ARTICLES

Differences in Teenage Pregnancy Rates Among Five Developed Countries: The Roles of Sexual Activity and Contraceptive Use

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Context: *Adolescent pregnancy, birth, abortion and sexually transmitted disease (STD) rates are much higher in the United States than in most other developed countries.*

Methods: *Government statistics or nationally representative survey data were supplemented with data collected by private organizations or for regional or local populations to conduct studies of adolescent births, abortions, sexual activity and contraceptive use in Canada, the United States, Sweden, France and Great Britain.*

Results: *Adolescent childbearing is more common in the United States (22% of women reported having had a child before age 20) than in Great Britain (15%), Canada (11%), France (6%) and Sweden (4%); differences are even greater for births to younger teenagers. A lower proportion of teenage pregnancies are resolved through abortion in the United States than in the other countries; however, because of their high pregnancy rate, U.S. teenagers have the highest abortion rate. The age of sexual debut varies little across countries, yet American teenagers are the most likely to have multiple partners. A greater proportion of U.S. women reported no contraceptive use at either first or recent intercourse (25% and 20%, respectively) than reported nonuse in France (11% and 12%, respectively), Great Britain (21% and 4%, respectively) and Sweden (22% and 7%, respectively).*

Conclusions: *Data on contraceptive use are more important than data on sexual activity in explaining variation in levels of adolescent pregnancy and childbearing among the five developed countries; however, the higher level of multiple sexual partnership among American teenagers may help explain their higher STD rates.*

Family Planning Perspectives, 2001, 33(6):244–250 & 281

Despite recent declines, the current level of births to adolescents continues to be much higher in the United States than in most other developed countries.[1] Continued decreases in U.S. rates have only succeeded in moving the country's levels slightly closer to where those of most other developed countries were during the late 1990s.[2] (By 2000, the teenage birthrate in the United States had declined to 49 per 1,000, as compared with late-1990s rates of 7–9 in Sweden and France, and 20–31 in Canada and Great Britain.)

Large differences in adolescent pregnancy rates were also identified in the early 1980s in a comparative study of developed countries.[3] At that time, differences in sexual activity were not found to account for the variation in pregnancy rates; instead, the limited available information suggested that use of contraceptives, particularly the pill, by teenage women was lower in the United States than in other developed countries. Building on this body of information and using the most recent data available, we address the following questions: How large are cross-country differences in pregnancy, birth and abortion rates, and to what extent are current differences associated with variation across countries in sexual behavior and contraceptive use?

These results are part of a large-scale investigation that examined reasons for the wide variation in teenage pregnancy and birth rates among five developed countries: Canada, France, Great Britain, Sweden and the United States.[4] Although all five focus countries have a high per capita income and are highly developed and industrialized, they differ in their extent of social and economic inequality, in their government policies and programs that address inequality, in their health care systems and their provision of services to teenagers, and in their societal attitudes concerning sexuality and adolescents. All of these factors are likely to affect adolescent reproductive behavior.

In addition to having a higher adolescent pregnancy rate, the United States has higher rates of sexually transmitted diseases (STDs) among adolescents than most other developed countries.[5] The incidence of chlamydia among adolescents in the United States (1,132 cases per 100,000) is nearly twice that in Canada and Sweden (where reporting is relatively complete), five times that in England, and 20 times that in France (two countries where reporting is considered to be less complete, as it is in the United States). The annual incidence of gonorrhea among all U.S. adolescents (572 cases per 100,000) is 10 or more times the level in the other four countries.

Large differences in pregnancy and STD rates may be due to differences in the proportion of adolescent women who are sexually active and, therefore, are at risk of pregnancy and infection. Alternatively, they may be related to variation among sexually active adolescent women in the steps that they take to prevent pregnancy and STD infection, including their use of contraceptives, their choice of method and the effectiveness of their method use. While we do not have information on all of these measures, some information is

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available to help us assess variation in the two key factors of sexual activity and method use across countries.

Data and Methodology

Case Studies

The design of this collaborative study was to carry out in-depth case studies in five countries. To maximize comparability, we worked with a research team in each of the five study countries who followed a common outline and approach in gathering information and in preparing a report on their country. Each report included a comparable set of tables on adolescent sexual behavior, contraceptive use, and birth, abortion and pregnancy rates, broken down by available socioeconomic measures. The collaborative process included two workshops and field visits by the study-team leaders to each of the focus countries. This article synthesizes key findings from the five country case-study reports regarding adolescent pregnancy, birth and abortion rates, and sexual and contraceptive behavior.[6]

Sources of Data

• *Birth and abortion statistics.* Birth data were obtained from published vital statistics reports and from unpublished government data provided by special request to the study teams. Data on births are close to completely reported for these five developed countries, which all have long-established birth registration systems.

Data on the number of abortions occurring to adolescents were also obtained from government statistical agencies. Abortion is legal on broad grounds in all five countries, and reporting of all procedures is required in Canada, France, Great Britain and Sweden and in most U.S. states. Reporting of abortion procedures is believed to be nearly complete in Canada, Great Britain and Sweden.[7] In France, studies evaluating data quality in the late 1980s and mid-1990s have shown a substantial level of underreporting, possibly as high as 25%.[8] However, we did not inflate the reported abortions to teenagers in France because there is no consensus on the level of underreporting, nor on whether it applies equally across age-groups. Comparison of officially reported abortions in the United States with an independent survey of all known providers indicates that official statistics underreport abortions by about 13%.[9] We therefore used estimates of abortions based on The Alan Guttmacher Institute's abortion provider survey (which is judged to be almost complete) and the age distribution of women having officially reported abortions.[10]

Table 1. Characteristics of and measures available in surveys of sexual and reproductive behavior in Sweden, France, Canada, Great Britain and the United States, mid-1990s

Country and survey	Characteristic					Measure of behavior				
	Year of survey	Age-range	National sample	Sample size		Age		Method		
				Male	Female	At first sex	At first birth	At first sex	Current use	At last sex
Sweden										
Two surveys in towns in Northern Sweden	1986 1991	16–18 16–18	No No	533* 253	na 223			X X		 X
National Swedish Survey	1996	18–74	Yes	1,335	1,475	X				X
Swedish Family Survey	1992–1993	23–43	Yes	1,666	3,318		X			
France										
Survey of Sexual Behavior of Young People	1994	15–17	Yes	3,340	2,838	X		X		X
Survey of Sexual Behavior	1992	18–49	Yes	8,951	11,104	X				X
Survey on Families and Employment	1994	20–49	Yes	1,941	2,944		X			
Canada										
General Social Survey	1995	≥15	Yes	3,743	4,166	X		X		
National Population Health Survey	1996	15–49	Yes	21,310	22,834	X				
Great Britain										
National Survey of Sexual Attitudes and Lifestyles	1990–1991	16–59	Yes	8,384	10,492	X	X	X		X
United States										
National Survey of Family Growth (Cycle 5)	1995	15–44	Yes	na	10,847	X	X	X	X	X
National Survey of Adolescent Males	1995	15–19	Yes	1,729	na	X	X	X	X	X

*Total sample size, not divided between males and females. *Notes:* na=not applicable. Order of countries in all tables is based on levels of birthrate (from lowest to highest). Analyses were carried out on data files, except for the following sources for Sweden, for which only published data could be used: **Two surveys in towns in northern Sweden**—Swedin G et al., Big changes in adolescent sexual behavior, *Lakartidningen*, 1994, 91(11):1083–1084 (in Swedish); and **National Swedish Survey**—Lewin B, ed., *Sex in Sweden: On the Swedish Sexual Life, 1996,* Stockholm: National Institute for Public Health, 1998, p. 11 (in Swedish).

The measures of birth, abortion and pregnancy presented here are the standard ones: Rates are calculated as the number of events (for example, births) per 1,000 women aged 15–19 per year. The abortion ratio is calculated as abortions per 100 pregnancies (births plus abortions) in a given year. The pregnancy rate includes only births and abortions (that is, it excludes miscarriages*).

Birth, abortion and pregnancy rates presented here are calculated according to the woman's age at the time the pregnancy ended. To obtain comparable rates for the five study countries, it was necessary to adjust the data from France, where events are reported according to the age that the woman would attain during the calendar year in which the event (birth or abortion) occurred, rather than according to her age in completed years. We present the adjusted rates in order to facilitate comparison with the other case-study countries.†

• *Sexual activity, timing of the first birth and contraceptive use.* Data on these topics come from the most recent surveys that interviewed adolescents on sexual and reproductive behaviors. Table 1 lists the main surveys used for each country and the variables available from each survey. Countries vary in coverage of the adolescent age-group, with some including all 15–19-year-olds and others only younger

*Miscarriages may be estimated using an established formula (number of miscarriages equals 0.2 x births + 0.1 x abortions). This calculation approximately accounts for miscarriages that occur after eight weeks from the last menstrual period.

†In effect, age in France is calculated as the difference between the year in which the event (birth or abortion) occurred and the woman's year of birth. The use of this method for calculating age has a substantial impact on birthrates and abortion rates for adolescents, with rates based on age attained being substantially lower than those based on completed age at the event. For more on the procedure for adjustment and for unadjusted rates, see reference 1.

Table 2. Birth, abortion and pregnancy rates and abortion ratio, by country, according to age-group, mid-1990s

Country	Ages 15–19				Ages 15–17				Ages 18–19			
	Births per 1,000	Abortions per 1,000	Pregnancies per 1,000	Abortion ratio	Births per 1,000	Abortions per 1,000	Pregnancies per 1,000	Abortion ratio	Births per 1,000	Abortions per 1,000	Pregnancies per 1,000	Abortion ratio
Sweden (1996)	7.8	17.2	25.0	68.8	2.7	13.7	16.4	83.5	15.5	22.6	38.1	59.3
France* (1995)	10.0	10.2	20.2	50.5	3.5	6.8	10.3	66.0	20.0	15.2	35.2	43.2
Canada (1995)	24.5	21.2	45.7	46.4	13.6	13.8	27.4	50.4	40.0	32.2	72.2	44.6
Great Britain† (1995)	28.3	18.4	46.7	39.4	14.8	13.8	28.6	48.3	49.8	25.6	75.4	34.0
United States (1996)	54.4	29.2	83.6	34.9	33.8	19.0	52.8	36.0	86.0	44.9	130.9	34.3

*Rates are adjusted to the young woman's age in completed years when the event occurred, to be comparable with other countries. Rates are not inflated for the underreporting of abortions. †Rates for Great Britain (which comprises England, Wales and Scotland) are calculated by combining data for these administrative areas. *Notes:* Pregnancy rates include births and induced abortions but do not include spontaneous abortions or miscarriages. The abortion ratio is the number of abortions per 100 pregnancies, excluding miscarriages.

or older teenagers. Not all surveys obtained information on all the main aspects of sexual and reproductive behavior. Surveys in the United States and Great Britain collected the largest range of measures of sexual and reproductive behavior; coverage was much more uneven in the other three countries.

Data on age at first intercourse and age at first birth were available from at least one survey for all five countries. Data on contraceptive use at first intercourse were available only for younger teenagers (15–17-year-olds) in France and for 16–18-year-olds from a small sample survey in Sweden, but were not available for Canada. A measure of recent contraceptive use (either current use or use at last intercourse) was available for all five countries. In the case of France, data on younger teenagers (15–17) are from the 1994 Survey of Sexual Behavior of Young People, and data for older teenagers (18–19) are from the 1992 Survey on Sexual Behavior. In the case of Sweden, national data were available only for teenagers aged 18–19, and data for 16–18-year-olds were available only from a small sample survey.

We used two methods when dealing with missing data. When no information was available on whether a behavior or an event had occurred, such cases were omitted from calculations (for example, from percentage distributions). When the available information indicated that the event had occurred (for example, the respondent had initiated intercourse) but the age at the event was unknown, such cases were assumed to have had the same proportional distribution as the events for which there was information.

Results

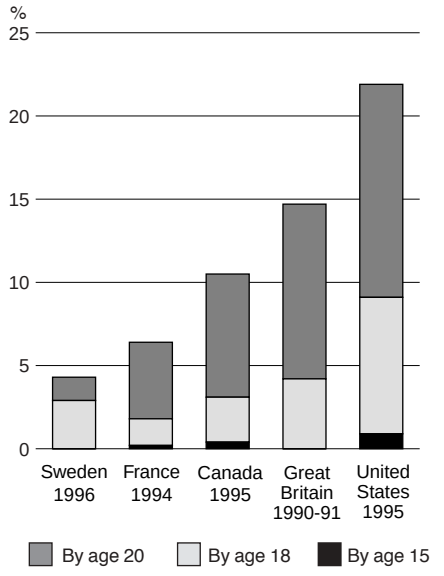
Pregnancy and Childbearing

In the mid-1990s, the pregnancy rates for France and Sweden were 20 and 25 per 1,000 women aged 15–19, respectively (Table 2).* The pregnancy rates were approximately twice that level in Canada and Great Britain (46 and 47 per 1,000, respectively) and four times that level in the United States (84 per 1,000). Differences between the United States and the other four countries are even larger for younger teenagers than for older ones: The pregnancy rate among 15–17-year-olds in the United States is five times that in France (rates of 53 and 10 per 1,000, respectively), compared with somewhat less than a fourfold difference among 18–19-year-olds (rates of 131 and 35 for the United States and France, respectively).

The proportion of women aged 20–24 who had a child before age 20 is a useful summary indicator that reflects the differences in teenage birthrates by country. This proportion is lowest in Sweden (4%), slightly higher in France (6%), much greater in Canada and Great Britain (11% and 15%, respectively) and highest in the United States (22%). Differences in the proportion giving birth by age 15 and by age 18 are also much higher in the United States than in the other four countries (Figure 1).

Whether adolescents plan their pregnancies and have intended births are key factors in understanding the implications of adolescent pregnancies and births. Although there are no comparable data on these issues for all five of the focus countries, some related information does cast light on the subject. Available national survey-based information for the United States shows that 78% of all pregnancies and 66% of all births to adolescents in the early 1990s were unintended.[11†] The intended adolescent birthrate in the United States was about 18 births per 1,000 teenagers per year in the mid-1990s—a rate that is approximately twice the overall adolescent birthrate in France and Sweden, and is probably as high as or higher than the intended adolescent birthrate in Canada and Great Britain (not shown). The unintended teenage pregnancy rate in the United States (roughly 66 per 1,000 in the mid-1990s) is still substantially higher than the

Figure 1. Percentage of 20–24-year-old women who had a birth by ages 15, 18 and 20



*If we assume that the level of abortion underreporting is the same for teenagers as for all women (10–25%, reference 8), the adolescent pregnancy rate for France would be between 21.3 and 23.5 per 1,000, somewhat higher than the rate of 20.2 per 1,000 shown in Table 2.

†Births were classified as "unintended" if the mother reported when surveyed that she had wanted to have a child but at a later time, or if she did not want a child (or another child) at all. All other births were termed "intended." Unintended pregnancies are the sum of unintended births and abortions, which all are considered to have been unintended conceptions.

total pregnancy levels of the other four study countries.

Teenagers who experience pregnancy differ across countries in their likelihood of resolving the pregnancy by abortion (measured by the abortion ratio, which is the proportion of pregnancies that end in abortions, excluding miscarriages). In the mid-1990s, the abortion ratio for 15–19-year-olds ranged from 35 abortions per 100 pregnancies in the United States (that is, 35% of pregnancies to 15–19-year-olds were resolved by abortion) to 69 per 100 in Sweden (Table 2). The proportion of teenage pregnancies ending in abortion in Great Britain is similar to the United States (39%), while levels in Canada (46%) and France (51%) are somewhat higher, but still much lower than the level in Sweden. In France, Great Britain and Sweden, the abortion ratio is substantially higher among teenagers aged 15–17 than among those aged 18–19. This indicates that younger adolescents who become pregnant are less likely than those who are older to want to have a child at that time and to feel ready to become parents. The difference in abortion ratio between older and younger teenagers is small in Canada and minimal in the United States.

Childbearing among unmarried adolescents has attracted policy attention because of potential consequences to the young women and their children, as well as to society. The measure, however, is defined differently across countries, with some classifying cohabiting teenagers as unmarried and others grouping married and cohabiting couples together, considering only those who are single as unmarried. In the latter case, cohabiting couples are often socially and legally considered the equivalent to married couples and their relationships are often long-term ones. In France and Sweden, half of adolescent births are to teenagers who are either married (17–18%) or cohabiting (33–35%). By comparison, 13% of adolescent births in Great Britain and 25% in the United States are to married teenagers (in both countries, births to women who are cohabiting are grouped together with those to unmarried women).

Sexual Activity

In all five countries, the large majority of young women have first intercourse while they are teenagers. The proportion of women aged 20–24 who had first intercourse before age 20 varies from 75% in Canada to 86% in Sweden, with the United States (81%), France (83%) and Great Britain (85%) having intermediate levels (Table 3). The median age at first intercourse* for women aged 20–24 ranges from 17.1 to 17.5 in Canada, Great Britain, Sweden and the United States, but is slightly higher (18.0) in France. Comparative data for a larger number of developed countries also suggest that the timing of sexual initiation has become increasingly similar across developed countries and is similar among young men and young women as well.[12]

Table 3. Percentage of adolescent females who ever had sexual intercourse, by age; percentage who had intercourse in the past three months; percentage of 20–24-year-olds who had sex before age 20, by age; and median age at first intercourse among 20–24 year-olds—all according to country

Country	% ever had sex			% who had intercourse in past 3 months*	% who had sex before given age†			Median age at first sex†
	15–19	15–17	18–19		15	18	20	
Sweden‡ (1996)	na	na	80.3	78.7	12.2	65.2	85.6	17.1
France (1992,1994)	49.3§	37.9	67.1	63.9	7.4	50.1	82.5	18.0
Canada (1996)	50.9**	37.4	70.9	u	9.1	53.4	75.2	17.3
Great Britain (1990–1991)	61.1††	40.9‡‡	78.5	62.2	4.1	63.8	84.8	17.5
United States (1995)	51.3	38.3	70.7	58.7	14.1	63.1	80.6	17.2

*Among 18–19-year-olds. †Among 20–24-year-olds. ‡Data are available only for 18–19-year-olds; there are no recent data on sexual activity among 15–17-year-olds. (Source: 1996 National Swedish Population Survey.) §The estimate for 15–19-year-olds is synthetic, obtained by combining results on 15–17-year-olds from the 1994 Survey of Sexual Behavior of Young People and results on 18–19-year-olds from the 1992 Survey of Sexual Behavior, and applying these proportions to the 1995 populations for both age-groups. **The 1990 Health Promotion Survey, which had a much smaller sample, shows higher levels of teenage sexual activity (57.4% of 15–19-year-olds were ever sexually active). ††16–19-year-olds. ‡‡16–17-year-olds. *Note:* u=unavailable.

Although the available measures of sexual experience among 15–19-year-olds are not completely comparable for the five focus countries, data for this age-group suggest that sexual activity among adolescents also varies relatively little across the five countries. Moreover, the data are fairly consistent with findings on the proportions of 20–24-year-olds who ever had sex by age 20. Among all 15–19-year-old females, the proportion who ever had intercourse ranged from 49% in France to 51% in Canada and the United States but was substantially higher in Great Britain (61%, Table 3). The latter finding is partly due to the slightly older age-group for whom data are available (those aged 16–19).† The proportion of females aged 15–17 who ever had sexual intercourse is similar in three countries for which this information is available (37–38%) and is somewhat higher in Great Britain (41%), where the data are for 16–17-year-olds.

There is greater variation across the five focus countries among teenagers aged 18–19: Sixty-seven percent of French and 71% of U.S. and Canadian 18–19-year-olds have ever been sexually active, compared with 79–80% in Great Britain and Sweden. Overall, while cross-country differences in the proportion of teenagers who have had sex by age 18 and by age 20 are very small, a substantially higher proportion in the United States begin having sex before age 15 (14%) than do in Canada, France and Great Britain (4–9%); the U.S. proportion is only somewhat higher than that in Sweden (12%).

Data on the proportion of all 18–19-year-olds who are currently sexually active (i.e., who had sex in the last three months) are available for four countries. The United States has the lowest proportion (59%), with France and Great Britain (62–64%) having somewhat higher levels, and Sweden (79%) having the highest level (Table 3). When expressed as a proportion of those who have ever been sexually active, these data also provide an indicator of continuity of adolescent sexual relationships once intercourse is initiated. Continuity is higher in France and Sweden (where about 95% of 18–19-year-olds who have initiated intercourse are currently sexually active) than in Great Britain (79%) or the United States (84%, not shown).

The proportion of sexually active people who have had two or more sexual partners in the past year is often used as an indicator of potential risk for STDs.

*The median age at first intercourse is the age by which 50% of all women aged 20–24 had had intercourse. For the United States, the current value (17.2) differs from a previously published estimate—a median of 17.4—which was calculated from data for 15–19-year-olds (source: The Alan Guttmacher Institute, *Fulfilling the Promise: Public Policy and U.S. Family Planning Clinics*, New York: AGI, 2000, Chart 2, p. 10.)

†The comparable proportion among 16–19-year-olds in the United States is 58%, still somewhat lower than the proportion in Great Britain.

Table 4. Percentage of sexually active adolescents with two or more sexual partners in the past year, by sex and by age, according to country

Country	Women				Men			
	15–19	18–19	16–19	15–17	15–19	18–19	16–19	15–17
Sweden (1996)	u	42.8	u	u	u	31.3	u	u
France (1992, 1994)	u	12.8	u	31.0*	u	28.8	u	45.3*
Cauda (1996)	23.9	23.5	u	24.3	32.1	38.1	u	24.8
Great Britain (1990–1991)	u	u	30.1	u	u	u	45.5	u
United States (1995)	46.5	48.6	47.2	43.8	50.8	48.8	50.5	53.3

*This value is not exactly comparable with the others because it is based on those who had first intercourse at least one year ago and who were sexually active in the past year. *Note:* u=unavailable.

Some information on multiple partnership among adolescents is available, although measures are not exactly comparable across countries (Table 4). The proportion of those who were sexually active within the past year who had two or more sexual partners in that time period is substantially higher among teenage women in the United States than in Canada, Great Britain or France when we compare age-groups with similar data, but it is only slightly higher than the proportion among 18–19-year-olds in Sweden. The proportion of sexually active adolescent men who had two or more sexual partners in the past year is also highest in the United States, with Great Britain a close second among 16–19-year-olds. Adolescent men are generally much more likely than their female counterparts to have had two or more sexual partners in the past year in Canada, France and Great Britain, and they are slightly more likely to have done so in the United States. However in Sweden, the situation is reversed.

A more refined measure, only available for France, is the proportion of 15–17-year-olds who, having had their first intercourse at least one year before interview and having been sexually active during the past year, have had two or more sexual partners in the past year. This proportion is almost one-third (31%) for women and one-half (45%) for men. In contrast, the proportion of 15–17-year-olds sexually active in the past year who had had two or more partners is higher in the United States (44% for women and 53% for men).*

Contraceptive Use

Information on contraceptive use is available for all five countries, although the data are somewhat limited. Some surveys obtained information on multiple method use both at first intercourse and at last intercourse (or during a recent time period). For surveys that allowed reporting of simultaneous use of two or more methods, we created a measure that prioritized contraceptive methods according to effectiveness, so that the most effective methods (sterilization, long-acting hormonal methods, the IUD and the pill) were given higher priority than such less-effective methods as condoms, spermicides, withdrawal and periodic abstinence. Thus, a person who uses both the pill and condoms was classified as a pill user, while someone who uses condoms and spermicides was classified as a condom user. The data on condom use are based on questions concerning prevention of pregnancy and do not include condom use for STD prevention only. Thus, we do not have measures of total condom use, nor do we have comparable data on dual contraceptive use for all study countries.

• *Use at first intercourse.* Adolescents in France were substantially more likely to have used a contraceptive method at first intercourse than those in the other three countries for which data are available, with 89% of 15–17-year-olds having done so (Table 5). The proportion of adolescent women who did not use any method at first intercourse was highest in the United States (25%), while the proportions were only slightly lower in Great Britain and Sweden (21–22%). The condom is the method most likely to be used at first intercourse, with 61–67% of young women in France, Great Britain and the United States and 41% of young women in Sweden reporting using condoms at first sex. In Sweden, however, teenagers were by far the most likely to use "other" methods—mostly withdrawal—at first intercourse: Twenty-four percent did so in Sweden, compared with 4–7% in the other three countries. Few adolescent women in any of the countries reported using the pill at first intercourse, although U.S. adolescents were somewhat less likely to do so (8%) than were those in the other three countries (13–15%).

• *Use at last intercourse or current use.* Some information on adolescents' recent contraceptive use (either use at last intercourse or current use) was available for all five countries; however, these data were not fully comparable across countries, which should be borne in mind when making comparisons.† Differences across countries in recent use are greater than those in use at first intercourse. The proportion of sexually active adolescents at risk of an unintended pregnancy who were not currently using any method is especially high in the United States (20%) and is lowest in Sweden and Great Britain (4–7%); it is intermediate in France (12%).

Data for 15–17-year-olds in France unexpectedly show a low level of nonuse among younger adolescents (7%), lower even than the level found among older teenagers (15%), based on the 1992 Survey of Sexual Behavior (not shown). In the case of Canada, data available from a large sample survey of students in grades 7–12 (high school) in British Columbia show that 13% of those who have ever had intercourse did not use a method at last intercourse. These data, combined with national information showing that 87% of Canadian teenagers were using the pill or another method at last intercourse, suggest that nonuse among sexually active adolescents in Canada falls between the higher levels seen in the United States and the lower levels found in the three European countries.

Some notable differences in method choice were also found across countries, with the United States standing out in a number of respects. It is the only country where a substantial proportion of adolescents used long-acting methods of con-

*This proportion is understated for U.S. adolescents compared with French teenagers because in the French data, the measure is based on sexually experienced teenagers who were sexually active throughout the past year, while for the United States, all sexually active teenagers were included, even those who had first had intercourse within the past year.

†The age-groups for which data are available for Sweden (18–19) and Great Britain (16–19) differ from what is available for the other three countries (15–19). Data from a small-scale survey of 16–18-year-olds in Sweden show method patterns and level of use very similar to the results for 18–19-year-olds, providing a basis for generalizing to all 15–19-year-old females from the data for 18–19-year-olds. (The latter data are from a larger sample and provide a more reliable estimate.) Further, the measure available for Canada is current contraceptive use, while for the other countries, the measure presented is use at last intercourse, among those who had intercourse in the past three months. Measures of recent contraceptive use (whether current or at last intercourse) should be based on those who are at risk of unintended pregnancy. As noted in Table 5, available data do not always approach this goal. In the case of Canada and France, certain small groups that should have been excluded are not, because they could not be separately identified. Since these groups are likely to be nonusers, the impact is to make the proportion of nonusers appear higher than it would otherwise be.

Table 5. Percentage distribution of ever sexually active women, by method used at first intercourse; and percentage distribution of currently sexually active women, by method used at last intercourse—all according to country

Measure and country	Age-group	Injectable/ implant/IUD	Pill	Condom	Other methods*	No method	Total
Method used at first intercourse†							
Sweden (1991)	16–18	0.0	13.0	41.0	24.0	22.0	100.0
France (1994)	15–17	0.0	15.1	66.5	7.1	11.3	100.0
Great Britain (1990–1991)	16–19	0.0	12.5	61.4	5.1	21.0	100.0
United States (1995)	15–19	0.5	8.0	62.8	4.0	24.7	100.0
Method used at last intercourse							
Sweden (1996‡)	18–19	2.1	49.9	24.1	17.3	6.5	100.0
France (1992, 1994§)	15–19	0.0	59.2	28.4	0.6	11.9	100.0
Canada (1995**)	15–19	††	63.7	††	23.1‡‡	††	100.0
Great Britain (1990–1991§§)	16–19	1.3	67.5	23.3	3.8	4.1	100.0
United States (1995*†)	15–19	9.3	32.5	33.0	5.2	20.0	100.0

*Includes withdrawal, rhythm, diaphragm, cap, female condom and spermicides. †Among women who have ever had intercourse. ‡Excludes those who never had sex, those who did not have intercourse in the past three months and those not at risk for unintended pregnancy (pregnant, postpartum, seeking pregnancy, and infecund or sterile). §Estimated by applying distributions for 15–17-year-olds (1994) and 18–19-year-olds (1992) to estimated number sexually active in each age-group in 1995. Women who never had intercourse and those classified as "method not reported" or "no intercourse" were excluded from the base population. Women in other categories usually considered to be "not at risk of unintended pregnancy," such as those who were pregnant, trying to become pregnant and postpartum, were not identified and therefore could not be excluded. **Based on current contraceptive use data from the 1995 General Social Survey. Women who were not sexually active and those who were infecund or pregnant were excluded. ††Estimate does not meet Statistics Canada standards for size of denominator or numerator.‡‡This category is "any method other than the pill," and consists primarily of condom users. The proportions using methods other than the pill are based on too few cases to be shown separately. §§Based on women who were sexually active in the three months before interview. Women who were not at risk of being pregnant, being postpartum or trying to become pregnant were not identified and therefore could not be excluded. *†Method used at last intercourse during the three months before interview. Those who have never had sex, who did not have intercourse in the past three months and who were not at risk of unintended pregnancy (pregnant; two months or less postpartum; seeking pregnancy; and infecund or sterile) were excluded. *Note:* Women who reported more than one method were classified according to the most effective method they reported using.

traception, such as the injectable and the implant. Overall, however, the United States had much lower use of medical methods, such as the pill, injectable, implant and IUD: Fifty-two percent of 15–19-year-old U.S. women using contraceptives at last intercourse relied on medical methods, compared with 56% of Swedish 18–19-year-olds, 67% of French 15–19-year-olds, 72% of British 16–19-year-olds and 73% of Canadian 15–19-year-olds. (These proportions are based on method users only, and have been calculated from data shown in Table 5.)

In the four focus countries with comparable data, condoms were the method of choice for a large proportion of currently sexually active adolescent women: Between 23% and 33% had used condoms during their last intercourse or in the recent past. Total condom use was somewhat higher, however, because we categorized those using a hormonal method in addition to condoms as users of hormonal methods.

Although we could not precisely estimate the proportion of Canadian teenagers using condoms because of the small number of adolescents surveyed in the 1995 General Social Survey, almost all of the 23% of teenagers who reported using methods "other than the pill" were in fact using the condom as their most effective method at last intercourse. In addition, supportive (although not exactly comparable) data from various Canadian surveys show that condom use by teenagers seems to be equal to or more prevalent than levels observed in the other four focus countries. The 1996 National Population and Health Survey found that 70% of single, sexually experienced 15–19-year-old Canadian women (and 81% of 15–19-year-old Canadian men) reported using a condom at last intercourse. Condom use at last intercourse was also high (49%) in a large sample of high school students (grades 7–12) in British Columbia.

These high levels of condom use, along with high levels of pill use, suggest that a large proportion of sexually active Canadian teenagers are using condoms, and that the proportion using both the pill and the condom (dual use) is also probably quite large. The limited data available show that dual use at last intercourse is much higher in Great Britain (among both younger and older teenagers) and somewhat higher in France (data available for older teenagers only) than in the United States; no data are available for Sweden.

In the United States, overall current use of condoms (used alone or with other methods) by adolescents is estimated to be 38% of all sexually active teenage women who are at risk of unintended pregnancy.[13] The levels of overall condom use among sexually active teenagers are higher in Great Britain and Canada (according to the related survey data cited above) than in the United States; overall condom use is about the same among U.S. teenagers and those in France.

Younger adolescents aged 15–17 are more likely to use condoms than are older teenagers. This pattern is found in the three countries (France, Great Britain and the United States) for which data are available for both younger and older teenagers.

Discussion

Despite the recent decline in adolescent pregnancy in the United States, the current rate is 2–4 times that in the four other developed countries included in this analysis. The rates of intended births and intended pregnancies in the United States are much higher than the total rates in France and Sweden and are probably as high as or higher than the intended teenage birthrates in Canada and Great Britain. Most of the difference in pregnancy rates between the United States and the other study countries is due to the high unintended pregnancy rate in the United States, however, which is much higher than the total teenage pregnancy rates of all other study countries.

In most developed countries, adolescent pregnancy rates and birthrates declined more between the 1980s and the mid-to-late 1990s than they did in the United States.[14] Even as researchers seek to explain the reasons for the recent decline in pregnancies and births in the United States and in other countries,[15] we also need to understand why the United States continues to have rates so much higher than those in other developed countries. This article has examined information available on the two main proximate determinants of the pregnancy rate—sexual activity and contraceptive use—with the aim of assessing their roles in explaining differences between countries in adolescent pregnancy and STD rates. While these two proximate determinants are among the immediate or direct causes of variations in teenage pregnancy, they are only two factors, and are themselves influenced by a large number of social, economic, political and cultural factors, as well as by the characteristics of individual adolescents.

The available data indicate that variation in sexual behavior is not an important contributor to explaining differences in levels of teenage pregnancy between the United States and other study countries, or even differences between France and Sweden on the one hand and Canada and Great Britain on the other. In the five countries, the age at first intercourse, the pro-

portion who have ever had intercourse and the proportion who have had sex before age 20 differ little, although the percentage of teenagers who first had intercourse before age 15 is greater in the United States and Sweden than in the other study countries. Although the available data on continuity of being in a sexual relationship (that is, the proportion currently sexually active among those who have ever been sexually active) are limited to the 18–19 age-group, they indicate that potential exposure to pregnancy is greater in Sweden and is slightly greater in France and Great Britain than in the United States. This suggests that, all else being equal, the pregnancy rate in the United States should be no higher than—or perhaps even lower than—rates in the other countries.

Data on certain other aspects of sexual behavior, however, such as frequency of intercourse and the type and duration of sexual relationships, may influence exposure to pregnancy and STD risk. Such information is mostly not available or is not measured in a comparable way across countries; however, it is possible that some of these aspects of sexual behavior may partly explain cross-country differences in reproductive health outcomes.

While teenagers in the United States are not much different from those in other countries in terms of their level and timing of sexual activity, sexually active U.S. teenagers are typically more likely to have had more than one sexual partner in the past year. This may contribute to the relatively high levels of STDs evident in the United States.[16]

The level of condom use at first sex is lower in the United States than in France, though it is higher than the level in Sweden and similar to that in Great Britain. Use of the condom as the primary method at last intercourse is higher in the United States than in the other study countries; however, overall condom use (used along with a hormonal method or as the most effective method) is lower in the United States than in Great Britain (and most likely Canada) and similar to levels in France. Though not conclusive, this suggests that the higher U.S. adolescent STD rates may reflect lower overall levels of condom use, as well as greater exposure to infected partners (both by having sex with more partners over a given period of time and by greater prevalence of STDs in the country as a whole).

In addition, national differences in current contraceptive use are substantial, with the proportion of adolescent women who are at risk of an unintended pregnancy and who are not using a method being greater in the United States than in the other study countries. Use of modern methods with the lowest failure rates (the pill, the injectable, implants and the IUD) is lower in the United States than in the other countries. These differences are consistent with national differences in pregnancy rates and appear to be the more likely cause of the higher teenage pregnancy rates in the United States than any differences in sexual behavior.

While these differences in contraceptive use are likely to contribute substantially to variations in pregnancy rates, they do not appear large enough to totally account for the much higher teenage pregnancy rate in the United States. In addition to variations in the levels and patterns of method use among those trying to avoid becoming pregnant, there may be cross-country differences in levels of effectiveness of method use. Use-failure rates for reversible methods are high for adolescents and young adults in the United States, but comparable data are not available for the other study countries.[17]

There are many possible reasons that may explain cross-country variations in contraceptive use. Differences in societal attitudes toward adolescent sexual activity can influence provision of reproductive services for adolescents. Thus, contraceptive services and supplies are available free or at low cost for all teenagers in the four developed countries other than the United States, and concrete efforts are made to facilitate their easy access to such services. There also may be differences in adolescents' attitudes toward contraceptive methods, in the accuracy of their knowledge of how to use methods, in the fear of side effects, in the level of confidentiality and in the extent of parental support or opposition. Use patterns and effectiveness of use are also likely to be influenced by adolescents' motivation to delay parenthood and to avoid unintended pregnancy, which may in turn be influenced by job and educational opportunities and social support (or the lack of it) for young mothers.

In combination with its higher teenage pregnancy rate, the United States has a lower abortion ratio than the other four study countries, particularly among adolescents aged 15–17. While the lower abortion ratio may reflect the possibly greater difficulty American adolescents have in accessing abortion services than teenagers have in the other countries, it also provides some support for the interpretation that motivation to delay early motherhood is lower, and acceptability of adolescent childbearing and antiabortion sentiment are greater among U.S. adolescents. In fact, the proportion of pregnancies that are intended is somewhat higher among older teenagers than among younger ones—25% compared with 13%.[18] This interpretation may also apply to older adolescents (18–19-year-olds) in Great Britain, for whom the abortion ratio is about the same as that in the United States.

Research in the United States and Great Britain shows that there is great variation among adolescents in the motivation to prevent pregnancy and in ambivalence about having a birth during their adolescent years. There is lower motivation and greater ambivalence (as well as a more positive attitude toward having a baby) among teenagers who have lower educational and job aspirations and expectations, among those who are not doing as well in school and among those in poor and single-parent families, as well as among black and Hispanic teenagers in the United States.[19]

The two proximate determinants of teenage pregnancy that are studied here, sexual activity and contraceptive use, help to explain the immediate or direct causes of variations in teenage pregnancy, and STD rates. They are, however, only two factors in variations in teenage pregnancy, and are themselves influenced by a large number of social, economic, political and cultural factors, as well as by the characteristics of individual adolescents. Nevertheless, some policy implications may be drawn from these research findings. The lower levels of contraceptive use (hormonal methods, in particular) among teenagers in the United States compared with young women in the other four countries suggests that there is substantial room for improvement. Increased attention to the provision of information and services could yield significant gains in reducing unplanned pregnancies and births among adolescents.

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