiple regression analyses to assess whether the effect of mothers' reservations on the degree of communication about sex was related to the adolescent's age or gender. These analyses revealed that as adolescents aged, mothers' concerns about being embarrassed had a diminishing effect on young people's reporting of sexual communication, and their concerns about not being taken seriously had an increasing effect. As for mothers' reports of discussions about sex, concerns had a greater impact if a son rather than a daughter was involved.

Teenagers' Perspectives

Teenagers were asked about 16 concerns, largely mirroring the statements presented to the mothers, that might prevent them from discussing sex with their mother. Those with which they most commonly (35–40%) agreed were that they would be embarrassed, they knew what they needed to about the subject, their mother would be suspicious if they wanted to have such a talk and their mother would ask too many personal questions. Teenagers were unlikely to be concerned that a discussion about sex would anger their mother or cause an argument, or that their mother did not know enough or was too old to be able to relate to them about sex (6–9%).

All 16 concerns were significantly correlated with the likelihood that a teenager reported having discussed sex with his or her mother, and the effects were sizable (coefficients ranged from $-.11$ to $-.26$). All but five of these concerns were significantly correlated with mothers' reporting of communication, although the effects were smaller (coefficients ranged from $-.08$ to $-.14$).

Results of regression analyses showed that the impacts of two reservations—teenagers' concern that discussing sex would lead to an argument and that their mother would lecture them on the subject—declined as adolescents aged. In addition, the influence of young people's concern that they would have difficulty speaking honestly with their mother de-

creased with age, but more so for young women than young men. The belief that their mother would be embarrassed by a conversation about sex had a growing impact on mothers' reports of communication as female adolescents aged and a declining effect as males grew older.

Conclusion

While noting that the homogeneity of the sample and methodological issues limit the generalizability of their findings, the researchers conclude that the data have implications for efforts to encourage parents to talk to their teenage children about sex, unintended pregnancy and sexually transmitted diseases. For example, they say, educational programs should aim to increase both parents' knowledge about these topics and their skills and level of comfort in talking about them. Among the implications for future research, the investigators add, the study points up the need for further exploration of the differences between mothers' and teenagers' perspectives on communication about sex.—*D. Hollander*

Reference

1. Jaccard J, Dittus PJ and Gordon VV, Parent-teen communication about premarital sex: factors associated with the extent of communication, *Journal of Adolescent Research*, 2000, 15(2):187–208.

After Abortion, Danish Women's Odds of Preterm Delivery Are Doubled

Danish women whose first pregnancy ended in abortion are about twice as likely as those who did not terminate their first pregnancy to subsequently deliver an infant at less than 37 weeks' gestation, according to results of a population-based cohort study; they have a somewhat elevated risk of having a subsequent delivery at 42 or more weeks of gestation.¹ Analyses of the same cohort also suggest that women who have undergone abortion have twice the risk of other women of later bearing a low-birth-weight infant.²

The investigators used three national registries to identify Danish women who had a first pregnancy in 1980–1982, determine the outcomes of these pregnancies and gather information on the women's additional pregnancies until 1994. Their analyses compare two groups of women who had at least two pregnancies during the study period: 15,727 who terminated their first pregnancy and 46,026 who had other outcomes.

Most of the women in the abortion group (83%) had only one abortion before having a live birth; 15% had two, and the rest had three or more. At the time of their last abortion, 43% of women in this group were younger than 20, and 52% were aged 20–29. All abortions were performed during the first trimester; 92% were vacuum aspiration procedures, and 7% were done by dilation and evacuation.

For their study of the effects of abortion on subsequent pregnancy duration, the researchers used logistic regression techniques to examine the likelihood of preterm delivery (before 37 weeks) and of postterm delivery (42 weeks or later), controlling for potentially confounding factors. They also analyzed the data according to the woman's number of pregnancies, up to and including one that ended in a live singleton birth, and the number of months between that pregnancy and the previous one.

When age, residence, interpregnancy interval and number of previous miscarriages were taken into account, women with one previous abortion were 1.9 times as likely as women in the comparison group, those with two previous abortions were 2.7 times as likely and those with three or more previous abortions were 2.0–2.2 times as likely to have a preterm birth. In general, the risk varied slightly according to the method of abortion used, but it was sharply higher (odds ratio, 12.6) among women who had had two abortions by dilation and evacuation. Increases in the risk of preterm birth were significant mainly among women whose interpregnancy interval was 12 months or more; the pattern of risk among this subgroup was similar to the overall pattern. Previous abortion also was associated with a doubling of the odds of very preterm delivery (before 34 weeks' gestation).

Women who had had an abortion were at an increased risk of delivering postterm; the odds ratios increased from 1.3 among those who had had one abortion to 1.6 for those who had had three or more. The likelihood of postterm delivery was significantly elevated regardless of the interval between pregnancies. According to the investigators, these results were “unexpected” and might reflect a “chance association.”

In the study of the influence of abortion on the risk of having an infant with a low birth weight (less than 2,500 g), the researchers conducted multivariate analyses including the newborn's gender, as well as mother's age, residence and interpregnancy interval, among the controls. They found that women who had had one

or more abortions were 1.9 times as likely as those who had had none to deliver a low-birth-weight baby; the increased risk was restricted to those who had obtained vacuum aspiration procedures.

For women who had had one abortion, the odds of having a low-birth-weight baby were elevated at interpregnancy intervals of seven months or more, while for those who had had more than one abortion, the risk increased significantly only if the interval was longer than 12 months. Additional analyses showed that whether the abortion took place within the first eight weeks of gestation or within weeks 9–12, the risk of low birth weight increased if the interpregnancy interval was seven months or longer.

The investigators note that earlier research on the effects of abortion on subsequent pregnancy outcomes has yielded conflicting results and that the mechanisms by which abortion may influence the duration of later pregnancies or infants' birth weight are unclear. Furthermore, they acknowledge that they were unable to control for a number of factors that may contribute to the outcomes they studied, including women's smoking habits, birth weight, race, socioeconomic status and pregnancy-related medical conditions. However, they point out that their study has advantages over previous work because of its size, because it was population-based and because of the completeness of abortion reporting in Denmark.—*D. Hollander*

References

1. Zhou W, Sorensen HT and Olsen J, Induced abortion and subsequent pregnancy duration, *Obstetrics & Gynecology*, 1999, 94(6):948–953.
2. Zhou W, Sorensen HT and Olsen J, Induced abortion and low birth weight in the following pregnancy, *International Journal of Epidemiology*, 2000, 29(1):100–106.