

# PREGNANCY AND PARENTING: PREVENTION AND SERVICES

## Contents

	<i>Page</i>
Introduction . . . . .	323
Background on Adolescent Pregnancy and Parenting . . . . .	323
Sources and Limitations of Data on Adolescent Sexual Activity, Pregnancy, Childbearing, and Abortion . . . . .	323
Trends in the Incidence and Prevalence of Adolescent Sexual Activity, Pregnancy, Childbearing, and Abortion . . . . .	326
Sexual Activity and Contraceptive Use Among Adolescents . . . . .	326
Pregnancies Among Adolescents . . . . .	326
Births Among Adolescents . . . . .	328
Abortions Among Adolescents . . . . .	329
Out-of-Wedlock Childbearing Among Adolescents . . . . .	331
Adolescent Fatherhood . . . . .	332
Summary . . . . .	<b>332</b>
Consequences of Adolescent Sexual Activity, Pregnancy, Abortion, and Parenthood . . . . .	334
Consequences for Adolescents . . . . .	336
Consequences for Children of Adolescent Parents . . . . .	339
Risk and Protective Factors in Adolescent Pregnancy and Parenting . . . . .	340
Risk and Protective Factors Related to Pregnancy . . . . .	340
Risk and Protective Factors Related to Pregnancy Outcomes . . . . .	345
Demographic Differences Related to Adolescent Pregnancy and Pregnancy Outcomes . . . . .	348
Prevention of Adolescent Pregnancy and Associated Negative Outcomes . . . . .	356
programs That May Help Prevent Adolescent Pregnancy . . . . .	356
Programs That Emphasize Education . . . . .	357
Programs That Provide Contraceptives to Adolescents . . . . .	372
programs That Seek To Enhance Adolescents' Life Options . . . . .	389
Economic Incentive Programs . . . . .	394
Conclusions About the Effectiveness of programs To Prevent Adolescent Pregnancy . . . . .	394
programs Designed To Prevent Negative Outcomes of Adolescent Pregnancy and Parenthood . . . . .	397
Programs That Offer Alternatives to Parenthood . . . . .	397
Programs That Offer Maternity Care or Family Planning Services . . . . .	399
Programs That Offer Specific Types of Services to Pregnant Adolescents and Adolescent Mothers . . . . .	400
Programs That Offer Comprehensive Services to Pregnant Adolescents and Adolescent Mothers . . . . .	403
Programs for Adolescent Fathers . . . . .	405
Conclusions About the Effectiveness of Programs To Prevent Negative Outcomes of Adolescent Pregnancy and Parenthood . . . . .	406
Major Federal programs and Policies Pertaining to Adolescent Pregnancy and Parenting . . . . .	408
The Title X Family Planning Services and Research Program . . . . .	408
The Title XX Adolescent Family Life Program . . . . .	411
Other Federal Programs Pertaining to Adolescent Pregnancy and Parenting . . . . .	412
Conclusions and Policy Implications . . . . .	417
Chapter 10 References . . . . .	418

## Boxes

<i>Box</i>	<i>Page</i>
10-A. The True Story of Keesha: An Unwed Teenage Mother .....	324
10-B. Examples of New and Emerging Contraceptive Technologies .....	376
10-C. The Six General Conclusions of the National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing .....	3%
10-D. Roadblocks to the Provision and Coordination of Care for Pregnant and Parenting Women and Children: Findings of the National Commission To Prevent Infant Mortality .....	407

## Figures

<i>Figure</i>	<i>Page</i>
10-1. Number of U.S. Females Ages 15 to 19, Number of Sexually Experienced U.S. Females Ages 15 to 19, and Number of pregnancies Among U.S. Females Ages 15 to 19 Pregnancies Among U.S. Females Ages 15 to 19,1970-85 .....	327
10-2. Trends in Pregnancy Rates, Birth Rates, Abortion Rates, Miscarriage Rates, and Out-of-Wedlock Birth Rates Among U.S. Females Ages 15 to 19,1970-87 .....	327
10-3. Trends in Sexual Experience Rates Among U.S. Adolescent Females Ages 15 to 19 and Pregnancy Rates for Sexually Experienced U.S. Females U.S. Females Ages 15 to 19, 1970-85 .....	328
10-4. Birth Rates, Abortion Rates, Miscarriage Rates, and Pregnancy Rates Among Females Ages 15 to 19 in 11 Countries, 1983 .....	329
10-5. Trends in Birth Rates Among U.S. Females Ages 10 to 19, 1970-88 .....	330
10-6. Trends in the Percentage of Pregnancies Ending in Abortion Among U.S. Females Under Age 20,1970-85 .....	330
10-7. Trends in Pregnancy Rates, Birth Rates, and Abortion Rates Among U.S. Females Ages 15 to 19,1973-85 .....	331
10-8. Trends in Out-of-Wedlock Childbearing Among U.S. Females Under Age 20, 1960-88 .....	331
10-9. Overview of U.S. Adolescent Pregnancy and Parenting .....	335
10-10. A Conceptual Model for Pregnant/Parenting Teens and Their Male Partners: Pregnancy Resolution Decisions, Life Style Adaptations, and Well-Being .....	341
10-11. Trends in Out-of-Wedlock Childbearing Among U.S. Females Under Age 20 by Race, 1979-87 ....	354
10-12. Percentage of U.S. Female Contraceptive Users Experiencing Contraceptive Failure During the First 12 Months of Use, by Age and Method of Contraception. ....	373

## Tables

<i>Table</i>	<i>Page</i>
10-1. U.S. Mothers and the Reported Age of the Fathers of Their Children, by Child's Race, 1988 .....	333
10-2. Adolescent Fathers: Distribution of Male Participants in the 1984 NLSY Who Reported Having Fathered a Child Before the Age of 20, by Father's Age at Child's Birth and Marital Status at Conception .....	334
10-3. Adolescent Fathers: Distribution of Male Participants in the 1984 NLSY Who Reported Having Fathered a Child Before the Age of 20, by, Race/Ethnicity .....	334
10-4. State Education Agencies and Large School Districts' Position on the Teaching of Selected Topics in Sex Education, 1988 .....	359
10-5. Evaluations of School-or Community-Based Sex Education, Life Skills Training, and Other Programs .....	360
10-6. Evaluation of a Multimodal Pregnancy Prevention Program That Included School- and Community-Based Education. ....	369
10-7. Overview of Contraceptive Methods Most Commonly Used by U.S. Adolescents .....	374
10-8. Evaluations of Contraceptive Provision Policies and Programs .....	379
10-9. Evaluations of Youth Employment Demonstration Programs .....	392
10-10. Overview of Title X and Title XX of the Public Health Service Act .....	409

# PREGNANCY AND PARENTING: PREVENTION AND SERVICES

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## Introduction

In 1988, roughly one million U.S. adolescents became pregnant, and nearly half a million gave birth. In recent decades, sexual activity rates among U.S. adolescents have been increasing, but birth rates among U.S. adolescents have generally been declining.<sup>2</sup> Since 1960, however, births to *unmarried* U.S. adolescents have increased dramatically (195c). About two-thirds of the almost 488,941 U.S. females under age 20 who gave birth in this country in 1988 (as compared to about one-fifth in 1960) were single mothers (195c). Some of the immediate difficulties encountered by unmarried adolescents who become pregnant and bear children out of wedlock are illustrated by one mother's story in box 10-A.

Early out-of-wedlock childbearing increases dramatically the chance that a mother and her child (or children) will live in poverty. Because of their need for economic and other support, adolescents who become mothers and their children cost U.S. taxpayers a substantial amount of money. Families started by adolescents account for the majority of families receiving benefits under Aid to Families With Dependent Children (AFDC) program; and in 1985, AFDC, Medicaid, and Food Stamp Program costs for families begun by a birth to a teenager were estimated to be \$16.65 billion (149).<sup>3</sup> In 1988, Federal, State, and local governments spent an estimated \$20 billion on AFDC, Medicaid, and food stamps to support families started by women when they were under age 20 (33).<sup>4</sup> These estimates do not include other public costs commonly associated with family support such as housing subsidies, foster care, or day care (33).

Adolescent pregnancy and parenthood are now new phenomena in this country. In recent decades, however, numerous societal and other transforma-

tions have changed the context in which these phenomena occur and heightened perceptions that pregnancy and childbearing among U.S. adolescents are serious problems (13,148,149,235). Among the concerns are recent increases in births to adolescents as a proportion of all births and the rising number of these that are out of wedlock (51a,89a). Black adolescents have much higher rates of premarital pregnancy and out-of-wedlock births than white adolescents, but in recent decades, a large increase in out-of-wedlock childbearing rates has taken place among whites (51a,196).

This chapter examines the problems of adolescent pregnancy and parenting. The first section of the chapter presents background information on sexual activity, pregnancies, births, and abortions among U.S. adolescents. Subsequent sections review programs that may help prevent adolescent pregnancy, programs that may help prevent negative outcomes associated with adolescent pregnancy and parenting, and major Federal policies and programs pertaining to adolescent pregnancy and parenting. The chapter ends with conclusions and policy implications.

## Background on Adolescent Pregnancy and Parenting

### *Sources and Limitations of Data on Adolescent Sexual Activity, Pregnancy, Childbearing, and Abortion*

Data on U.S. adolescents' sexual activity, contraceptive use, pregnancy, childbearing, and abortion are available from a variety of sources described below. Data on births among adolescents, as noted below, are considerably more accurate than data on sexual activity, pregnancies, or abortions,

Data on U.S. adolescents' *sexual activity* have been collected in several surveys, although the type

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<sup>1</sup>Although the focus of OTA's adolescent health report is on adolescents ages 10 through 18, much of the data on adolescent pregnancy presented in this chapter is for adolescents ages 15 to 19. Those are the ages covered in most published data on adolescent pregnancy.

<sup>2</sup>Birth rates among black U.S. adolescents declined in the 1970s, but increased during the 1980s (202 f). Also an upswing in birth rates occurred among 15- to 17-year-olds and 18- to 19-year-olds in 1988 and bears watching (202f).

<sup>3</sup>These and other Federal programs relevant to low-income adolescents are discussed in ch. 18, "Issues in the Delivery of Services to Selected Groups of Adolescents," and in ch. 19, "The Role of Federal Agencies in Adolescent Health," in Vol. III.

<sup>4</sup>According to the Center for Population Options, the components of these estimates were as follows: \$10.07 billion for AFDC, \$6.53 billion for Medicaid, and \$3.23 billion for food stamps (33).

**Box 10-A—The True Story of Keesha: An Unwed Teenage Mother<sup>1</sup>**

At the age of 11, Keesha moved in with her grandmother because of problems with her mother at home; after only a year with her grandmother, she moved in with an aunt. Life was hard with her aunt, who beat Keesha, and told Keesha that she was never wanted by her mother. Finally, after telling her mother about beatings by her aunt, Keesha was sent to live with another aunt, and later back to her grandmothers.

When Keesha was 16, her mother became very ill. After being turned away from one hospital because she had forgotten her insurance card, Keesha's mother was admitted to another hospital, where doctors discovered a cancerous tumor on her kidney. At that time, she had surgery to remove the tumor and one of her kidneys. After staying in the hospital for a couple of months, she was discharged on Christmas Eve so she could spend the holidays with her family. Because she was so ill, however, and was having trouble with falling down, she was readmitted to the hospital in a few days. Her condition continued to decline, and shortly after the New Year, she died.

In elementary school, Keesha was a popular and successful student, but after moving so many times, she began to have problems in school. Finally, when her mother became ill, Keesha dropped out of school to stay home with her mother.

Keesha had sexual intercourse for the first time at the age of 15, and shortly before her mother died, Keesha became pregnant. When Keesha was 3 months pregnant, her grandmother, with whom she had been living, had a fatal heart attack. Keesha then began moving around from place to place, first with a friend, then with a friend of her mother. Keesha had a difficult pregnancy, and at 7 months, she was hospitalized until the birth of her daughter.

After the birth, Keesha went to stay with a friend who helped her and the baby out by getting them some clothes from a charitable agency. After a few months, Keesha and her daughter moved to another friend's house. Nothing

<sup>1</sup>This story is based on an autobiographical note; the name has been changed to protect confidentiality.

and level of information are often insufficient for program and policy purposes (100a).<sup>5</sup> In 1971, the first epidemiological study of U.S. adolescents' sexual activity was conducted by researchers Zelnick and Kantner at Johns Hopkins University, and these researchers conducted subsequent studies in 1976 and 1979 (47a). A more recent survey that collected data on U.S. adolescents' sexual behavior and pregnancies is the National Longitudinal Survey of Labor Market Experience-Youth Cohort (NLSY) (47a). Sponsored by the U.S. Department of Labor, NLSY was begun in 1979 with a youth cohort of over 12,000 males and females ages 14 to 21. One positive feature of this survey was oversampling of black and Hispanic youth and of white youth from socioeconomically disadvantaged families to provide sample sizes large enough for statistically reliable ethnic and socioeconomic comparisons.

Data on U.S. adolescent females' sexual activity (and other items, including contraception, spontane-

ous fetal losses, and prenatal care) are available from the National Survey of Family Growth conducted periodically by the National Center for Health Statistics in the U.S. Department of Health and Human Services (DHHS) (47a,213). This survey has been tracking fertility patterns and contraceptive use of American women ages 15 through 44 since the early 1970s. Cycle III of the survey was conducted from August 1982 through February 1983 and interviewed a sample of about 8,000 U.S. females of childbearing age (ages 15 through 44). Cycle III included unmarried adolescents for the first time and sampled black women and adolescents ages 15 to 19 at higher rates than other women (202e). Data on younger adolescents are not available from this survey. Cycle IV of the National Survey of Family Growth was conducted in 1988 among about 8,500 U.S. females ages 15 to 44 (59a).

Among the other sources of data on U.S. adolescents' sexual activity are the High School and

<sup>5</sup>It is important to note that the term "sexually active" is often used in the literature to denote whether an individual has ever had heterosexual intercourse. It does not necessarily mean that an individual is currently having sexual intercourse, or indicate the number of partners or number of times. As a rule, those individuals, including adolescents, who have ever had sexual intercourse do report having had intercourse in the past 3 months, which is one measure of current sexual activity levels (59a). In the 1988 National Survey of Family Growth, 92.3 percent of the 15-to 19-year-olds who reported having ever having had intercourse also reported having had intercourse in the 3 months prior to the survey date (59a). The term 'sexually experienced' is also used as a synonym for ever having had sexual intercourse.

ever really seemed to work out, and Keesha and her daughter kept moving from place to place, staying for a little while with someone and then moving on. Some of the neighborhoods they lived in were pretty dangerous. In some places they stayed, there was a lot of drug traffic, and violence and shootings were common.

Keesha tried to find some kind of social services program that could help her and the baby, but she was refused from all of them for a variety of reasons: some were full, some wouldn't take children, and some required that she become award of the county, which Keesha didn't want to do because she feared it would result in her losing custody of her baby. She found that regular emergency shelters for the homeless would not take in families with parents under age 18. There were few places designed to serve adolescent mothers and their infant children.

When she was 18, Keesha became pregnant again. She considered having an abortion, but the people she was staying with told her that if she terminated the pregnancy, she would no longer be able to stay with them. Late in her pregnancy, Keesha moved in with another aunt. While living with her aunt, Keesha met a man whom she liked, and she and the baby moved in with him; they continued to stay with him after her second daughter was born. Keesha and her boyfriend had some problems, and Keesha left him several times. One of the things they argued about was whether she would get pregnant again. Keesha said she didn't want to have anymore children now, but her boyfriend argued that she should have his baby, since she already had babies fathered by two other men.

Keesha left this man and moved into a one-bedroom basement apartment with another mother of two young children; this housing lasted only a month, and after that, Keesha and her children continued to move from place to place. Then Keesha's children were taken away by the State social services department. She had left both children with the father of the older child (now 2<sup>1</sup>/<sub>2</sub>) when he was arrested on a Federal warrant. She had been testifying in court on behalf of the father of the younger child (now about 1)-this man had been accused of murder. Keesha moved back with her aunt and worked for a while in a fast food outlet, but when last heard from she was living in a shelter for women. She can't get her children back until she obtains permanent housing and completes a parenting education course. When last seen, Keesha was pregnant again. While pregnant, she was sexually assaulted.

Beyond Survey conducted from 1980 to 1984 and the National Survey of Adolescent Males conducted in 1988. The High School and Beyond Survey followed about 13,000 individuals who were sophomores in 1980 (47a). The National Survey of Adolescent Males, fielded by the Institute for Survey Research at Temple University, interviewed 1,880 U.S. never-married males ages 15 to 19 between April and November 1988 about their patterns of sexual activity (187).

There is no independent and valid measure of *pregnancies* or pregnancy rates, and these are typically calculated using live birth and other data (e.g., by summing the numbers of live births, induced abortions, and fetal losses (214)). Estimates of the number of pregnancies and pregnancy rates among U.S. adolescents are available from the Alan Guttmacher Institute, a private organization. Estimates of pregnancies and pregnancy rates for the United States from 1976 through 1985 are also available from the National Center for Health Statistics in DHHS (214).

Data on *live births* are among the vital statistics available from the National Center for Health Statistics in DHHS (81a,202e). The National Center for Health Statistics obtains information on births

from the birth registration offices of all States, New York City, the District of Columbia, Puerto Rico, the U.S. Virgin Islands and Guam (202e). Each year, the National Center for Health Statistics publishes the number of births according to age, race, marital status, and State of residence of the mother. Because data on births among U.S. adolescents are based on a 100-percent sample of birth certificates (which are filed for more than 99 percent of all births), data on births are considerably more accurate than data on sexual activity, pregnancies, or abortions (8). The major Federal report on health indicators in the *United States—Health* United States-tabulates birth rates by race but not by income or other factors indicative of socioeconomic level (202e,202f).

Data on aggregate numbers and rates of induced *abortions* are available from the Alan Guttmacher Institute. The Alan Guttmacher Institute obtains information on the number of abortions in each State from periodic surveys of abortion providers (8,81a,81b,202c). A limitation of the Alan Guttmacher Institute data on abortion is that they do not provide information regarding the age, race, and marital status of the women obtaining abortions (148). Data on abortions performed by or under the supervision of a licensed physician are also available

from the abortion surveillance system of the Centers for Disease Control within DHHS (202e). This system currently obtains data on the number of abortions and characteristics of abortion recipients reported by central health agencies in reporting areas that include the 50 States, New York City, and the District of Columbia (202c). The total number of abortions reported to the Centers for Disease Control’s abortion surveillance system is considerably smaller than the number estimated independently by the Alan Guttmacher Institute and is probably less accurate (202c,202e). By integrating the Centers for Disease Control data on abortion with the Alan Guttmacher data, one can estimate the incidence and rates of abortions among age, race, and marital subgroups (148). In surveys such as the National Survey of Family Growth, abortions are severely underreported (59a).

The reporting estimates of *spontaneous fetal losses* (miscarriages and stillbirths) among U.S. females is not very accurate (148). Estimates of fetal losses among U.S. females ages 15 to 19 can be tabulated on the basis of 1982 data from Cycle III of the National Survey of Family Growth (214), but these estimates are likely to be undercounts, because early miscarriages are not always detected by the women in whom they occur.

The national *adoption* reporting system was discontinued in 1975, so there are no systematically collected national data on the number of adoptions or trends in adoption (148). Currently, the only system that collects annual information on adoptions is the Voluntary Cooperative Information System, operated by the American Public Welfare System. This system collects data on the characteristics of adopted children and adoptive families placed for adoption by public child welfare agencies. It does not collect data on private placements.

### ***Trends in the Incidence and Prevalence of Adolescent Sexual Activity, Pregnancy, Childbearing, and Abortion***

#### **Sexual Activity and Contraceptive Use Among Adolescents**

Available data suggest that U.S. adolescents are becoming sexually active at increasingly earlier ages. According to the National Survey of Family Growth, the proportion of 15- to 19-year-old U.S. females who reported having had premarital sexual intercourse has increased steadily since 1970 (202d).

The percentage of 15- to 19-year-old U.S. females who reported having had premarital sexual intercourse was 28.6 percent in 1970, 36.4 percent in 1975, 42 percent in 1980, 44.1 percent in 1985, and 51.5 percent in 1988 (202d). The largest relative increase in the percentage of 15- to 19-year-old females who reported having had premarital sexual intercourse occurred among females age 15 (from 4.6 percent in 1970 to 25.6 percent in 1988). Comparable time-series data on adolescent males are not available, but the 1988 National Survey of Adolescent Males found that 64 percent of 15- to 18-year-old males had had sexual intercourse, 33 percent of them by the time they reached 15 (186b,187). There are no national level data on adolescents under age 15.

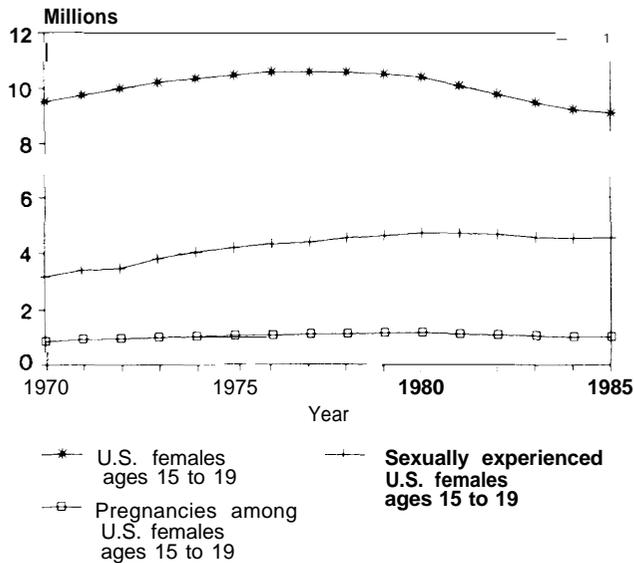
Cycle IV of the 1988 National Survey of Family Growth, which was conducted in 1988, found that among U.S. females at risk of pregnancy, females ages 15 to 19 were more likely than females age 20 and over to be using no contraceptive method (59a). The 1988 survey found that 78.8 percent of sexually active adolescent U.S. females ages 15 to 19 reported ‘current’ use of some method of contraception, as compared to 90.1 percent of all women ages 15 to 44 (143). Still, the percentage of sexually active 15- to 19-year-olds who reported using contraception in 1988 (78.8 percent ) was higher than in 1982 (71 percent) (59a). The 1988 National Survey of Adolescent Males had similar findings, with 76.6 percent of 15- to 19-year-old males reporting some form of contraceptive use at last intercourse (186b). Neither survey collected data on contraceptive use among younger adolescents.

#### **Pregnancies Among Adolescents**

Each year since 1974 in this country, there are estimated to have been over 1 million pregnancies to mothers between the ages of 10 and 19. It has been projected that as many as 43 percent of the 17 million female adolescents in this country may become pregnant at least once before they reach the age of 20 (58).

The vast majority of pregnancies among U.S. adolescents occur among females ages 15 to 19. In 1985, for example, an estimated 1,031,000 U.S. females under age 20 became pregnant, and all but 31,000 of them were ages 15 to 19(8 la). Figure 10-1 shows the number of U.S. females ages 15 to 19, the estimated number of sexually experienced U.S. females ages 15 to 19, and the estimated number of

**Figure 10-1—Number of U.S. Females Ages 15 to 19, Number of Sexually Experienced U.S. Females Ages 15 to 19, and Estimated Number of Pregnancies Among U.S. Females Ages 15 to 19, 1970-85**



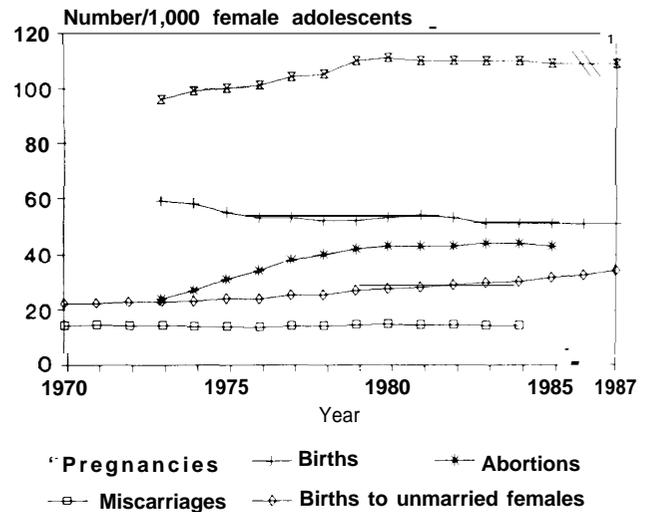
**SOURCE:** Office of Technology Assessment, 1991, based on National Academy of Sciences, National Research Council, Commission on Behavioral and Social Sciences and Education, Committee on Child Development Research, Panel on Adolescent Pregnancy and Childbearing, *Risking the Future, Adolescent Sexuality, Pregnancy, and Childbearing, Volume II: Working Papers and Statistical Appendixes*, S.L. Hofferth and C.D. Hayes (eds.) (Washington, DC: National Academy Press, 1987); and S.K. Henshaw, Alan Guttmacher Institute, New York, NY, personal communication, May 23, 1990.

pregnancies to U.S. females ages 15 to 19 from 1970 to 1985.

Pregnancy rates are typically presented as numbers of pregnancies per 1,000 women of a given age or ages in the population. In 1988, the estimated pregnancy rate among all U.S. females ages 15 to 19 was 109 pregnancies per 1,000 females (124a). As shown in figure 10-2, this rate was fairly stable throughout the 1980s (195a). Not unexpectedly, pregnancy rates are higher among older U.S. adolescent females (those ages 15 to 19) than among younger adolescent females (those under age 15). In 1985, for example, the pregnancy rate was 109.8 pregnancies per 1,000 population among U.S. females ages 15 to 19 and 16.6 pregnancies per 1,000 population among U.S. females under age 15 (81a).

As noted above, National Survey of Family Growth data indicate that about half of 15- to 19-year-old U.S. females in 1988 were not sexually active and were therefore not at risk of pregnancy

**Figure 10-2-Trends in Pregnancy Rates, Birth Rates, Abortion Rates, Miscarriage Rates,<sup>a</sup> and Out-of-Wedlock Birth Rates Among U.S. Females Ages 15 to 19, 1970-87**



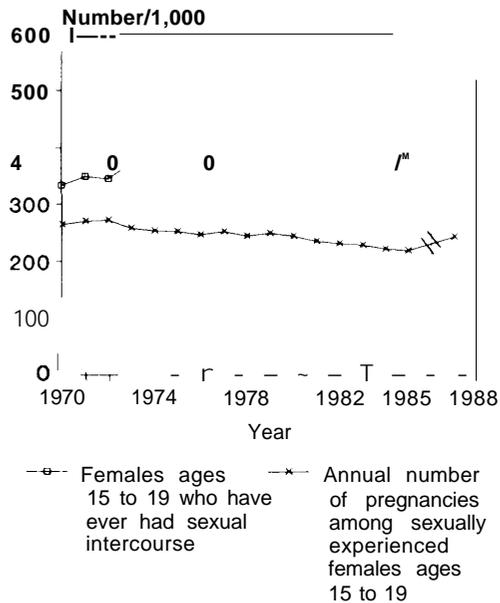
<sup>a</sup>Miscarriage rates are derived from the number of miscarriages calculated by Alan Guttmacher Institute as 20 percent of births plus 10 percent of abortions.

**SOURCE:** Office of Technology Assessment, 1991, based on K.A. Moore and T.M. Stief, "Changes in Marriage and Fertility Behavior: Behavior Versus Attitudes of Young Adults," paper prepared for Child Trends, Inc., Washington, DC, July 1989; National Academy of Science, National Research Council, Commission on Behavioral and Social Sciences and Education, Committee on Child Development Research and Public Policy, Panel on Adolescent Pregnancy and Childbearing, *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing, Volume II: Working Papers and Statistical Appendixes*, S.L. Hofferth and C.D. Hayes (eds.) (Washington, DC: National Academy Press, 1987). S.K. Henshaw, Alan Guttmacher Institute, New York, NY, personal communication, May 21, 1990.

(202d). Trends in sexual experience rates among U.S. females ages 15 to 19 are shown in figure 10-3. Between 1970 and 1985, sexual experience rates in this group rose steadily, but estimated pregnancy rates among *sexually experienced 15- to 19-year-old U.S. females* declined (see figure 10-3). The decline in pregnancy rates among sexually active 15- to 19-year-old females up to 1985 may reflect an increase in older sexually active U.S. adolescents' willingness or ability to use effective contraceptives (25,125,148,187). Estimated pregnancy rates among sexually experienced adolescent females increased between 1985 and 1987, however, and this is a development that bears watching.

Adolescent pregnancy rates are considerably higher in the United States than in many other developed

**Figure 10-3-Trends in Sexual Experience Rates Among U.S. Females Ages 15 to 19 and Pregnancy Rates Among Sexually Experienced U.S. Females Ages 15 to 19, 1970-88**



SOURCE: Office of Technology Assessment, 1991, based on National Academy of Sciences, National Research Council, Commission on Behavioral and Social Sciences and Education, Committee on Child Development Research and Public Policy, Panel on Adolescent Pregnancy and Childbearing, *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing, Volume II: Working Papers and Statistical Appendixes*, S.L. Hofferth and C.D. Hayes (eds.) (Washington, DC: National Academy Press, 1987); J.D. Forrest and S. Singh, "The Sexual and Reproductive Behavior of American Women, 1982-1988," *Family Planning Perspectives* 22(5):206-214, 1990; and S.K. Henshaw, Alan Guttmacher Institute, New York, NY, personal communication, May 21, 1990.

nations (see figure 10-4), despite similar rates of adolescent sexual activity in these countries (148). The higher adolescent pregnancy rates in the United States have been attributed to various factors, among them attitudes regarding sexuality, the nature of media programming, and lack of access to contraceptives (182).

### Births Among Adolescents

Of the roughly 1 million U.S. females under age 20 who become pregnant each year, about half give birth. In 1988, there were 488,941 births to U.S. females under age 20 (207b). Of these, 478,353 births were to females ages 15 to 19, and 10,588

births were to adolescents under age 15 (207b). According to a 1987 report by the Panel on Adolescent Pregnancy and Childbearing of the National Academy of Sciences, U.S. adolescents under age 15 are more than five times as likely to give birth as girls in any other Western developed country of the world (148,149).

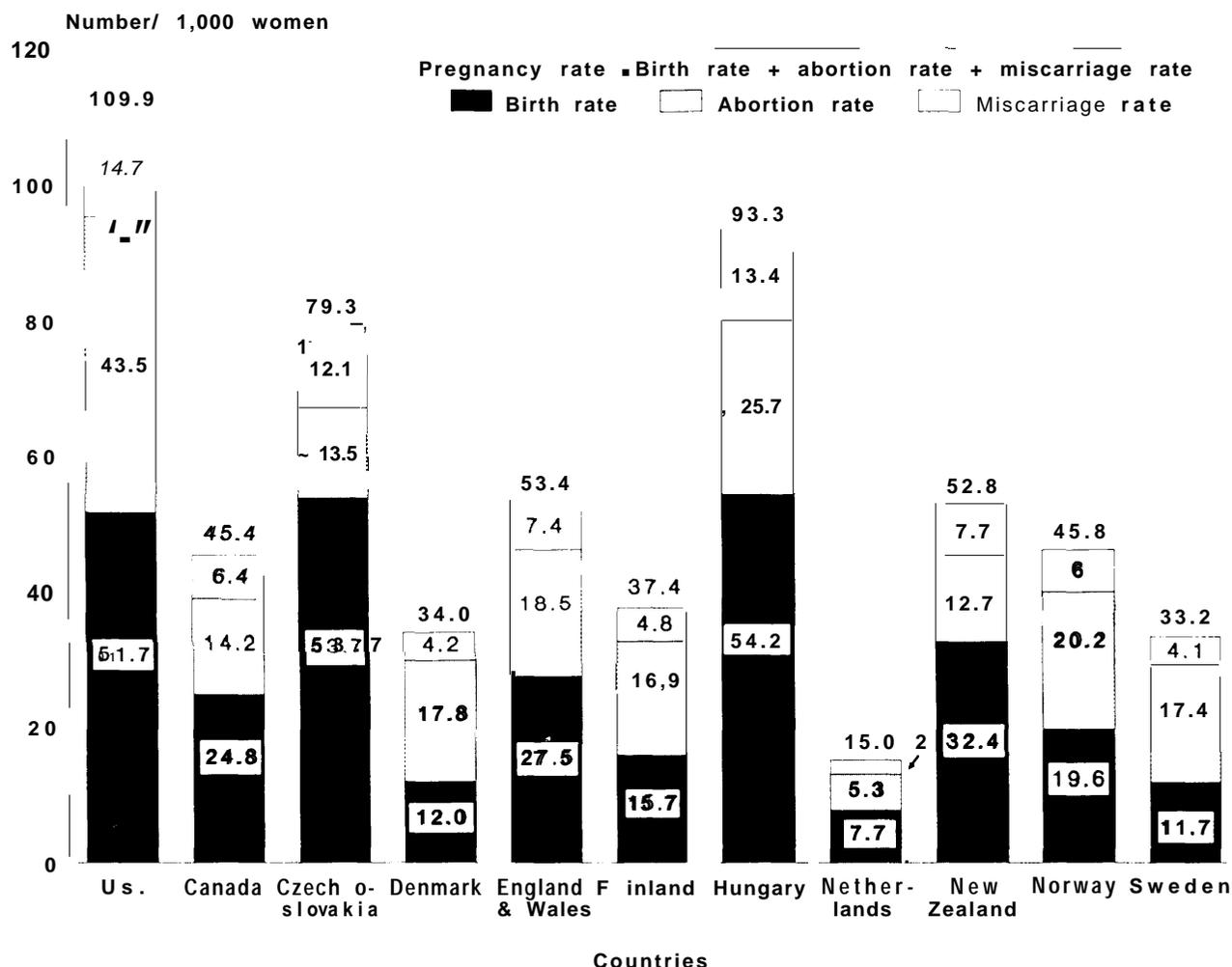
In 1988, the *birth rate* for U.S. females ages 15 to 19 was 53.6 births per 1,000 females (207b). Not surprisingly, 10- to 14-year-old females have much lower birth rates (1.3 births per 1,000 females) than 15- to 17-year-olds (33.8 births per 1,000) or 18- to 19-year-olds (81.7 births per 1,000) (see figure 10-5). Birth rates among all U.S. females under age 20 began declining in the 1960s and leveled off after about 1976.

The largest decline in birth rates since the early 1970s has occurred among U.S. females ages 18 and 19 (203). Their birth rates dropped from 114.7 births per 1,000 females in 1970 to 81.7 births per 1,000 in 1981 and have remained roughly at that level ever since (figure 10-5) (202f). Birth rates among females ages 15 to 17 and ages 10 to 14 have shown somewhat different trends. Birth rates among U.S. females ages 10 to 14 have remained relatively stable since 1970, at about 1.2 births per 1,000 females (202f,203). Birth rates among U.S. females ages 15 to 17 showed a steady decline from 1955 to 1980, going from 44.5 births per 1,000 females in 1955, to 43.9 births per 1,000 in 1960, to 33.8 births per 1,000 in 1970, to 32.5 births per 1,000 in 1980 (202f). From 1980 to 1986, the birth rate among 15- to 17-year-olds females declined only slightly, dropping to 30.6 births per 1,000 15- to 17-year-old females in 1986 (202f). In 1987, and 1988, the birth rate among 15- to 17-year-olds rose slightly to 33.8 births per 1,000 females, the same level as in 1970 (202 f).

As discussed later in this chapter, birth rates for black and white adolescents have differed substantially for many years.<sup>6</sup> Historically, black adolescents have had much higher birth rates than U.S. adolescents as a whole, and white adolescents have had lower birth rates than U.S. adolescents as a whole. Racial disparities in birth rates among U.S. adolescents have narrowed over the years but still

<sup>6</sup>To some extent, racial disparities in birth rates may reflect factors related to socioeconomic status. As discussed later in this chapter, black adolescents are far more likely to be poor or near poor than white adolescents. National data on birth rates among adolescents tabulated by socioeconomic status are not available.

Figure 10-4—Birth Rates, Abortion Rates, Miscarriage Rates, and Pregnancy Rates Among Females Ages 15 to 19 in 11 Countries, 1983



SOURCE: Alan Guttmacher Institute, *Teenage Pregnancy in the United States: The Scope of the Problem and State Responses* (New York, NY: 1989).

remain striking. Thus, in 1988, the birth rates among U.S. females under age 20 were as follows:

- 10- to 14-year-olds: all races, 1.3 births per 1,000 females, with whites at 0.6 births per 1,000 and blacks at 4.8 births per 1,000;
- 15- to 17-year-olds: all races, 33.8 births per 1,000 females, with whites at 25.5 births per 1,000 and blacks at 76.6 births per 1,000;
- 18- to 19-year-olds: all races, 81.7 births per 1,000 females, with whites at 69.2 births per 1,000 and blacks at 150.5 births per 1,000 (202 f).

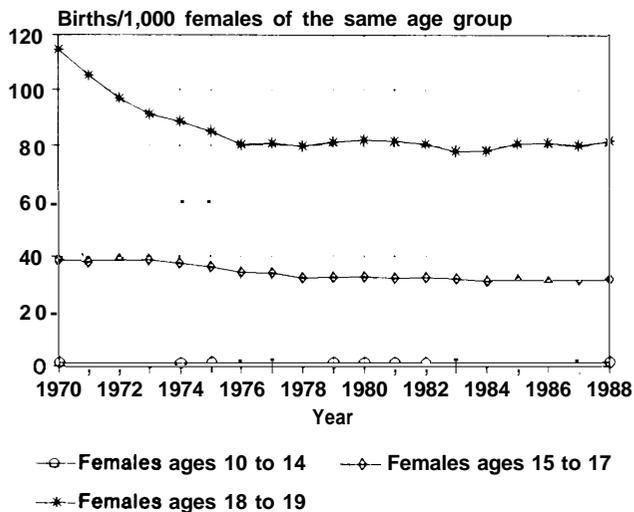
Another point that should be made here is that birth rates among black U.S. females under age 20 have increased rather steadily since 1984, reversing a trend of declining birth rates among black adolescents that occurred in the 1970s and early 1980s (202f). Birth rates among black adolescents in 1988 were at their highest levels in about a decade (202f).

### Abortions Among Adolescents

The difference between adolescent pregnancy and birth rates is due primarily to the use of induced abortion.<sup>7</sup> Although over half of all adolescent

<sup>7</sup>It is also due to spontaneous fetal losses (miscarriages). The number of miscarriages has been estimated by the Alan Guttmacher Institute to be 20 percent of the number of births plus 10 percent of the number of abortions, following a model developed by Bongaarts and Tietze of the Population Council (8).

**Figure 10-5—Trends in Birth Rates Among U.S. Females Ages 10 to 19, 1970-88**



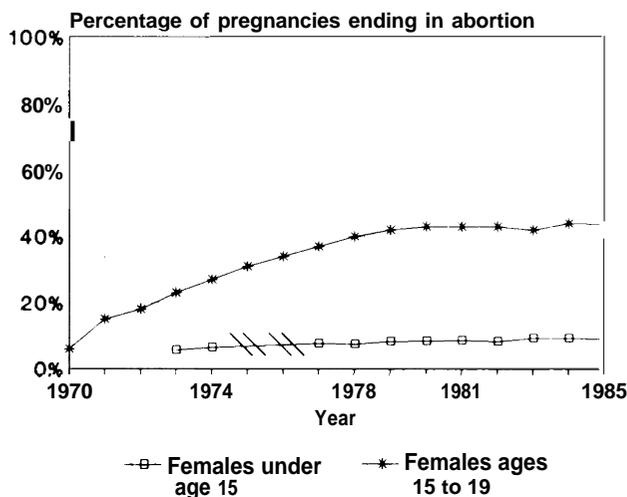
**SOURCE:** Office of Technology Assessment, 1991, based the following sources: 1970-1987 data: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital Statistics, *Vital Statistics of the United States, Volume 1: Natality* (Washington DC: U.S. Government Printing Office, various years). 1988 data: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital Statistics, "Advance Report of Final Natality Statistics, 1988," *Monthly Vital Statistics Report* 39 (no. 4, suppl.), DHHS Pub. No. (PHS) No. (PHS) 90-1120, Aug. 15, 1990.

pregnancies in this country are carried to term, the use of abortion among U.S. adolescents, as among adults, has increased substantially since the U.S. Supreme Court ruling in the case of *Roe v. Wade* in 1973 (7,148).<sup>8</sup>

According to the Alan Guttmacher Institute, there were an estimated 416,170 abortions among U.S. females under age 20 in 1985 (8). Of these, 399,200 were to females ages 15 to 19, and 16,970 were to females under age 15 (8). Twenty-six percent of all abortions in 1985 were obtained by teenagers. In 1984, only 6 percent of the teenagers who obtained abortions were married (8).

Data from the Alan Guttmacher Institute on the percentage of pregnancies ending in abortions among U.S. females under age 20 from 1970 through 1985 are shown in figure 10-6. Between 1970 and 1979, there was a dramatic increase in the percentage of

**Figure 10-6—Trends in the Percentage of Pregnancies Ending in Abortion Among U.S. Females Under Age 20, 1970-85<sup>a</sup>**



<sup>a</sup>Data on abortion rates for adolescents under age 15 are not available before 1973.

**SOURCE:** Office of Technology Assessment, 1991, based on Alan Guttmacher Institute, *Teenage Pregnancy in the United States: The Scope of the Problem and State Responses* (New York, NY: 1989).

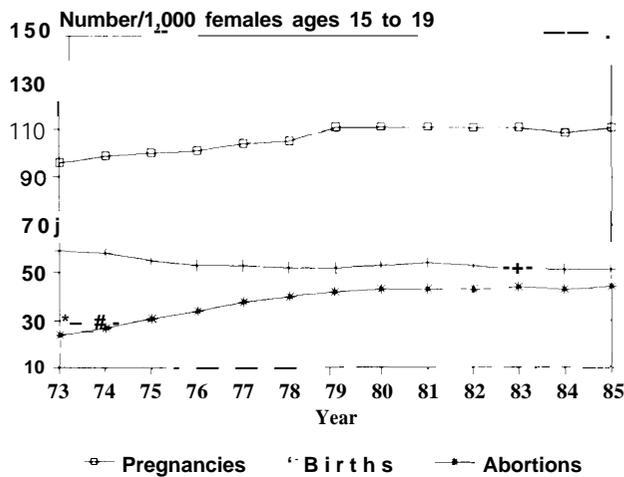
pregnancies ending in abortion among U.S. adolescents ages 15 to 19; the percentage of pregnancies ending in abortions leveled off somewhat between 1979 and 1985 (8). The increase in the percentage of pregnancies ending in abortions among U.S. females under age 15 between 1970 and 1985 was far less dramatic.

According to data from the Alan Guttmacher Institute, the estimated *abortion rate* for U.S. females ages 15 to 19 rose during the 1970s to 43 abortions per 1,000 females in 1980 but then became relatively stable through 1985 (8). Still, in 1985, the U.S. abortion rate among teenagers ages 15 to 19 was one of the highest in any country for which data are available (8). In 1985, the abortion rate for U.S. females ages 15 to 19 was 44 abortions per 1,000 females; thus, 4.4 percent of all women in that age group obtained an abortion in 1985 (8). Trends in the abortion rate for U.S. females ages 15 to 19 from 1973 through 1985 are shown in figure 10-7.

According to data from the Alan Guttmacher Institute, the abortion rate for U.S. females under age

<sup>8</sup>Secch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III for a discussion of U.S. Supreme Court decisions that may affect U.S. adolescents' access to abortion.

**Figure 10-7—Trends in Pregnancy Rates, Birth Rates, and Abortion Rates Among U.S. Females Ages 15 to 19, 1973-85**



SOURCE: Office of Technology Assessment, 1991, based on K.A. Moore and T.M. Stief, "Changes in Marriage and Fertility Behavior: Behavior Versus Attitudes of Young Adults," paper prepared for Child Trends, Inc., Washington, DC, July 1989.

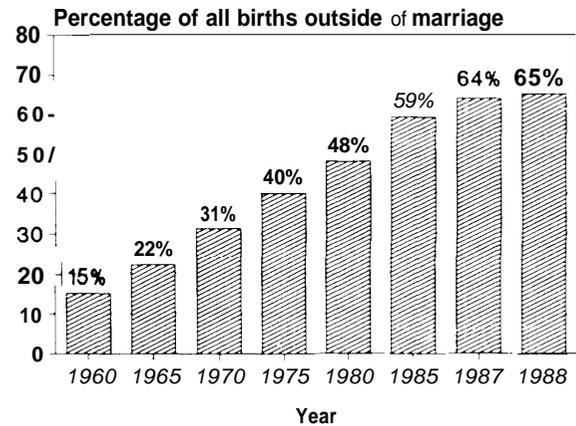
15 increased during the 1970s through 1985 (8). In 1973, the abortion rate among U.S. females under age 15 was 5.6 abortions per 1,000 females, in 1982, it was 8.3 abortions per 1,000 females (8). In 1985, it was 9.2 abortions per 1,000 females.

As noted earlier, the number of abortions reported to the Centers for Disease Control is lower than the number reported to the Alan Guttmacher Institute. In 1985, there were 1,328,570 legal abortions reported to the Center for Disease Control's abortion surveillance program, and 26.3 percent of these were to females under age 20 (202c). Thus, according to the Centers for Disease Control, there were an estimated 349,414 abortions among U.S. females under age 20 in 1985 (202c). The Centers for Disease Control noted that between 1972 and 1987, the proportion of abortions obtained by teenagers decreased steadily from 33 percent to 26 percent, reflecting in part upward shifts in the age of women in the population (202C).

### Out-of-Wedlock Childbearing Among Adolescents

While the overall birth rate among U.S. adolescents has actually declined since the early 1970s, the birth rate among *unmarried* adolescents in this country has skyrocketed. As shown in figure 10-8, in 1960, less than one-fifth (15 percent) of all births to

**Figure 10-8—Trends in Out-of-Wedlock Childbearing Among U.S. Females Under Age 20, 1960-88**



SOURCE: Office of Technology Assessment, 1991, based on U.S. Congress, House of Representatives, Select Committee on Children, Youth, and Families, U.S. *Children and Their families: Current Conditions and Recent Trends, 1989* (Washington, DC: U.S. Government Printing Office, 1989); U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital Statistics, "Advance Report of Final Natality Statistics, 1988," *Monthly Vital Statistics Report* 39 (No. 4, suppl.), DHHS Pub. No. (PHS) 90-1120, Aug 15, 1990.

U.S. females under age 20 were to females who were not married (195c). In 1988, nearly 65 percent (322,406 births) of the 488,941 births to U.S. females under age 20 were to single mothers (195a,195c,207b).

The proportion of out-of-wedlock births among younger adolescents has increased less dramatically since 1970 than the overall proportion for females under 20, in part because it was so high to begin with. In 1970, four-fifths (81 percent) of the births to U.S. females under age 15 were to females who were not married (195c); in 1985, more than nine-tenths (92 percent) of the births to U.S. females under age 15 were to females who were not married (207b).

What accounts for the increase in out-of-wedlock birth rates among U.S. adolescents is not exactly known. Some unmarried adolescents who become pregnant marry before they give birth, but the proportion of females conceiving who marry before giving birth has declined in recent years (148). In 1981, the proportion was 23 percent, down from about 31 percent in 1970 (148,154). The decline in the proportion of unmarried adolescents who marry before they give birth probably reflects changes in societal attitudes toward marriage. It may also

reflect the inability of fathers who are high school dropouts to find jobs that provide sufficient income to support a family (166,195a).

### Adolescent Fatherhood

Much of the talk about adolescent pregnancy focuses on females. Information on adolescent fathers is scarce and tends to be less reliable than similar data on adolescent females. One very limited source of information on the extent of adolescent fatherhood is the U.S. vital statistics system maintained by the National Center for Health Statistics of DHHS. The vital statistics system compiles data from State birth certificates on the ages of both mothers and fathers of children born in the United States. For about 40 percent of births to U.S. mothers under age 20, however, information about the child's father is not reported on the child's birth certificate (1,47a,52,203,207b). The percentage of mothers under age 15 who report information about their child's father is smaller than the percentage of mothers ages 15 to 19 who do, probably because younger mothers are also much less likely to be married than older adolescent mothers. Black adolescent females are substantially less likely to report the age of the father than white females.

In 1988, 18 percent of U.S. mothers ages 15 to 19 who *did* report the age of their child's father on their child's birth certificate reported the father's age as 15 to 19 (see table 10-1). The percentage of adolescent mothers under age 15 with adolescent males as partners is probably higher.

NLSY, which as mentioned earlier is a longitudinal survey of youth sponsored by the U.S. Department of Labor, has included questions about adolescent males' sexual behavior and parenthood experience since 1982 (128). Although NLSY is probably the best available nationally representative data source on adolescent male fertility and living arrangements it is unclear whether, and if so, to what extent, the available survey data accurately reflect the total population of adolescent males who have fathered a child. Even when adolescent males are asked, they do not always know that they have made a sexual partner pregnant or fathered a child. Even if they do know that they have fathered a child, they may be reluctant to acknowledge that fact, even in a survey where confidentiality is protected (1a).

According to Marsiglio, 6.8 percent (555) of the nationally representative sample of 5,550 young males surveyed in the 1984 round of NLSY (when the males surveyed were ages 20 to 27) reported that they had fathered a child before the age of 20 (128).<sup>9</sup> As shown in table 10-2, more than three-fourths (446) of these adolescent fathers reported that they had been single at the time of conception. One-third of those who were responsible for a nonmarital conception reported that they had married within 12 months of conception, and half of all the young men lived with their child shortly after the child's birth (128). As shown in table 10-2, three-fourths of the 555 males who had fathered a child before the age of 20 reported they were ages 18 or 19 at the time; these older adolescent fathers were more likely to report being married at the time of conception than younger ones (128). Sixty-two percent of adolescent fathers with a marital conception reported being high school dropouts, but all adolescent fathers—regardless of marital status at first birth—were much more likely to be high school dropouts than were other male teenagers.

NLSY data analyzed by Marsiglio indicate that black adolescent males, economically disadvantaged white adolescent males, and Hispanic adolescent males were all substantially more likely to become adolescent fathers than white adolescent males from nondisadvantaged backgrounds (128) (see table 10-3). Black adolescent males were especially likely to report having fathered a child out-of-wedlock. Furthermore, only 15 percent of black teenagers lived with their first child, as compared with 48 percent of Hispanics, 58 percent of disadvantaged whites, and 77 percent of nondisadvantaged whites (128).

### Summary

An overview of U.S. adolescent pregnancy and parenting is presented in figure 10-9. The United States leads all other Western developed countries in its rates of adolescent pregnancy, abortion, and childbearing, although the age of initiation and rates of sexual activity in these countries are comparable (8,149). Although it is encouraging to note that the pregnancy rate among *sexually active* U.S. females ages 15 to 19 declined between 1970 and 1985, an increase in the pregnancy rate in this group between 1985 and 1987 is cause for concern.

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<sup>9</sup>All percentages reported in the Marsiglio article are weighted statistics, but reported sample sizes reflect actual frequency counts (128).

**Table 10-1—U.S. Mothers and the Reported Age of the Fathers of Their Children, by Child's Race, 1988**

Race of child and age of mother	Age of father															
	Total		Under 15 years		15 to 19 years		20 to 24 years		25 to 29 years		30 to 34 years		35 years and over		Not stated	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All races, <b>all ages</b> . . . . .	3,909,510	100%	376	— <sup>a</sup>	110,685	3%	617,124	16%	1,055,417	27%	903,800	23%	636,741	16%	585,367	15%
Under 15 years . . . . .	10,588	100	110	1	2,241	21	759	7	112	1	23	—	21	—	7,322	69
15 to 19 years . . . . .	478,353	100	140	—	87,018	18	153,525	32	34,371	7	6,940	1	3,007	—	193,352	40
<b>White, all ages</b> . . . . .	3,046,162	100	211	—	79,543	2	494,426	16	894,849	29	766,167	25	518,275	17	292,691	10
Under 15 years . . . . .	4,073	100	26	—	1,031	25	498	12	69	2	18	—	17	—	2,414	59
15 to 19 years . . . . .	315,471	100	83	—	61,959	20	119,525	38	27,089	9	5,347	2	2,256	1	99,212	31
<b>Black, all ages</b> . . . . .	671,976	100	146	—	27,166	4	100,230	15	116,019	17	85,647	13	71,413	11	271,355	40
Under 15 years . . . . .	6,182	100	80	1	1,137	18	208	3	32	—	3	—	3	—	4,719	75
15 to 19 years . . . . .	146,326	100	49	—	22,046	15	28,588	20	5,604	4	1,222	1	583	—	88,234	60

NOTE: Percentages may not total 100 because of rounding. Percentages less than 1 percent are indicated by a “—”.  
<sup>a</sup>“All races” includes races other than white and black. Separated data for Hispanics are not available (see text). Hispanics may be either black or white.

SOURCE: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital Statistics, “Advance Report of Final Natality Statistics, 1988,” *Monthly Vital Statistics Report* 39 (No. 4 suppl.), DHHS Pub. No. (PHS) 90-1120, Aug. 15, 1990.

**Table 10-2-Adolescent Fathers: Distribution of Male Participants in the 1984 NLSY Who Reported Having Fathered a Child Before the Age of 20, by Father's Age at Child's Birth and Marital Status at Conception<sup>a</sup>**

Father's age at child's birth	Males who reported having fathered a child before age 20 <sup>b</sup>	Single at conception	Married at conception
	N = 555	N = 446	N = 109
Age 11 to 16 .....	66 (10.1%)	66 (12.7%)	0 (0.0%)
Age 17 .....	85 (15.8)	76 (18.3)	9 (5.8)
Age 18 .....	181 (30.6)	158 (32.8)	23 (22.1)
Age 19 .....	223 (43.5)	146 (36.2)	77 (72.0)
Age 11 to 19 .....	555 (100.0)	446 (100.0)	109 (100.0)

<sup>a</sup>Data are from the 1984 round of the National Longitudinal Surveys of Labor Market Experience-Youth Cohort (NLSY), sponsored by the U.S. Department of Labor. The survey was begun in 1979. In 1984, male participants were ages 20 to 27.

<sup>b</sup>The total number of males in the NLSY sample in 1984 was 5,550. According to Marsiglio, who used weighted statistics to report percentages (as noted in table 10-3), 6.8 percent of male participants in the 1984 NLSY reported that they had fathered a child before the age of 20.

SOURCE: Office of Technology Assessment, 1991, based on W. Marsiglio, "Adolescent Fathers in the United States: Their Initial Living Arrangements, Marital Experience, and Educational Outcomes," *Family Planning Perspectives* 19(6):240-251, 1987.

**Table 10-3—Adolescent Fathers: Distribution of Male Participants in the 1984 NLSY Who Reported Having Fathered a Child Before the Age of 20, by Race/Ethnicity<sup>a,b</sup>**

Marital status at conception and age at child's birth	Race/ethnicity				
	Total (N= 5,550)	Hispanic (N= 858)	Black (N= 1,402)	White Not poor (N= 2,475)	White Poor (N =815)
Percent of male participants who fathered a child before age 20 .....	6.8%	10.9%	14.8%	4.6%	11.9%
Single .....	5.5%	7.0%	14.2%	3.4%	9.1%
Ages 11 to 17 .....	1.7	2.6	5.8	0.7	3.4
Ages 18 to 19 .....	3.8	4.4	8.4	2.7	5.7
Married .....	1.3%	3.9%	0.6%	1.2%	2.8%

<sup>a</sup>Data are from the 1984 round of the National Longitudinal Surveys of Labor Market Experience-Youth Cohort (NLSY) sponsored by the U.S. Department of Labor. The survey was begun in 1979. In 1984, male participants were ages 20 to 27.

<sup>b</sup>The NLSY is a nationally representative survey that includes 12,686 male and female respondents with an oversampling of blacks, Hispanics, and economically disadvantaged whites. These subgroups can be weighted to represent a national cross-section of American youth ages 14 to 21 as of January, 1979. All percentages reported in this table are weighted statistics, but reported sample sizes reflect actual frequency counts.

SOURCE: W. Marsiglio, "Adolescent Fathers in the United States: Their Initial Living Arrangements, Marital Experience, and Educational Outcomes," *Family Planning Perspectives* 19(6):240-251, 1987. Reprinted by permission.

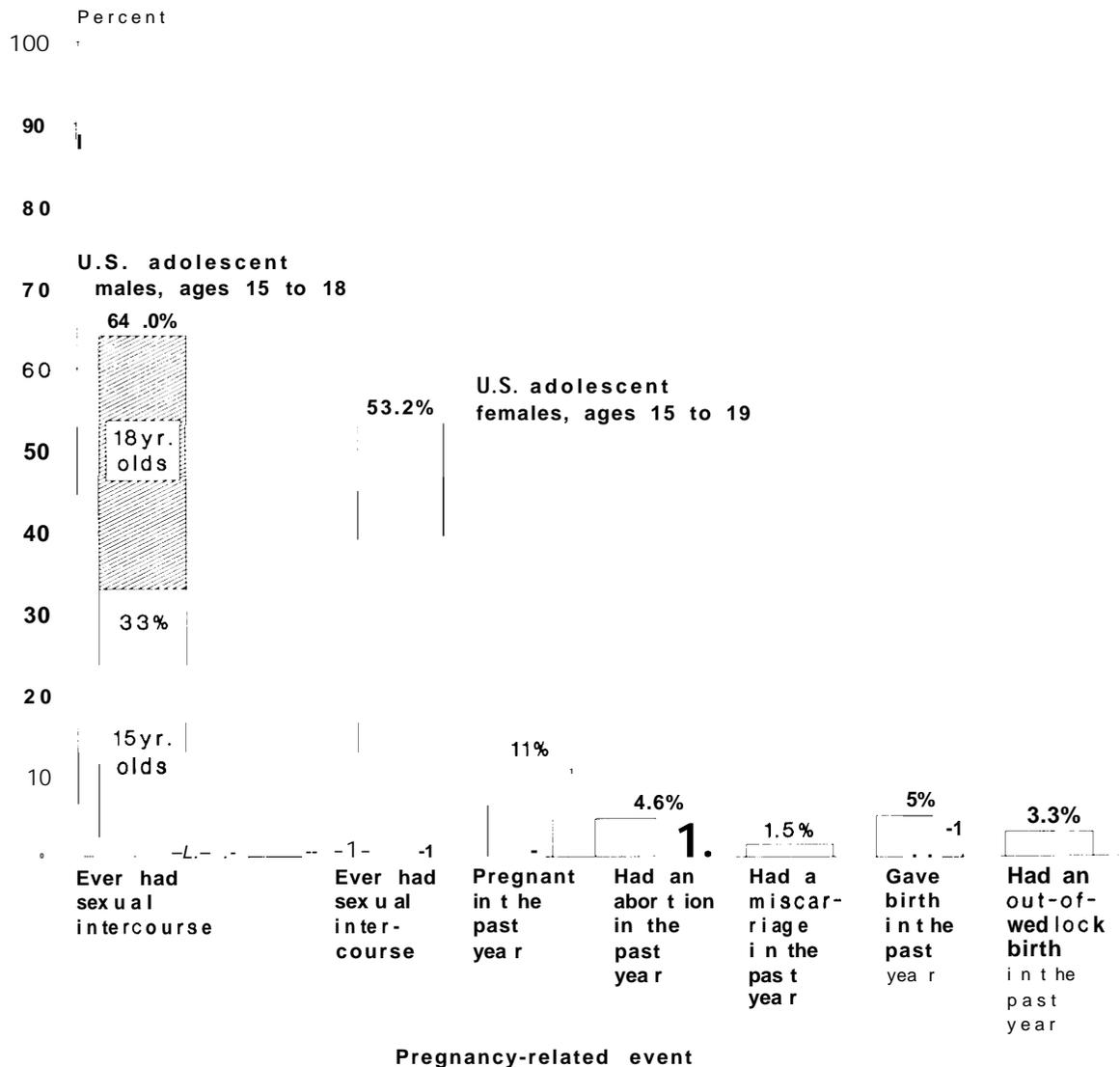
Birth rates among U.S. adolescents as a whole seem to have leveled off since the late 1970s, after an initial sharp decline due to the legalization and increased availability of abortion. In 1988, however, birth rates among 10- to 14-year-old adolescents and among 15- to 17-year-old U.S. adolescents were at their highest levels in 10 years (202f). The reasons are not known. Another cause for concern is the fact that birth rates among black U.S. adolescents increased during the 1980s (202f). Again, the reasons are not entirely clear. There are about half a million births to adolescent mothers each year. It is troubling that the proportion of births to unmarried

adolescents has increased dramatically in recent years, and currently, about two-thirds of births to adolescent mothers are out-of-wedlock births. Data from the U.S. vital statistics system, through limited, suggest that perhaps half of adolescent pregnancies involve males age 20 or above; the rest of adolescent pregnancies involve younger males as fathers.

### ***Consequences of Adolescent Sexual Activity, Pregnancy, Abortion, and Parenthood***

It is often assumed that adolescent pregnancy and childbearing are associated with a constellation of negative health, social, and economic outcomes for

Figure 10-9—Overview of U.S. Adolescent Pregnancy and Parenting”



Percentages of sexual intercourse, pregnancies, and out-of-wedlock births were tabulated from 1988 data. Percentages of abortions, miscarriages, and births were tabulated from 1984 data. Percentages of adoptions were tabulated from 1982 data.

SOURCE: Office of Technology Assessment, 1991, based on data from the following sources: Adolescent males ever had sexual intercourse: F.L. Sonnestein, J.H. Pleck, and L.C. Ku, "Patterns of Sexual Activity Among Adolescent Males," paper presented at the annual meeting of the Population Association of America, Toronto, Canada, May 1990. Adolescent females ever had sexual intercourse: J.D. Forrest and S. Singh, "The Sexual and Reproductive Behavior of American Women, 1982-1988," *Family Planning Perspectives* 22(5):206-214, 1990. Pregnant in the past year: U.S. Congress, Congressional Budget Office, *Sources of Support for Adolescent Mothers* (Washington, DC: September 1990). Had an out-of-wedlock birth in the past year: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital Statistics, "Advance Report of Final Natality Statistics, 1988," *Monthly Vital Statistics Report* 39 (No. 4, suppl.), DHHS Pub. No. (PHS) 90-1120, Aug. 15, 1990. All others: National Academy of Sciences, National Research Council, Commission of Behavioral and Social Sciences and Education Committee on Child Development Research and Public Policy, Panel on Adolescent Pregnancy and Childbearing, *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing*, Vol. 1, C.D. Hayes (ed.) (Washington, DC: National Academy Press, 1987).

adolescents (196). As discussed below, however, not all adolescents experience these negative outcomes, and there is evidence that some of the negative outcomes may actually result from lack of prenatal care or other factors related to socioeconomic status

rather than from adolescent pregnancy or childbearing per se (196). A better understanding of risk and protective factors in adolescent pregnancy and childbearing would undoubtedly be useful in developing appropriate interventions.

## Consequences for Adolescents

**Health Consequences of Early Sexual Activity—**Adolescents who engage in sexual intercourse are at very high risk of immediate health consequences. One consequence for females, of course, is unintended pregnancy due to the failure to use effective contraception (47a). As noted below, different subgroups of adolescents are more likely to practice effective contraception than others. Younger adolescents, for example, are less likely to use effective contraceptive methods than older ones.<sup>10</sup>

Engaging in sexual intercourse places both male and female adolescents at very high risk of getting sexually transmitted diseases (STDs) and their related side effects, infection with human immunodeficiency virus (HIV), and the life-threatening acquired immunodeficiency syndrome (AIDS) (47a, 189). The risk of AIDS and some STDs can be reduced through the use of condoms and other measures discussed elsewhere in this Report.<sup>11</sup>

**Health Consequences of Pregnancy and Child-bearing—**Pregnant adolescents are at risk for negative health outcomes including excessive weight gain during pregnancy, anemia, nutritional deficiencies, mild and severe toxemia of pregnancy, prolonged or abrupt labors, cephalopelvic disproportion, and maternal mortality (75a,134,137,189). The adolescents at highest risk are very young (underage 15), black, have a low gynecological age, are thin, are of low socioeconomic status, and do not seek prenatal care (75a). Some adolescents enter pregnancy with preexisting conditions that may produce negative outcomes (e.g., poor nutrition, anemia, STDs, substance abuse problems<sup>12</sup>). Thus, the problems they experience stem from those conditions. Many of the adverse outcomes that pregnant adolescents experience can be avoided by good nutrition and appropriate medical care (75a).

**Health Consequences of Abortion—**Like any surgical procedure, induced abortion carries some physical health risks (189). Length of gestation is the

most important determinant of abortion complications (30,189). Part of the reason is that it determines the abortion method, and methods used later in pregnancy have higher risks of complications. Adolescents are twice as likely as older women to obtain an abortion after 12 weeks, and the youngest adolescents are most likely to delay seeking an abortion (30,189).

The most comprehensive analysis of complications of abortions among adolescents, by Cates and his colleagues, was based on data for legal abortions performed in the 1970s (30,189). The Cates analysis found that the overall rate of major complications following abortion by suction curettage at 12 weeks gestation or earlier was similar for teens and older women (between 1 and 2 per 1,000 in 1975-78) (30,189). Complication rates associated with abortion by dilatation and evacuation or saline administration were lower for teenagers than for any other age group. The Cates analysis found that between 1972 and 1978, the risk of dying from a legal induced abortion was lower among adolescents than among older females. Within lengths of gestation, adolescents had the lowest death rates.

Cates concluded that the physical health risks of induced abortion for teenagers were generally no greater than the risks for older women (30, 189). The one exception was the greater risk of cervical trauma among teenagers. Adolescents who experience cervical trauma following induced abortion may be at increased risk for adverse outcomes in subsequent pregnancies.<sup>13</sup>

A 1989 report by then Surgeon General C. Everett Koop stated that firm conclusions regarding the psychological effects of abortion were not possible (largely because of serious flaws in much of the existing research), but the Surgeon General's report did not specifically address psychological effects of abortion for adolescents (209). Adler and colleagues' review of the most recent methodologically sound studies of psychological responses of U.S.

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<sup>10</sup>The effectiveness of contraceptive methods most commonly used by U.S. adolescents is discussed later in this chapter.

<sup>11</sup>The risk of HIV infection, AIDS, and other STDs among U.S. and adolescents and measures to prevent these diseases are discussed in ch. 9, "AIDS and Other Sexually Transmitted Diseases: Prevention and Services," in this volume.

<sup>12</sup>The special nutritional needs of pregnant adolescents are discussed in ch. 7, "Nutrition and Fitness Problems: Prevention and Services," in this volume. Substance abuse problems among adolescents are discussed in ch. 12, "Alcohol, Tobacco, and Drug Abuse: Prevention and Services," in this volume.

<sup>13</sup>The effect of a prior induced abortion on subsequent pregnancy outcomes has not been specifically evaluated for adolescents. Given the increased risk of cervical injury as a complication among adolescents and its possible association with subsequent unfavorable pregnancy outcomes, research on the delayed effects of induced abortion among adolescents seems warranted (189).

women after obtaining legal abortions found that women often experience particular distress before an abortion but that legal abortion during the first trimester of their pregnancy does not pose a psychological hazard for most women (4). Several studies have found that adolescents experience more negative emotional reactions immediately following an abortion than women over age 19 do (3,20,126). This finding may reflect the older women's greater ability to make use of their support networks to resolve negative emotions following an abortion (1,1,62). Adler and Dolcini note, however, that statistically significant differences between adolescents' and adults' psychological reactions to abortion are small, and negative reactions of both groups are generally mild (5). Some distress preceding an abortion is to be expected.

Studies of the long-term psychological impact of abortion on adolescents are rare. A recent study that followed 360 black, urban adolescents who received a pregnancy test in Baltimore found that adolescents who obtained an abortion were no more likely to have psychological problems 2 years later than were adolescents who carried their pregnancies to term or whose pregnancy test was negative (225).

**Social and Economic Consequences of Parenthood**—According to Dryfoos, adolescent mothers face “a myriad” of short- and long-term problems, as do the babies they bear, the fathers, their families, and, ultimately, their communities (47a). One problem that researchers have confronted in attempting to document the consequences of parenthood for adolescents as compared with the consequences for older women, however, is determining the effects of low socioeconomic status and race apart from age (47a).

In the short-term, adolescent mothers frequently report many stresses in their lives: reliance on their family of origin, unstable relationships with the child father and other male partners, unusual rates of physical health problems for themselves and their children, economic hardships, school changes, family conflict, loneliness, isolation, and depression (16,55,102).

The relationship between adolescent parenthood and educational attainment is a complex one, especially among females (185c). A number of studies have found that females who have babies while in junior or senior high school complete on average fewer years of school than their peers who

delay childbearing until their twenties and are less likely to receive a high school degree or to attend college or graduate school; these studies have found that the younger the adolescent, the greater the effect (29, 145,66). In studies conducted several years ago, as many as three-quarters of female dropouts cited pregnancy and/or marriage as their reason for leaving school (185c). As discussed below, however, females who become adolescent mothers tend to be those who lack basic skills and are low achievers in school (47a). Thus, poor academic performance may be a precursor of pregnancy and motherhood rather than a consequence. Using data from NLSY, Upchurch and McCarthy found that female adolescents who had a baby while still enrolled in school and who remained in school were just as likely to graduate as adolescents who did not have babies (195). Female high school dropouts who had a baby, however, had their chances of eventual graduation from high school reduced.

Some studies have found that adolescent mothers tend to have lower status jobs and lower incomes than other females and that they are more likely to depend on public assistance (29,70,89); it is suggested that part of the reason may be that females who give birth during adolescence tend to have more subsequent births at closer intervals than their peers who delay childbearing (90). Economic outcomes are substantially brighter for adolescent mothers who marry and maintain stable marital relationships than they are for other adolescent mothers (67). As noted earlier, most births to adolescents, especially blacks, occur outside of marriage. Furthermore, adolescent marriages are very likely to end in divorce, and adolescent cohabitational relationships are even more unstable than adolescent marriages (14,29,66,67).

Recently, a couple of longitudinal studies have found that there is great variability in how adolescent parenthood affects adolescent mothers' educational and vocational attainment. Furstenberg and colleagues conducted a longitudinal study that followed a group of mostly urban black adolescent mothers in Baltimore and their children for 17 years (68,68a). They found a great deal of diversity in how these mothers, who gave birth as adolescents in the middle to late 1960s, responded in the long run to the setback in education and labor force participation associated with adolescent childbearing and parenthood. Women who had more economically secure and better educated parents and women who had

been doing well in school and had high educational aspirations at the time of their child's birth were much more likely to be successful later on.

At 5-year followup in 1972, Furstenberg and colleagues found, most of the 331 mothers were in their early twenties and were struggling to remain in or return to school, to enter the job market and to raise their child (68,68a). Close to one-third of the young women were receiving welfare. Only 50 percent of the women had graduated from high school. Having more children at a young age was found to constrain these mothers' ability to pursue their education or get job experience. The mothers who had had more children in the 5 years did less well in school, had lower aspirations, and came from more socioeconomically disadvantaged families than those who had no subsequent children.

At 17-year followup in 1984, Furstenberg and colleagues found that a substantial majority of the Baltimore adolescent mothers had returned to school, had gotten off welfare, and were employed in stable jobs (68,68a). Relatively few had ended up with large families. Nevertheless, barely more than one-third were married, and in comparison with samples from several national surveys, the Baltimore mothers were not as successful as metropolitan black women who had delayed childbearing until their early twenties. Women who had attended a special school for pregnant women were more likely to be economically independent at followup.

This study by Furstenberg and colleagues suggests that adolescent parenthood does not inevitably lead to a life of poverty and disadvantage for adolescent mothers (68).<sup>14</sup> Furstenberg and colleagues caution, however, that the situation confronting the sample of mothers in their study maybe very different from that of pregnant teenagers today. During the mid-1960s, for example, abortion was illegal, and early childbearing was not considered a problem so long as it was accompanied by marriage; thus, many women married to avoid the stigma of unwed parenthood. Special services for adolescent mothers were less available 20 years ago than they are today. In drawing conclusions about the implications of the Furstenberg study's findings for today's adolescent mothers, these changes should be kept in mind. The effects these changes are likely to have are not really known.

Horwitz and colleagues investigated the long-term effects of school-age pregnancy in a 20-year followup of women who were pregnant adolescents in the late 1960s (92a). The study population consisted of 154 black women who had been enrolled in a program that offered obstetric, social, and educational series to pregnant teenagers. This study also found that the life course and long-term outcomes for adolescent mothers were not homogeneous. Long-term success, defined as being currently employed or supported by a spouse *and* having a high school education or its equivalent, had been achieved by 62 percent of the women in this study at 20-year followup. Long-term success was associated with six factors: 1) having completed more school prior to becoming pregnant, 2) participating more extensively in life skills training sessions offered to them as pregnant adolescents, 3) being in school with no subsequent pregnancies at 26 months postpartum, 4) feeling in control of one's life at 26 months postpartum; 5) experiencing little social isolation at 26 months postpartum, and 6) lifetime fertility control defined as one or two children after the first.

The educational attainment of male adolescents who become fathers during their teenage years has been found to be negatively affected by parenthood but to a lesser extent than the educational attainment of adolescent mothers (29,128). Data from the 1984 round of NLSY suggest that adolescent fathers whose first child is conceived within marriage have the poorest high school completion patterns (128). A number of questions remain about whether adolescent fathers who live with a child they have fathered are harmed in their educational careers, and if so, under what conditions (128).

Psychological Consequences of Giving Up a Baby for Adoption—Adoption is a relatively rare event, and the process of formalizing adoption decisions has been highly confidential, so research data have been difficult to obtain. Some data indicate that placing a child for adoption results in a grieving process that may affect many aspects of a young woman's life (44) and that mothers who give their children up for adoption experience a variety of negative psychological consequences (162). The studies from which these data are drawn have been based on small, self-selected samples and have not concentrated on adolescents, however, so their

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<sup>14</sup>The study's findings with respect to outcomes for the children of adolescent mothers were less positive, as discussed below.

applicability to the general population of adolescents who give babies up for adoption is limited.

A 1988 study comparing female adolescents who chose to give up a baby for adoption with female adolescents who chose to keep their baby found that both groups of adolescent mothers experienced a decline in satisfaction with themselves and their lives which closely followed their decisions to give up or to keep their baby (133). But when researchers followed up the two groups of adolescent mothers at least 6 months later, they found no differences between the two groups in overall levels of self- or life satisfaction (133). Adolescent mothers who chose to keep their babies were slightly more satisfied with their decisions than adolescent mothers who chose adoption.

### Consequences for Children of Adolescent Parents

**Health Consequences**—Babies born to adolescent mothers (especially adolescent mothers under age 15) are more likely to be premature or low birthweight and are more likely to require hospitalization within the first 5 years of life than babies born to women age 20 and over (71b,84,190,196). The risks of prematurity and low birthweight can be reduced with adequate prenatal care. Furthermore, the fetus of an adolescent is at *less* than average risk in some respects (e.g., fetal death), and many children born to adolescent mothers tend to grow better in the earlier years of life (71 b).

Some studies suggest that the children of adolescent parents are at increased risk of cognitive deficits, tend to perform less well in school than children born when their parents were older, and are more likely to exhibit behavior problems in school (14,70, 106,120, 140). Some data suggest higher rates of abuse and neglect among children of adolescent mothers (105,176), but such outcomes seem to be affected by socioeconomic factors; when the effects of socioeconomic variables are controlled, apparent differences between the children of adolescents and older mothers are substantially reduced, although not completely eliminated (148,196).

**Social and other Consequences**—Furstenberg and colleagues' longitudinal study of mostly poor black adolescent mothers and their children in Baltimore found that the offspring of their sample of

mothers who gave birth in the mid- 1960s were at greater risk of developing problems in late adolescence and early adulthood than the children of older mothers interviewed in the National Survey of Children who did not give birth as adolescents (70). The children of the Baltimore mothers were interviewed at 5-year followup (when they were preschoolers), at 17-year followup (when they were adolescents), and at 20-year followup (when they were ages 18 to 21).

At 17-year followup, the Furstenberg study found that the frequency of school failure, delinquency, emotional difficulties, and other problem behaviors was much greater among the children of the adolescent mothers than among children of older mothers in the National Survey of Children (70). At 20-year followup, the children of the Baltimore adolescent mothers were not doing as well as the children of older mothers in the National Survey of Children, but the differences were not as large as some observers might have been expected. Sixty-three percent of the children of the Baltimore adolescent mothers had completed high school or obtained a high school equivalency degree and another 10 percent seemed likely to do so. Still, a conspicuous minority had dropped out of school (23 percent) or had spent time in jails or correctional institutions (17 percent), and a substantial proportion were experiencing symptoms of depression (32 percent).

Because of its ability to follow families over generations, the Furstenberg study was also able to address the important and controversial issue of the transmissibility (e.g., through parental socialization or modeling) of adolescent childbearing between generations. This study found that early childbearing was at least indirectly involved in increasing the chance that one's child would become an adolescent parent (daughters of women who had given birth at ages 14 to 17 were more likely than those whose mothers were 20 or older at their first birth to themselves give birth as adolescents). On the other hand, the great majority (two-thirds) of the children of adolescent mothers did not become parents before age 19 (68,70).<sup>15</sup>

Furstenberg and colleagues unfortunately found that the second-generation adolescent mothers were not faring as well as their mothers had and predicted

<sup>15</sup>It may be important to note that because not all women in their sample had reached ages 14 to 18, the researchers calculated probabilities based on the experiences of the sample that was available (70).

worse outcomes for them than for their mothers in terms of educational achievement, marriage, and welfare dependence (68,70). The second-generation adolescent mothers were almost twice as likely as their mothers to have failed a grade in school (57 percent v. 33 percent), were less likely to have married (14 percent v. 60 percent), and were more likely to be on welfare (60 percent v. 30 percent). Furstenburg and colleagues concluded that "second-generation teenage mothers in the 1980s appear more vulnerable to long-term dependence and probably less equipped to maneuver their way out of lifelong disadvantage than were their mothers in the 1960s" (68). They recommended that second-generation adolescent mothers be targeted for extensive educational and social services (68).

### ***Risk and Protective Factors in Adolescent Pregnancy and Parenting***

*In* recent years, researchers have documented a number of potential risk and protective factors related to adolescent pregnancy and parenting. Much of the available research was recently reviewed in a comprehensive analysis of adolescent pregnancy and parenting by the National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing (148,149), and that information is summarized, along with other information, below. It is important to note that there is still a paucity of methodologically sound research on the precursors to adolescent pregnancy and postpregnancy decisions.

In an attempt to capture the many factors that may be associated with the determinants and outcomes of pregnancy resolution decisions made by adolescent females and their male partners after conception, Marsiglio recently presented the conceptual model shown in figure 10-10. As shown, the factors affecting the pregnancy resolution decision alone have many determinants, including the social structure; cultural and subcultural values and norms; policies and programs; the flow of financial resources and social support from family, friends, and partner; and the adolescents' own attitudes, aspirations, and resources. The decisions made as a result of these factors affect the process and outcomes of a pregnancy-related decision, which in turn affect the life-style adaptations made by the couple and their future life options and well-being. What is

perhaps more important to note is that these factors often interact with each other in causally complex ways and that each couple's decision in turn affects the cultural values and norms of other contemporaneous couples and succeeding generations.

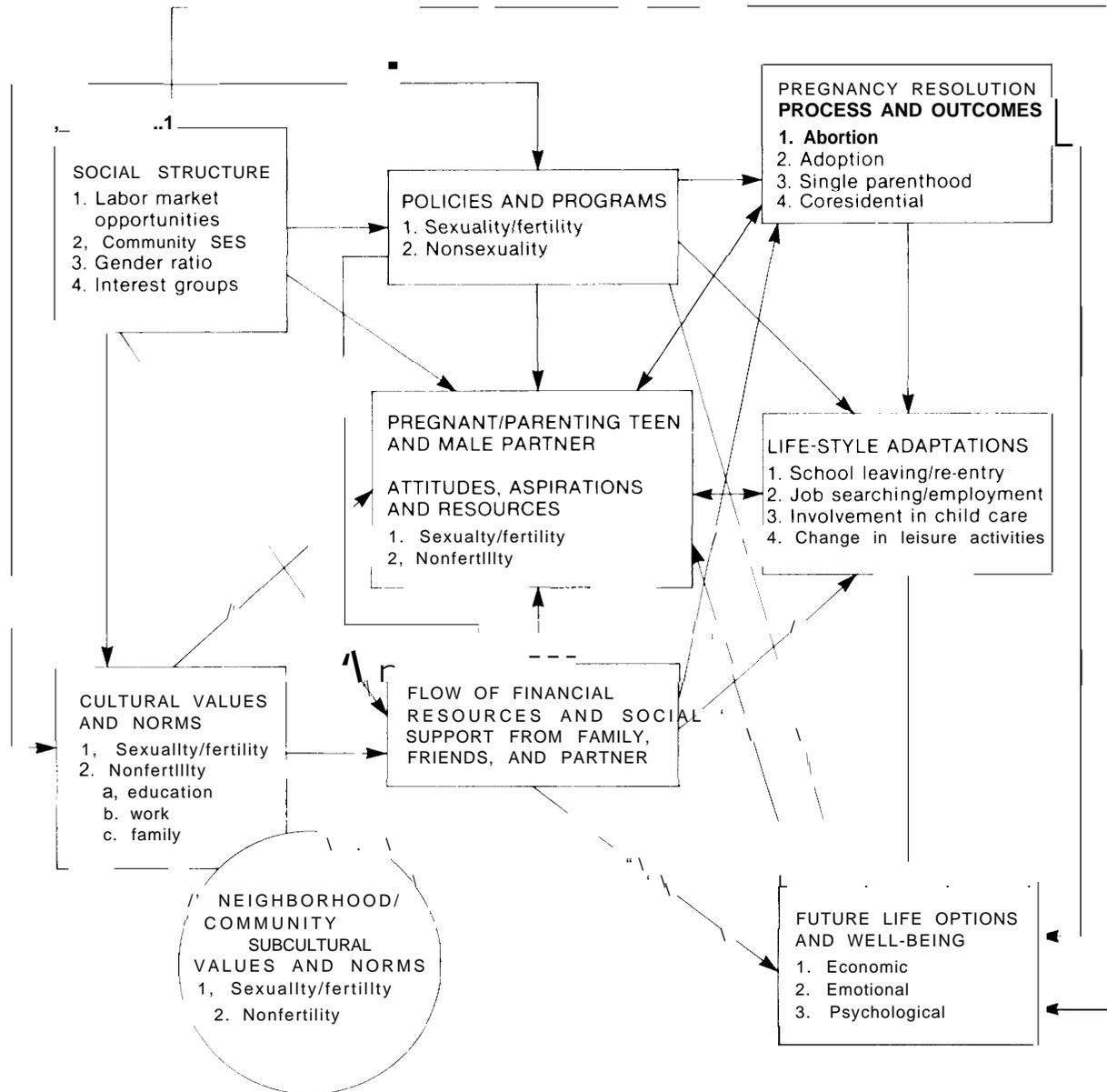
Models similar to the one shown in figure 10-10 could be constructed for the decisions that may lead to a pregnancy: whether to initiate sexual activity at all, whether to initiate sexual activity with a particular partner, whether to use contraception, and what method of contraception to use. Each of these decisions has its own set of determinants. Longitudinal research focusing on the psychological, social, and economic determinants of pregnancy and pregnancy outcomes would be useful in resolving some of the questions about risk and protective factors in adolescent pregnancy and parenting (171 b).

Numerous individual, familial, and social/environmental factors related to pregnancy and pregnancy outcomes among adolescents are discussed below. Factors affecting all events that can lead up to a pregnancy (i.e., sexual intercourse, use or nonuse of contraceptives) are discussed below as "factors *related to pregnancy*," and factors affecting events that may occur during or after a pregnancy (abortion, complications during pregnancy, childbearing, adoption, parenting) are discussed as "*factors related to pregnancy outcomes*."

### **Risk and Protective Factors Related to Pregnancy**

**Individual Factors Related to Pregnancy—**Two strong predictors of adolescent pregnancy are the initiation of sexual activity at an early age and engaging in unprotected sexual intercourse (i.e., intercourse without the use of effective contraceptives). Females who first have intercourse at age 15 or below have been found to be nearly twice as likely to get pregnant in the first 1 to 6 months of sexual activity as adolescents who wait to have intercourse until they are 18 or 19 (228a). One of the reasons is that older adolescents who become sexually active are considerably more likely than younger adolescents to use contraception and to use it effectively (229). In general, the older an adolescent female is, the more likely she is to report using some form of birth control when she is sexually active (229,231), and the older she is when she begins having sex, the

**Figure 10-10—Conceptual Model for Pregnant/Parenting Teens and Their Male Partners: Pregnancy Resolution Decisions, Life-Style Adaptations, and Well-Being**



SOURCE: W. Marsiglio, "Pregnant Teens and Pregnancy Resolution Decisions: The Role of Male Partners," *TEC Networks*, Newsletter of the Too-Early-Childbearing Networks of Programs Funded by the Charles Stewart Mott Foundation, Washington, DC, No. 29, June 1991. Reprinted by permission.

more likely she is to use contraception at first intercourse (235).<sup>16</sup>

According to the comprehensive review of adolescent pregnancy and parenting by the National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing, research suggests that a number of factors are strongly associated with the *initiation of sexual activity* before marriage (148). Among the most important are individual characteristics such as physical maturation level, age, race, socioeconomic status, religiousness, intelligence and academic achievement, and dating behavior.

There is almost universal agreement that early pubertal development (e.g., age of menarche for females, body development and hormonal development for males) is strongly associated with early initiation of sexual activity (148). During the period of adolescence, young people undergo dramatic biological changes that give them the capacity to create children. U.S. females today first menstruate, on average, at age 12½ (with a range between 8 and 16), but in some cases, they cannot get pregnant for at least a year (47a). Boys are able to father children at age 14 or so, although they can and sometimes do engage in sexual intercourse before that. Studies provide evidence for the hormonal basis of sexual motivation and behavior among white males. For white females, sexual behavior (as opposed to interest) seems to be influenced more by social environment than by physical development. There are no comparable data on black adolescents.<sup>17</sup>

Apart from pubertal development, age is associated with the initiation of sexual activity. The older an adolescent is, the more likely he or she is to have had sexual intercourse (148).

Race is also associated with the initiation of sexual intercourse. Black males and females become sexually experienced on average 2 years earlier than white males and females (148,187). As discussed later in this chapter, there is disagreement over the cause of racial differences in the proportion of adolescents who are sexually active and the age of

sexually initiation (e.g., subcultural values and attitudes regarding the acceptability of early sexual behavior, residence in socioeconomically disadvantaged neighborhoods) (148).

Religiousness (the tendency to be devout and observant of religious custom, regardless of religious affiliation) appears to be a factor that distinguishes early and late initiators of sexual activity (43,148,231).

A number of studies indicate that there is a strong association between low intellectual ability, low academic achievement, a lack of educational goals, and early sexual experience among both black adolescents and white adolescents (148). Male and female adolescents with higher levels of academic achievement and higher educational and life goals are less likely than other adolescents to engage in sexual intercourse during their early adolescent years, and they are more likely to make consistent use of contraceptives when they do have intercourse (43,98a,139). Adolescent females who are experiencing academic problems, who have low academic and career expectations, and particularly those who have dropped out of school are more likely to initiate sexual activity at an early age than those who are more academically successful and ambitious (148,149). The association between ability, educational aspirations, and life goals and the lower likelihood of early sexual experience is undoubtedly tied to several interacting social, economic, psychological, and situational variables (148).

Research findings suggest that adolescents who begin dating early are likely to have early sexual experience (148). Research also suggests that adolescents who become sexually active at an early age are also often involved in other behaviors that push toward independence and adulthood (e.g., smoking, drinking, and drug use) (148).

A factor in adolescent sexuality and pregnancy that may be important but that is rarely analyzed or discussed is adolescent females' perceptions about their roles as women (56a,149,122,145a). Lewin

<sup>16</sup>Data on reported contraceptive use among adolescent males are very limited, but what little information there is suggests that age has little effect on adolescent males' use of birth control methods (142); older adolescent males are no more likely to report using birth control methods than are younger males.

<sup>17</sup>One issue of importance is the extent to which initiation of sexual intercourse is voluntary or forced (i.e., the result of rape or incest) (86a). Currently, there is no reliable information about this at the national level.

found, for example, that college-aged women felt that it was psychologically more cost-beneficial to accept unwanted sexual intercourse than to refuse it (122).<sup>18</sup> The review by the National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing suggested that adolescents' increasing exposure to working women and single mothers could be expected to influence the desirability of early childbearing in diverse ways (149).

Not surprisingly, sexually active females who practice *effective contraception* are less likely to experience an unintended pregnancy than those who do not (235).<sup>19</sup> As noted earlier, the older an adolescent female is at the time of initiation of sexual activity, the more likely she is to use contraception and to use it effectively (148). The older a female is, the more likely she is to use a prescription method of contraception such as the pill (148,231). Among males, age appears to have little effect on contraceptive use at first intercourse (148).

According to the review by the National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing, studies have found that, in addition to the age at initiation of sexual intercourse, several factors are strongly associated with contraceptive use by unmarried, sexually active adolescents. These include having a stable relationship with a sexual partner, knowledge of reproduction and contraception, acceptance of one's own sexuality, academic aspirations, developmental characteristics, and parental support for the use of contraception (148).

Adolescents who are involved in a committed relationship (e. g., are "going steady") are more likely to use contraceptives than adolescents who do not have strong ties to one partner (148). One study found this observation to hold for black adolescents in particular (143).

Some observers have attributed sexually active adolescents' failure to use contraceptives to their lack of knowledge about reproduction and contraception (231). Although most U.S. adolescents appear to know that a girl can become pregnant if she has intercourse, significant numbers of U.S. adolescents—especially young adolescent females—appear not to know what time of the month entails a higher rate of pregnancy, that they can get pregnant at first intercourse, that infrequent sex can lead to pregnancy, and other facts about pregnancy risk and birth control that are more well known to sexually active adults (26a,137,248). At least one study has found that adolescents who have had sex education are more likely to be knowledgeable about reproduction and contraception than adolescents who have not had sex education (107).<sup>20</sup>

Regular and effective contraceptive use among adolescent females has been found in some studies to be associated with adolescents' acceptance of their own sexual behavior (223,248). Some adolescents, especially younger adolescents, who delay using contraceptives (often for up to a year) after they start having sexual intercourse, may do so because they have difficulty coming to terms with their own sexuality (148). Positive attitudes toward contraception and low levels of guilt about sexual activity are strongly associated with effective contraceptive use (148). Fear that contraception will have negative health effects and interfere with pleasure has also been found to be related to less frequent contraceptive use (148).<sup>21</sup> Adolescent females who believe contraception is the female's responsibility are likely to be more effective contraceptive users (148,168,232).

Female adolescents (blacks and whites) who have clear educational goals and expectations and are performing well in school appear more likely to use contraception than those who lack a strong achievement orientation (148). Some studies have found

<sup>18</sup>Contraceptive use during unwanted sexual intercourse was not measured in this study of **hypothetical situations**.

<sup>19</sup>It is important to note that, for as yet unknown reasons, the percentage of adolescents who use contraception and experience contraceptive failure in terms of preventing pregnancy is generally higher than the percentage of older women who experience contraceptive failure. Contraceptive failure rates for adolescents are shown in figure 10-12 later in **this chapter**.

<sup>20</sup>The relationship between gains in knowledge about conception and contraception through sex education courses and adolescents' sexual activity or use of contraceptives is not fully understood, but it seems that information alone is not sufficient to change adolescents' sexual behavior. As discussed later in this chapter, a 1984 study by Kirby found that while sex education programs did increase adolescents' knowledge about conception and contraception, they had little impact on whether adolescents became sexually active or used contraception (107). Various studies on the effectiveness of efforts to prevent adolescent pregnancy through school-based sex education/family life education classes, parent-child communication programs, and other informational programs are discussed later in this chapter.

<sup>21</sup>The types of contraceptives available to adolescents and some of their advantages and disadvantages are discussed later in this chapter. Also discussed are various programs that make contraceptives available to adolescents.

that adolescents who become teenage mothers are performing below grade level at the time they become pregnant (68, 148), suggesting a relationship between school achievement and the likelihood of pregnancy (148).

Some research has found that adolescent females who have a high level of self-esteem and believe they have a large measure of control over their lives are more likely to be effective users of contraceptives than adolescents who have low self-esteem and lack a sense of competence (148). Adolescent females who tend to be passive and to hold traditional views of male-female relationships tend to be poor contraceptors (148). Adolescents who are impulsive and like to take risks are more likely to be poor users of contraceptives than other adolescents (148).

Some research indicates that adolescents who use illicit drugs other than marijuana are at especially high risk for experiencing a premarital pregnancy (223b). Such adolescents are especially likely to engage in early sexual experimentation and to have permissive attitudes about sexual behavior (223b). Elliott and Morse found in a large national sample that among young men and women ages 15 to 21 in 1981, the proportions sexually active in the last year ranged from 21 percent among those who used no drugs, to 45 percent among those who used marijuana, and to 89 percent among those who experimented with illicit drugs other than marijuana (51 a).

Several studies indicate that female adolescents who have good lines of communication with their mothers and whose mothers discuss contraception with them in a positive way are more likely to be effective contraceptors than adolescents who lack such communication (57a,60,148).<sup>22</sup> Furthermore, female adolescents whose mothers support them in selecting and using contraception seem to be more consistent in their own use of contraception (118,148).

**Familial Factors Related to Pregnancy—**According to the comprehensive review of adolescent pregnancy and parenting by the National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing, research examining the role of family members on adolescents' sexual behavior and contraceptive use is limited (148). Most studies in this area have examined mother-daughter rela-

tionships, ignoring the role of fathers and the relationship of parents to sons. Nevertheless, several studies have shed some light on family factors related to adolescent pregnancy and childbearing.

One of the factors that has been found to be most strongly associated with an adolescent female's *initiation of sexual activity* before marriage is the sexual and fertility experience of her mother (148). Several studies have found a strong relationship between a mother's sexual and fertility experience as a teenager and that of her daughter (148,152). The earlier the mother's first sexual experience and first birth, the earlier the daughter's experience is likely to be (148).

Other family factors that "appear to affect the level and quality of parental support and controls, and perhaps in turn influence sexual behavior among teenagers," "include family intactness, family composition, and mother's age at marriage (148). Several studies have also shown that females who have grown up in fatherless families are more likely to initiate sexual activity at an early age than those who have grown up in two-parent families (139a,148,152). One study found that females in families with large numbers of siblings are also likely to become sexually active at an early age (91,148). The mechanism by which these factors influence the initiation of sexual activity is not well understood. Several plausible explanations have been offered (e.g., girls in fatherless families may seek affection in sexual relationships) but have not been substantiated (148).

Some studies have found that adolescents' sexual behavior is affected by the nature of their relationships with their mothers (148). Specifically, adolescent girls whose mothers do not combine affection with firm, mild discipline and set clearly defined limits on behavior are likely to engage in premarital sexual intercourse (148). In addition, as suggested in the previous section, some studies have found that adolescents in homes where there is good communication between parents and adolescents about sex tend to engage in less sexual activity and to make better use of contraceptives and that parental support for adolescents in seeking family planning services results in more consistent contraceptive use (60,118,96). According to Hofferth, writing in the report of

<sup>22</sup>See & 3, "Parents and Families' Influence on Adolescent Health," in this Volume for a discussion of the importance of parents in adolescents' lives.

the National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing, however, parent-child relationships and parent-child communication seem to have an ambiguous association with the initiation of sexual activity and use of contraception by adolescents (86a,148). Thus, "there is no clear implication for program development" (148).

**Social/Environmental Factors Related to Pregnancy—**Research on how peers influence adolescents' sexual attitudes and behavior is limited and exhibits a number of methodological problems (e.g., data are gathered at one point in time, so delayed effects cannot be detected). Several studies indicate that same-sex peers are a major source of information for adolescents about sex (148), and at least one study has found that the proportion of their same-sex peers that teenagers believe are sexually active and how sexually active they perceive them to be are strong predictors of *sexual experience* among adolescent males and females (38,148). Some research has suggested that adolescents' sexual behavior is influenced more by their perceptions of peers' attitudes and behavior than by what their friends actually do and think (148,151). The influence of peer pressure seems to vary by age and gender (148). Younger adolescents (i.e., those below the age of 15), especially white females, seem to be more susceptible to peer influences in sexual decision-making than others (123, 148).

Although the influence of television on adolescents' sexual behavior has been little studied, it is clear that television is a predominant aspect of the lives of today's adolescents. Studies show that both explicit and implicit sexual behavior in television programming increased dramatically during the 1970s (148). Contraception is almost never mentioned or referred to, and the negative consequences of an unintended pregnancy are seldom portrayed (148).

Knowledge of how neighborhood environments and community institutions such as schools and churches affect sexual activity is just beginning to emerge (148). Adolescents who live in poor neighborhoods in which early childbearing and single parenthood are the norm are more likely to become sexually active and become pregnant than adoles-

cents living in and going to school in more prosperous environments (9c,149).

An overview of the effectiveness and other features of *contraceptive* methods available to U.S. adolescents is presented later in this chapter. Research suggests that some adolescents find these methods difficult to use or otherwise unappealing and are therefore inconsistent or ineffective contraceptive users (148).

As discussed later in this chapter, support for public and private nonprofit family planning clinics that serve adolescents and other, predominantly low-income, women is provided through Title X of the Public Health Service Act and other Federal, State, local government, and private programs.<sup>23</sup> Expansion in the availability of contraceptives and abortion during the 1970s was paralleled by an increase in adolescent sexual activity. Critics of family planning programs suggest that the availability of contraceptive services has caused higher rates of sexual activity and unintended pregnancy among U.S. adolescents (148). As noted later in this chapter, available research findings on this point are contradictory (e.g., 100,138).<sup>24</sup>

### **Risk and Protective Factors Related to Pregnancy Outcomes**

**Individual Factors Related to Pregnancy Outcomes—**Adolescents who become pregnant may decide to have an abortion, or deliver their infants and keep them, or deliver them and give them up for adoption. Mothers who bear children out of wedlock may remain single, cohabit without marrying, or get married.

According to the National Academy of Sciences' 1987 report on adolescent programming and childbearing, one of the most important factors affecting whether a pregnancy is terminated by *abortion* or carried to term is whether it was intended (14 S). Adolescents who report that their pregnancy was unintended are more likely to have an abortion than those who report that their pregnancy was intended (148). As noted below, almost two-thirds of 15- to 19-year-old U.S. females giving birth in 1988 said that their pregnancies were unintended (59a); combined with the high rate of abortions among pregnant

<sup>23</sup>Title X of the Public Health Service Act is discussed in the section of this chapter on Federal programs and policies related to adolescent pregnancy and childbearing.

<sup>24</sup>This research is summarized in table 10-8 in the section of this chapter on contraceptive provision programs below.

U.S. adolescents, this observation suggests that most pregnancies among U.S. adolescents are unintended.

Adolescents who are unmarried are more likely to have an abortion than those who are married (13,80,232); and pregnant adolescents who are achieving academically before pregnancy and who have a strong future orientation are more likely to choose abortion to resolve an unintended pregnancy than those who are not doing well in school and lack high educational and vocational goals (148). Another attitudinal factor that has consistently been found to discriminate between abortion and term pregnancy groups is attitude toward abortion, with those choosing to terminate their pregnancy expressing greater acceptance of abortion (53,14).

As noted earlier, pregnant adolescents are at risk for a variety of *pregnancy and birth* complications (75a,134,137,189). Furthermore, babies born to adolescent mothers are more likely to be premature or low birthweight and are more likely to require hospitalization within the first 5 years of life than babies born to women over age 19 (71b,84,190,196). But as noted above, except in the case of the very youngest adolescents, pregnancy and birth complications are probably not related to low maternal age per se (63a). Some adolescents enter pregnancy with preexisting conditions such as anemia or substance abuse problems that may cause adverse outcomes. Adolescents who use illicit drugs are at high risk for experiencing poor pregnancy outcomes such as low birthweight (under 2,500 grams) and infant mortality (223 b), and heavy alcohol use is believed to be a risk factor for long-term damage to children (188a).<sup>25</sup> Other preexisting conditions that may cause problems include poor nutrition and anemia.<sup>26</sup> Teenagers seem to be at especially high risk of nutritional deprivation during pregnancy (148).

Many of the physical health risks to adolescent mothers and their babies can be significantly reduced with proper prenatal care and good nutrition (14).<sup>27</sup> The standards of the American College of Obstetricians and Gynecologists, and the American

Academy of Pediatrics recommend that every pregnant woman have a comprehensive program of prenatal care beginning as early in the first trimester of pregnancy as possible (9a,148). Furthermore, a 1988 OTA study concluded that available evidence supports the value of both early and frequent prenatal care and the provision of enhanced services to adolescents.<sup>28</sup>

Unfortunately, many pregnant adolescents in this country—53 percent of pregnant 15-to 19-year-olds in 1988 (207b)—do not receive prenatal care ever or until after the first trimester of their pregnancy (204,207b). The problem of late or no prenatal care is caused by numerous factors, ranging from adolescents' failure to recognize the early signs of pregnancy to concerns about costs or confidentiality (148). Unmarried teenagers with less than a high school education have been found to be among the least likely to receive first-trimester prenatal care (96a,148,185a,199). The problems associated with late or no prenatal care are exacerbated among pregnant adolescents who have not been educated about nutrition or who have poor health habits (6,127).

Adolescents who choose to carry their pregnancies to term also need adequate care for labor and delivery.<sup>29</sup> Maternity care is often expensive, and some adolescents may experience problems related to financial access.

Following delivery, the immediate needs of adolescent mothers and their babies (e.g., food, housing, health care, economic support, social support, child care) are numerous (148). Individual adolescents vary in their ability to have these needs met, and some adolescents (e.g., those who are very young, those who have poor parenting or life planning skills, those with substance abuse problems) may have greater difficulty than others. Many adolescent parents require extensive social and economic support. A 1990 review by the Congressional Budget Office (CBO) found that few adolescent mothers are able to support themselves and their children during

<sup>25</sup>See ch. 12, "Alcohol, Tobacco, and Drug Abuse: Prevention and Services," in this volume. As noted in that chapter, alcohol is the most frequently used drug among adolescents. The extent to which adolescent females drink heavily during pregnancy is unknown, however.

<sup>26</sup>s. ch. 7, "Nutrition and Fitness Problems: Prevention and Services," in this volume.

<sup>27</sup>*Prenatal care* refers to medical services delivered from conception to labor (199). Such care encompasses a wide range of preventive, diagnostic, and therapeutic services delivered throughout the course of pregnancy with the goal of a healthy baby and a healthy mother (199).

<sup>28</sup>See OTA's 1988 report *Healthy Children: Investing in the Future* (199).

<sup>29</sup>*Maternity care* includes prenatal care and intrapartum care (labor and delivery care) (199).

the first few years of parenthood (195).<sup>30</sup> According to CBO's analysis, the amount of support available to *married* adolescent mothers varies, depending on their husbands' age, educational level, and employment status; however, 40 percent of married adolescent fathers were found to be high school dropouts, and adolescent fathers were less likely than fathers age 20 and over to have jobs (195a). Almost no information is available on support for adolescent mothers and their children from the absent fathers of those children.

**Familial Factors Related to Pregnancy Outcomes-** According to the 1987 National Academy of Sciences' report, several studies of adolescent girls who choose *abortion* have found that family background factors are significant predictors (148). Adolescent females from white families are more likely than those from black families to terminate an unintended pregnancy, and females from families with higher socioeconomic status are more likely to have abortions than those from families living in poverty.

Some studies have found that parental attitudes, especially mothers' attitudes toward abortion, predict adolescent daughters' pregnancy termination decisions (50a,148). Particularly among young adolescents, parents seem to play a major role in the decision to terminate an unintended pregnancy (173).<sup>31</sup> There is some evidence of a link between being raised in a single-parent home and early *childbearing* (25a,92). Some studies have found that adolescents who become pregnant and have an abortion are more likely to come from two-parent families with smaller numbers of children than adolescents who carry their pregnancies to term (37,63).

Studies that have examined the role of families in helping adolescent mothers adjust to *parenting roles* are scarce, and studies of the families of adolescent fathers are virtually nonexistent (148).

In its analysis of Current Population Survey data, CBO found that more than half of young unmarried mothers lived with their parents or other relatives (195a). CBO noted that by sharing living quarters

with parents and other relatives, young single mothers were probably able to benefit from the overall household income and other supports in the household (195a). A relatively low 34 percent of unmarried mothers who lived with relatives lived in poverty (based on the cash income of the extended family unit); available data also suggested that adolescent mothers living with relatives were also more likely to be able to continue their schooling (195a).

**Social/Environmental Factors Related to Pregnancy Outcomes-**The incidence of *abortion* has increased since the U.S. Supreme Court's *Roe v. Wade* decision in 1973 [410 U.S. 113 (1973)]. As discussed later in this chapter, however, some adolescents' access to abortion is limited by factors such as cost, geographic distance from facilities that perform abortions, and parental consent and notification requirements.<sup>32</sup> According to the National Academy of Sciences' report, one study found that adolescent females' decisions about whether or not to carry their pregnancies to term were predicted by the attitudes of both their female friends and their male partners, and adolescent females who have friends who are themselves adolescent parents are more likely to carry their pregnancies to term than those who do not have friends who are parents (50a,148).

Pregnant adolescents who receive early and regular prenatal care that is appropriate to their level of risk are more likely to have healthy *birth* outcomes than those who do not, but gaining access to prenatal and perinatal services seems to be a problem for many adolescents. As noted above, about half of pregnant 15- to 19-year-olds in 1988 did not receive prenatal care in the first trimester of pregnancy (207b). One of the factors influencing adolescents' (and other women's) use of prenatal and other maternity care is the availability of a payment source.<sup>33</sup> Because of a loophole in the regulations issued under the Pregnancy Discrimination Act of 1978 (Public Law 95-555), almost one-third of privately insured adolescents are not covered for maternity-related services by their parents' employ-

<sup>30</sup>Various sources of support, including Aid to Families With Dependent Children (AFDC), are discussed below.

<sup>31</sup>For further discussion of the role parents play in adolescents' health care decisions, see ch. 3, "Parents and Families' Influence on Adolescent Health," in this volume, and ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III.

<sup>32</sup>Adolescents' access to abortion is discussed in the section of this chapter below entitled "Programs That Offer Alternatives to Parenthood."

<sup>33</sup>See ch. 16, "Financial Access to Health Services," in Vol. III. Also see OTA's 1988 report *Healthy Children: Investing in the Future* (199).

ment based health plans.<sup>34</sup> Pregnant adolescents without private health insurance who rely on Medicaid and other Federal and maternal and child health programs to pay for their maternity care may also experience access problems.<sup>35</sup>

As noted earlier, few adolescent mothers are able to support themselves and their children during the first few years of parenthood (195a). Other sources of economic and social support, therefore, can have a great impact on outcomes for adolescents who bear and keep their children (128,148). AFDC benefits are an alternative source of economic support for unmarried (and some married) adolescent mothers. CBO's analysis of NLSY data found that about half of all adolescent mothers received AFDC benefits sometime during the 5 years after they first gave birth, but that most were not covered by AFDC for at least some time during those 5 years (195a).<sup>36</sup>

Overall, CBO found high levels of poverty among adolescent mothers, particularly those who were unmarried (195a). Almost half of all adolescent mothers, and 81 percent of unmarried mothers living with only their children, had family cash incomes below the poverty line in 1985 and 1986 (195a). Based on the level of poverty among adolescent mothers and an analysis of available sources of support, CBO concluded that many of the economic problems of adolescent parenthood could be eased if young mothers had more resources available to support their families (195a). Improvements discussed by CBO included programs to improve the mothers' earning ability, programs to raise the amount of support provided by young fathers or other relatives, and programs to expand the benefits offered by Federal and State governments (195a).

### **Demographic Differences Related to Adolescent Pregnancy and Pregnancy Outcomes**

As noted elsewhere in this Report, in 1988, more than 8 million (26.7 percent) of the country's 31 million adolescents lived in a poor or near-poor family.<sup>37</sup> Poor and near-poor are terms defined in

relation to the Federal poverty level, a cash income level which varies with family size and the age of family members. Poor families are those with incomes below the Federal poverty level, and near-poor families are those with incomes between 100 and 149 percent of the Federal poverty level.

The health and other effects of growing up poor are complex and not well understood, but because poverty is often associated with a low educational level, substandard living conditions, an inadequate social support network, poor nutrition, unemployment, and diminished access to health care, children growing up in poor or near-poor families probably confront more risk factors and benefit from fewer protective factors than their more advantaged peers.

Children and adolescents living in single-parent households headed by a female are disproportionately poor. In 1988, nearly two-thirds of U.S. adolescents who lived with their mothers only lived in poor or near-poor families. U.S. adolescents from racial and ethnic minority groups are also disproportionately poor. In 1988, about half of black, non-Hispanic adolescents, half of Hispanic adolescents, half of American Indian and Alaska Native adolescents lived in poor or near-poor families.<sup>38</sup> Among white, non-Hispanic U.S. adolescents, less than one-fifth lived in poor or near-poor families.

As discussed elsewhere in this Report, data and research on the health status of poor adolescents and on the health effects of poverty have major limitations. How adolescents' social class and race/ethnicity are related to pregnancy-related behaviors such as the initiation of sexual activity and contraceptive use, to pregnancy, or to pregnancy outcomes such as abortion, childbearing, or parenting is not entirely clear. Studies showing differences between adolescents of different socioeconomic statuses or racial or ethnic backgrounds are discussed below. Many of these studies differ among themselves, depending on factors such as the following:

<sup>34</sup>For further discussion, see the section of this chapter below entitled, 'Programs Designed To Prevent Negative Outcomes of Adolescent Pregnancy and Parenting,' and ch. 16, 'Financial Access to Health Services,' in Vol. III.

<sup>35</sup>For further discussion, see the section of this chapter below entitled 'Major Federal Programs and Policies Pertaining to Adolescent Pregnancy and Parenting,' and ch. 16, 'Financial Access to Health Services,' in Vol. III.

<sup>36</sup>CBO found that nearly 40 percent of recipients who were *not* married when their children were born left the AFDC program within 1 year and more than 70 percent left within 4 years, as compared with about 70 percent and 90 percent, respectively, of their married counterparts (195a).

<sup>37</sup>See ch. 18, 'Issues in the Delivery of Health and Related Services to Selected Groups of Adolescents,' in Vol. III.

<sup>38</sup>See ch. 18, 'Issues in the Delivery of Health and Related Services to Selected Groups of Adolescents,' in Vol. III for further discussion.

- the behavior or outcome that is investigated (e.g., sexual activity v. contraceptive use v. childbearing);
- the specific races and/or ethnic backgrounds that are compared;
- the measure of socioeconomic status that is used (e.g., various measures of the socioeconomic status of the family of origin, various measures of socioeconomic status of the impregnating male, the adolescent's anticipated social class, education levels, job categories<sup>39</sup>); and,
- perhaps most importantly, the number and types of factors that are simultaneously investigated, and subsequently statistically controlled, in the study.<sup>40</sup>

In addition, it should be understood that studies finding differences by race/ethnicity or socioeconomic status have to be interpreted sensitively. While such findings can be used to target specific groups of adolescents for services, they may not be helpful in determining the precise causes of adolescent pregnancy or variations in pregnancy-related outcomes in specific groups or in individual adolescents. These determinations typically require further study,<sup>42</sup>

**Socioeconomic Differences Related to Pregnancy and Pregnancy Outcomes**—Available data discussed below suggest that adolescents from socioeconomically disadvantaged families are at greater risk of nonmarital pregnancy and parenting than adolescents from nondisadvantaged families. In comparison to their more advantaged peers, these adolescents tend to initiate sexual activity at an earlier age, are less likely to use contraceptives when sexually active, are less likely to have an abortion, and are more likely to give birth to children out of wedlock. They also seem to be less likely to give their babies up for adoption.

*Socioeconomic Differences Related to Pregnancy*—Data from the NLSY indicate a relationship between adolescents' mothers' level of schooling, which is

one measure of socioeconomic status, and the age at which adolescents initiate *sexual activity* (148). The 1982 NLSY included a sample of 4,657 males and 4,648 females who were age 20 and over at the survey date. Among male adolescents whose mothers had some education beyond high school, 56 percent engaged in sexual intercourse before age 18, in comparison with 72 percent of male adolescents whose mothers did not complete high school. Among female adolescents whose mothers had some education beyond high school, 34 percent became sexually active before age 18, in comparison with 54 percent of female adolescents whose mothers did not complete high school (148).

Other investigators have found that adolescents' *anticipated social class* (as measured by their educational aspirations) has a greater effect on the initiation of sexual activity than does their current socioeconomic status. Adolescents who expect to complete more years of schooling are more likely to delay the initiation of sexual intercourse than adolescents who expect to complete fewer years of school (135a). And, not surprisingly, other investigators have found that the social class of the family of origin *and the adolescent's anticipated social class* both influence the initiation of sexual activity (139,144,183,192,234). However, parental expectations of an adolescent's sexual behavior have also been found to have an independent influence (52a).

Studies that have investigated the relationship between socioeconomic status of the adolescent's family of origin and the *use of contraceptives* have found results similar to those for initiation of sexual intercourse: adolescents from socioeconomically disadvantaged families are less likely to use contraceptives than those from those from nondisadvantaged families (152). Adolescents' socioeconomic status has not been found to have as much impact on adolescents' contraceptive use as adolescents' age at the time of initiation of sexual activity, adolescents' attitudes about contraception, pregnancy, abortion, education, frequency of intercourse, and some of the other individual factors discussed earlier (85). How-

<sup>39</sup>These measures are themselves often highly intercorrelated.

<sup>40</sup>For example, if a study only collects data on the race, but not the socioeconomic status, of adolescents in the sample, it will not be able to distinguish outcomes by social class from outcomes by race.

<sup>41</sup>In some studies, socioeconomic status and race/ethnicity appear to affect pregnancy-related behaviors and outcomes independently, but closer inspection sometimes reveals a multiplier effect of economic disadvantage (e.g., 140). Some observers believe that attempts to control for socioeconomic differences when comparing black and white adolescents have been inadequate, as they do not account for the time spent in poverty and disparity between blacks and whites in categories of socioeconomic status (148).

<sup>42</sup>For further discussion, see ch.18, "Issues in the Delivery of Services to Selected Groups of Adolescents," in Vol. III.

ever, the influence of an adolescents socioeconomic status may be felt in terms of access to contraceptives and the availability of contraceptives (97a) .43

Socioeconomic differences in rates of sexual activity and in the use of contraceptives would lead naturally to findings that adolescents of lower socioeconomic status are also more likely to become pregnant. To OTA's knowledge, there is little information directly on this point. Information on pregnancies and pregnancy rates by adolescents' socioeconomic status is not readily available. In an analysis of 1979 data from the NLSY, however, Mott and Haurin found that the lower the family income of female adolescents and the less the mother's education, the more likely an adolescent was to report a first pregnancy prior to age 16 (144b).

*Socioeconomic Differences Related to Pregnancy Outcomes*—As noted earlier, the major Federal report on health indicators in the United States—*Health United States--does* not tabulate data on birth rates by income or other factors indicative of socioeconomic status. There is some evidence that pregnant adolescents of lower socioeconomic status—as measured by family income (61) and other factors—are more likely to carry their pregnancies to term than other adolescents of higher socioeconomic status, regardless of their race (86a). One hypothesis to explain apparent social class differences in childbearing is that having babies is a rational response to poverty for poor adolescents, in that by having children poor adolescents may gain access to family networks and support programs that otherwise may not be available to them. Several studies have suggested that childbearing may mobilize supportive responses from family, peers, and others

(e.g., social programs, including mentoring or educational programs) (19,72,122).<sup>44</sup> Another hypothesis might be that adolescents from low-income families have less access to abortions than other adolescents.

A number of researchers have found that poverty and poor employment opportunities are closely associated with *out-of-wedlock births* (148). The 1988 National Survey on Family Growth found that among U.S. females, females ages 15 to 19 and females with family incomes below the Federal poverty level had the highest rates of unintended births (59a) .45 Reports from this survey did not combine the factors of age and socioeconomic status to give an estimate of childbearing by socioeconomic status for adolescents (59a). In the 1988 National Survey of Family Growth, 72.6 percent of the 15- to 19-year-old females who gave birth between 1984 and 1988 and 60 percent of females with incomes under the poverty level reported that their pregnancies were unintended (59a).<sup>46</sup>

Some observers have also expressed concern that the conditioning of social benefits on the presence of children in the family may encourage poor people to have children. The largest cash assistance program serving poor families with children is the AFDC program administered by the Family Support Administration in DHHS.<sup>47</sup> For the first 25 years of AFDC, if a father lost his job and his family became needy, State AFDC programs were forbidden to help the family so long as the father lived at home (195d). (In 1961, in an antirecession measure, the law was changed so that families with jobless fathers at home could qualify for AFDC at a State's option (195d).) This arrangement has been believed by some to have encouraged out-of-wedlock childbearing and single-

<sup>43</sup>Various programs intended to increase low-income adolescents' access to contraceptives are discussed later in this chapter.

<sup>44</sup>Adolescents from families of higher socioeconomic status may also bear children in order to receive support and attention from family and friends.

<sup>45</sup>Unintended births are a combination of births resulting from pregnancies that are "mistimed" and "unwanted" (59a).

<sup>46</sup>Among females of all ages who gave birth in the period 1984 to 1988, the percentage of births that were unintended decreased with increasing income level. Almost 60 percent of births to females with incomes under 100 percent of the Federal poverty level were unintended, as compared to 42.7 percent of births among women with incomes between 100 and 199 percent of the poverty level, and 31.8 percent among women with incomes over 200 percent of the poverty level.

<sup>47</sup>AFDC and various other Federal programs of relevance or potential relevance to poor adolescents are described at greater length in ch. 18, "Issues in the Delivery of Services to Selected Groups of Adolescents," in Vol. III. For a further discussion of Medicaid, also see ch. 16, "Financial Access to Health Services," in Vol. KU.

<sup>48</sup>A recent welfare reform law, the Family Support Act of 1988 (Public Law 100-485), altered this arrangement by requiring that all States that operate AFDC programs provide AFDC to two-parent families who are needy because of the unemployment of the principal wage earner—the so-called AFDC-UP (Unemployed Parent) provision (195d). The unemployed parent must meet certain requirements pertaining to previous employment and is required to search for a job or participate in the Job Opportunities and Basic Skills (JOBS) program (195d), but, overall, this provision does provide greater support for the possibility of a father living with an adolescent mother and their children. It is too early to be able to assess the effects, if any, of changes in social welfare program eligibility requirements on rates of out-of-wedlock childbearing among adolescents. For further discussion of AFDC and the JOBS program, see the section on Federal policies and programs related to adolescent pregnancy and parenting below.

parent households.<sup>48</sup> Some evidence suggests, however, that birth rates are not related to potential receipt of welfare benefits; real reductions in the level of welfare benefits since the mid-1970s have not resulted in decreases in single-parent families, nor is single-parenthood related to differences in levels of welfare benefits across States (14a).

Data on the number of abortions or abortion rates by adolescents' socioeconomic status are not available. Some observers believe that socioeconomically disadvantaged adolescents who become pregnant are *less* likely to have an *abortion than their* more advantaged peers, as they may have problems of access (especially financial) to abortions (13,232). Federal funding for abortion as a method of family planning has statutorily been prohibited for several years.<sup>49</sup>

The few studies that have been conducted on *adoption* among adolescents indicate that adolescents who make adoption plans tend to be of higher socioeconomic status (17 la). A recent study on the characteristics of adolescents who choose to give their child up for adoption indicate differences between adolescents of different social classes: adolescents from families of higher socioeconomic status are more likely to choose to put their child up for adoption than adolescents from disadvantaged families. In addition, adolescents who have higher educational aspirations, which has been linked to social class, are more likely to put their child up for adoption (19a).

**Racial Differences Related to Pregnancy and Pregnancy Outcomes--**As discussed further below, there are large racial differences in patterns of sexual activity, contraceptive use, birth rates, and out-of-wedlock childbearing rates. According to the National Academy of Sciences' comprehensive 1987 report on adolescent pregnancy and childbearing, what accounts for these differences is not at all clear (148). Some observers attribute the racial differences wholly or in part to socioeconomic differences among blacks and whites; others maintain that the differences are primarily attributable to differences

in the acceptability of early nonmarital sexual activity, pregnancy, and parenthood. Research has not yet resolved this controversy (148).

*Racial Differences Related to Pregnancy—*Available data indicate that black adolescents in this country tend to *initiate sexual activity* at earlier ages than white adolescents and that the proportion of black U.S. adolescents who are sexually experienced is greater than the proportion of white U.S. adolescents who are sexually experienced at every age of adolescence (16a,59a,86a,151,152,235). National data from 1984 and 1988 show that among U.S. adolescents who have had sexual intercourse, black males initiated intercourse 2 years earlier than whites and black females initiated intercourse 1 year earlier than whites (129,187). The 1988 National Survey of Family Growth found that the percentage of 15- to 19-year-old black, non-Hispanic females who had ever had sexual intercourse was 60.8 percent (59a), somewhat higher than the percentage of 15- to 19-year-old white non-Hispanic females who had ever had sexual intercourse (52.4 percent).

The National Survey of Adolescent Males found that 19.8 percent of black non-Hispanic adolescent males surveyed reported that they had had their first sexual intercourse by age 12 *or* under, an average of 2 years younger than white non-Hispanic and Hispanic males (187). Almost half (47.8 percent) of the black non-Hispanic males in this survey reported having had their first sexual intercourse by age 14 (187). These data should be viewed with some caution because the question about age of first sexual intercourse was asked of males who were already ages 15 to 18; however, the results are consistent with other findings about the early initiation of sexual intercourse among black children and adolescents of both sexes. In addition, black non-Hispanic males reported having had more sexual partners in their lifetimes than did white non-Hispanic and Hispanic males (187).<sup>50</sup>

Researchers disagree on the reasons for racial differences in the timing of the initiation of sexual intercourse and proportion of sexually active adoles-

<sup>49</sup>Federal regulations issued by DHHS in 1988 also prohibit abortion counseling and referrals by family planning clinics receiving funds under Title X of the Public Health Service Act. For further discussion of Federal policies related to abortion, see the section below on Federal policies and programs related to adolescent pregnancy and parenting.

<sup>50</sup>On average for ages 15 to 19 taken together, black non-Hispanic males reported having had an average of 8.3 sexual partners, compared to 4.29 partners for white non-Hispanic males and 5.15 partners for Hispanic males (187). The measure of variability (i.e., the range in the number of partners across surveyed males) was greatest for black non-Hispanic males (standard deviation of 18.62 for 15- to 19-year-olds), second greatest for Hispanic males (standard deviation of 12.13 for 15- to 19-year-olds), and lowest for white non-Hispanic males (standard deviation of 6.71 for 15- to 19-year-olds) (187).

cents (148). There is some evidence that black females mature at earlier ages than white females (43,75 b), but the physical differences between black and white females are too small to account for the greater differences in age of initiation of sexual activity (139a,148). Furthermore, in the case of white females, the effect of biological factors on the initiation of sexual activity seems to be strongly mediated by factors in the individual's social environment (148). Some studies have found that neighborhood environments are very important in influencing adolescents' decisions to initiate sexual behavior (9c,148). Several studies suggest that when comparisons are made among adolescents of similar socioeconomic status, there is no significant difference between the ages at which blacks and whites initiate sexual activity (35,68,144a,185). A few studies have found, however, that even after controlling for social class (148) and mother's level of education (86a), racial differences still exist between blacks and whites in the age of first intercourse.<sup>51</sup>

Overall, most of the available research indicates that black adolescent females are less likely to *use contraception than* white adolescents. Given that black adolescents are more likely to initiate sexual activity at an early age and that young adolescents are less likely to use contraception than older ones, this general finding is not unexpected. It is important to note, however, that one investigator found that in the majority of the research on contraceptive use, blacks are inadequately represented and race is confounded with socioeconomic status (142).

The 1988 National Survey of Family Growth found that the percentage of black non-Hispanic females ages 15 to 19 who used some contraception at first intercourse (one, but not the only, indicator of contraceptive use) was 54.1 percent, an increase from 35.8 percent in 1982 but somewhat lower than the percentage of white non-Hispanic adolescents who used some form of contraceptive at first intercourse (69 percent) (59a). If one controls for

socioeconomic status when comparing contraceptive practices at first intercourse, one finds that blacks more often use a prescription method of contraception (e.g., the pill, a diaphragm) than their white counterparts (234). Zelnik and Shah found that among adolescents who used contraception at first intercourse, 41 percent of black adolescents used a prescription method of contraception, as compared with 15 percent of white adolescents (234). Definitive calculations of prescription contraceptive use are not available from the National Survey of Family Growth, but National Survey of Family Growth data do indicate that 15.7 percent of black, non-Hispanic females, as compared with 7.1 percent of white, non-Hispanic females, used the pill at first intercourse (59a).

Among U.S. adolescents who do not use contraception at first intercourse (if one does not take socioeconomic status into account), black adolescents have been found to take longer to begin using contraception than white adolescents (85). In the recent National Survey of Adolescent Males, however, black non-Hispanic males generally reported *greater* use of contraceptives at their last intercourse before the survey (one measure of current contraceptive use) than did white non-Hispanic or Hispanic males (186b).<sup>52</sup>

Several studies indicate that examinations of differences in contraceptive use must examine factors other than race. Two studies found that black adolescents whose parents had high levels of education used contraception more regularly than black adolescents whose parents were less educated (38,235). Another study looked at how black females perceived opportunities in nonreproductive roles; those with better perceived opportunities were more likely to be regular contraceptive users (146a).

National data on pregnancy rates among black adolescents are not available, but the numbers of births and abortions in the black adolescent population<sup>53</sup> (see below) suggest that *pregnancy rates*

<sup>51</sup>Some observers have argued that efforts to control for social class in some studies are inadequate (e.g., because they do not account for the amount of time spent in poverty and other factors) (148).

<sup>52</sup>This finding was true overall and for the use of 'condoms alone or with other methods, ... the latter of which was reported by 65.5 percent of black non-Hispanic males ages 15 to 19 combined, compared to 54.4 percent of white non-Hispanic males, and 53.0 percent of Hispanic males in that age group (186b). Black male 15- to 19-year-olds, however, reported somewhat less use of an "effective female method [e.g., oral contraceptives, diaphragm, intrauterine device, sponge] without a condom' (14.5 percent) than did white non-Hispanic (22.2 percent) or Hispanic (15.6 percent) male 15- to 19-year-olds in this survey (186b). Only 20 percent of black 15- to 19-year-old males reported the use of ineffective or no contraceptive methods at last intercourse (186b).

<sup>53</sup>As noted earlier, the numbers of births and abortions along with miscarriages and stillbirths, are used to estimate the number of pregnancies and pregnancy rates in a given population.

among black adolescents are substantially higher than pregnancy rates among white adolescents (52a,214). In 1987, the estimated pregnancy rate for white 15- to 19-year-olds was 90 pregnancies per 1,000 population; for “nonwhite” adolescents (including black, Asian, and other adolescents) in the same age group, the rate was 189 pregnancies per 1,000, more than twice the rate for white adolescents (8a).

What accounts for the higher rates of pregnancy among black adolescents is not entirely clear. One survey of pregnant adolescents found that 70 percent of the blacks surveyed expected a favorable reaction about their pregnancy from their peers and 65 percent expected that they would get a favorable reaction from the father of their child; only 40 percent and 43 percent of whites, respectively, felt that they would receive favorable reactions (148). A number of studies reveal that black adolescents prefer earlier age for first birth than marriage, while white adolescents prefer earlier age for marriage than for first birth (148,224a). The degree to which differences in values and attitudes affect differences in sexual activity is questionable, as often such attitudes are measured after sexual experience, and thus the attitudes expressed may be a reflection of this experience (86a). In addition, the impact of socioeconomic and subcultural differences in attitudes is not clear from this body of research.

One recent study of 1,590 inner city females ages 13 to 18 who used health clinics, most of whom were black and from single-parent low socioeconomic status homes, found that sexually active females came from more psychosocially disadvantaged backgrounds than their sexually inactive peers (187a). The females who became pregnant were from significantly less stable homes than either the never-pregnant but sexually active females or the sexually inactive females.

*Racial Differences Related to Pregnancy Outcomes—*Black adolescent females in the United States have dramatically higher *birth rates than* adolescent females of all races or white adolescent females. In 1988, as noted earlier, the birth rates among U.S. females were under age 20 were as follows:

- 10- to 14-year-olds: all races, 1.3 births per 1,000 females, with whites at 0.6 births per 1,000 and blacks at 4.8 births per 1,000;
- 15- to 17-year-olds: all races, 33.8 births per 1,000 females, with whites at 25.5 births per

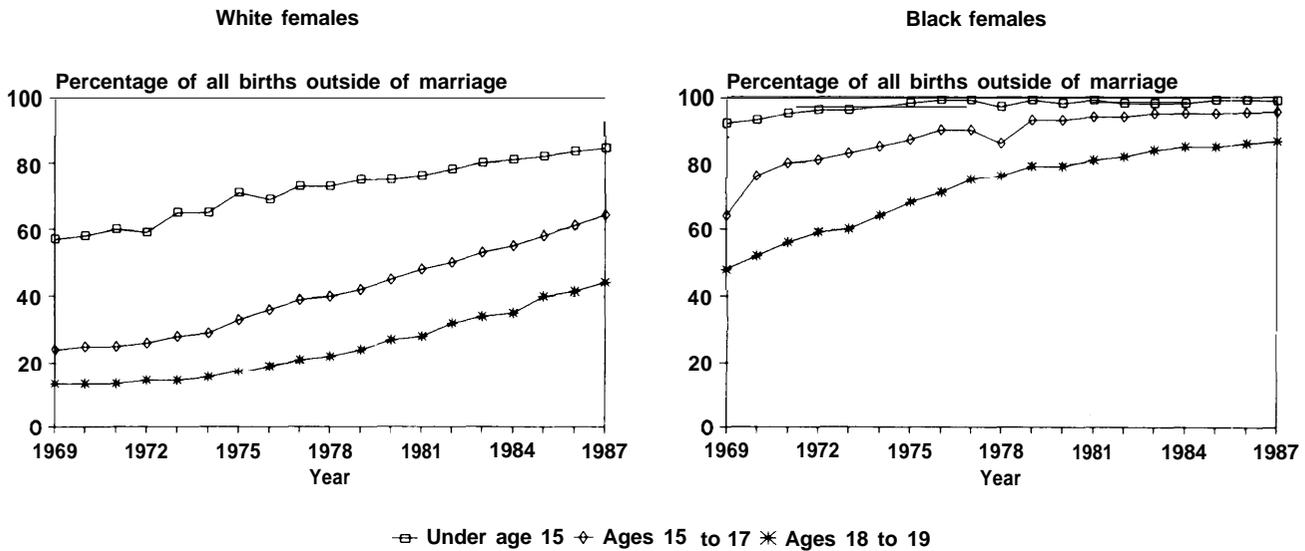
- 1,000 and blacks at 76.6 births per 1,000; and
- 18- to 19-year-olds: all races, 81.7 births per 1,000 females, with whites at 69.2 births per 1,000 and blacks at 150.5 births per 1,000 (202f).

During the 1970s and early 1980s, there was a substantial decline in birth rates among black U.S. females under age 20 (202 f). By 1984, birth rates among black U.S. females had dropped to 4.3 births per 1,000 10- to 14-year-olds, to 69.7 births per 1,000 15- to 17-year-olds, and to 132 births per 1,000 18- to 19-year-olds (202 f). Since 1984, however, birth rates among black U.S. adolescent females have been steadily increasing (202f). In fact, birth rates among black U.S. adolescents in 1988 were at their highest levels in about a decade (202 f). The reasons are not clear.

Differences in *out-of-wedlock childbearing* among black and white U.S. females under age 20 have also been narrowing in recent years, but they are still striking (see figure 10-1 1). Very few births to black adolescents are to adolescents who are married. The reasons are unclear, although various explanations have been offered. The shortage of black males able to provide sufficient economic support to a family (e.g., because of unemployment and economic disadvantage) may partially account for the high rates of out-of-wedlock births among poor black adolescents (148). Furthermore, black adolescents are significantly more likely than whites to live in low-income communities in which rates of unemployment are high and poor, mother-headed families have been prevalent for generations (148). When asked, blacks in these communities report a greater tolerance for sexual activity outside a marriage and a greater tolerance for nonmarital childbearing (148). Whether these attitudes reflect deep-seated subgroup values or are transient responses to economic circumstances is not known (148). Some observers believe that differences in attitudes are affected by the differential economic histories of the races, in that chronic economic disadvantage affects attitudes toward marriage and family (1,140).

Data on 1985 abortion rates for whites and “nonwhites” (a group that includes blacks, Asians, and other groups) are available from the Alan Guttmacher Institute. These data indicate that 1985 abortion rates among females under age 15 were 5.0 abortions per 1,000 population for whites and 27.0 abortions per 1,000 population for nonwhites; for

Figure 10-1 I—Trends in Out-of-Wedlock Childbearing Among U.S. Females Under Age 20 by Race, 1969-67



SOURCE: Office of Technology Assessment, 1991, based on U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital Statistics, *Vital Statistics of the United States, Volume I: Natality* (Washington, DC: U.S. Government Printing Office, various years).

females ages 15 to 19, the rates were 71.1 abortions per 1,000 population for whites and 127 abortions per 1,000 population for nonwhites; for females ages 18 to 19, the rates were 55.4 abortions per 1,000 for whites and 97.1 abortions per 1,000 for nonwhites (81a).

Data from the National Center for Health Statistics in DHHS suggest that black adolescent females who become pregnant are slightly less likely to have an abortion than their white peers are (148). In 1983, 40.5 percent of pregnancies of white adolescents and 38.1 percent of pregnancies of black adolescents ended in abortion (148). Because rates of unintended pregnancies are higher among black adolescents than among white adolescents, however, black adolescents have much higher population-based abortion rates than white adolescents (148).

As noted earlier there is no national system for collecting information about U.S. females who carry their pregnancies to term and give their babies up for adoption (148). Thus, national information concerning black adolescents who give their babies up for adoption is not available. A study in 1982 estimated that 93 percent of unmarried black mothers ages 15 to 19 kept and raised their children (12,148). In some cases, grandmothers, other relatives, or friends assumed responsibility for a child's care (12).

Ethnic Differences Related to Pregnancy and Pregnancy Outcomes-Data on adolescents of *Hispanic origin* typically includes both black and white Hispanics. According to the report by National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing, national data describing ethnicity began to be available only in the 1970s, as some subgroup--especially Hispanics--became more prominent minorities in this country (148).

*Ethnic Differences Related to Pregnancy-Data* on Hispanics are collected in recent surveys of sexual and fertility behavior, but the samples are often too small to permit disaggregation of the data by age (148). Thus, according to the National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing, information on Hispanic adolescents' sexual activity and fertility behavior is incomplete and not comparable to information for racial subgroups (148).

Some studies have found that Hispanic adolescents initiate sexual *intercourse* at roughly the same ages as non-Hispanic white adolescents (12a,141a,187). The 1988 National Survey of Family Growth found that 49 percent of 15- to 19-year-old Hispanic females said they had ever had sexual intercourse, slightly lower than the percentage of 15- to 19-year-old non-Hispanic white females (52.4 percent) who said they had had intercourse (59a). The percentage

of 15- to 19-year-old Hispanic females who reported they had ever had sexual intercourse in 1988 was slightly lower than the percentage in 1982 (59a). The 1988 National Survey of Adolescent Males found that 19 percent of Hispanic males reported having had sexual intercourse by age 14 and 81 percent reported having had sexual intercourse by age 18 (187). These were similar to the percentages for white non-Hispanic males but far lower than those for black non-Hispanic males (187).

The 1983 NLSY, which interviewed a sample of 683 Hispanic males and 703 females who were age 20 and over at the survey date, found that 50 percent of the males and 24 percent of the females reported that they were sexually active by age 17; 67 percent of the males and 40 percent of the females reported that they were sexually active by age 18 (148). Although Hispanic adolescent females may be slightly less likely than non-Hispanic whites to be sexually active, they are considerably less likely to be using *contraception*. The 1988 National Survey of Family Growth found that the percentage of 15-to 19-year-old Hispanic females who used some form of contraception at first intercourse was 54 percent, while the percentage of white non-Hispanic adolescents who used some form of contraception at first intercourse was 69 percent (59a).

National data on *pregnancy rates* among Hispanic females are not available. In a 1982 study among unmarried Hispanic females ages 15 to 19, however, 15 percent reported having experienced a pregnancy (144). This percentage falls between that reported by unmarried, white non-Hispanic adolescents (8 percent) and that reported by same-age non-Hispanic blacks (23 percent).

*Ethnic Differences Related to Pregnancy Outcomes*—Data on ethnicity have been included in vital statistics reports published by the National Center for Health Statistics in DHHS only since 1978 (148). National natality statistics are somewhat limited because States do not always report the Hispanic origin of the parents on a child's birth certificate.<sup>54</sup> Further, many different nationalities and cultures are

often subsumed under a single ethnic category (e.g., Hispanic), obscuring diversity within the category.<sup>55</sup> Data concerning *birth rates* among Hispanic adolescents are still somewhat incomplete and have only been collected during the past decade.

In 1980, the overall birth rate for Hispanic adolescents was about double the rate for non-Hispanic whites and about four-fifths the rate for non-Hispanic blacks (194). DHHS is unable to calculate population-based birth rates for Hispanic adolescents for the years 1980 to 1988 because truly national data on Hispanic births are not currently available (207 b). However, DHHS estimated that in 1988 about 1 in 6 Hispanic-origin births was to a teenage mother in 1988, as compared with 1 in 10 white births and 1 in 5 black births (table 10-1) (207b).<sup>56</sup> In the States for which data were available in 1988, there were 73,858 births to Hispanic females under age 20 (207b). According to DHHS, the incidence of adolescent childbearing among the various Hispanic groups varies widely: in 1988, 17 percent of Mexican births and 21 percent of Puerto Rican births, as compared with 6 to 8 percent of Cuban and Central and South American births, were births to adolescent mothers (207b).

Data collected since 1980 suggest that there has been an increase in the percentage of births that are *out-of-wedlock births* among Hispanic adolescents ages 15 to 19, from 43 percent of births to these adolescents in 1980 to 52 percent in 1985 (1a). In 1986, 55 percent of births to Hispanic adolescents were *out-of-wedlock* as compared with 46 percent of births to white adolescents and 91 percent of births to black adolescents (205).

National data on Hispanic adolescent mothers who have *abortions* or who carry their pregnancies to term and give their children up for *adoption* are not available (148). In 1985, a tabulation by the Alan Guttmacher Institute of national survey data of abortion patients indicated that 50 per 1,000 Hispanic adolescent females ages 15 to 19 had abortions, as compared with 38 per 1,000 non-Hispanic whites and 53 per 1,000 nonwhites (8).

<sup>54</sup>In 1988, 30 States and the District of Columbia reported the Hispanic origin of the parents on the birth certificate; this was an increase of 7 States over the number reporting this information during the years 1983 to 1987(207b). According to 1980 census data, however, these 30 States contained 95 percent of the Hispanic-origin population(207b).

<sup>55</sup>The National Center for Health Statistics' 1988 report on natality statistics did report national origin (e.g., Mexican, Puerto Rican, Cuban, Central and South American) of Hispanic mothers, as available from the States that reported information on parents' Hispanic origin (207b). However, these data were not further disaggregate by mother's age.

<sup>56</sup>Hispanic and non-Hispanics are included in these estimates for whites and blacks (207b).

According to DHHS, the number of births to Asian and Pacific Islander adolescents in 1988 was 8,056 (207b). The lowest numbers of births to Asian and Pacific Islander adolescents were to Chinese and Japanese adolescents (243 and 295 births respectively). DHHS reported that there were 1,181 births to Hawaiian adolescents, 1,527 to Filipino adolescents, and 4,810 to “other” Asian and Pacific Islander adolescents. It is not possible to calculate accurate current pregnancy or birth rates for Asian adolescents (212).

The number of births (8,455) to American Indian and Alaska Native adolescents in 1988 was quite high in proportion to such adolescents’ representation in the population (207b). Estimates of the American Indian and Alaska Native population are difficult to make, but if, as OTA estimates, there are approximately 100,000 American Indian and Alaska Native females ages 15 to 19 (199a), the birthrate for this group would be 83 births per 1,000 population—about 1.5 times that of all U.S. adolescents ages 15 to 19 combined, almost twice (1.9 times) the birth rate for white adolescents ages 15 to 19, and three-quarters the birth rate for black adolescents ages 15 to 19.

## Prevention of Adolescent Pregnancy and Associated Negative Outcomes

Preventive programs related to adolescent pregnancy and parenting generally focus either on preventing the occurrence of adolescent pregnancy or on the provision of services designed to prevent possible negative outcomes of early pregnancy and childbearing. Both types of efforts and available data on their effectiveness are discussed below.

### Programs That May Help Prevent Adolescent Pregnancy

Over the past 20 years, there has been dramatic growth in the number and variety of interventions aimed at preventing adolescent pregnancy (147a, 148). According to Dryfoos, programs aimed at preventing adolescent pregnancy in this country are of three general types:

- those that seek to impart knowledge or influence adolescents’ attitudes about sexual behavior, human relationships, reproduction, and contraception;
- those that seek to improve sexually active adolescents’ access to contraceptives; and
- those that seek to enhance young people’s life options by providing work opportunities or other alternatives to early pregnancy and childbearing (45,148).

The first two types of programs are the most common (45). These focus on increasing adolescents’ ability to prevent a pregnancy, either by abstaining from sexual intercourse or by using effective contraceptive methods. The third type of program is intended to affect adolescents’ motivation for avoiding early pregnancy and childbearing (45).<sup>57</sup> A recent addition to motivational programs are programs that pay adolescents who have been pregnant already to avoid repeat pregnancies (e.g., 101).

Few programs to prevent adolescent pregnancy have been rigorously evaluated in methodologically sound studies (28,47a). Producing scientific evidence about what works in preventing adolescent pregnancy requires measuring changes in adolescent pregnancy rates and attributing those changes to some program or curriculum (47a). Because of the difficulty of measuring pregnancies, surrogate measures (e.g., self-reports of sexual activity, knowledge and beliefs about sexual activity, birth rates) are often used. Questions have been raised about the reliability of self-report data; about the relationships between adolescents’ knowledge, attitudes, intentions, and behavior; and about the validity of birth rates as an indicator of the effects of adolescent pregnancy prevention efforts.<sup>58</sup>

Even in programs where information on pregnancy rates is collected, observed reductions in the pregnancy rate may be due to factors other than the preventive intervention. Ruling out this possibility requires rigorous evaluation research. Rigorous evaluation research is costly, however, particularly when a longitudinal research design is required to

<sup>57</sup>Some pregnancy prevention efforts combine aspects of these three general strategies. Thus, for example, programs that aim to prevent pregnancy by enhancing young people’s life options are likely to include discussions of family life and sexuality as part of their efforts. Educational programs that seek to increase knowledge and influence attitudes may also attempt to affect adolescents’ motivations to avoid sexual activity or pregnancy.

<sup>58</sup>Declines in teenage birth rates can be due to many factors unrelated to pregnancy prevention efforts. Sweden, for example, experienced a profound decline in teenage birth rates during the late 1970s and 1980s that was due largely to an increasing tendency of women to marry and have children later in life to be able to take advantage of wider educational and career options (74a). Declining birth rates can also be due to the increased use of abortion.

determine long-term impacts on fertility behavior (88,149). Also, although experimental research can provide the most solid evidence of the impact of preventive interventions, there are often methodological or perceived ethical problems associated with creating control groups. For example, researchers may have problems deciding which adolescents should be given access to contraceptive education or health services. More frequently, methodological problems arise because prevention messages are delivered to groups that are hard to compare, or recipients of services are self-selected.

The paucity of systematic evaluations of the effectiveness of strategies for preventing adolescent pregnancy was noted in the 1987 report by the National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing (148,149). That report nevertheless concluded that there was adequate knowledge on which to base some recommendations (47a). The report stated that "because there is so little evidence for the effectiveness of the other strategies for prevention, the panel believes that the major strategy must be the encouragement of diligent contraceptive use by all sexually active teenagers" (47a,148). OTA's review suggests no reason to disagree with this recommendation, although it notes that the promotion of diligent contraceptive use by adolescents can be a complex task. The National Academy of Sciences also recommended pursuing the strategies of delaying the initiation of sexual intercourse among adolescents and enhancing "life options" for disadvantaged teenagers (47a,148). These strategies also seem justified by OTA's review of available literature, so long as the strategy of promoting effective contraceptive use among sexually active adolescents is not ignored.

Published information concerning the impact of programs that emphasize education, programs that provide contraceptives to adolescents, and programs to seek to develop adolescents' life options on pregnancy rates, sexual activity, or other outcomes is presented in the discussion that follows.

### **Programs That Emphasize Education**

Education about human sexuality, once regarded as the responsibility of parents and guardians, is now commonly provided in junior and senior high school classrooms, as well as in some elementary schools (86). A study using retrospective data from the 1984 NLSY found that about 60 percent of the females

and 52 percent of the males in the sample (all of whom were between the ages of 19 and 27 at the time of the survey) had taken a sex education course in school; the percentages were somewhat lower for blacks (57 percent for females and 49 percent for males) and Hispanics (50 percent for females and 46 percent for males) in the sample (129). A study using data from the 1982 National Survey of Family Growth found that 64 percent of the sample of females ages 15 to 19 had received school-based instruction about contraception (41).

According to Kirby, the content of sex education courses varies to some extent by grade level (107,148). High school courses typically cover a wider range of topics than courses at the junior high level. In junior high, many courses cover anatomy, physical and psychological changes of puberty, reproduction, dating, responsibilities in interpersonal relations, and STDs. Some junior high schools also cover contraceptive methods. High school sex education courses typically include topics covered in junior high plus teenage sexuality, pregnancy, and childbirth. About three-fourths of the high school courses cover family planning, contraceptive methods, and abortion.

Instruction in values as a part of sex education varies and is somewhat controversial (148). Some programs have emphasized enabling adolescents to make decisions about sexual matters in terms of their own values and beliefs. Other programs have used other approaches such as teaching what are regarded as "basic universal values." Recently, many schools have begun teaching about sexuality in the broader context of family life education, which includes attention to the role and responsibilities of families and often emphasizes values (148).

The goals of school-based sex or family life education are not always clearly specified. Some courses are designed primarily to improve students' knowledge and understanding about how the body functions and about human sexuality (86). Some courses are also designed to help students understand the social context of sexuality, including relationships with others and the social, moral, and ethical restraints on its expression (86). Other goals may be to promote rational and informed decision-making about sexuality, to increase knowledge of reproduction to reduce sexual activity, or to reduce pregnancy (148). Most schools offer brief (10 hours or less) sex education programs that focus on the

basics of anatomy, human reproduction, and physical and psychological changes during puberty; these are often integrated with other courses such as health or physical education, home economics, or biology (7,148). Very few schools offer comprehensive sex education programs of more than 40 hours (148), and Kirby estimates that less than 10 percent of all students take comprehensive sex education courses (107).

Information about the effects of school-based sex education/family life education courses on adolescents' knowledge, attitudes, sexual behavior, and pregnancy rates is presented below.<sup>59</sup> Also presented below is information on the effects of a variety of other programs that emphasize education:

- school-based decisionmaking, assertiveness, and life skills training programs that attempt to help adolescents make responsible decisions about sexual activity by teaching them problemsolving, decisionmaking, or interpersonal communications skills;<sup>60</sup>
- programs that emphasize communication between parents and their adolescent children for the purpose of encouraging young people to postpone sexual activity;
- community-based education efforts such as media campaigns that focus on imparting information about the negative consequences of early sexual activity, pregnancy, and parenting; and
- a multimodal pregnancy prevention program in that combined school- and community-based educational efforts with the provision of contraceptives through a school nurse.

**School-Based Sex Education/Family Life Education**—In 1988, researchers at the Alan Guttmacher Institute conducted a national survey of all State

education agencies and 203 of the largest school districts in the United States (104). Forty-nine State education agencies plus the District of Columbia and 162 local school districts responded to the survey. Forty States plus the District of Columbia and the vast majority of the 162 responding school districts either required or encouraged some form of sex education in the schools (104).

Researchers at the Alan Guttmacher Institute found that the topics covered in sex education courses varied, as shown in table 10-4. About two-thirds of the States and four-fifths of the local school districts said they required or encouraged schools to teach about prevention of pregnancy (104). More States and local school districts said they required or encouraged AIDS education, STD education, or teaching abstinence from sex than said they required or encouraged teaching prevention of pregnancy (104). About four-fifths of the States and nine-tenths of the local school districts said they required or encouraged schools to teach abstinence. Abstinence from sexual intercourse is, of course, one means of preventing pregnancy. Some sex educators believe, however, that relying exclusively on abstinence as a means of preventing pregnancy and the transmission of STDs is unrealistic (74a). With American females now starting to menstruate on average at age 12½ and many waiting longer to get married (74a), the period prior to marriage in which people are able to have and are interested in having sex is likely to be prolonged.

*Evaluations of Sex Education Based on Data From National Surveys*—As shown in table 10-5, evaluations of the effectiveness of sex education based on data from national surveys of young people have been performed by Zelnik and Kim, by Dawson, and by Marsiglio and Mott. Zelnik and Kim's study and Dawson's study found that expo-

<sup>59</sup>These programs are known variously as sex education or family life education programs, with family life education apparently being the more current and encompassing term (181a). According to a recent review by the Southern Center on MolesCent Pregnancy Prevention, *family life education* is "a curriculum, program or framework for helping young people make responsible choices and decisions by providing accurate and age-appropriate information about human sexuality, and by exploring the attitudes, behaviors, and value systems that shape the development of healthy sexuality" (181a). According to the Center's review, "The demands and expectations of family life education today far exceed those of sex education in decades past. . . No longer just human anatomy and reproductive functioning, school-based [family life education] programs became forums for promoting positive health practices, critical thinking, and values clarification. Classrooms [have become] laboratories for building skills in communication, responsible decision-making, and assertiveness" (181a). Consistent with the Center's analysis, a mid-1980s survey of States and large school districts conducted by the Alan Guttmacher Institute defined sex education as "instruction in the public schools about human sexual development, the process of reproduction and related topics" (104). However, as noted in the text, it is often difficult to determine from the evaluation literature just what takes place in any set of education programs related to human sexuality (see 104). Not all programs termed sex education programs are restricted to a reproductive and "facts only" approach that may have characterized the sex education of the past, however (181a), and not all "family life" education programs fulfill all the demands and expectations that many educators and parents place on them.

<sup>60</sup>Life skills and decisionmaking programs by some definitions maybe included under sex education or family life education. They are discussed separately from sex education programs here in an attempt to distinguish their effects from education-based programs that are strictly didactic.

**Table 10-4—State Education Agencies and Large School Districts' Position on the Teaching of Selected Topics in Sex Education, 1988a**

Position on teaching	Percentage distribution by tepid <sup>c</sup>			
	Abstaining from sex	Prevention of pregnancy <sup>c</sup>	AIDS education <sup>c</sup>	Other STD education
<b>State education agencies' position:</b>				
Require/encourage . . . . .	82%	66%	94%	88%
Discourage/prohibit. . . . .	0	4	0	0
No position . . . . .	18	30	6	12
<b>Local school districts' position:</b>				
Require/encourage . . . . .	91%	81%	96%	93%
Discourage/prohibit. . . . .	0	4	1	4
No position stated.....	9	16	4	6

<sup>a</sup>The data presented in this table were obtained in a national survey of State education agencies and the 203 largest school districts in the United States, conducted by researchers at the Alan Guttmacher Institute in 1988. Forty-nine States (all but South Dakota) and the District of Columbia and 162 (80 percent) of the school districts responded to the survey.

<sup>b</sup>Percentages may total more than 100 because of rounding.

<sup>c</sup>Topics listed below areas they appeared in the survey questionnaire. The topics were not specifically defined.

<sup>d</sup>It is interesting to note that some States do not consider AIDS or STD education sex education. Thus, more States support AIDS education (46 States and the District of Columbia) or STD education (43 States and the District of Columbia) than require or encourage "sex education" (40 States and the District of Columbia).

SOURCE: Office of Technology Assessment, 1991, based on data from A.M. Kenney, S. Guardado, and L. Brown, "Sex Education and AIDS Education in the Schools: What States and Large School Districts Are Doing," *Family Planning Perspectives* 21(2):56-64, 1989.

sure to a sex education course had little or no consistent effect on the likelihood that adolescents would engage in sexual activity (41,232). Marsiglio and Mott found that exposure to sex education was positively (but weakly) associated with initiation of sexual activity at ages 15 and 16 but not at ages 17 and 18 (129). For 15- and 16-year-olds, exposure to sex education was a less important determinant of the initiation of sexual activity than other factors. Thus, the evaluations of sex education by these investigators suggest that traditional sex education<sup>61</sup> generally neither encourages adolescents to initiate sexual activity nor encourages them to delay it. One of the problems these investigators noted, however, was that sex education programs were frequently offered to adolescents who had already become sexually active. Marsiglio and Mott found, for example, that half of the females and two-thirds of the males under age 19 had engaged in sexual intercourse before receiving formal sex education (129).

In terms of getting adolescents to use contraceptives, Zelnik and Kim found that females who had taken a sex education course were more likely to report use of birth control at first intercourse than

those who had not (232). The studies by Dawson and by Marsiglio and Mott also found that young females exposed to sex education were more likely to report use of contraceptives when they became sexually active, especially if they received instruction in both the mechanisms of pregnancy and contraceptive use prior to initiating sexual activity (41,129).

Zelnik and Kim found that sexually active females who had taken a sex education course were less likely than who had not received sex education to report having been pregnant (232); however, no verification (e.g., hospital records) of these reports of avoiding pregnancy was available. Dawson found that exposure to sex education had no consistent effect on responding females' likelihood of becoming pregnant (41).

The validity of conclusions from the evaluations of sex education based on national surveys of students is open to question. These studies use data relying on students' self-reports and retrospective recall for information about the timing and content of sex education and the incidence of sexual activity and pregnancy. The studies also combine data from

<sup>61</sup>OTA has assumed that the sex education programs delivered to individuals participating in the national surveys were "traditional" sex education, that is, they did not include major life-skills decisionmaking or life options components. In fact, as noted below, one problem with studies based on data from national surveys is that such studies are, in effect, averaging a potpourri of programs that differ in content, intensity, timing, goals, and biases. A conclusion that such programs did not include relatively new components such as life-skills decisionmaking or life options components seems justified in light of the fact that all studies used data on sex education programs developed either early in or before the 1980s (41,129,232).

**Table 10-5-Evaluations of School-or Community-Based Sex Education, Life Skills Training, and Other Programs**

Study*	Program characteristics	Participant characteristics	Evaluation method	Findings
<p>Evaluations of sex education based on national surveys: Zelnic and Kim, 1982</p>	<p>Various-course related to sex education.”</p>	<p>Nationally representative sample of females ages 15 to 19 in 1976 or 1979, and males ages 17 to 21 in 1979, living in Standard Metropolitan Statistical Areas. N = 2,193.</p>	<p>Telephone survey; included questions on sexual activity, use of contraceptives, premarital pregnancy, and sex education courses (including course content).</p>	<p>Exposure to a sex education course was not significantly associated with engaging in sexual activity. Among sexually active females, those who had taken a sex education course were less likely to have been pregnant than their peers who had not taken a sex education course; among sexually active females in the 1979 survey, those who had taken a sex education course were more likely to use birth control at first intercourse than those who had not.</p>
<p>Dawson, 1986</p>	<p>Various-formal instruction in schools or organized community programs.</p>	<p>participants in 1982 National Survey of Family Growth. N = 1,888 females ages 15 to 19.</p>	<p>Analyzed self-report data on whether respondents had received formal sex education (included questions about content of sex education courses) and on initiation of intercourse, knowledge and use of contraceptives, premarital pregnancies.</p>	<p>Exposure to formal sex education had no consistent effect on responding females' likelihood of initiating sexual intercourse or becoming pregnant. Sexually active females who had received sex education reported knowing how to use more contraceptive methods than sexually active females who had received no instruction. Among females who had ever used birth control, those who reported receiving education on how pregnancy occurs and on how to use contraceptive methods were more likely to report using birth control at first intercourse than those who had not received such information in sex education courses.</p>
<p>Marsiglio and Mott, 1986</p>	<p>Various-course related to sex education.”</p>	<p>N = 6,015 males and 6,054 females, ages 19 to 27 at time of interview in 1984. Participants in National Longitudinal Surveys of Labor Market Experience-- Youth Cohort (NLSY) 1979-84.</p>	<p>Longitudinal analysis of retrospective self-report data.</p>	<p><b>Males in the sample were less likely than females to have had exposure to a sex education course before engaging in sexual intercourse. Among female respondents, prior exposure to formal sex education was positively (but relatively weakly) associated with initiation of sexual activity at ages 15 and 16 (but not at ages 17 and 18), but other factors (infrequent church attendance, parental education of less than 12 years, black race) were stronger determinants of females' first intercourse at 15 to 16 years. Among female respondents ages 17 and 18 in 1982, those who had taken a sex education course were more likely to use effective birth control methods than those who had never taken such a course.</b></p>

**Table 10-5-Evaluations of School- or Community-Based Sex Education, Life Skills Training, and Other Programs-Continued**

Study <sup>a</sup>	Program characteristics	Participant characteristics	Evaluation method	Findings
<p><b>Evaluation of various types of exemplary sex education programs:</b> Kirby, 1984</p>	<p>Various-programs in 9 sites: peer education, parent-child, school-based, community conferences; 5-session to year-long programs</p>	<p>Variou-primarily high school students; matched comparison groups included in some sites.</p>	<p>Questionnaires administered to participants 3 times: pretest, posttest, and 3- to 5-month followup; assessed knowledge, attitudes, and sexual behavior. Estimates of pregnancy rates obtained in some locations.</p>	<p>Most programs significantly increased participants' knowledge about conception and cent reception; greater knowledge gains were found in classes with younger students; longer, more comprehensive programs did not produce greater knowledge increases than short-term programs. Parent/child programs increased parents' comfort in discussing sex with their children, and increased the frequency of self-reported parent-child communication. The programs had no significant or consistent effects on participants' initiation of sexual activity or contraceptive use. In the 4 sites where pregnancy data were collected, the programs had no impact on pregnancy rates.</p>
<p><b>Evaluations of school-based decisionmaking, assertiveness, and life skills training programs:</b> Schinke, Blyth, and Gilchrist, 1981</p>	<p>Life Skills Counseling (LSC) program: In 14 50-minute group sessions offered instruction in reproductive biology and in use of contraceptive methods; problem-solving training; and communication and assertion skills training.</p>	<p>N = 36 high school sophomores (19 females, 17 males).</p>	<p>Students were randomly assigned to one condition of a Solomon 4-group design (pretest, training, and posttest; training and posttest; pretest and posttest; and posttest only). Evaluation included tests of problem-solving; videotapes of role-played interactions involving sexual decisionmaking; measures of attitudes toward contraceptive use, self-reported birth control use, knowledge of reproduction and birth control.</p>	<p>LSC program participants had higher levels of knowledge about sexual facts and probabilities, better problem-solving abilities, and better assertion skills at posttest than controls. At 6-month followup, LSC participants were more favorably disposed to birth control use and reported better contraceptive use than controls.</p>
<p>Barth, Fetro, Leland et al., in press</p>	<p>Life Skills Counseling (LSC) program: See above</p>	<p>Pretest N = 1,033 high school students, with 586 in the treatment group and 447 in the control group (who took their school's standard sex education course). Posttest N = 832 students. 6-month followup = 722 students.</p>	<p>Questionnaires were administered to participants 3 times: pretest, posttest, and 6-month followup. These assessed knowledge, intentions to avoid unprotected sexual intercourse, current and past use of birth control; observational ratings of teacher effectiveness in implementing the program; parental survey.</p>	<p>LSC participants' knowledge about birth control and reported intentions to avoid unprotected sexual intercourse improved, and improvement was maintained at 6-month followup. LSC participants reported increased frequency of birth control use; no change in rates of sexual activity or pregnancy. Students who started having sex after the program had lower rates of sexual activity and were more likely to report using condoms.</p>

Continued on next page

**Table 10-5-Evaluations of School- or Community-Based Sex Education, Life Skills Training, and Other Programs-Continued**

study <sup>a</sup>	Program characteristics	Participant characteristics	Evaluation method	Findings
Howard, 1985; Howard, 1988; Howard and McCabe, 1990	<b>Postponing Sexual Involvement (PSI) Program</b> , a public-school-based program, offered basic factual information regarding reproduction and contraceptive use; provided decisionmaking still training, "social inoculation" and assertiveness training in 10 classroom periods. It was taught by trained high school (11th and 12th graders) students and staff from a hospital-based teen clinic.	<b>N = 536, 99% black, mostly low-income, drawn from hospital's service population. Included 8th graders from public schools receiving the PSI intervention (N = 395) and a comparison group of 8th graders (N= 141) from other school systems in the same metropolitan area.</b>	<b>PSI program participants and comparison</b> group participants were interviewed by telephone at beginning, middle, and end of 8th grade; followups were conducted at beginning and end of 9th grade were questions on sexual behavior included in a larger survey of health habits.	Among students who had not been sexually active before the programs began (N= 365), students in PSI schools were significantly less likely to have become sexually active by the end of the year and continued to be less likely to become sexually active through the end of the next year (i.e., the end of the 9th grade) than comparison group students. Among students who were already sexually active when the programs began, PSI had no effect on their frequency of sexual activity. Although more sexually active students in PSI schools than in comparison schools reported using contraceptives, it is unclear if the reported difference was statistically significant.
Christopher and Roosa, 1990	<b>Success Express Program</b> , a Title XX Adolescent Family Life act-funded program consisting of 6 sessions that focused on self-esteem, communication skills peer pressure, and teaching the value that sex should be confined to marriage. Program conducted in 8 sites, of which were schools, and 3 of which were unidentified community sites. Control groups were classes in the 5 schools that did not receive the intervention.	N = 191 participants, 129 controls, all middle school-aged, average age 12.8 years, 61% female, majority Hispanic (69%) or black (21%), most from low-income families.	Questionnaires on self-esteem, quality of family communication, and premarital sexual behaviors and attitudes were administered immediately before the first intervention session and 6 weeks later at the final session. Experimental participants were more advanced in grade level than the comparison group; this factor was statistically controlled in the analysis.	Only <b>change was that participants, especially males, reported more engagement</b> in pre-coital sexual activity than controls did (e.g., touching genitals). Interpretation of results was confounded by the fact that 41% of participants (v. 30% of controls) failed to complete the post-test questionnaire; these were considered program dropouts. Dropouts were more sexually active and more likely to believe in sex at younger ages than were non-dropouts, suggesting that the abstinence-based program was not appealing to large segments of the target population.

**Table 10-5--Evaluations of School- or Community-Based Sex Education, Life Skills Training, and Other Programs--Continued**

Study <sup>a</sup>	Program characteristics	Participant characteristics	Evaluation method	Findings
Roosa and Christopher, 1990	Same as Christopher and Roosa, 1990 but in 20 sites	N = 399, 129 controls, all early adolescents, <b>average age 13, 57% female, majority Hispanic (64%) or black (12%), family income not provided. Participant sites included public and parochial schools, community centers, Indian reservations, and Police Athletic League branches. Control sites were classes in participant or neighboring schools.</b>	<b>Same as above, but used age as a covariate (controls were older).</b>	No desired changes in attitudes toward abstinence or in sexual behaviors. Incongruously, control group significantly increased age at which they expected to have sex for the first time by 1 1/2 years, compared to a 1/2 year increase for participants. Study dropout rate was higher among participants (34%) than for controls (24%).
Eisen, Zellman, and McAlister, 1990	Sexuality and contraceptive education program based on health belief model and social learning theory. Program combined lectures, simulations, leader-guided discussions, and role-playing (including gender-role reversals). Experimental programs had more active adolescent participation than comparison programs. Experimental and comparison programs based on traditional sex education model were delivered in 7 varied settings, including schools, county health departments, summer work-study programs.	N = 1,444 at baseline, 1,328 at immediate followup, 888 at 1-year followup. 13-to 19-year-olds included, but 96% were 17 or younger; 52 percent female; mostly low socioeconomic status; 15% white, 24% black, 53% Hispanic, 8% Asian; 42% did not live with 2 parents; <b>62% had had previous sex education experience; 36% had had sexual intercourse. Differences by experimental and comparison group not provided.</b>	Using multivariate analysis to control for background variables, and excluding Asians from the analysis because of language issues, analyzed changes over time and between experimental and comparison groups, based on self-reports of sexuality-related knowledge, beliefs and behavior, including knowledge of and use of effective contraception; statistically controlled for some baseline and other (e.g., demographic) factors.	At immediate followup, there were significant differences between experimental and comparison adolescents in sexual knowledge but no significant <b>changes in health beliefs. At 1-year followup, there were significant differences between experimental and comparison adolescent males (but not females) in maintenance of abstinence, and significant differences in consistent use of effective contraceptives for females (but not males) who initiated intercourse in the course of the study and</b> for males who had already been sexually active. Noted cumulative effect of <b>prior sex education. The analysis was somewhat flawed</b> in that all comparisons were made at the individual level of analysis, although some of the randomizations had been done at the group level of analysis.

Continued on next page

**Table 10-5-Evaluations of School- or Community-Based Sex Education, Life Skills Training, and Other Programs--Continued**

study”	Program characteristics	Participant characteristics	Evaluation method	Findings
Weed and Olsen, 1990	Sex Respect Program: Public-school-based program; classroom instruction, student presentations in the community; and publications, videos, and other materials made available to school libraries.	Questionnaires were administered to N = 4,000 students, 2,900 students who had been in the Sex Respect Program previously in junior high schools which implemented the program on a schoolwide basis and 1,100 students who were a matched comparison group. Data reported were from 1988-89 and included students who had not received the program (comparison group), students who had just received the curriculum and were evaluated pre and post, and students who were being followed up; students were evaluated at various sites in the Midwest.	Questionnaires were administered to students in the Sex Respect Program; pre and post curriculum followup and every year after for 3 years; this evaluation reported the findings for 1988-89, which included students who did not receive the curriculum, students who had recently received the curriculum and who were given pretest and posttest questionnaires, and students who had received the curriculum in the past and were being followed up.	Sex Respect Program participants’ attitudes and values about the benefits of delaying sexual activity were strengthened immediately after receiving the curriculum and maintained to a lesser extent over a 2-year followup period. Differences in sexual activity rates were minimal and nonsignificant at 2-year followup; however, decreases in levels of sexual activity were larger and more enduring for girls, for younger students, and for those who started the program as virgins.

<sup>a</sup>Full citations are listed at the end of this chapter.

SOURCE: Office of Technology Assessment, 1991.

students involved in many different types of sex education programs; these aggregate data may obscure results achieved by a specific program. Thus, the inability of gross evaluations of school-based sex education programs to demonstrate a significant impact on targeted behaviors may be a result of the content, quality, and intensity of the specific programs offered rather than the intervention strategy itself. The national surveys on which the three evaluations described above were based were not really able to disaggregate the impact of specific types of sex education programs on adolescent pregnancy because they averaged the findings of a variety of programs that differ from one another. It is unclear from these surveys what type of sex education class the adolescents (or adults) participated in. Even when questions were asked of survey respondents about the format and emphasis of sex education classes, the actual implementation of the curricula was not observed by the evaluators. These and other problems associated with the nature of the data collected (e.g., the use of retrospective data) call into question the validity of the conclusions drawn from these studies,

*Evaluation of Educational Programs Based on Observations of Multiple Program Types—Kirby* evaluated several different types of sex education programs in nine sites (see table 10-5). The programs, which Kirby selected for evaluation because they were believed to be exemplary, represented a range of different program types (e.g., a peer education program, a parent-child program, as well as more traditional classroom-based didactic programs) and lengths (107). Kirby cautions, however, that it is not prudent to generalize his findings regarding these programs to all sex education programs.

Kirby's study was unusual in its attempt to be relatively methodologically rigorous (e.g., using pretest and posttests of knowledge, attitudes, and behavior, and matched comparison groups) and to measure relatively long-term (3- to 5-month) effects of the programs (107). Student and parent evaluations of the programs were also collected. In addition, relatively objective (i.e., non-self-report) pregnancy and birth data were obtained from clinics at four of the sex education sites chosen.

Most of the educational programs evaluated by Kirby significantly increased participants' knowledge about human sexuality, especially among

younger students (107). (Kirby's study is controversial, however, because it found that longer, more comprehensive programs did not produce greater knowledge increases than short-term programs.) Overall, both student and parent evaluations of the programs were extremely positive, findings in themselves which Kirby cites as reasons to continue offering sex education programs (107).

None of the educational programs evaluated by Kirby had any measurable effects on participants' sexual activity, contraceptive use, or pregnancy rates (107). Thus, Kirby's findings based on a range of exemplary sex education programs delivered in the 1980s differed somewhat from the studies based on national survey data, in that the earlier studies found that exposure to sex education was associated with greater contraceptive use (41,129) and fewer self-reported pregnancies (232).

Kirby notes that the demands placed upon sex education are more formidable than those placed on other courses (107). As he says, most classes are not evaluated using measures of behavior outside the classroom: for example civics classes are not evaluated by measuring students' later voting behavior; English classes are not evaluated by measuring students' improvements in their speech and thinking outside of class (107,107a). Sex education programs, on the other hand, are expected not only to increase students' knowledge about sexuality and related topics but also to effect changes in behaviors that are subject to many influences outside the classroom.

School-Based Decisionmaking, Assertiveness, and Life-Skills Training Programs—School-based decisionmaking, assertiveness, or life-skills training combine the provision of sex education with training in problem-solving, decisionmaking, or interpersonal communications skills (86). Some programs of this type have no stated position on the appropriateness of engaging in or abstaining from sexual activity and focus instead on helping young people identify their own values (148). Other programs explicitly communicate the value of abstinence and postponement of sexual activity and emphasize helping young people develop the skills to resist pressures to become sexually active.

It may be important to note at this point that some observers of sex education policy see an inherent conflict in sex education that provides a "double message—that is, that it is necessary and appropri-

ate to explicitly encourage students not to have sex but also to encourage them to use contraception if they do have sex (107a). As Kirby notes, however, educators are beginning to recognize that adults commonly tell adolescents that they should not do certain things (e.g., drink alcohol, take courses above their level of competence), but that if they do, they should take certain precautions (e.g., drink very little, and not drive after drinking or with someone who has been drinking; seek tutoring). Thus, increasingly, according to Kirby, “this double message is viewed as a realistic approach to a difficult problem and is losing some of its negative press” (107a).

One school-based intervention that gives adolescents factual information about conception and contraception and teaches decisionmaking and assertiveness skills without emphasizing a specific set of values regarding sexual activity is the *Life Skills Counseling (LSC) program* developed at the University of Washington (see table 10-5). The LSC program provides adolescent participants with factual information about human reproduction and contraception; it also provides training in decision-making skills related to dating, sexuality, birth-control, abortion, childbearing, and parenthood to help adolescents clarify their own values and make responsible decisions (180,181). The LSC program also teaches participants communication skills and strategies for resisting peer pressures to engage in sexual activity, but it presents such resistance as one of several possible alternatives rather than as the best alternative.

In 1981, Schinke and colleagues performed an initial evaluation of the LSC program that showed promising results in terms of getting students not to engage in unprotected sexual intercourse (see table 10-5). This evaluation among a group of 36 high school sophomores (19 females and 17 males) found that students who participated in the LSC program had more positive attitudes toward birth control use and greater knowledge of sexual facts, myths, probabilities, and sequelae than a comparison group of students who did not participate (180). LSC participants also demonstrated significantly better communication skills and better abilities to resist pressure from “partners” to engage in unprotected sexual intercourse. Six months after the end of the LSC course, students who had participated in the LSC program reported greater use of birth control methods and fewer instances of unprotected sex than

comparison students (73,179,180). Schinke and colleagues’ evaluation did not obtain information on rates of sexual activity or pregnancy among the students, so the LSC program’s impact on the incidence of sexual intercourse or pregnancy is unknown. Also, because the LSC approach was tested on students who were asked to participate on a voluntary basis, there is a high probability of selection bias influencing the outcomes. Thus, further information on the LSC’s program’s applicability for larger, more diverse groups of adolescents is needed.

Recently, Barth and colleagues evaluated a large-scale program using the LSC model in 13 high schools in California (see table 10-5). For Barth and colleagues’ evaluation, a diverse group of more than 1,000 sexually active and inactive adolescents was recruited, and in most cases, the students were randomly assigned to either an LSC curriculum or to their school’s standard sex education curriculum (15). (In some schools, when there were classes of unequal size, larger classes were assigned to the LSC group.)

Barth and colleagues found that students in the LSC program demonstrated greater knowledge about contraception than students who received their school’s standard sex education curriculum did; students in the LSC program also reported increasing the frequency of their use of birth control methods and reported having more positive intentions of avoiding unprotected intercourse (15). Barth and colleagues also found that students who received the LSC curriculum and who started having intercourse after the program began were more likely than students in the control group to report using a condom. Overall, however, Barth and colleagues found that students in the LSC group did not have lower rates of sexual activity or pregnancy than students in the control group.

In 1990, Eisen, Unman, and McAlister performed an evaluation of a *sexuality and contraceptive program based on the health belief model and social learning theory* (see table 10-5). This program involved lectures, simulations, and leader-guided discussions (51). The intervention was unusual in that it was at least in part, an explicit test of a participatory model of sexuality education. Social learning theory predicts that successful enactment of a behavior (e.g., convincing a partner to delay having sex) will encourage that behavior in the

future. In contrast, many educational interventions rely on lectures or at most discussion of sex-related issues.<sup>62</sup> The evaluation showed that this more participatory approach can have some success, in that participating adolescent males (but not females) were more successful than comparison males in maintaining abstinence, and participating adolescent females (but not males) were more successful than comparison females in using contraception effectively (51). Like many other evaluations, this evaluation was somewhat flawed in that it relied on self-report data, rather than on observations of changes in pregnancy rates, to test outcomes.

The *Postponing Sexual Involvement (PSI) program* developed at Emory University in Atlanta, Georgia, a prominent example of the abstinence-promoting approach to decisionmaking and assertiveness training, was part of a larger classroom-based sex education program carried out in the Atlanta public schools (see table 10-5). The PSI program sought not only to provide adolescents with factual information on human sexuality but also to help them recognize and respond to social pressures (e.g., from advertising) and peer pressures to engage in sexual activity through assertiveness training and peer counseling (93,94,95).

Howard and colleagues performed a large-scale evaluation of the PSI program in which they compared sexual knowledge, sexual activity, and pregnancy rates among students in the Atlanta public schools who were involved in the PSI program and students from county schools in a neighboring area where the PSI program was not offered (93,94,95). Their sample included nearly 600 mostly black, low-income eighth graders, 395 of whom received the PSI intervention and 141 of whom did not. Howard and colleagues found that the PSI program seemed to be effective in helping young adolescents (especially females) delay sexual activity (95). Although they found that the PSI program had no effects on rates of pregnancy or frequency of sexual activity among participants who were sexually active before the program started, they did find lower frequencies of sexual intercourse and fewer pregnancies among PSI participants who became

sexually active after the program had started (93,94,95). The decreases in pregnancy rates need to be interpreted with caution, though, because small sample sizes were used to make comparisons and the statistical significance for these differences in rates was not reported.

In another set of evaluations of an abstinence-only pregnancy prevention program involving the teaching of communication skills, Christopher and Roosa found disappointing results (see table 10-5). A six-session program for middle-school adolescents that focused on self-esteem, communication skills, peer pressure, and teaching the value that sex should be confined to marriage resulted in an *increase in* precoital sexual activity (i.e., not in sexual intercourse) in program participants, but not in the control group (36a). Another evaluation of this abstinence-only pregnancy prevention program found that none of the desired changes in attitudes or behavior occurred for the sample as a whole or for the subgroup who had never had sexual intercourse (172a).

An example of a school-based program that combines assertiveness skills with values clarification is the *Sex Respect Program* for young adolescents in the Midwest (see table 10-5). The goal of the Sex Respect Program was to reduce participants' sexual activity and pregnancy rates by improving their awareness and recognition of the potentially harmful consequences of early sexual activity, by improving skills to help them resist pressure to be sexually involved, and by preventing early sexual activity (220). The Sex Respect Program planned to infuse regular education programs for young adolescents with a greater emphasis on saying "no" and also aimed to foster peer pressure on behalf of self-restraint from sexual activity. There was some emphasis on disseminating information more generally in the community.

Entire schools administered the Sex Respect curriculum in mandatory junior high school classes. For an evaluation by Weed and Olsen, students participating in the Sex Respect Program were asked to complete questionnaires before and after their

<sup>62</sup>The difference between this participatory program and other participatory life-skills interventions is not immediately clear. Life-skills training typically has a participatory component so that adolescents can learn strategies and skills for various aspects of surviving, living with others, and succeeding in a complex society. Social learning theory-based interventions are typically based on self-efficacy theory, which focuses intensively on one behavior at a time. The evaluators of the social learning theory-based program were not able to tell how well the theoretical aspects of the program were actually implemented (5 1). In addition, the intervention was partially based on the health belief model of changing health-related behaviors. The evaluation found that health beliefs did not change, however (5 1).

participation (220). Weed and Olsen found that students' attitudes and values about the benefits of delaying sexual activity appear to have been strengthened by the Sex Respect Program, because more students responded positively to questions like "Do you think there are benefits to waiting until marriage to have sex?" after receiving the Sex Respect curriculum. Weed and Olsen found that differences in sexual activity rates among program participants were minimal and nonsignificant at 2-year followup; however, decreases in levels of sexual activity were larger and more enduring for girls, for younger students, and for those who started the program without ever having had sexual intercourse.

**Parent-Child Communication Programs—**Some programs supported by the Office of Adolescent Pregnancy Programs in the Office of Population Affairs in DHHS and other organizations<sup>63</sup> seek to prevent or delay early sexual activity among young adolescents by improving parent-child communication (148). Such programs are based on the belief that parents prefer and will promote sexual abstinence and responsible sexual decisionmaking among their children (86). Many family communication programs focus on basic interpersonal communication techniques (e.g., taking time to establish relationships, recognizing natural communication barriers focusing on the adolescent's concerns) to enable parents to communicate more effectively with their adolescent children (148).

Evaluations by Kirby and others of parent-child communication programs indicate that such programs do increase the frequency of communications between parents and adolescent children about sex, as reported by parents and children, and increase the comfort of both with such discussions (60,107,107a, 186a). So far, however, there have been no assessments of the long-term impact of on parent-child communication patterns, and there are few data on the effect of parent-child communication programs on adolescents' sexual behavior or unintended pregnancy (148). Kirby, for example, did not find that parent-child communication programs reduced adolescents' sexual behavior or unintended pregnancies (107).

**Community-Based Education Programs--**Community-based education programs for pregnancy

prevention can take a number of forms. In recent years, for example, community organizations (e.g., churches, youth organizations such as Boys' and Girls' Clubs) have developed teen theater projects to offer pregnancy and contraceptive information to diverse groups of adolescents or to reinforce messages about the values of abstinence from sexual intercourse and responsible sexual decisionmaking (148). Such programs usually involve adolescents in developing scripts and producing either live performances or radio and television pieces targeted to other adolescents. No evaluation data to indicate the effectiveness of such projects in increasing adolescents' knowledge or affecting their sexual behavior are available (148).

Some communities have experimented with media campaigns to raise consciousness about the issues of adolescent pregnancy and provide outreach to adolescents in need of support or services (148). Some have used public service announcements, mostly on the radio, to encourage sexual responsibility or provide information about local resources (e.g., hot line or family planning clinic telephone numbers). These efforts have not been evaluated in terms of their impact on adolescents' sexual behavior.

In Los Angeles, the Center for Population Options has initiated a media project intended to serve as a factual resource for television programmers and to encourage commercial television to depict more responsible male-female relationships (148). Project staff report that television programmers have been slow to change their approach to sexuality issues. Network executives consistently avoid subjects such as contraception and abortion which are not considered entertaining and are likely to offend a segment of their viewers.

**A Multimodal Pregnancy Prevention Program That Included School- and Community-Based Education—**The *School/Community Program for Sexual Risk Reduction Among Teens*, a community-wide pregnancy prevention effort in South Carolina, took, in retrospect, a very broad and comprehensive approach (see table 10-6). Its most 'programmatically' aspect was its attempt to coordinate the messages adolescents receive from their schools, churches, homes, community agencies, and the public media.

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<sup>63</sup>A member of OTA's Adolescent Health Youth Advisory Panel, for example, participated in a parent-child communication program on sexuality issues that was sponsored by her local Catholic church (200).

Table 10-6—Evaluation of a Multimodal Pregnancy Prevention Program That Included School- and Community-Based Education

Study <sup>a</sup>	Program characteristics	Participant characteristics	Evaluation method	Findings
Vincent, Clearie, and Schluchter, 1987	School/Community Program for Sexual Risk Reduction Among Teens: Implemented in one rural South Carolina community; school teachers K-1 2 were trained to Incorporate sex education units into existing curricula (e. g., biology, science, social studies); church leaders and parents were trained in sex education; <b>local media</b> were involved in disseminating program messages regarding postponing the onset of sexual intercourse, consistent use of effective contraception among sexually active adolescents.	Females <b>ages</b> 14 to 17 In the target community and a comparison group from demographically similar portion of the country in which the target community was located, as well as from 3 other socio-demographically similar counties In the same State.	Compared <b>estimated</b> pregnancy rates (calculated from local vital statistics data regarding live births, fetal deaths, and induced abortions) within target group (i.e, 14- to 17-year-old females) for years pre-intervention and post-intervention, and compared changes In pregnancy rates from pre to post In target community and comparison areas.	In the first year following the Intervention, pregnancy rates among the target group fell from 61.7 pregnancies per 1,000 population to 25.1 per 1,000, while pregnancy rates declined only slightly (from 63.1 pregnancies per 1,000 population to 58.8 per 1,000) in the comparison portion of the target county, and increased In the 3 comparison counties. In the second year postintervention, pregnancy rates in the target area remained at the same low level, while rates continued to decline slightly in the comparison portion of the county, and continued to increase in all 3 comparison counties.
Koo and Dunteman, 1990	Reanalysis of Vincent et al., 1987 above, plus consideration of effect of distribution of contraception by school nurse and school-linked health center.	Same as Vincent et al. in the target community, and a comparison group of 7 counties with initial similar estimated rates of adolescent pregnancy.	For number of 14-to 17-year-olds, used published target group denominator as in Vincent et al., and State projections for comparison group denominators. In calculating estimated pregnancies, added certain proportions of live births and abortions occurring to <b>18-year-olds</b> that could be estimated to have been conceived when they were still 17, for a "pregnancy conception rate." Learned about pregnancy prevention activities and programs in comparison counties, but could not quantify. Attempted to quantify, but could not: level of "family planning coverage" (i.e., contraceptive distribution) in target and comparison communities; content and extent of community-and school-based educational interventions. Quantified number of teachers remaining to teach pregnancy prevention education. Compared estimated pregnancy conception rates quantitatively for pre-program period 1981-82, program periods 1983-86 and 1984-86, and "later intervention" years 1987-88; Independent variables varied.	Pregnancy conception rates in the target area decreased between the preprogram period and the early program period and subsequently rose during the " <b>later intervention</b> " period to a level equal to the preprogram period. Although all of the comparison counties experienced some decreases in their adolescent pregnancy rates during the study period, pregnancy conception rates of the target area were significantly lower than those of the noncontiguous comparison areas in 1984, 1985, and 1986, and of the contiguous comparison area in 1984 and 1986. The research team could not determine quantitatively how various factors (e.g., broad-based educational intervention, distribution of contraception) contributed to reduction and subsequent in pregnancy conception rates, but suggested that distribution of contraceptives may have been a substantial contributing factor.

<sup>a</sup>Full citations are listed at the end of this chapter.

SOURCE: Office of Technology Assessment, 1991

The School/Community Program for Sexual Risk Reduction was implemented in a rural community in South Carolina beginning in 1982 (117,215). The goal was to reduce the number of teen pregnancies, primarily by postponing the onset of initial sexual activity and secondarily by promoting consistent use of birth control among adolescents who had chosen to become sexually active. Teachers and administrative staff in schools and professionals in community agencies within the target community were given training in sexuality education, and sex education was then taught at all grades in the schools. Church leaders and parents were provided with sex education “minicourses,” and additional educational programs for community adolescents were developed in some churches and community agencies. Peer counselors were trained. The local newspaper and radio station were used to heighten community awareness of the program through public media campaigns. In addition, a school nurse in the target school provided male students with condoms, took female students to a nearby family planning clinic to obtain contraceptives, and provided both male and female adolescents with information and counseling (117). During the course of the School/Community Program efforts, an onsite school-linked health center (SLHC) known as the “Teen Life Center” opened, and the school nurse and other family planning staff worked in the clinic, but these efforts were not formally part of the School/Community Program (117).

Because of the nature of the School/Community Program for Sexual Risk Reduction Among Teens intervention, it was not possible to design a rigorous experimental evaluation. In 1987, Vincent and his colleagues published an analysis that compared the pregnancy rates for the rural county where the School/Community Program for Sexual Risk Reduction was implemented with pregnancy rates of three other South Carolina counties with similar socioeconomic and demographic characteristics (215). Their assessment of results was based on locally and nationally recorded statistics about birth, fetal deaths, and abortion. Vincent and colleagues found that in the first year following implementation of the School/Community Program, the pregnancy rate among adolescents ages 14 to 17 in the target community declined substantially (from 61.7 pregnancies per 1,000 population to 25 per 1,000); meanwhile, pregnancy rates among adolescents ages 14 to 17 in the three comparison areas increased (an

average increase of 8.5 per 1,000) (215). In the second year after the program was started, the pregnancy rate remained the same in the target community while continuing to climb, by an average of 4.5 pregnancies per 1,000, in all three comparison counties (215).

A 1990 reevaluation of Vincent and colleagues’ analysis by a team from Research Triangle Institute (RTI), using a more refined data analysis, different comparison counties, and additional years of analysis, also found that pregnancy rates declined more in the study area than in the comparison to other counties (117). However, the 1990 analysis by Koo and Dunteman found that the declines in pregnancy rates persisted for only 3 years following the School/Community program’s full implementation in 1983: the 1984-85, 1985-86, and 1986-87 school years (117). By the 1987-1988 school year, the pregnancy rate for the target community was where it had been in 1981-82.

The reason for the 1990 reevaluation by RTI was that the original findings had become a source of controversy. A major question was whether factors other than the educational portion of the School/Community Program might have influenced the changes in pregnancy rates in the target community. Unfortunately, because of limitations on available data, the RTI evaluators were not able to demonstrate conclusively which specific aspects of the program may have been responsible for the reduction in pregnancy rates. Some investigators attributed the School/Community Program for Sexual Risk Reduction Among Teens’ apparent success in reducing pregnancy rates to having adequate funding and time for training, implementation, and followup; a receptive target population; and inclusion of an entire small and cohesive target community in the intervention process (117,215).

In their 1990 reevaluation of the School/Community Program for Sexual Risk Reduction Among Teens, Koo and Dunteman concluded that the provision of contraceptives by the school nurse was probably a key factor in the program’s success (117). The nurse appeared to develop trusting relationships with adolescents and provided sexuality counseling and contraceptive services in a school system that supported her effort. The evaluators also noted, however, that the work of the specially trained teachers “undoubtedly” supported that of the school nurse, and vice versa.

In their 1990 reevaluation, Koo and Dunteman tried to determine why the pregnancy rate in the target community rose to its preintervention level by the 1987-88 school year (1 17). A number of factors seem to have contributed to the increase. From interviews with community members and teachers, Koo and Dunteman noted that the overall educational program lost much of the momentum it had had when the School/Community Program began and pregnancy rates began to drop (1 17). Teachers who had been specially trained in the program curriculum left the school system. Other teachers reported that the requirements of a new minimum competency test for students made them feel that they did not have sufficient classroom time to devote to the pregnancy prevention Curriculum.<sup>64</sup>

Perhaps most important, Koo and Dunteman found, in 1987, the State of South Carolina banned the distribution of contraceptives in school-based clinics such as the Teen Life Center (117).<sup>65</sup> As a result of this ban and the fact that a nearby family planning clinic was closed when the Teen Life Center was opened on school grounds, the only family planning services that adolescents had available to them were 9 miles away from the school. There was no public transportation in this rural community (215). Finally, the school nurse who had reached out to the students, counseled them on contraceptive use, and actually provided condoms to the male students or driven female students to the family planning clinic to obtain contraceptives, resigned in 1988 (1 17).

The lesson of the School/Community Program for Sexual Risk Reduction Among Teens and its specific implementation in the target community in South Carolina appears to be that a comprehensive, well-thought-out program combining the major elements theoretically desirable for such a venture, supported by the provision of sexuality counseling and contraceptive services by a trusted school nurse working within and supported by the school system, will, based on the best available evidence, work to reduce adolescent pregnancy (1 17). What implementers of similar programs in other communities should learn, according to the RTI team, is to avoid eventual complacency and to provide sufficient and timely resources so that an appropriate and believa-

ble evaluation can be made (1 17). OTA suggests that it is possible, but not certain, that a valid evaluation showing that the availability of contraceptives was a necessary (if perhaps not sufficient) part of the adolescent pregnancy reduction effort, would have helped to ward off the State legislative change that inhibited adolescents' access to contraception.

Summary of the Effectiveness of Educational Programs--Evaluations based on national surveys suggest that school-based sex education does increase young people's knowledge about conception and contraception (see table 10-10). There is little evidence that sex education courses affect participants' sexual activity or use of contraceptives and no evidence that they affect participants' pregnancy rates. Those who favor sex education in the schools nevertheless say that such courses are worthwhile because they provide students with basic knowledge they will use throughout their lives (74a).

Kirby's evaluation of various types of sex education programs (e.g., peer education, parent-child communication) in nine sites similarly found that most programs significantly increased participants' knowledge about conception and contraception (especially younger participants' knowledge), but had no significant or consistent effects on their initiation of sexual activity, contraceptive use, or pregnancy rates.

A school- and community-based, theory-based sexuality and contraceptive education program that combined lectures, simulations, leader-guided discussions, and role-playing increased participants' sexual knowledge but not their health beliefs (see table 10-5). This program seemed to affect some participants' sexual behavior and contraceptive use.

School-based decisionmaking, assertiveness, and life-skills training programs such as the Life Skills Counseling (LSC) program, the Sex Respect Program, and the Postponing Sexual Involvement (PSI) program combine the provision of sex education with training in assertiveness and decisionmaking (see table 10-5). The LSC program, which does not emphasize any particular set of values regarding sexual activity, looks promising in terms of improving knowledge of sexual facts and getting sexually active adolescents to use contraceptives but not in

<sup>64</sup>Minimum competency tests and their effect on school environments and adolescent well-being are discussed more generally in ch. 4, "Schools and Discretionary Time," in this volume.

<sup>65</sup>According to the RTI team, the South Carolina legislature was reacting to publicity about the School/Community Program (1 17).

**terms** of reducing such adolescents' sexual activity or pregnancy rates. But LSC students who were not sexually active at the time of their participation reported lower rates of sexual activity and greater use of condoms than control group students who took standard sex education. The PSI program, which explicitly encourages abstinence, looks promising in terms of helping young adolescents (especially females) delay sexual activity. Other abstinence-promoting efforts evaluated by Roosa and Christopher experienced large dropout rates and no apparent success in favorably changing attitudes or behaviors related to sex; in fact the level of reported noncoital sexual activity among males increased. The Sex Respect Program, which combined assertiveness skills with values clarification, strengthened participants' belief in the benefits of delaying sexual activity but had minimal effects on their sexual activity rates. Decreases in sexual activity were larger and more enduring for girls and younger students.

Parent-child communication programs seem to increase the frequency of and level of comfort with communications about sex between parents and their children, but data on the impact of such programs on adolescents' sexual behavior or unintended pregnancy are generally not available. Community-based education approaches range from teen theater to public service announcements. Public service announcements seem to be relatively underdeveloped and potentially effective information and outreach tools (148). The evaluation of these efforts (and contraceptive advertising on radio and television) in terms of their impact on adolescents' sexual behavior is difficult, however, because of the difficulty of determining what segment of the target population is reached (148).

The success of the School/Community Program for Sexual Risk Reduction Among Teens, a pregnancy prevention effort in South Carolina, was initially attributed to intensive school-and community-based education, but a subsequent evaluation concluded that the provision of contraceptives and one-on-one contraceptive counseling by a school

nurse were probably important factors in reducing the rate of adolescent pregnancies (see table 10-6). The evaluators concluded that a *comprehensive, well-planned program combining community-wide educational efforts and the provision of sexuality counseling and contraceptive services by a trusted school nurse working within and supported by the school system could help to reduce adolescent pregnancies.*

### **Programs That Provide Contraceptives to Adolescents**

The distribution of contraceptives is one of the primary approaches to pregnancy prevention taken by traditional family planning programs, special adolescent clinics, comprehensive school-linked health centers (SLHCs), and condom distribution programs.<sup>66</sup> Evidence on the effectiveness of such programs in preventing pregnancy is presented below.<sup>67</sup>

In reviewing interventions that attempt to increase sexually active adolescents' contraceptive use, it is important to keep in mind the limitations for adolescents of currently available contraceptive methods. An overview of contraceptives available to U.S. adolescents is provided below. Oral contraceptives (the "pill" and the use of condoms appear to be effective means of birth control for adolescents when they are used properly, but research suggests that many adolescents are inconsistent or ineffective contraceptive users (148). Part of the reason may be that adolescents find existing methods difficult to use or unappealing for other reasons. Some observers have found that adolescents' failure to use contraceptives or their discontinuation of contraceptives is sometimes associated with a fear of side effects or belief that contraceptives interfere with sexual spontaneity or enjoyment (98a). Further research to identify factors that may enhance adolescents' motivation to use contraceptives and the development and testing of contraceptives that are more acceptable and appropriate to the needs of sexually active adolescents could ameliorate this problem.<sup>68</sup>

<sup>66</sup>The distribution of contraceptives by a school nurse was one feature of the South Carolina community's successful multimodal pregnancy prevention effort discussed in the preceding section.

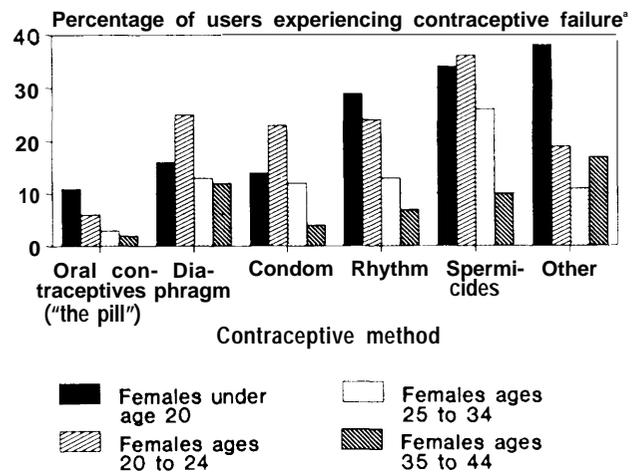
<sup>67</sup>Adolescent health care clinics and SLHCs are discussed at length in ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III.

<sup>68</sup>Some of the barriers to adolescents' use of condoms are discussed in ch. 9, "AIDS and Other Sexually Transmitted Diseases: Prevention and Services," in this volume.

**Overview of Contraceptive Methods Available to U.S. Adolescents**—As shown in table 10-7, the contraceptive methods most commonly used by U.S. adolescents include oral contraceptives ('the pill'), condoms, diaphragms, vaginal spermicides, rhythm, and withdrawal (coitus interruptus). Intrauterine devices (IUDs) are generally not recommended for adolescents. Oral contraceptives, diaphragms, and IUDs must be obtained through a physician in private practice or in family planning or other clinics (148). Condoms, vaginal sponges, and various spermicides can be obtained at drug stores without a prescription (148). No contraceptive method other than abstinence is 100 percent effective in preventing pregnancy, but some methods (e.g., oral contraceptives, condoms) are considerably more effective in preventing pregnancy among U.S. adolescents than others. Theoretical and actual failure rates of various reversible contraceptive methods in terms of preventing pregnancy among U.S. females under age 20 are shown in table 10-7. Many contraceptive methods are less effective in preventing pregnancy for adolescents than they are for adults (see figure 10-12).

A large majority of sexually active adolescents who use contraceptive methods make use of prescription methods, especially oral contraceptives (85). Oral contraceptives are among the most effective means of preventing pregnancy in adolescents, but one of their drawbacks is that they do not offer protection against acquired immunodeficiency syndrome (AIDS) or most other sexually transmitted diseases (STDs). Condoms are a nonprescription contraceptive method that seems to afford adolescents a level of effectiveness in preventing pregnancy that is almost as great as the level offered by prescription methods and, at least in adults, also provides substantial protection against AIDS and other STDs (76).<sup>69</sup> One encouraging trend found by the 1988 National Survey of Family Growth was that the use of contraceptives at first intercourse among U.S. females ages 15 to 19 had increased substantially since 1982, rising from 48 percent in 1982 to 65 percent in 1988 (59a). Most of the improvement

**Figure 10-12—Percentage of U.S. Female Contraceptive Users Experiencing Contraceptive Failure During the First 12 Months of Use, by Age and Method of Contraception**



SOURCE: Office of Technology Assessment, 1991, based on E.F. Jones and J.D. Forrest, "Contraceptive Failure in the United States: Revised Estimates From the 1982 National Survey of Family Growth," *Family Planning Perspectives* 21(3):103-109, 1989.

was due to the increased use of condoms at first intercourse (59a).

A recent study by the National Research Council and the Institute of Medicine on issues affecting the development of new contraceptives identified a number of emerging contraceptive methods (130). Because of the difficulties in estimating the length of the development process for new contraceptives, it is impossible to say when emerging methods will become available.<sup>70</sup> Examples of new and emerging contraceptive technologies that may offer adolescents more effective protection against pregnancy than existing methods are described in box 10-B. Some of these methods are likely to have fewer side effects than existing methods, and others will offer the advantage of greater convenience of use or greater protection against AIDS and other STDs. Thus, some new and emerging contraceptive technologies may be used more consistently and correctly by sexually active adolescents, possibly resulting in fewer pregnancies.

<sup>69</sup>The effectiveness of condoms in preventing the transmission of AIDS and STDs in adolescents is not known because most studies in adolescents have investigated condom use as a method of contraception only. Sech 9, "AIDS and Other Sexually Transmitted Diseases: Prevention and Services," in this volume for further discussion of studies of the effectiveness of latex condoms lubricated with nonoxynol-9 in preventing the transmission of AIDS and STDs in adults.

<sup>70</sup>Of the nine contraceptive methods determined by OTA in 1982 to be 'highly likely' to be available before 1990 (198), only three were being marketed in the United States by mid-1989 (130).

**Table 10-7-Overview of Contraceptive Methods Most Commonly Used by U.S. Adolescents**

Contraceptive method <sup>a</sup>	Theoretical rate of failure in terms of preventing pregnancy <sup>b</sup>	Actual rate of failure in U.S. females under 20 <sup>c</sup>		Selected advantages for adolescents	Selected disadvantages for adolescents
		White	Nonwhite		
Oral contraceptives (“the pill”)	0.1%	9.3%	18.1%	<ul style="list-style-type: none"> <li>• Relatively effective in preventing pregnancy</li> <li>• Not linked to sexual activity, requires less planning</li> <li>• May improve acne, dysmenorrhea, anemia</li> <li>• May protect against ectopic pregnancy, ovarian and endometrial cancer, pelvic inflammatory disease (PID)</li> </ul>	<ul style="list-style-type: none"> <li>• Requires gynecological examination and prescription</li> <li>• Can be expensive</li> <li>• Requires daily use by females</li> <li>• Minor side effects (e.g., headaches, nausea, breast tenderness, spotting)</li> <li>• Small risk of serious side effects (e.g., stroke, pulmonary embolism)</li> <li>• Does not protect against AIDS or most other sexually transmitted diseases (STDs)</li> </ul>
Condom		13.3	22.3	<ul style="list-style-type: none"> <li>• Inexpensive</li> <li>• Relatively effective in preventing pregnancy</li> <li>• Readily available without prescription</li> <li>• Protects against AIDS and most other STDs</li> <li>• Few side effects</li> <li>• Involves male in contraception</li> </ul>	<ul style="list-style-type: none"> <li>• Linked to sexual activity, requires planning</li> <li>• Requires cooperation of male partner</li> </ul>
Diaphragm		12.4	35.5	<ul style="list-style-type: none"> <li>• Few side effects</li> <li>• Protects against some STDs (with use of a spermicide)</li> </ul>	<ul style="list-style-type: none"> <li>• Requires gynecological examination, fitting, and prescription</li> <li>* Linked to sexual activity, requires planning</li> <li>• Sometimes perceived as messy, hard to use</li> <li>• Possibly increases risk of toxic shock syndrome</li> </ul>
Spermicides <sup>d</sup>		35.0	34.0	<ul style="list-style-type: none"> <li>• Inexpensive</li> <li>• Readily available without prescription</li> <li>• Few side effects</li> <li>• May increase lubrication during sex</li> <li>• Protect against some STDs</li> </ul>	<ul style="list-style-type: none"> <li>• Linked to sexual activity, requires planning</li> <li>• Allergic reactions for some (women or partners)</li> </ul>

Table 10-7—Overview of Contraceptive Methods Most Commonly Used by U.S. Adolescents-Continued

Contraceptive method <sup>d</sup>	* Theoretical rate of failure in terms of preventing pregnancy	Actual rate of failure in U.S. females under 20		Selected advantages for adolescents	Selected disadvantages for adolescents
		White	Nonwhite		
Rhythm (calendar)	10	22.8	34.1	<ul style="list-style-type: none"> <li>• No side effects</li> <li>• Virtually no cost</li> <li>• May help young women learn about their bodies and menstrual cycles</li> </ul>	<ul style="list-style-type: none"> <li>• Decreased effectiveness in women with irregular menstrual periods (e.g., younger adolescents)</li> <li>• Requires periods of abstinence</li> <li>• Does not protect against AIDS or other STDs</li> </ul>
Withdrawal <sup>e</sup> (coitus interruptus)	4	34.0 <sup>g</sup>	61.5 <sup>g</sup>	<ul style="list-style-type: none"> <li>• Virtually no cost</li> <li>• No side effects</li> <li>• Involves male in contraception</li> </ul>	<ul style="list-style-type: none"> <li>• Requires cooperation and self-control by male partner</li> <li>• Likely to diminish sexual pleasure</li> <li>• Does not protect against AIDS or other STDs</li> </ul>

<sup>a</sup>Several contraceptive methods are not included in this table. The intrauterine device (IUD) is not included because it has been implicated as a possible causative agent in pelvic inflammatory disease and is generally not recommended for use in adolescents (189). Sterilization is not included because it is generally not considered appropriate for adolescents. Also not included are NORPLANT® (a 5-year contraceptive implant approved by the Food and Drug Administration for use in the United States in December 1990) or cervical caps. As of early 1991, the effectiveness and safety of these methods in adolescents had not been specifically evaluated, and other questions concerning their use in adolescents remain.

<sup>b</sup>This column shows, among those who initiate use of a method and who use it perfectly (i.e., consistently and correctly during each act of intercourse), the lowest expected percentage of women who will experience an accidental pregnancy during the first year of use if they do not stop using the method for any other reason. The figures were derived from R.A. Hatcher, et al., 1988 (76).

<sup>c</sup>This column shows, among females under 20 who participated in the 1982 National Survey of Family Growth, the percentage of females who became pregnant accidentally during the first year of use of a given contraceptive, corrected for underreporting of abortions. The figures were derived from E.F. Jones and J.D. Forrest, 1989 (97).

<sup>d</sup>This information in this column was derived largely from R.A. Hatcher, et al., 1988 (76), and A. Rosenfield, 1989 (174).

<sup>e</sup>Vaginal spermicides come in a variety of forms: contraceptive foam, spermicidal suppositories, creams and gels with spermicidal effects (sometimes used with a diaphragm or cervical cap). Vaginal contraceptive sponges and condoms that contain spermicides are also available.

<sup>f</sup>Withdrawal (coitus interruptus) is not a method suggested by family planning providers.

<sup>g</sup>These figures may not accurately reflect failure rates for withdrawal, since contraceptive failures resulting from use of both withdrawal and douche, as well as other miscellaneous methods mentioned by adolescent respondents, were combined. Separate data on failure rates for withdrawal alone in this population are not available.

SOURCE: Office of Technology Assessment, 1991, based on E.F. Jones and J.D. Forrest, "Contraceptive Failure in the United States: Revised Estimates from the National Survey of Family Growth," *Family Planning Perspectives* 21 (3):103-109, 1989; R.A. Hatcher, F. Guest, F. Stewart, et al., *Contraceptive Technology 1988-1989*, 14th rev. ed. (Atlanta, GA: Printed Matter, Inc., 1988); and A. Rosenfield, "Modern Contraception: A 1989 Update," *Annual Review of Public Health* 10:385-401, 1989.

### **Box IO-B—Examples of New and Emerging Contraceptive Technologies**

Efforts to develop contraceptives that are easier to administer and use, are more effective and have fewer side effects, and are less costly than existing contraceptives could be of great importance to adolescents. In recent years, however, several major U.S. pharmaceutical companies have abandoned their contraceptive research and development programs (143a). Thus, public sector funding and the increased activity of nonprofit groups and small entrepreneurial firms has become increasingly important to the development of new contraceptive methods.

Several examples of new and emerging contraceptive technologies of possible importance to adolescents, including modifications of existing technologies, are discussed below.

**Contraceptive Methods for Females**—In Western Europe, Canada, and some developing nations, several new methods for delivering contraceptive hormones to women to control their ovulation have been available for as long as a decade; other new methods for delivering hormones to women are still being developed. Most of these delivery systems release contraceptive steroids into the bloodstream at a constant, slow rate and in smaller doses than existing oral contraceptives. Contraceptive steroids do not protect against acquired immunodeficiency syndrome (AIDS) or most sexually transmitted diseases (STDs). Examples of new methods of delivering contraceptive hormones to females to prevent pregnancy include the following:

- *Contraceptive implants*—In December 1990, the U.S. Food and Drug Administration approved use in the United States of NORPLANT®, a set of nonbiodegradable progestin-releasing capsules that are surgically inserted under the skin of a woman's arm. A version of NORPLANT® currently available in over 12 countries provides up to 5 years of highly effective (less than 1 percent failure rate) protection against pregnancy (83a). The capsules are somewhat visible after insertion, but if a woman wants to become pregnant, the capsules can be removed by a trained health professional. The incidence of serious health problems associated with NORPLANT® is low, but data on long-term health effects have not been systematically collected (83a). Furthermore, the field trials of NORPLANT®, like those for most drugs, excluded women under age 18. Data about NORPLANT's effectiveness and side effects in adolescents, therefore, are not currently available. Other contraceptive implants being tested include biodegradable pellets. The contraceptive effects of biodegradable pellets (unlike those of NORPLANT®) could be reversed only in the first few months following the pellets' insertion (before they began to degrade).
- *Contraceptive injections*—Contraceptive injections of long-acting progestins with high rates of effectiveness in preventing pregnancy are currently available in many countries of the world. The most commonly used progestins are medroxyprogesterone (Depo Provera®) and norethindrone enanthate (76). Depo-Provera®, a progestin injection administered to a woman once every 3 months, is highly effective in preventing pregnancy (failure rate of less than 1 percent) and is used by approximately 4 million women worldwide. Because of concerns about its safety, the U.S. Food and Drug Administration has not approved

**Subsidized Family Planning Clinics**—Family planning services—which typically include birth control information and counseling, provision of contraceptives, pregnancy testing and counseling, gynecological examinations, and referrals for related services such as primary care—are available to adolescents through private physicians and through a variety of public and private nonprofit health providers (e.g., public health departments, and private nonprofit clinics supported by organizations such as Planned Parenthood).<sup>71</sup>

As the National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing has pointed

out, most family planning clinics have been almost exclusively female-oriented in both their approach and the services they offer (148). However, new strategies are being used in programs designed specifically for adolescent males (see section below on programs for adolescent males).

Adolescents, especially black females, tend to use family planning clinics more often for obtaining contraceptives than they use private physicians (207a,234). In the 1988 National Survey of Family Growth, 30.4 percent of 15- to 19-year-old females reported one family planning visit in the 12 months preceding the survey (207a). For their most recent

<sup>71</sup>As discussed later in this chapter, about 4,000 public and private nonprofit family planning providers receive Federal grants under Title X of the Public Health Service Act.

it for use in the United States (76). Several other types of injectable contraceptives with high rates of effectiveness are currently available in different parts of the world. In addition, new formulations of injectable contraceptives that use microcapsules for gradual release of hormones over a longer period of time are undergoing clinical testing.

- . *Transdermal patches containing contraceptive hormones*--Transdermal patches, currently being used to provide estrogen replacement therapy to postmenopausal women, are being tested as contraceptive devices. Worn on the body and replaced at regular intervals by the user, these patches could provide a continuous low-level dose of contraceptive hormones. In one system, a new patch is worn each week for 3 weeks of the month; then the patch is removed for a week to allow menstrual bleeding to occur (143a).
- *Vaginal rings containing contraceptive hormones*—Vaginal rings (of about the same circumference as a diaphragm) that continuously release contraceptive hormones are undergoing clinical trials. The rings can be removed for a few hours without compromising their effectiveness in preventing pregnancy (a failure rate of 3.5 percent in one trial). They would have the advantage of being readily reversible, but their use would require a level of familiarity and comfort with their genitals that some adolescents may not have.

Research on contraceptive **vaccines for females**, which would immunize women against either pregnancy-related hormones or against male sperm, is still in the early stages (143a). In theory, such methods would require initial immunizations, possibly in a series of shots, after which periodic booster shots would be necessary to continue to control a women's fertility. A contraceptive vaccine would have the disadvantage for some users of not being readily reversible. For sexually active adolescents, most of whom do not wish to become pregnant while still in school, however, a contraceptive vaccine might be very appealing. On the other hand the use of a contraceptive vaccine would probably not protect against AIDS or most STDs.

Two **modifications of barrier methods of contraception** for females that are currently being tested in the United States are disposable diaphragms that contain spermicides, and condoms that line the vagina, are larger than condoms for males, and may provide greater protection against STDs. Like the vaginal rings, as well as the currently available diaphragms and the contraceptive sponge, such methods require a level of comfort and familiarity with one's genitals that some adolescents may not have. More effective spermicides, including spermicides that not only protect against pregnancy but also provide greater protection against STDs, are currently being developed (143a).

**Contraceptive Methods for Males**--Contraceptive methods that inhibit the production of a man's sperm or affect the sperm's ability to fertilize the human egg still require substantial basic research. Hormonal or vaccine contraceptives for males are not likely to be available for general use in the United States for at least a decade. Gossypol, a cotton seed derivative has been used as an oral contraceptive for males in China, however, and this or other nonhormonal, nonendocrine contraceptive methods may hold promise (143a).

**SOURCE:** Office of Technology Assessment, 1991.

source of family planning services in 1988, two-thirds of 15-to 19-year-olds used a family planning clinic (207a) .72

Various factors may affect adolescents' decision to use family planning clinics rather than private physicians' services.<sup>73</sup> One reason that some adolescents seeking contraceptive services prefer public or private nonprofit family planning clinics to private physicians is undoubtedly cost. Adolescents typically have limited personal incomes, and physician fees for birth control services are almost four times

higher on average than clinic fees for comparable services (34).

Another reason some adolescents prefer clinics to private physicians is concern about confidentiality in visiting private physicians (34,112). This concern may be well-justified. Data from a national sample of private physicians indicate that only 59 percent of general and family practice physicians are willing to provide contraception to minors without parental consent, although 80 percent of obstetricians and

<sup>72</sup>Interestingly, the use of family planning clinics by white adolescent females increased between 1982 and 1988 (from 44.0 percent to 60.6 percent), but use by black adolescent females decreased (from 73.7 percent to 65.4 percent) (207a).

<sup>73</sup>For further discussion of factors that may affect adolescents' access to services, see ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents" and ch. 16, "Financial Access to Health Services," and ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in vol. III.

gynecologists are willing to do so (161).<sup>74</sup> A recent survey of primary care physicians (general and family practitioners and internists) found that only 57 percent thought that it was acceptable to make contraceptives available to minors without parental consent (222). In contrast, a 1982 study found that only 14 percent of clinic providers required parental consent or notification for contraceptive services to minors (69).

Some critics of family planning programs have expressed concerns that such programs increase adolescent sexual activity, pregnancy, abortion, and birth rates. As shown in table 10-8, the findings of studies using a rather global approach to examining the effects of the availability of family planning services are contradictory. Some studies have found a positive association between the availability of family planning services and higher adolescent pregnancy rates, and some studies have found negative associations.

A 1977 study by Moore and Caldwell found that the availability of subsidized family planning services in States was associated with a lower occurrence of pregnancy among black adolescents ages 16 to 18 (138). This finding did not hold for whites, perhaps because black adolescents rely more on public family planning services and are therefore more affected by their availability than are white adolescents. Moore and Caldwell also found that the availability of subsidized family planning services was associated with lower out-of-wedlock pregnancy rates among 15- to 19-year-old blacks.

A 1981 study by Forrest and colleagues found that areas with greater increases between 1970 and 1975 in the proportion of adolescents enrolled in subsidized family planning clinics had larger declines in adolescent birth rates (59). The authors estimated that for every 10 adolescents ages 15 to 19 involved in a public family planning clinic program in 1975, almost 3 pregnancies and 1 birth were averted in 1976. The authors also estimated that during the 1970s, over 2.6 million pregnancies to adolescents were prevented through use of federally funded family planning clinics (59).

But a 1982 study of family planning services in California by Kasun found a positive association between levels of spending for family planning

services and adolescent pregnancy rates and concluded that increased availability of contraceptive services led to higher levels of sexual activity among adolescents (100).

A 1986 study by Olsen and Weed found that higher levels of utilization of family planning clinic programs by adolescents nationwide were associated with higher pregnancy rates among adolescents (156). Family planning enrollment by females ages 15 to 19 seemed to result in an average increase of about 120 pregnancies per 1,000 adolescent family planning patients. This study found a decline in birth rates associated with family planning program involvement by adolescents but attributed it to family planning programs' effects on pregnancy continuation rather than occurrence.

A 1990 study by Lundberg and Plotnik found a positive association between restrictive State laws governing the availability of contraceptives and high rates of premarital adolescent pregnancies; this study also found a negative association between the availability of family planning services for Medicaid-eligible women and *high* rates of premarital adolescent pregnancies (124b).

There are several possible reasons for the conflicting findings of studies using a global approach to examine the effects of the availability of family planning services on adolescent pregnancy. The studies use different levels of aggregation (counties, States), different time periods (e.g., late 1960 through 1971 [138] v. 1979 to 1986 [124b]), and different units of analysis (e.g., States [59] v. individuals [124b,138]). The studies also differ in statistical methods, measurement of policy and program variables, and indicators of pregnancy (e.g., birth rates [59], nonmarital childbearing [124b], pregnancy rates [156]).

**Family Planning Clinics With a Special Emphasis on Adolescent--**Some family planning and general health clinics operate teen clinics, where adolescents are served separately from other clinic patients and services are tailored to adolescents' needs for confidentiality, sexuality and birth control information, after-school hours of operation, and low costs (83). Others have special outreach and followup programs for young people (e.g., work to maintain contact with adolescent patients following

<sup>74</sup>For a discussion of State laws and U.S. Supreme Court decisions related to consent and confidentiality in the provision of family planning services to minors, see ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III.

**Table 10-8--Evaluations of Contraceptive Provision Policies and Programs**

Study <sup>a</sup>	Program characteristics	Participant characteristics	Evaluation method	Findings
<b>Subsidized family planning clinics:</b>				
Moore and Caldwell, 1977	1. Percent of need for subsidized family planning services met in State, 1969.  II. A. Existence of State laws limiting family planning services to females 18 and older. B. Availability of subsidized family planning.	1.1,479 black and 3,132'other' (mostly white) females ages 15 to 19 in a national probability sample; surveyed in 1971.  II. Out-of-wedlock birth rates among 15- to 19-year-olds, by States, 1971.	1. Used regression analysis to determine estimated effects of meeting need for subsidized family planning services in respondent females' State of residence.  II. Compared policy and program characteristics to out-of-wedlock birth rates, aggregated at State level.	1. Availability of subsidized family planning services in States was negatively associated with the occurrence of pregnancy among older (ages 16 to 18) black females. No association for other age groupings, or between availability of subsidized family planning services and transition to first intercourse.  II. A. Existence of laws limiting contraceptive services was associated with higher out-of-wedlock pregnancies. B. Availability of subsidized family planning services was associated with lower rate of out-of-wedlock pregnancies among blacks only. No relationship for whites for either variable. <sup>b</sup>
Forrest, Hermalin, and Henshaw, 1981	Family planning clinic programs that receive Federal funds under Title X of the Public Health Service Act (the Family Planning Services and Population Research Act of 1970) in 1975 to 1976.	Adolescents ages 15 to 19 in 1970 and 1975 who participated in federally funded family planning clinic programs.	Used multivariate analysis, with counties as the unit of analysis, to assess the impact of family planning clinic use on birth rates among adolescents. Used aggregates of the proportion of adolescents enrolled in federally funded family planning clinics, the rate of births in 1976 to adolescents ages 15 to 19 in 1975 as the outcome measure, and compared birth rates in 1970 and 1976. Used national data on the relationship between birth rates and pregnancy rates to estimate the effect of family planning programs on pregnancy and abortion rates among adolescents ages 15 to 19.	For both white and nonwhite adolescents, areas with greater increases between 1970 and 1975 in the proportion of adolescents enrolled in family planning clinics had larger declines in birth rates among 15- to 19-year-olds from 1970 to 1976. For every 10 patients ages 15 to 19 who were enrolled in family planning clinics in 1975, the authors estimated that 2.82 pregnancies to adolescents (for a total of 331,000 pregnancies) were prevented in 1976. For every 10 patients ages 15 to 19 who were enrolled in family planning clinics in 1975, the authors estimated that 1.01 births to adolescents (or a total of 119,000 births) were averted in 1976.
Kasun, 1982	Family planning services in California.	Unknown.	Compared levels of spending for family planning services with adolescent pregnancy rates.	Positive association (i.e., the higher the level of family planning spending, the higher the adolescent pregnancy rate).
Olsen and Weed, 1986; W and Olsen, 1986	Organized family planning clinic programs in all 50 States and the District of Columbia, as surveyed by the Alan Guttmacher Institute in 1975.	Females ages 15 to 19 in 1975 who were clients of organized family planning clinic programs.	Used regression analyses, with States as the unit of analysis, to assess the effect of levels of enrollment of adolescents ages 15 to 19 in family planning programs on birth rates and pregnancy rates among adolescents. Used available State-level estimates of abortion rates and birth rates among adolescents to develop estimates of overall pregnancy rates.	The level of enrollment of adolescents ages 15 to 19 in organized family planning programs was associated with increased and decreased birth rates among 15- to 19-year-olds. Although not as significant a predictor of teen pregnancy rates as several demographic variables (i.e., the ratio of married to unmarried 15- to 19-year-olds in each State and the percent of the State population that was white), family planning program enrollment by adolescents seemed to result in an average increase of about 120 pregnancies per 1,000 adolescent family planning program patients.

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**Table 10-8-Evacuations of Contraceptive Provision Policies and Programs-Continued**

study'	Program characteristics	Participant characteristics	Evaluation method	Findings
Lundberg and Plotnick, 1990	4 policy or program variables at State level; 1) restriction on contraceptive licensing, advertising, or selling; 2) proportion of counties in which family planning clinics serve <50 percent of low-income women at risk of unintended pregnancy; 3) proportion of teenage women at risk who obtain family planning services; and 4) proportion of Medicaid-eligible women at risk of unintended pregnancy served by family planning clinics. <sup>c</sup>	11,181 white females who were ages 14 to 16 in the first (1979) round of NLSY and provided data on premarital pregnancies and other pregnancy-related events for the period 1979 to 1986. <sup>d</sup>	Nested logit analysis	largest (and significant) effects on premarital pregnancy were found for variables 1 and 4.
Family planning clinics with a special emphasis on adolescents: Chamie, Eisman, Forrest et al., 1982	Various family planning clinics in 37 counties throughout the United States, all with at least 200 adolescents a year.	Included 124 clinic directors, over 3,500 "teenage" clinic patients and over 6,000 adult patients (ages not specified), plus approximately 1,000 pharmacists and 1,000 physicians in the counties where the clinics were located.	Using data from survey questionnaires of all participants, compared characteristics of clinics in counties identified as having a high proportion (average 75 percent) of their sexually active adolescent population served by family planning clinics ("high-met-need" counties) with clinics in communities that had a lower proportion (average 28 percent) of sexually active adolescents who were family planning clinic patients ("low-met-need" counties).	Clinics in "high-met-need" areas were more likely to have special outreach and followup programs for adolescents, to provide services to minors without requiring parental consent, to combine family planning with other health services, to provide free services to adolescents, and to see adolescents on a walk-in basis. Although the rates of adolescent pregnancy in both types of counties were similar (about 32 percent), adolescents in "low-met-need" counties were more likely to have terminated their last pregnancy, while those in "high-met-need" counties were more likely to have given birth.

Table 10-8-Evaluations of Contraceptive Provision Policies and Programs—Continued

study <sup>a</sup>	Program characteristics	Participant characteristics	Evaluation method	Findings
Kisker, 1984	Same as Chamie, Eisman, Forrest, et al., 1982 (see above)	Same participants as Chamie, Eisman, Forrest, et al., 1982 (see above)	Using data from survey questionnaires of all participants, factors predicting three indicators of clinic effectiveness in serving adolescents (mean delay between teenage patients' self-reported first intercourse and first visit to a family planning clinic; clinic retention of teenage patients, as reported by clinic directors; and level of satisfaction with clinic services reported by teenage patients) were studied using regression analyses.	Clinics with community education programs geared to adolescents seem to reduce delay in clinic visits following first intercourse by 4 to 5 months; the support of local churches for teens' use of family planning services appeared to decrease delay by about 3 months, and having active relationships with local youth groups also decreased delay by about 2 months. The longer teenage patients had to travel to get to the clinic, the longer the mean delay: every 5 extra minutes of travel time increased the delay in seeking clinic services by almost a month. Clinics that served more adolescent patients on a walk-in basis also decreased delay. Working with local youth groups increased the ability of clinics to retain teenage patients, as did having at least 3 hours of clinic time in the evening and on weekends and offering a larger range of services to adolescents (e.g., special youth programs, abortion services, prenatal care). Interestingly, clinics that reported greater amounts of counseling and education time with patients slightly raised the mean delay in seeking clinic services and slightly lowered retention of teenage patients, although it also increased teenage patients' satisfaction with clinic services. The authors speculated that teens might perceive the educational services as "preachy," although information about their satisfaction with the educational and counseling services offered was not collected.

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**Table 10-8-Evaluations of Contraceptive Provision Policies and Programs-Continued**

Study <sup>a</sup>	Program characteristics	Participant characteristics	Evaluation method	Findings
Herceg-Baron, Fursterberg, Shea, et al., 1986	Two special service components for adolescents implemented in existing family planning programs in 9 sites: <i>family support services</i> provided short-term (6 week) counseling for adolescents and family members, to support adolescents' contraceptive use and sexual decisionmaking, and periodic <i>support</i> in the form of weekly telephone calls from project staff for 6 weeks to monitor adolescents' adjustment to their chosen contraceptive methods.	N = 469, female clinic patients ages 12 to 17, making first visit to clinics. Approximately one-half black and one-half white, one-third under the age of 16; only 13.5% were not yet sexually active.	<b>Personal interviews were conducted at the time of the first clinic visit, and 2 followups were conducted by telephone approximately 6 months and 15 months later.</b> Patients were randomly assigned to 1 of the 2 special services groups, or to 1 of 2 control groups (the first control group took part in all three interviews, and the second was contacted only for the third interview. Patients in control groups received only those services routinely offered in each clinic site.	Study design was compromised, since only 36% of the patients who agreed to participate in the <i>family support services</i> actually <b>attended any</b> counseling sessions, <b>and</b> only 5% of those who attended came with a parent. A total of 84% of those who agreed to periodic support were contacted at least once; they averaged 2.6 calls. No significant differences in regularity of contraceptive use or pregnancy rates were found between special services or control groups.
Winter and Breckenmaker, 1991	"A total service delivery system for adolescents, from initial contract to followup," including the following critical elements: one-to-one educational, concrete information, more frequent visits, longer telephone and on-site contacts with staff, special staff training in adolescent development, encouragement of male participation, greater attention to adolescent comfort, confidentiality.	Experimental groups: 518 adolescent females under age 18 in 3 sites. Control groups: 738 adolescent females in 3 control sites, 98 percent whites.	Baseline and post-treatment evaluations at both experimental and control sites.	Clients in experimental site had higher gains in knowledge, more persistent use of contraceptives, greater ease in using contraception, and, for continuing patients, significantly lower pregnancy rates (4.0 v. 7.8%). Differences in pregnancy rates were marginally significant when all patients (including program dropouts) were considered.

Table 10-8-Evaluations of Contraceptive Provision Policies and Programs--Continued

Study <sup>a</sup>	Program characteristics	Participant characteristics	Evaluation method	Findings
<b>School-linked health centers (SLHCs)</b> Edwards, Steinman, Arnold, et al., 1980	St. Paul Maternity & Infant Care (MIC) Project: Hospital-linked health clinic located in two high schools; provided pregnancy tests, gynecological exams, contraceptive counseling, referral to hospital clinic for contraceptives, as well as other health services.	Female student population of schools served by clinic program; female users of family planning services in MIC school clinics (N= 403)	Assessed changes over time in birth rates among the female student population; assessed rates of continued use of birth control in female clinic users. (No "pre-post" statistical testing of changes over time was conducted; no comparison group.)	By the end of the 3rd year, the birth rate among females in the clinic schools had dropped from 79 births per 1,000 females to 35 births per 1,000; 86.4% of females who received contraceptives from the MIC project continued to use them for at least 12 months.
Zabin, Hirsch, Street et al., 1988; Zabin, Hirsch, Smith, et al., 1986a&b	The Self Center: Hospital-linked health clinic located near 1 junior and 1 senior high school in inner-city Baltimore; a team of clinic staff was assigned to each school; provided class-room-based sex education, group and individual sex education in school health suites and in the clinic, medical services related to reproductive health (e.g., pregnancy tests, gynecological exams, STD testing, provision of contraceptives).	Students in schools linked to the clinic; all students in both clinic schools were black. Comparison group of black students in socioeconomically similar junior and senior high schools in the same school system. N = 667 males and 1,033 females in intervention group, and 944 males and 1,002 females in comparison group, at baseline; 506 males and 695 females in intervention group, and 860 males and 889 females in comparison group, at end of project.	Self-administered questionnaire collected data from all students regarding knowledge of and attitudes toward pregnancy risk and contraceptive use, sexual behavior, and pregnancy experience. Changes over time in these variables were assessed, by length of exposure to the clinic program. School system data on pregnancies among female students in all public schools were used to compare pregnancy rates among females in the 2 program schools with other junior and senior high schools.	Significant increases in knowledge of pregnancy risk and use of contraceptives among students in clinic schools; greater knowledge gains were seen among those with longer exposure to the program. Females age 15 and older who had not been sexually active at the beginning of the program delayed first intercourse for an average of 7 months, when compared with their peers in nonclinic schools. Program increased the percentage of females who attended at clinic for birth control services both before their first intercourse and within a month of initiating sex. By the end of the 3rd year, of the project, pregnancies among females in clinic schools had declined by 30%, while rising 58% in comparison schools.
Kirby, Waszak, and Ziegler, 1989	Various—6 school-based clinics in high schools serving low-income populations; all provided pregnancy testing and contraceptive counseling; only 3 dispensed contraceptives on site.	Various—included from 24% to 90% of student population in clinic schools; 4 sites had comparison groups from sociodemographically similar high schools; predominantly black in 5 sites, substantial Hispanic representation in 2 sites, less than one-fifth white in all sites.	Student health survey (self-report questionnaire) used in all sites; assessed clinic use, use of other medical services, risk-taking behaviors (e.g., drug use, speeding), sexual activity, birth control use, pregnancy experience. Four sites had comparable data from students in comparison schools; 2 sites collected baseline data before clinics opened and posttest data 2 years later.	None of the clinic schools had significantly higher percentages of sexually active students than comparison schools; at 2 sites, students in the clinic schools reported significantly later ages at first intercourse than students in comparison schools. <b>At 2 sites, more students in clinic school samples reported using birth control at last intercourse than in nonclinic or preclinic samples. No differences in self-reported pregnancy (or impregnation, for males) rates were found between clinic school students and nonclinic or preclinic samples.</b>

Continued on next page

**Table 10—Evaluations of Contraceptive Provision Policies and Programs—Continued**

Study <sup>a</sup>	Program characteristics	Participant characteristics	Evaluation method	Findings
<b>Condom distribution programs:</b> Arnold, 1973	Outreach workers distributed condoms.	Adolescent males.	Compared fertility rates in target and nontarget areas.	Fertility rate of black adolescent females ages 10 to 19 declined 19 percent <b>compared with no decrease</b> in nontargeted areas.
Kirby, Harvey, Clausenius, et al., 1983	Educational pamphlet and order form mailed. Targeted males could order free condoms.	Adolescent males.	Phone survey asking about condom use.	Educational materials appeared to have no impact on changing attitudes related to sexual behavior. The offer of free condoms did not appear to increase levels of sexual intercourse or increase the possibility of using condoms at last intercourse.

<sup>a</sup>Full citations are listed at the end of this chapter.

<sup>b</sup>It is important to note that although Moore and Caldwell reported that they used multiple regression and explored effects of independent variables, they did not report how much each variable contributed to the outcome of interest. They did note, however, that much of the variance remained unexplained after their analysis (138).

<sup>c</sup>Sources and years of data are explained in Lundberg and Plotnick, 1990 (124b).

<sup>d</sup>Only the portion of the analysis related to the availability of contraception and family planning services is presented here. The impacts of various policies on marriage v. premarital birth and on abortion were also explored (124b).

SOURCE: Office of Technology Assessment, 1991.

clinic visits, to encourage continued use of contraceptives, or to provide outreach through community education and contact with local youth groups) (11 1). Teen-oriented family planning clinics are more likely to provide free services to adolescents and to see adolescent patients on a walk-in basis than are clinics that are less effective in reaching adolescents (34).

Prior to a recent study by Winter and Breckenmaker (223a), studies of family planning services with a special emphasis on adolescents had found that such services demonstrate only a minimal impact on adolescent pregnancy rates or birth control use (82,1 11). In 1982, Chamie and colleagues used survey data from family planning clinics and county-level adolescent population data in 37 counties across the United States to devise an index of counties with “high met need” (a high proportion of the sexually active adolescent population being served by family planning clinics) versus “low met need” (a low proportion of the sexually active adolescent population being served by family planning clinics) (34) (see table 10-8). They then compared the counties’ level of met need to the counties’ adolescent pregnancy, abortion, and birth rates. Clinics in “high-met-need” counties were more likely to have special outreach and followup programs for adolescents, to provide services to minors without requiring parental consent, to combine family planning with other health services, to provide free services to adolescents, and to see adolescents on a walk-in basis. Chamie and colleagues found that adolescent pregnancy rates in low-met-need counties were similar to those in high-met-need counties; however, abortions were more likely in “low-met-need” counties and births more likely in “high-met-need” counties. The authors hypothesized that more of the pregnancies in the “high-met-need” counties might have been intentional, but they did not collect data on pregnancy intentions.

Kisker’s 1984 analysis of the same survey data was limited to those adolescents who had actually used the family planning clinics (1 11) (see table 10-8). Kisker found that several factors characterized family planning clinics that appeared to be more effective either in increasing the delay between initiation of sexual intercourse and the receipt of contraceptive services or in retaining adolescent clients:

- location in communities with community education programs,
- the support of local churches for adolescents’ use of contraceptive services,
- active relationships between the clinics and local youth groups,
- less travel time to the clinic,
- service available to adolescents on a walk-in basis, and
- weekend and evening hours (1 11).

Interestingly, although adolescents reported greater satisfaction with family planning clinics that provided counseling and education (although not specifically with these elements of the clinics’ services), the availability of such services was associated with a *greater* average delay between initiation of intercourse and seeking of services.

Chamie’s analysis and Kisker’s analysis were both based on retrospective reporting by existing family planning clinic programs. In 1986, Herceg-Baron and colleagues attempted to implement and evaluate the effects of special service components (family support and periodic support) for adolescents in family planning clinics (82) (see table 10-8). Unfortunately, the study design was compromised, because only 36 percent of the group of adolescents scheduled to receive family support services attended any counseling sessions, and only 5 percent of those who attended came with a parent. The group of adolescents that was supposed to get periodic support had been scheduled to receive six weekly phone calls from staff to monitor the adolescents’ adjustment to their chosen contraceptive methods, but an average of only 2.6 contacts were actually completed. Perhaps as a result, there were no significant differences in regularity of contraceptive use or pregnancy rates between the special services and the control groups.

Winter and Breckenmaker’s study in 1991 found, however, that sites that used experimental protocols developed by a committee of family planning clinic personnel and staff of the Family Health Council of Central Pennsylvania had lower adolescent pregnancy rates than control sites had (223a) (see table 10-8). It seems likely that the Pennsylvania protocols led to more favorable results than did the intervention in the Herceg-Baron study because the Pennsylvania protocols actually made changes in the everyday delivery of family planning services rather than adding on new components.

**Comprehensive School-Linked Health Centers (SLHCs)**--One model for delivering family planning services to adolescents has been the SLHC, in which family planning and other health services are offered to students in a clinic located on or near school grounds.<sup>75</sup> Data describing the services provided by SLHCs are available from a 1990 survey of 153 SLHCs operating during the 1988-89 school year, conducted by the Center for Population Options (95a). Almost all of the 95 responding SLHCs, which operated on-site at schools, provided counseling on birth control methods. About 90 percent of the 95 SLHCs conducted pregnancy tests and performed gynecological examinations, 54 percent provided written prescriptions for birth control methods, but only 21 percent actually *dispensed* contraceptives. At some schools, clinic staff also conduct sex education sessions in classrooms. In comparison to office-based physicians, SLHCs may have the advantage of making health services for adolescents more readily accessible, approachable, and tailored to the specific needs of adolescents.<sup>76</sup>

One of the earliest and most comprehensive SLHCs was established in two public high schools by the Maternity and Infant Care Project of St. Paul-Ramsey Hospital in St. Paul, Minnesota. The *St. Paul SLHC program* exemplifies a model for the provision of family planning services and other health services at a clinic located on the school site (50). The St. Paul SLHC was begun as a means of providing pregnancy prevention and care services (e.g., prenatal and postpartum care, STDs, pregnancy testing, contraceptive information, and counseling) to the students at these schools, but it was rapidly expanded to include a more comprehensive range of health services (e.g., immunizations, general physical examinations) (50).<sup>77</sup>

In 1980, Edwards and colleagues evaluated the school-based program established by the Maternity and Infant Care Project in St. Paul (see table 10-8). They found that the birth rate among female students served by the clinic program dropped from 79 to 35

births per 1,000 students in the first 3 years of the program (50); the birth rate declined even further over time, dropping to 26 births per 1,000 students during the 1983-84 school year (86). The program also demonstrated a very high rate (93 percent) of reported contraceptive continuation among clinic patients in the year following the patients' first clinic visit (50). No data were collected on pregnancy or abortion rates, so it is unclear what proportion of the decline in birth rates was due to a decrease in pregnancies and what portion was due to an increase in the use of abortion. Also, because birthrates were declining nationwide during the time of the study, the lack of an appropriate comparison group limits inferences about the validity of this study's findings.

A variation on the St. Paul model of services is the *Self Center*, a clinic located near both a junior and a senior high school in a low-income neighborhood in Baltimore, Maryland (224). The Self Center was established as a pregnancy prevention demonstration project by the School of Medicine at the Johns Hopkins University. This SLHC made a range of reproductive health care services (e.g., contraceptive counseling, pregnancy testing, provision of contraceptives, educational programs) available after school hours to all students at the two schools. A team of clinic staff was assigned to each of the two schools to participate in the schools' sex education programs, provide individual and group counseling at the schools, and follow up on students who had been seen at the clinic. The Self Center program was able to successfully gain participation among the male adolescents in the school. Males were most likely to participate in informal group discussions and to meet individually with social workers who provided information on and distributed contraceptive devices (225).

In the late 1980s, Zabin and colleagues conducted a relatively well-designed evaluation of the Self Center that compared Self Center students with a carefully matched sample of students from similar urban Baltimore schools (227) (see table 10-8). Over

<sup>75</sup>&<sup>2</sup> described in ch.15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III, there are substantial variations among SLHC programs. Although all SLHCs aim to provide a wide range of health care services, what particular SLHCs offer varies and depends largely on clinic resources, the particular needs of the community's adolescents, and local attitudes towards providing reproductive health services in a school-linked setting.

<sup>76</sup>For further discussion, see ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III.

<sup>77</sup>This expansion of services away from a strict focus on family planning and other reproductive health services has occurred in most SLHCs. Family planning and reproductive health care are still typically considered part of comprehensive health service delivery for adolescents, however. For further discussion, see ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Services to Adolescents," in Vol. III.

3 years of the Self Center's operation, they found, there were significant gains in sexual and contraceptive knowledge among both boys and girls at the schools that received classroom-based sex education and that were linked to the clinic. Adolescent females enrolled in the Self Center program schools for 2 years or more were found to be significantly more likely to delay sexual activity (for an average of 7 months) than adolescent females in the comparison schools.

Zabin and colleagues also found that Self Center students increased their use of contraceptives and were more likely than comparison students to visit the clinic for contraceptive counseling *before initiating intercourse or in the first few months after initiating sexual activity* (227). These results were strongest for those students who were exposed to the Self Center program for 2 years or more. Finally, Zabin and colleagues found a substantial (30 percent) drop in the pregnancy rate at the end of 3 years for sexually active adolescent females in the Self Center program schools, while conceptions among adolescent females in the comparison schools increased significantly (57 percent) during the same time period.

In drawing conclusions about the overall effectiveness of the Self Center program, it is important to recognize some methodological shortcomings of Zabin and colleagues' evaluation. First, the actual numbers of adolescents used for statistical comparisons were small because of attrition rates from the program schools. Second, the high school students involved in the Self Center program were of somewhat higher academic standing than those who were not involved.

In 1989, Kirby, Waszak, and Ziegler performed an in-depth assessment of six SLHCs for the Center for Population Options (110) (see table 10-8). They compared schools in which SLHCs were located with sociodemographically similar schools in the same communities, and found that students in the SLHC schools were no more likely to be sexually active than their peers in the comparison schools (1 10). In two of the sites, students in the schools with SLHCs initiated sex at older ages (an average of 8 months later). Also, students in two of the SLHC schools (those in which the health center staff provided aggressive outreach for contraceptive education within the school) had higher rates of contraceptive use than the comparison groups did. In

three SLHC sites in which contraceptives were dispensed, however, students did not report higher rates of contraceptive use. According to Kirby and his colleagues, these findings suggest that the mere accessibility of contraception may not be sufficient to increase adolescents' contraceptive use (1 10).

The 1989 study by Kirby, Waszak, and Ziegler found that none of the six SLHC programs had a significant impact on students' sexual activity or self-reported pregnancy rates, not even SLHCs that dispensed contraceptives onsite (1 10). It may be important to note, however, that the researchers collected pregnancy data from all students at the school and did not just compare clinic users to nonusers. In the three SLHC schools in which clinic users were compared with nonusers, *contraceptive use* was found to be higher among the clinic users, and, overall, from 44 to 90 percent of the pregnancies that occurred in the student body occurred to students who had never attended the clinic (1 10). In any event, the researchers concluded after careful examination of the programs that the programs were not as strong and integrated within the school as they needed to be to lower pregnancy rates,

In considering the effects of SLHCs on adolescent pregnancy, it is important to keep in mind that the greatest amount of research to date has been conducted on the SLHC programs in St. Paul and Baltimore, both of which were established with the *explicit goals* of reducing adolescent pregnancy and parenting. Other SLHCs—especially those that do not emphasize reproductive health services—may not be able to achieve the same kinds of pregnancy-related outcomes. Furthermore, many SLHCs operate only during the academic year, are not open after school hours, and do not serve students who have dropped out of school. Because of its off-campus location and its after-school hours of operation, the Self Center in Baltimore was able to avoid some of these limitations; the avoidance of those limitations and the Self Center program's explicit and intensive focus on pregnancy prevention may have contributed to the apparent success of this program in reducing adolescent pregnancies.

SLHCs have been opposed on several grounds. There are concerns among some opponents of abortion, for example, that the *real* agenda of clinic supporters is to promote abortions (74); in many SLHCs, though, abortion counseling and referrals are prohibited (148). Another objection is that the

provision of contraceptive services by a formative public institution such as a school will legitimate early sexual activity. Another objection to SLHCs is that most existing data do not support the claim that SLHCs reduce adolescent pregnancy rates (65,1 10). Given the limitations of current evidence, however, it is not possible to conclude that SLHCs do not reduce pregnancy rates. Evaluation designs have been mostly pretest-posttest research designs with no comparison groups, and there have been limitations in the types of data collected.<sup>78</sup>

It has been argued by some that because of the great need for health care in the low-income and minority communities targeted for SLHC locations, families have been reluctant to protest their establishment (74). Unfortunately, information about the level of community support for SLHC programs is limited, although polls conducted in several States have found that over three-fourths of adults surveyed favored the establishment of SLHCs (32,42,135).

**Condom Distribution and Other Programs Targeted to Adolescent Male**--Contrary to popular opinion, a majority of adolescent males are likely to acknowledge that they bear some responsibility for preventing pregnancy in their sexual relationships and say that they are willing to make use of contraception (166). Whitley and Schofield's recent meta-analysis of 134 studies of adolescent contraceptive use found that the major variables affecting young males' contraceptive use pertain to encouragement by their partner and favorable attitudes towards contraception (221). Despite adolescent males' willingness to be involved in pregnancy prevention, family planning and other pregnancy prevention programs have traditionally focused on young women and have even excluded adolescent males (47,148).

**Condom Distribution Programs**--Condom distribution programs targeted to males are a notable exception to the general pattern of male exclusion noted above, and such programs have been increasing in number in recent years. The increase in condom distribution programs is partly in response to concerns about AIDS and other STDs<sup>79</sup> and partly due to the recognition by service providers and program planners that use of condoms (the birth

control method most frequently used by adolescents at first intercourse) may help in the "vulnerable period" for many young women between initiating intercourse and seeking other contraceptive services (148).

Condom distribution programs targeted to adolescent males have largely been carried out by family planning service providers; distribution locations have included clinics, pharmacies, community and recreation centers, neighborhood shops and restaurants, and other places where young men gather. Some programs have used male outreach workers to distribute educational materials along with the condoms, and to encourage their use (148).

In 1988, Kirby and colleagues evaluated a program that attempted to get adolescent males to use condoms by mailing order forms (109) (see table 10-8). In 1973, Arnold's evaluation of a condom distribution program using outreach workers had found that adolescent males' use of condoms increased in the area targeted by the program both during its implementation and at followup (10) (see table 10-8). In the condom distribution effort that was evaluated by Kirby and colleagues, a sample of adolescent males was sent an educational pamphlet and an order form for free condoms in the mail; in a followup interview, the males who received these items were no more likely to report using condoms than a control group who did not receive them (109). It seems clear from these two examples that direct distribution of condoms would lead to greater condom use than just a mailing of order forms. But these studies provide no conclusive evidence of condom distribution programs' impact on adolescent pregnancy.

**Other Efforts To Offer Contraceptives to Adolescent Males**--some efforts to involve young adolescent males in family planning services have recognized that adolescent and young adult males are not likely to make use of services that they perceive to be geared toward young women and that the environment of programs that offer contraceptive services could be changed to make young men more comfortable. Strategies such as hiring young male staff members, offering special male clinics, and changing the physical environment (e.g., by show-

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<sup>78</sup>Some studies, for example, have collected data on births to adolescents but have not collected data on all adolescent pregnancies, leading to the assertion that lower birth rates have resulted exclusively from higher abortion rates.

<sup>79</sup>For further discussion, see ch. 9, "AIDS and Sexually Transmitted Diseases: Prevention and Services," in this volume.

ing sports videos in the waiting room) may help to reach this goal (166). Active outreach by clinic providers to contact adolescent males through existing recreational, educational, employment, or health care programs may be another means of increasing adolescent males' utilization of contraceptives (24, 171). Offering non-sexuality-specific services (e.g., sports physicals, recreational activities) may also attract young men to family planning clinics (166).

In general, there are few data available documenting the strategies on either clinic utilization or impact of contraceptive use among young males. One effort in a health maintenance organization used half of a 1-hour clinic visit to show a highly explicit slide and tape program, and the other half to provide an educational personal health consultation (38a). Participants and controls were randomly assigned to conditions in this rare experiment. Sexually active males who received the intervention were more likely to use a more effective method of contraception, and all participants had greater knowledge of fertility and STDs (38a). The program's effects were generally stronger among those who had not been sexually active before the experiment, a finding that suggests the wisdom of early intervention.

**Summary of the Effectiveness of Contraceptive Provision Programs**—programs that provide contraceptives to adolescents show mixed results in terms of preventing adolescent pregnancies (see table 10-8). Studies of the impact of subsidized family planning clinics on adolescent pregnancy have shown contradictory results, so it is difficult to come to conclusions about the effect that these programs have had. Some studies have found a positive association between the availability of subsidized family planning services and reduced adolescent pregnancy rates, and some studies have found a negative association. Family planning clinics with a special emphasis on adolescents have been found in most studies to demonstrate only a minimal impact on adolescent contraceptive use or pregnancy rates; one recent study in Pennsylvania found, however, that protocols that made changes in the everyday delivery of services for adolescents increased adolescents' use of contraceptives and reduced their pregnancy rates (223a). Studies of SLHCs that were established with the explicit goal of reducing adolescent pregnancy and parenting have found that such SLHCs seem to increase adolescents' use of contraceptives but do not always reduce pregnancy rates. Evaluations of condom

distribution programs suggest that an active effort to distribute condoms is more likely to get male adolescents to use condoms than is a more passive effort such as offering condoms through the mail.

### **Programs That Seek To Enhance Adolescents' Life Options**

Enhancing adolescents' "life options" is an approach to preventing adolescent pregnancy that has been proposed "in light of the seeming intractability of adolescent pregnancy rates, despite prolonged efforts to expand sexual education and contraceptive services" (47a). This approach is based on the assumption that young people will not be motivated to avoid early pregnancy and parenthood unless they see alternative pathways to achieving adult status. It is supported by evidence that low-income adolescents at risk for dropping out of school are also at increased risk of early pregnancy and parenthood.

Available information about the effectiveness of three types of life options approaches is presented below:

- 1) life planning and decisionmaking programs,
- 2) role modeling and mentoring programs, and
- 3) youth employment programs.

Life planning and decisionmaking programs rely on a curriculum to improve adolescents' life planning and decisionmaking skills so as to enable them to plan for alternatives to early parenthood. The Life Planning Project developed by the Center for Population Options and a pregnancy prevention program developed by the Girls' Clubs of Santa Barbara, California, are two examples discussed below (47a).

Role model and mentoring programs such as Big Brothers and Big Sisters have typically been designed to provide disadvantaged young people (males and females) with positive role models and social support for desirable social behaviors (148). Such programs offer concrete assistance in the form of academic tutoring or job interviewing skills. Most of these programs have not focused explicitly on sexual behavior or pregnancy prevention, but a few programs discussed below explicitly emphasize responsible sexual behavior.

The third kind of life options programs, youth employment programs, offer their participants actual work experience along with social support or

interventions to improve their life planning. One example is the Job Corps program for economically disadvantaged youth. This program, which is administered by the Employment and Training Administration in the U.S. Department of Labor, provides employment and training in primarily residential centers for socioeconomically disadvantaged people ages 16 to 21 (148).<sup>80</sup> Other examples of youth employment programs discussed below are the federally funded Youth Incentive Entitlement Projects, the Teen Outreach Program (TOP), and the Summer Training and Education Program (STEP) (148).

As noted earlier, adolescent pregnancy prevention efforts have traditionally focused on adolescent females, and some have even tended to exclude adolescent males. In contrast, some life options programs have included adolescent and young adult males, recognizing that limited work and educational opportunities may defeat young males'—especially low-income and minority males—motivation to be involved in parental responsibilities (1a).

**Life Planning and Decisionmaking Program--**The *Life Planning Project* is a curricular program developed by the Center for Population Options and implemented in three communities (47a). The major objective of the Life Planning Project is to help adolescent participants avoid pregnancy, largely as part of planning for their futures (148). The curricular materials emphasize job and career planning, family planning, and methods of pregnancy prevention through various written exercises and group activities. The Life Planning Program involves the participation of a range of youth-serving agencies in each community, whose staff have implemented the curriculum among their adolescent clients (148). Like many pregnancy prevention efforts, the Life Planning curriculum has not been rigorously evaluated. The evaluation that has been done suggests that although the intervention may have improved participating adolescents' knowledge, it did not significantly affect their behavior (148). Because the evaluation had no comparison or control group, it is unclear if even the knowledge gains were a direct result of the intervention itself.

Eight Girls' Clubs have implemented a pregnancy prevention program that includes a curriculum based on a workbook entitled *Choices: A Teen Woman's Journal for Self-Awareness and Personal Planning* (18), which was developed for adolescent females by the Girls' Clubs of Santa Barbara, California. The "Choices" workbook provides adolescents with written exercises and other activities designed to encourage them to think about their future work and family life and to enhance their goal-setting and decisionmaking skills (18).<sup>81</sup> The pregnancy prevention program includes two components for younger adolescent females (mother-daughter workshops designed to enhance communication about sex and a variation on the Postponing Sexual Involvement program discussed earlier) and two components for older adolescent females (the "Choices" workbook and clinic services) (148). The Girls' Clubs program that includes the "Choices" curriculum has been systematically evaluated (86). The results of that evaluation are expected in the fall of 1991.

**Role Model and Mentoring Programs--**Little information is available on the effectiveness of traditional role model and mentoring programs such as Big Brothers and Big Sisters in reaching their goals of encouraging positive social behavior, and none of these programs have been evaluated for their potential effect on adolescent pregnancy.

Innovative mentoring programs that have explicitly incorporated pregnancy prevention strategies include the Athletes Coaching Teens project developed in the Psychology Department at Virginia Commonwealth University. This program trains high school and college athletes to conduct sessions for younger students on goal setting, life planning, and responsible decisionmaking (39).

Another innovative mentoring program that explicitly encourages responsible sexual behavior is a program begun by the Urban League as part of its Adolescent Male Responsibility Program (148). College students in Kappa Alpha Psi, the national black fraternity, serve as mentors to young adolescent males, meeting with them three evenings each week and providing them with remedial education, recreational activities, and community service opportunities. The mentors specifically emphasize responsible

<sup>80</sup>Additional information on the Job Corps is presented in ch. 19, "The Role of Federal Agencies in Adolescent Health," in Vol. III.

<sup>81</sup>A companion book entitled "Challenges" has been developed for adolescent males; this book has not been used as extensively, however, and there seem to be no plans to evaluate its impact (47).

sexual behavior. A similar project involving adolescent females with a national black sorority (Delta Sigma Theta) has also been developed (148).

Although evaluations of all three of the innovative mentoring projects identified above are underway, data on the impact of these innovative efforts on adolescent sexual activity, contraceptive use, or pregnancy were not available as of mid-1991.

**Youth Employment Programs--**As noted above, youth employment programs include large-scale federally funded programs such as Job Corps programs, which are intended to address employment problems among socioeconomically disadvantaged young people ages 16 to 21 by teaching job skills, providing incentives to employees, and placing individuals in jobs (148). They also include demonstration projects such as the Summer Training and Education Program (STEP), which served adolescents in five cities, and the Teen Outreach Program (TOP) in St. Louis (see table 10-9).

**Job Corps and Youth Incentive Entitlement Pilot Projects--**Federal and other programs designed to increase the employability of young people from low socioeconomic and minority backgrounds have been in existence for a number of years. Only recently has their potential for adolescent pregnancy prevention been explored. This development follows increasing awareness that a lack of economic opportunities may influence the likelihood that an adolescent will become (or will make someone) pregnant. Most employment and job training programs have not included any explicit instruction in sex education or family planning,

Presumably because many youth employment programs have focused on young males and on employment, information has not been collected on the impact of traditional youth employment programs on adolescents' fertility behavior. One notable exception is a 1978 evaluation of the federally supported Job Corps program (148). That evaluation found that participation in the Job Corps seemed to delay family formation and reduce the incidence of out-of-wedlock childbearing among participants (210). To OTA's knowledge, more recent evidence concerning the impact of participation in the Job Corps on adolescents' childbearing is not available.

One more recent investigation considered the impact on adolescent fertility of the federally funded Youth Incentive Entitlement Pilot Projects. These pilot projects provided jobs to economically disadvantaged high school students who remained in school and maintained adequate levels of school performance (158). The results of the investigation, while not conclusive, seemed to indicate that adolescent females were more likely to delay childbearing (at least until the age of 18) in the communities where the projects were located than were adolescent females in the comparison sites.

**Summer Training and Education Program (STEP)--**STEP is a 15-month program developed to keep disadvantaged 14- and 15-year-olds from dropping out of school and becoming adolescent parents (185c). With summer income as an incentive, 14- and 15-year-olds who are eligible for the Federal Summer Youth Employment and Training Program (SYETP)<sup>82</sup> enroll in STEP for two consecutive summers of remedial instruction in reading and math, life skills instruction (stressing responsible social and sexual attitudes and behavior), and work experience combined with supportive services during the academic year (see table 10-9). Supportive services offered during the academic year include individual counseling, group activities, workshops, and meetings with parents (21,22).

Developed and managed by Public/Private Ventures, a private nonprofit corporation in Philadelphia, STEP was first implemented in a three-city pilot program in the summer of 1984 (185c). Following that successful pilot, Public/Private Ventures began a national demonstration of STEP in five cities (Boston, Fresno, San Diego, Seattle, and Portland, Oregon). Half the eligible youth interested in participating were randomly assigned to STEP or to a control group who participated in SYETP. In each of the five sites, three cohorts of about 320 youth each are participating in the program and research, so there are about 4,800 youth in the demonstration (185 b). Cohort I entered the program in 1985, Cohort II in 1986, and Cohort III in 1987. The operational phase of the program ended in August 1988 with Cohort III's second summer of services, but the long-term research phase of the demonstration (which includes the collection of

<sup>82</sup>The Federal Summer Youth Employment and Training Program (SYETP) is a U.S. Department of Labor program authorized under Title II-B of the Job Training Partnership Act. It offers 7 to 8 weeks of summer employment and remedial assistance to low-income teenagers. For further discussion see the section on Federal policies and programs pertaining to adolescent pregnancy and parenting below.

**Table 10-9—Evaluations of Youth Employment Demonstration Programs<sup>a</sup>**

study <sup>b</sup>	Program characteristics	Program participants	Evaluation characteristics	Findings
Branch, Milliner, Bloom, et al., 1985; Branch, Milliner, and Bumbaugh, 1986; Sipe, Grossman, and Milliner, 1988	Summer Training and Education Program (STEP): Over a 15-month period, offers 2 consecutive summers of remedial education, life skills instruction, and work experience plus various support services (e.g., counseling) during the school year. <sup>c</sup>	14- to 15-year-olds from low-income families in five cities who are at risk of dropping out of school and becoming adolescent parents. In each of 5 sites, three cohorts (1985, 1986, and 1987) of about 320 youths each are participating, for a total of 4,800 youth in the demonstration.	Eligible youth were randomly assigned to STEP or to a control group (remedial education and summer work experience only). <sup>d</sup> Findings are based on metropolitan achievement test scores, STEP questionnaire responses, <b>school records, and past program interviews.</b>	In <b>the short term</b> , STEP stemmed participants' <b>academic losses and increased their knowledge of contraception. Conclusive statements regarding STEP's long-term impacts on dropout rates and fertility-related behavior must await completion of the study.</b> <sup>e</sup>
Philliber, 1985; Philliber and Allen, 1990; Philliber and Allen, no date	Teen Outreach Program (TOP): An after-school program offered during the academic year with two major components: 1) a <b>twice-weekly</b> discussion group led by trained facilitators, covering topics such as family relationships, peer pressure, sexuality, and focusing on teaching group members to set life goals and develop plans for reaching those goals; and 2) volunteer service placement with community agencies to provide participants with work experience and opportunities to practice job-related skills learned in discussion groups. Students may earn credit toward graduation for participation in TOP.	National sample of junior and senior high school students who enrolled <b>voluntarily in response to announcements or who were identified as being at risk or potentially at risk for school dropout or pregnancy and enrolled by counselors or others. In 1984-85, there were 148 students at 7 sites; in 1985-86 444 students at 16 sites; in 1986-87, 632 students at 35 sites; in 1987-88, 782 students at 44 sites; and in 1988-89, 1,028 students at 60 sites. In 1988-89, over 75 percent of TOP participants were female; average age 15 (range was 11 to 21). In 1988-89, about 40 percent of TOP participants were black, 40 percent were white; and 13 percent were Hispanic; the rest were mostly Asians or Native Americans. About 41 percent came from nonintact families; socioeconomic status varied.</b>	<b>Years 1-4: TOP participants were compared with students in variously matched comparison groups.</b> The evaluations <b>monitored four outcome variables for TOP students and their comparisons:</b> school suspension, failure of courses in school, dropping out of school, and pregnancies. Year 5 (1980-90): Same as in years 1-4, but additional outcome variables were measured. At 5 TOP replication sites, students were randomly assigned to either TOP (79 students) or to a control group (89 students).	<b>Years 1-devaluations found positive results among TOP participants.</b> Year 5 evaluation found similar results in the national Sample. <sup>f</sup> At the 5 random assignment sites, TOP participants had significantly lower school suspension arrest, and were more likely to get an award. Other differences were not statistically significant. Findings from year 6 of the evaluation will not be available until after 1992.

<sup>a</sup>This table shows evaluations of youth employment demonstration programs and therefore does not include the Job Corps program or other large-scale youth employment programs sponsored by the U.S. Department of Labor. Those other programs are discussed in the text.

<sup>b</sup>Full citations are listed at the end of this chapter.

<sup>c</sup>During the summer, STEP participants spend half their time in remediation and life skills classes and half their time in work experience. All youth are paid minimum wage for their participation with funds from the Federal Summer Youth Employment and Training Program (SYETP), which is funded by the U.S. Department of Labor.

<sup>d</sup>Control group subjects were offered remedial education and a summer through SYETP. They did not receive life skills instruction or supportive services during the school year.

<sup>e</sup>The Operational phase of research ended in August 1988, but researchers will follow the youth through 1992.

<sup>f</sup>Each TOP site recruited a local comparison group at the beginning of the school year, preferably using true random assignment procedures (163a). In some sites where random assignment was not possible, student participants identified comparison students for themselves, naming young people who might have filled out intake forms "about like you did." In 1988-89, TOP participants in the national sample were significantly more likely to be female than comparison students (76 percent v. 67.5 percent) and were significantly less likely to have been pregnant (4.5 percent v. 7.8 percent).

<sup>g</sup>The 1988-89 evaluation gathered data not only on the four variables considered in the previous 4 years but also on arress skipping school, use of alcohol or marijuana, having sexual intercourse, using contraceptive when sexually active, joining after-school activities, getting an award, getting on the honor role, and educational aspirations.

<sup>h</sup>After background characteristics and baseline levels of outcomes were controlled for, participation in TOP was found to be relatively related to getting pregnant or causing pregnancy, Suspension, getting arrested, family courses, and skipping school. It was positively related to using contraception when sexually active, getting awards, getting on the honor role, raising college aspirations, and staying in school.

SOURCE: Office of Technology Assessment, 1991.

school records data and data from personal records) will not be completed until 1993.

preliminary findings issued in the summer of 1988 were based on four groups of data for each cohort: pre- and post-summer metropolitan achievement test scores, STEP questionnaire responses, school records and postprogram interviews (185c). These preliminary findings indicate that STEP was most effective in stemming participants' academic losses over the summer and in sharply increasing their knowledge of contraception. The preliminary results are consistent with the hypothesis that STEP reduces dropout behavior but are based on small numbers and are not statistically significant. Consistent effects on STEP participants' fertility-related behavior were not found in preliminary results. Nevertheless, final conclusions about STEP's long-term effects on dropout and fertility behavior must await the completion of the research.

*Teen Outreach Program (TOP)*—TOP is an after-school program designed to prevent early pregnancy, to encourage regular attendance in school, and generally to promote life options among junior and senior high school students at risk of school dropout or pregnancy (163a). The program was begun in 1978 as a collaborative effort between the Danforth Foundation and the St. Louis public school system. In 1983, funding was provided by the Charles Stewart Mott Foundation to begin a 3-year national replication of TOP. In 1987, a second 3-year national replication began under the direction of the Association of Junior Leagues International and the American Association of School Administrators.

TOP consists of two major components: 1) small group discussions about life planning, relationships, peer pressure, sexuality, and parenting and 2) volunteer service experience (163a). A twice-weekly discussion group is led by a trained facilitator,<sup>83</sup> who uses a variety of strategies (e.g., group exercises, role-playing, and homework) to teach group members how to set realistic life goals and develop plans for reaching those goals. Weekly volunteer service placement for the last three-quarters of the academic year provides TOP participants with real work experience and an opportunity to practice job-related skills learned in the discussion groups. Volunteer placements for participants

are identified by the trained facilitators, who also supervise the placement process.

The number of TOP sites increased from 7 in the 1984-85 school year to 24 in 1985-86 to 35 in 1986-87 to 44 in 1987-88 to 60 in 1988-89, to an estimated 87 in 1989-90 (163a). TOP evaluations in the first 4 years monitored four outcomes: school suspension, failure of courses in school, dropping out of school, and pregnancies. The evaluation data were fairly consistently positive (164a). The range in the types of students enrolled at the different TOP replication sites and the variability in the comparison groups at the different sites make interpreting the results of these evaluations difficult. Students at some sites volunteered entirely on their own to participate in TOP; at other sites, students were enrolled in the program by counselors or others. Some evaluators asked student participants to identify their own matched comparisons by naming someone who would be likely to fill out intake forms "about like you did." Other evaluators recruited comparison students as a group from other classes (164).

The 1989-90 evaluation of TOP monitored the four outcomes noted above plus several others, including having sexual intercourse and using contraception when sexually active. In this evaluation, five of the TOP replication sites existing at that time were able to conduct a true experiment by randomly assigning at-risk students to either TOP or a control group (163a,164). The results of the 1989-90 evaluation appear somewhat less promising than results suggested by aggregate data from the previous 4 years. In all randomized and nonrandomized sites combined, evaluators found significant differences between TOP participants and comparison students in four indicators: school suspension rates, school failure rates, school dropout rates, and pregnancy rates. At the five sites with randomization, evaluators found that TOP participants had lower school suspension and failure rates than control group students but did not have lower dropout or pregnancy rates. It is important to note, however, that the five sites with randomization included only 79 TOP participants and 89 controls. This small number of students across five different sites makes it difficult to detect differences in such low frequency events as pregnancy.

<sup>83</sup>All the facilitator for TOP are specially trained secondary school teachers.

Summary of the Effectiveness of Programs That Seek To Develop Adolescents' Life Options--Definitive conclusions about the effectiveness of life options programs are difficult to draw in part because such programs are more difficult to evaluate than programs with a narrower focus and in part because some evaluations are still underway. Nonetheless, some of these programs do seem to show promise. Life planning and decisionmaking interventions that do not provide work experience are probably less successful than those that do provide such experience. One youth employment program, the Job Corps, seemed to delay family formation and reduce out-of-wedlock childbearing among participants, but the evaluation of that program was performed in 1978. An evaluation of the federally funded Youth Incentive Entitlement Projects found that adolescent females in the communities where the projects were located were more likely to delay childbearing than females in comparison sites. Preliminary findings from an evaluation of the Summer Training and Education Program (STEP) indicate that the program reduces 14- to 15-year-old participants' academic losses over the summer and increases their knowledge of contraception, but the evaluation of that program has not been completed, and it is too early to draw conclusions about STEP's long-term impact on dropout or fertility behavior. An evaluation of the Teen Outreach Program (TOP) suggests that this program is somewhat promising in terms of reducing pregnancies and school problems, but methodological problems in the evaluation make it difficult to draw definitive conclusions about its effectiveness in reducing pregnancies. Role model and mentoring projects that emphasize responsible sexual behavior are a recent innovation, and data on their effects on adolescents' sexual behavior are only beginning to be collected.

### Economic Incentive Programs

A controversial and experimental approach to preventing *second* pregnancies among low-income adolescents who have already been pregnant before the age of 16 was developed by the Rocky Mountain Planned Parenthood program (101). This program, called Dollar-a-Day, uses money to attract adolescent females to attend a voluntary weekly meeting led by professional counselors. Dr. Jeff Dolgan, then director for the Denver Children's Home, proposed

this program after working with adolescents who got pregnant and showed little motivation to prevent future pregnancies. He asked the adolescents what it would take to get them to come to a voluntary program, and their response was that it would take money. Every week, adolescents who attend Dollar-a-Day weekly meetings are given 7\$1 bills for not becoming pregnant. The assumption being made is that adolescents who attend these meetings will receive support and peer pressure not to become pregnant from other adolescents. By helping delay further pregnancies, the program claims to "buy time" for high-risk adolescents, allowing them to mature emotionally and to finish or return to school. It is hoped that participants will discover that parenthood is not the solution to their problems.

Although no formal evaluation was done, records on pregnancy rates for program participants have been kept. Of the 56 adolescents who completed the program, 9 girls (17 percent) have become pregnant. Program designers compare these percentages with national statistics on repeat pregnancies, which the Alan Guttmacher Institute estimates to be between 37 and 50 percent (148). The program proponents claim that the program is successful and that the weekly groups and not the money are responsible for averted births. Their evaluation lacks an experimental control group, however, and it appears that they include pregnancy statistics only on those adolescents who graduate from the program and do not account for the pregnancy rates of those adolescents who drop out of the program. A similar program, the Cash Awards for Teens Who Stay Program, is being administered in Florida (185).

### Conclusions About the Effectiveness of Programs To Prevent Adolescent Pregnancy

The prevention of adolescent pregnancy would result in fewer births to U.S. adolescents and would also result in fewer abortions (148). Unfortunately, however, a political consensus in this country about how to prevent adolescent pregnancy has not been—and may never be—reached.<sup>84</sup> As Dryfoos notes in her recent comparative review of prevention programs for delinquency, substance abuse, and pregnancy, "Clearly, when sex enters the scene, the situation becomes complicated" (47a).

<sup>84</sup>To some extent, this lack of consensus is reflected in Federal programs such as Title X and Title XX of the Public Health Service Act. These programs are discussed later in this chapter.

Dryfoos notes a schism between political “liberals” and “conservatives” on the issue of adolescent pregnancy prevention (47a). Many conservatives take the position that government support for sex education and contraception weakens family ties and encourages promiscuity and that government initiatives should encourage adolescents to abstain from sexual intercourse. Many liberals agree that encouraging adolescents to delay sexual intercourse until full adulthood would be preferable, but are alarmed by the consequences of unprotected adolescent sexuality (i.e., pregnancy, AIDS, STDs) and believe that society’s approach should go beyond relying on the abstinence message alone. Scholars are generally frightened away from the topic of adolescent sexuality, and as one result, there is little scientifically valid evaluation of pregnancy prevention programs; the paucity of methodologically sound research makes drawing definitive conclusions about what works difficult (47a,107a,148).

The National Academy of Sciences’ Panel on Adolescent Pregnancy and Childbearing concluded in 1987 that “prevention of adolescent pregnancy should have the highest priority” (see box 10-C for the panel’s six general conclusions). While noting the lack of rigorous evaluative efforts, the panel felt there was an adequate basis at that time for making recommendations about strategies to prevent adolescent pregnancy (148). The three general strategies that the panel felt could lead to a reduction in the rate of adolescent pregnancies were as follows:

- 1) enhance the life options of disadvantaged adolescents,
- 2) delay the initiation of sexual activity, and
- 3) encourage contraceptive use by sexually active teenagers (148).

“Diligent contraceptive use” by adolescents was considered to be the most effective of these pregnancy prevention interventions, but no program element alone was considered to be sufficient, and specific approaches for implementing the three strategies were provided (148). Central to all the strategies embraced by the National Academy of Sciences panel was “the need for teenagers them-

selves to embrace values that lead to responsible, healthy, and productive lives, including the avoidance of unplanned and untimely parenting, and to be steadfast in their belief that they can achieve their goals” (148). Parents, other family members, and community and societal norms were seen as playing a key role in helping young people acquire and maintain those values.<sup>85</sup>

Following her more recent review of pregnancy prevention interventions, Dryfoos drew conclusions similar to those of the National Academy of Sciences’ Panel on Adolescent Pregnancy and Childbearing, with emphases on early intervention (no later than the middle school years), the use of multiple approaches, and confidential access to contraceptives (47a). As Dryfoos notes:

No one program component will be sufficient. In every community, young people should have access to a package of services that include both capacity-building<sup>86</sup> and life-option<sup>87</sup> components (47a).

Similarly, in a review of the effectiveness of sexuality education programs, Kirby concluded that such programs must do more than increase knowledge:

Programs must help adolescents personalize that information, improve their decisionmaking and communication skills, increase their motivation either to avoid sex or to use birth control, change their perception of peer group norms regarding having sex and using condoms, and therefore reduce their risk-taking behavior (107a).

Further, Kirby noted that sex education programs will probably be more effective if they involve adolescents in both shaping the programs and promoting the programs’ goals, and incorporate community-wide strategies that are both multifaceted and mutually reinforcing (e.g., 215) (107a). Kirby’s review did not examine the effectiveness of actually providing contraceptives to adolescents, although his conclusion that their use should be encouraged suggests support for providing contraceptives to sexually active adolescents (107a).

<sup>85</sup>It may seem to some that the use of contraceptives would be contrary to adolescents’ adoption of “values,” but if the goal is pregnancy prevention (and avoidance of other negative consequences of unprotected sexual intercourse), the use of contraception by those adolescents who are sexually active can be seen as responsible and health-promoting.

<sup>86</sup>Capacity-building includes imparting knowledge about human sexuality and contraceptive use and developing decisionmaking skills.

<sup>87</sup>Life Option components include developing adolescents’ motivation not to cut short their developmental trajectory by prematurely becoming pregnant and/or parents and helping adolescents to develop the skills to fulfill their (sometimes new-found) life ambitions.

**Box 10-C—The Six General Conclusions of the National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing**

*On the basis* of 2 years of review, analysis, and debate, the National Academy of Sciences Panel on Adolescent Pregnancy and Childbearing reached six general conclusions that underlie all of its specific conclusions and recommendations for policies and programs:

1. **Prevention of adolescent pregnancy should have the highest priority. In both** human and monetary terms, it is less costly to prevent pregnancy than to cope with its consequences; and it is less expensive to prevent a repeat pregnancy than to treat the compounded problems.

2. **Sexually active teenagers, both boys and girls, need the ability to avoid pregnancy and the motivation to do so.** Early, regular, and effective contraceptive use results in fewer unintended pregnancies. Delaying the initiation of sexual activity will also reduce the incidence of pregnancy, but we currently know very little about how to effectively discourage unmarried teenagers from initiating intercourse. Most young people do become sexually active during their teenage years. Therefore, making contraceptive methods available and accessible to those who are sexually active and encouraging them to diligently use these methods is the surest strategy for pregnancy prevention.

3. Society must avoid treating adolescent pregnancy as a problem peculiar to teenage girls. Our concept of the high-risk population must include boys. Their attitudes, motivations, and behavior are as central to the problems as those of their female partners, and they must also be central to the solutions.

4. There is **no single approach or quick fix to solving all the problems of early unintended pregnancy and childbearing.** We will continue to need a comprehensive array of policies and programs targeted to the special characteristics of communities and to the circumstances of teenagers from different social, cultural, and economic backgrounds and of different ages. Because adolescents are not a monolithic group, they do not all experience sexual activity, pregnancy, and childbearing in the same way. Our broad goal is the same for all young people: that they develop the necessary capabilities to make and carry out responsible decisions about their sexual and fertility behavior. The strategies for achieving these goals and the specific interventions to carry them out, however, should be sensitive to differences in values, attitudes, and experiences among individuals and groups.

5. **If tradeoffs are to be made in addressing the special needs of one group over another, priority should be given to those for whom the consequences of an early unintended pregnancy and birth are likely to be most severe: young adolescents and those from the most socially and economically disadvantaged backgrounds.** In many ways, those at highest risk are hardest to serve, yet they are also the groups that have been shown to benefit most.

6. **Responsibility for addressing the problems of adolescent pregnancy and childbearing should be shared among individuals families, voluntary organizations, communities, and governments.** In the United States, we place a high priority on ensuring the rights of individuals to hold different values and the rights of families to raise their children according to their own beliefs. Therefore, public policies should affirm the role and responsibility of families to teach human values. Federal and State governments and community institutions should supplement rather than detract from that role.

SOURCE: National Academy of Sciences, National Research Council, Commission on Behavioral and Social Sciences and Education, Committee on Child Development Research and Public Policy, Panel on Adolescent Pregnancy and Childbearing, *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing, Volume I, C.I.* Hayes (ed.) (Washington, DC: National Academy Press, 1987).

*Thus, a consensus is growing among scholars who have examined the pregnancy prevention literature that there is no "magic bullet" for preventing adolescent pregnancy.* Rather, a realistic approach that acknowledges that adolescents should be protected from the risks of unprotected sexual intercourse and at the same time strongly encouraged to delay the initiation of sexual intercourse seems essential. Short-term with a limited focus "programs"—e.g., didactic sexuality education interventions that

seek to improve knowledge and foster health-promoting, responsible attitudes; life-skills decisionmaking interventions that teach adolescents how to deal with pressure to have sex or unprotected sex; and parent-child communication programs--do not appear to be able *on their own* to do very much about reducing the high incidence of adolescent pregnancy, although each of these program types shows some positive effects. One promising pregnancy prevention intervention was the South Caro-

lina program that involved the provision of information and contraceptives, and involved parents, teachers, as well as adolescents as participants. This model did not include job and life skills training; other studies suggest that job and life skills training may be able to increase adolescents' motivation to avoid early pregnancy and childbearing.

The evidence on risk factors discussed above suggests that, as noted by the National Academy of Sciences panel, *different adolescents will have different needs, depending on their age, gender, socioeconomic status, cultural background, and community of residence*. Although more scientifically valid research is sorely needed, enough evidence exists to guide communities and national policymakers in their search for approaches that can lower adolescent pregnancy rates. Clearly, the figures presented earlier in this chapter (on increasing sexual experience rates among adolescents; apparent inconsistent use of contraceptives; persistently high adolescent pregnancy and birth rates; and clearly increasing levels of out-of-wedlock births) make an excellent case for ending the largely timid approach of the present. Finally, it may be important to go beyond "programs." Rather than simply being replicated in isolation, each of the successful interventions can be used to inform a general approach to working with adolescents.

### **Programs Designed To Prevent Negative Outcomes of Adolescent Pregnancy and Parenthood**

Approximately one million U.S. adolescents become pregnant each year. Interventions to reduce the likelihood of negative outcomes of adolescent pregnancy and childbearing for the young female, her offspring, or her partner take four general approaches:

- providing pregnant adolescents with alternatives to parenthood by offering abortion or adoption services;

- ensuring that pregnant adolescents have adequate prenatal and other maternity care services<sup>88</sup>;
- offering pregnant and parenting adolescents specific types of services that might help them (e.g., educational services or job training and employment services or social support services or housing, child care, or transportation)<sup>89</sup>; and
- providing pregnant or parenting adolescents with health and a wide range of other services in a comprehensive service program.

These approaches are discussed further below.

### **Programs That Offer Alternatives to Parenthood**

Programs That Offer Abortions---For females who become pregnant and do not wish to become parents voluntary pregnancy termination by induced abortion became a nationally legal option following the U.S. Supreme Court's 1973 decision in *Roe v. Wade* [410 U.S. 113 (1973)].<sup>90</sup> Although this alternative is charged with controversy, especially for adolescents who are legal minors, in recent years it has been widely used by substantial numbers of adolescents who become pregnant, as was discussed earlier.

Legal abortions in the United States are performed in hospitals (as inpatient and outpatient procedures), in abortion and other clinics, and in private physicians' offices (79). The long-term trend has been away from the use of hospitals toward the use of abortion clinics and other nonhospital abortion providers (79). According to Henshaw and his colleagues at the Alan Guttmacher Institute, 86 percent of abortions in the United States in 1988 were performed in nonhospital facilities, including freestanding abortion clinics (64 percent of all abortions), other clinics such as surgicenters and family planning clinics (18 percent), and private doctors' offices (4 percent) (81 b). The remainder (10 percent) were performed on either an inpatient or an

<sup>88</sup>Prenatal care and health services intended to benefit infants and young children were discussed at length in OTA's 1988 report *Healthy Children: Investing in the Future* (199), so the primary focus in the discussion that follows will be on services intended primarily to benefit pregnant and parenting adolescents.

<sup>89</sup>Programs designed to enhance the social, emotional, and cognitive development of children born to adolescent mothers (e.g., parenting education programs) may have some benefits for the adolescents themselves. Because they are designed to benefit the children, however, such programs will not be discussed in detail here.

<sup>90</sup>For a discussion of U.S. Supreme Court decisions dealing with abortion, see ch.17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking" in Vol. III.

outpatient basis in hospitals (81b).<sup>91</sup> Most facilities that perform abortions also provide proabortion sessions to provide information about the procedure and answer patients' questions, as well as contraceptive services and a postabortion checkup (78).

Several factors may limit adolescents' access to abortion, among them lack of abortion providers (or knowledge about abortion providers) in the community, parental consent and notification requirements, and cost. Abortion services are currently unavailable in many areas of the United States (79). Abortion services are most available in States on the East and West coasts (88). Abortion services are concentrated in metropolitan areas and are often not found in rural communities and small towns; in 1985, only 32,000 (2 percent) of the total number of abortions nationwide were performed outside of metropolitan areas (79). Another point is that fewer than half of all U.S. abortion providers perform abortions past the 12th week of pregnancy (79). A disproportionate number of women seeking second-trimester abortions are adolescents, and these adolescents may have particular difficulty obtaining abortions (79).

Several empirical studies concerning the impact of parental consent and notification requirements indicate that such requirements do create barriers to adolescents' access to and utilization of abortion services (e.g., 18a,18b,193c).<sup>92</sup> A number of States have passed laws requiring abortion facilities to obtain consent from one or both parents for legal minors who wish to obtain an abortion.<sup>93</sup> Furthermore, as discussed elsewhere in this Report, the Supreme Court's ruling in the 1989 case *Webster v. Reproductive Health Services* [109 S. Ct. 3040 (1989)] appears to give States greater leeway in restricting access to abortions and at the same time cast doubt on the future of *Roe v. Wade* and other Supreme Court decisions dealing with abortion. To the extent that *Webster* and future rulings increase States' ability to restrict abortion generally, they may reduce minors' access to abortion--even

though the decisions do not directly address the question of parental consent. Also it should be noted that even if the laws do not *require* parental consent or notification, health care providers may as a matter of policy or practice refuse to provide services to minors without parental consent or notification. One reason for such a policy might be to ensure payment. According to the Alan Guttmacher Institute, 22 percent of all abortion clinics in 1981 required parental consent for most minors under most circumstances, especially for those under the age of 15 (78).

As of mid-1986, charges for a first-trimester nonhospital abortion ranged from \$75 to \$900 (79). For adolescents from low-income families, adolescents who lack health insurance, and adolescents whose health insurance does not cover abortions except in the narrowest of circumstances, the cost of an abortion maybe a barrier to access. At least eight States (Idaho, Kentucky, Minnesota, Missouri, Nebraska, North Dakota, Pennsylvania, and Rhode Island) have mandated some restrictions on private health insurance for abortions (76a).<sup>94</sup> Federal funding of abortions through Medicaid has been prohibited since 1977 (8 1a), and only a minority of State have used their own moneys to fund abortions for low-income women (79).

In 1988, DHHS issued new regulations under Title X of the Public Health Service Act prohibiting Title X family planning clinics from providing abortion counseling or abortion referrals to pregnant women. To the extent that the regulation is enforced, it is likely to have an adverse effect on adolescents' access to abortions.<sup>95</sup>

**Programs That Offer Adoption Services—** Some adolescent females carry their pregnancies to term because they do not have access to abortion services, do not consider abortion an acceptable alternative, or become aware of their pregnancy beyond the point at which they can have an abortion, and feel they are not prepared for parenthood. For

<sup>91</sup>Prior to 1983, hospitals were more likely than facilities to provide later stage abortions, but a 1983 U.S. Supreme Court ruling determined that States may not require hospitals to perform early second-trimester abortions [(*City of Akron v. Akron Center for Reproductive Health*, 462 U.S. 416 (1973))]. This ruling, combined with the fact that clinic-based abortions are substantially less expensive than those performed in hospitals, has led to growth in the number of clinics providing abortions and a simultaneous decline in the number of hospitals performing this service (79,81 b).

<sup>92</sup>Other studies are noted in ch. 17, "Consent and confidentiality in Adolescent Health Care Decisionmaking," in Vol. III.

<sup>93</sup>For further discussion of State statutes dealing with abortion and the impact of parental consent and notification requirements or access to services, see ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in vol. III.

<sup>94</sup>For further discussion, see ch. 16, "Financial Access to Health Services," in Vol. III.

<sup>95</sup>Current limitations on the use of Federal Medicaid, Title X, and Title XX funds to pay for abortions, abortion referrals, and abortion counseling are discussed below in the section of this chapter entitled "Federal Programs and Policies Pertaining to Adolescent Pregnancy and Parenting."

these adolescents, services to help plan for adoption or assist in the process of having the child adopted may be important.

Although several studies of adoption decisions and the decisionmaking process have been conducted in recent years (12,133), relatively little information is available on the extent and nature of services provided for adolescents considering adoption (88). Adoption services may include education and counseling for the adolescent, identification and selection of adoptive families, and legal services related to carrying out the adoption decision (148). When such services are provided in a residential program, they are usually part of a comprehensive package (146). Typically, however, multiple agencies, including public and private adoption agencies, are involved in providing the range of services needed by adolescents considering giving a baby up for adoption.

According to the National Academy of Sciences, less than 10 percent of all U.S. adolescents who become pregnant choose adoption (148). In a 1986 survey of services to pregnant and parenting adolescents offered by member agencies of the Child Welfare League of America (CWLA), 63 percent of the 121 agencies surveyed indicated that they made adoptive placement available to their female adolescent clients (21 1). In contrast, almost all (97 percent) of the CWLA agencies who responded to a similar survey in 1969 offered adoptive placement services (186). Fairly few of the agencies surveyed in the 1986 survey indicated that adoption services were in demand among their clients; only 26 percent of the agencies named adoption in listing the five services they provided which were most often used by young women (there were no similar data from the 1969 study).

One Federal program that supports adoption as an alternative to abortion among adolescents is the Adolescent Family Life (AFL) program authorized under Title XX of the Public Health Service Act. Federal assistance for adoption is also provided under Title IV-E of the Social Security Act.<sup>96</sup>

### Programs That Offer Maternity Care or Family Planning Services

Programs That Offer Maternity Care-As noted earlier, the standards of maternity care developed by the American College of Obstetricians and Gynecologists recommended that every pregnant woman have a comprehensive program of prenatal care beginning as early in the first trimester of pregnancy as possible (9a,148). A recognition that pregnant adolescents, especially low-income and minority adolescents, may be at high risk of receiving inadequate prenatal care, and therefore at risk of poor pregnancy outcomes, has led to various efforts intended to increase the quality and amount of prenatal care that pregnant adolescents receive.

Programs to help high-risk adolescents obtain adequate prenatal care have been initiated by public health departments, university hospitals, freestanding clinics, youth service agencies, school-linked health centers (SLHCs),<sup>97</sup> and by private physicians (148). These providers offer services that include pregnancy testing and counseling; testing for STDs; regular medical examinations to monitor the course of the pregnancy; health and nutrition education and referral for nutrition services (e.g. those provided through the U.S. Department of Agriculture's Special Supplemental Food Program for Women, Infants, and Children); and delivery and postpartum care services. Many programs have included intensive outreach components and provide transportation to clinic sites in areas where public transportation is inadequate or unavailable (147). Others have offered counseling, referral, and educational services through home visits by professional health care providers or trained paraprofessionals, combined with clinic visits for medical care. The services may be provided in a separate program or may be included as part of a comprehensive package of services to pregnant and parenting adolescents (150a).

One of the factors influencing adolescents' use of prenatal and other maternity care is the availability of health insurance coverage. Private health insurance provides maternity care coverage for women at all income levels. Since the enactment by Congress of the Pregnancy Discrimination Act of 1978 (Public

<sup>96</sup>The Title XX AFL program is discussed later in this chapter along with other Federal programs related to adolescent pregnancy and parenting.

<sup>97</sup>For discussion of services offered by SLHCS, see ch.15, "Major Issues Pertaining to the Delivery of Health and Related Services to Adolescents," in vol. III.

Law 95-555), almost all employment-based health plans covering 15 or more employees provide maternity care benefits (76b). Because of a loophole in the regulations issued under that act, however, about one-third of privately insured adolescents are not covered for maternity benefits by their parents' employment based health plan.<sup>98</sup>

Medicaid is the major public financing program for pregnant women who are poor. The Omnibus Budget Reconciliation Act of 1989 (Public Law 101-239) required that, as of April 1, 1990, States provide Medicaid coverage to all pregnant women and children up to age 6 with family incomes up to 133 percent of the poverty level. Even women who are eligible for Medicaid, however, may encounter barriers (e.g., low Medicaid participation rates among physicians due to low reimbursement rates or onerous administrative procedures) to the timely receipt of care.<sup>99</sup>

Two major financing alternatives to health insurance coverage for maternity care are the Maternal and Child Health Block Grant Program authorized by Title V of the Social Security Act and community and migrant health centers (199). As discussed later in this chapter, little is known about who receives what services under the Title V maternal and child health block grant. Community health centers provide "primary health services" to residents of medically underserved areas, about half of whom lack health insurance.<sup>100</sup>

**Programs That Offer Family Planning Services To Prevent Repeat Pregnancies-Females** who have a first pregnancy during their adolescent years are at high risk of having repeat pregnancies. As noted earlier, Furstenberg and colleagues found that adolescent mothers who gave birth to additional children in the years immediately after the birth of their first child did not achieve as well vocationally as the mothers who had controlled their fertility (68a). Making family planning services available to young mothers following the birth of their first child may help to delay a second pregnancy for up to a year; few long-term effects on pregnancy rates have been demonstrated (86).

### **Programs That Offer Specific Types of Services to Pregnant Adolescents and Adolescent Mothers**

**School-Based Programs**-Because of the strong relationship between the educational attainment of young mothers and their economic self-sufficiency, many programs serving pregnant adolescents or adolescent mothers have focused on the adolescents' educational needs. Title IX of the Education Amendments of 1972 prohibits discrimination in education against teens because of their pregnancy/childbearing/marital status (88). In the late 1970s and early 1980s, teens who gave birth were less likely to leave school than in the late 1960s and early 1970s (88).

Regular school routines, regulations, and facilities are seldom able to accommodate all of the special needs of pregnant adolescents or adolescent mothers (e.g., their need for flexible schedules, child care, and specialized health education, and in some cases, parent training). In order to help meet these needs, at least some school systems have established alternative schools for pregnant adolescents and adolescent mothers (148). Some of these alternative schools are located within existing secondary schools, facilities, and others are in facilities of their own. Most of the alternative schools are self-contained. Alternative school programs typically offer pregnant and parenting adolescents individually paced academic instruction. In addition, many programs provide special instruction in sex education, health and hygiene, nutrition education, parenting skills training, life planning, life skills training, and job training (148). Most of them also provide onsite child care. Alternative schools for pregnant and parenting adolescent mothers frequently help link their students to other programs both within the school system and in the larger community (e.g., family planning, income supports, housing).

School-based interventions for pregnant adolescents and adolescent mothers vary widely in intensity, duration, and scope. Intensive, comprehensive educational programs offered both during and after pregnancy may be able to increase the likelihood that pregnant adolescents will stay in school and that adolescent mothers will complete high school (230).

<sup>98</sup>For further discussion, see ch. 16, "Financial Access to Health Services," in Vol. III.

<sup>99</sup>The problem of low Medicaid participation by obstetricians is discussed in ch. 16, "Financial Access to Health Services," in Vol. III. This and other barriers to the timely receipt of maternity care by poor women eligible for Medicaid were discussed at greater length in OTA's 1988 report *Healthy Children: Investing in the Future* (199).

<sup>100</sup>For discussion of the Title V Maternal and Child Health Block Grant Program and community health centers, see the section on Federal programs related to adolescent pregnancy and parenting below.

Unfortunately, well-controlled studies of the impact of alternative school programs on adolescent mothers' educational attainment do not exist (15,172). There is some evidence, however, that alternative school programs are able to increase participants' educational aspirations, enhance their knowledge of positive health practices and parenting skills, and improve health-related outcomes for both mothers and their infants (121).

It is important to note that school-based programs for pregnant and parenting adolescents serve only adolescents who remain in school after they become pregnant; few programs conduct active outreach to identify adolescents who are no longer in school when they become pregnant, and some do not follow up on adolescents who drop out during the course of their pregnancies (172). Thus, school-based programs for pregnant and parenting adolescents may be serving only the best informed, most highly motivated adolescents. There is also some concern that in areas where school officials lack commitment to or actively resist alternative programs, such programs may serve to exclude pregnant and parenting adolescents from regular school settings and may not provide them with an education that is comparable *with* that of their nonparenting peers (2,230).

Employment and Job Training Programs--As noted earlier, early parenthood may adversely affect adolescents' job opportunities and ability to achieve economic self-sufficiency. For that reason, increasing attention has been paid to the needs of pregnant and parenting adolescents for job training and job placement services, especially for older adolescents. In some comprehensive care programs for pregnant and parenting adolescents, however, including employment as a goal has been controversial because of the concerns that an emphasis on employment as a goal may lower the educational attainment of younger adolescents who have not yet completed high school (148).

As discussed elsewhere in this Report, the U.S. Department of Labor supports training and employment programs for economically disadvantaged youth ages 16 and over under the 1982 Job Training Partnership Act. This act authorizes the Job Corps and various other programs affecting adolescents.<sup>101</sup>

Few of the large *federally supported youth employment programs* have been sensitive to the special needs of pregnant and parenting adolescents (e.g., their need for child care) (148). Such programs have not had much effect on young mothers' employment status or earning levels. Even programs that have targeted adolescent parents seem to have shown little impact on participants' employment rates (26), although some programs have been able to increase participants' work preparedness and actual work experience (148).

A program called *Teenage Parent Demonstration*, sponsored by the Office of Family Assistance in the Family Support Administration of DHHS, is currently operating in Illinois and New Jersey in three different sites (131). This program serves urban, low-income, largely minority adolescent parents who are receiving AFDC benefits, with the goal of reducing long-term welfare dependency among them. Case managers assist program participants in identifying and fulfilling educational or employment-related experiences, and they provide referral services to community resources. The program also offers assistance with child care and transportation to help adolescents adhere to their plans. In an attempt to enhance the long-term ability of fathers to make support payments, efforts are being made to establish paternity soon after the birth of the baby, and the fathers of the participant's children are eligible to receive employment-related training. The Teenage Parent Demonstration is being evaluated for the effects of program participation on the adolescent parents' prospects for self-sufficiency by Mathematical Policy Research Inc., which will obtain State and county agency records, program records data, and followup interviews and basic skills tests with experimental and control groups. The program is still being implemented, so data are not yet available.

Programs That Provide Social and Emotional Support—In the 1986 survey of services to pregnant and parenting adolescents offered by member agencies of the CWLA, individual counseling was mentioned by almost four-fifths (79 percent) of the responding agencies as a "most often used" service by pregnant and parenting adolescents (both males and females) (21 1). To some extent, this finding may

<sup>101</sup>A 1978 evaluation of the Job Corps Program reviewed earlier in this chapter found that participation in the program seemed to delay family formation and reduce the incidence of out-of-wedlock childbearing among participants (2 10). For further discussion of the Job Corps and other youth training and employment programs administered by the U.S. Department of Labor, see ch. 19, "The Role of Federal Agencies in Adolescent Health," in Vol. III.

reflect the nature of the agencies surveyed (which were mostly child welfare and family service agencies, both public and private), but it also suggests that the provision of social support services may be an important component of interventions for pregnant and parenting adolescents.<sup>102</sup>

In addition to providing counseling, several programs link pregnant adolescents and adolescent mothers with adult or peer mentors or role models. These programs frequently target young women who are no longer living with their families of origin. Many have made use of community women volunteers or older adolescent mothers who provide advocacy for needed services, practical assistance, and reinforcement of positive messages related to prenatal and postnatal care, continuing in school, and effective contraceptive use. Such services may be offered as part of a larger program (170) or may exist as a separate intervention (155).

Unfortunately, interventions that focus on providing social and emotional support to pregnant and parenting adolescents have not been evaluated separately for their impact on such outcomes as educational attainment, job status, subsequent child-bearing, or health status of mothers or infants (148). It is reasonable to expect, however, that the quality of the training and supervision that role models and mentors themselves receive will affect the ability of mentoring efforts to influence desired program outcomes, as will the quality of the mentoring relationship (148). In one comprehensive intervention for pregnant and parenting adolescents (Project Redirection, described below), the mentoring component affected program attrition, with those who were dissatisfied with their community mentors citing this as a reason for their dissatisfaction with the program (170). Thus, while it may be important to offer social support to pregnant adolescents and adolescent parents, particularly those who are alienated from their own families, further information is needed about the potential for role modeling and mentoring approaches to provide this service.

Programs That Provide Housing, Child Care, or Transportation Services—Although many pregnant and parenting adolescents are able to live with their families of origin or with their partners' families, and others have the resources to establish

independent living, finding adequate housing is a problem for a significant minority of pregnant and parenting adolescents, especially those who are tiers (24). *Residential programs* for both pregnant adolescents and adolescent mothers, after experiencing a decline during the past 3 decades, have apparently been increasing in number in recent years, but the number is still small. According to William Pierce, president of the National Committee for Adoption, in 1980 there were only 99 homes for pregnant adolescents, but in 1989 there were about 140 homes serving about 2,600 adolescents (75). Some of these homes have been sponsored by antiabortion groups in response to criticisms that young women were being admonished to continue their pregnancies and choose adoption without being given resources to enable them to carry healthy pregnancies to term (75). Others, such as the Florence Crittenton agencies, have had a long-standing emphasis on preparing young mothers and their children for independent living and have tended not to support adoption (132).

Some residential programs for unwed pregnant adolescents exist primarily to offer housing and auxiliary services until a young woman gives birth; 33 percent of the CWLA agencies surveyed in 1986 offered prebirth residential or group home care in 1986 (21 1). Other programs continue to provide housing and other services after the birth of the child, although such services are less common; only 18 percent of CWLA agencies offered postbirth residential care in 1986 (21 1).

Adequate *child care*, especially infant care, is another service that is crucial for adolescent mothers who are enrolled in school, involved in job training, or working to support themselves (23,36). The inability to obtain child care is the single most commonly cited reason young mothers give for not returning to school following the birth of their child (49,2 16). However, some school-based programs for adolescent mothers do provide child care on-site, and some adolescents are able to make private child care arrangements, usually with family members. Less than half (47 percent) of the CWLA agencies surveyed in 1986 stated that they provided child care (211).

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<sup>102</sup>This idea is supported by the results of the Teen Father Collaboration (discussed later), which indicated that counseling was the single most utilized service by the adolescent fathers involved in the project (177).

*Transportation*, especially to school or child care facilities, and especially in communities with limited (or no) public transportation, is also essential for many parenting adolescents. In most communities, school buses are not able to carry infants and toddlers for safety reasons (35). Thus, specially equipped vans or buses may be needed to transport adolescent mothers enrolled in school or employment programs. However, transportation services are not commonly offered to pregnant and parenting adolescents; a study published in 1984 found that only 29 percent of the pregnant teens and 14 percent of the teen mothers involved in programs funded by the Office of Adolescent Pregnancy Prevention in the Office of Population Affairs of DHHS benefited from transportation assistance (26). Although approximately three-fifths of the CWLA agencies surveyed in 1986 stated that they offered transportation services, less than one-fifth saw this assistance as necessary; perhaps as a result, transportation was a frequently used service by clients in less than 10 percent of the CWLA agencies (21 1).

Although support services such as housing, child care, and transportation are frequently cited as essential adjuncts to the success of many interventions for pregnant and parenting adolescents (24,35), little information is available on their impact on program goals and outcomes. Nevertheless, there are some data that do support assertions regarding the importance of including support components in comprehensive service programs. A study of Office of Adolescent Pregnancy Prevention programs, for example, found that receipt of child care reduced the likelihood of a repeat pregnancy by 1 full year among adolescents who were pregnant at entry into the programs; adolescents receiving child care who were already mothers at entry were more likely than those who did not receive child care to have completed more schooling or to be employed 1 year later (26). The same study found that pregnant adolescents who received transportation assistance through Office of Adolescent Pregnancy Prevention projects were more likely to be still enrolled in school at the time they delivered than were other participants who did not receive transportation services (26). A 1987 study of programs for pregnant and parenting adolescents supported by the California Department of Education found that when transportation services were cut, program attendance declined (27). Thus, although the data are limited, they strongly suggest that such support

services may be integral to the ultimate success of interventions for pregnant and parenting adolescents.

### **Programs That Offer Comprehensive Services to Pregnant Adolescents and Adolescent Mothers**

Over the past decade, there has been growing awareness that most pregnant and parenting adolescents are not well-served by a fragmented service delivery system designed to deal separately with needs for health care, educational services, economic assistance, and psychosocial support services. Consequently, efforts have been made to establish comprehensive programs able to provide pregnant and parenting adolescents with multiple services either during pregnancy or through the first year or two of parenthood.

Comprehensive programs for pregnant or parenting adolescent females typically provide education, health care, employment, and social services. The services may either be provided by one agency or provided through several different agencies with formal or informal agreements, often using a case management approach (24).

The *Teenage Pregnancy and Parenting Program (TAPP)* in San Francisco is one example of the comprehensive services model. This program, which is coordinated by the Family Service Agency of San Francisco and the San Francisco Unified School District, involves over 30 agencies in providing health, education, and social services to pregnant adolescents. Staff from a number of different agencies are located at TAPP sites, and TAPP staff serve as liaisons in other agencies that see large numbers of pregnant and parenting adolescents (e.g., a hospital-based clinic, a maternity home, an SLHC). Each pregnant adolescent client is assigned a “continuous counselor” who provides case management; an alternative school, child care, and health care services are provided on-site at TAPP, and transportation assistance for the public transit system is available to clients (191). An evaluation of TAPP found successful outcomes in terms of school attendance and avoidance of repeat pregnancies (23a,47a).

Another example of the comprehensive services model is *Project Redirection*, which was established to help low-income young mothers and pregnant adolescents who had not completed school (217). Project Redirection was initially implemented in



Photo credit: Katherine Criss, New York, NY

The report *One-stop Shopping: The Road to Healthy Mothers and Children*, by the bipartisan National Commission To Prevent Infant Mortality, noted the current level of fragmentation **among services for pregnant and parenting women, including adolescents. It found that the current consensus is that a comprehensive range of services should be provided, optimally in a single setting.**

four sites nationwide with funding from the Ford Foundation and the U.S. Department of Labor. These four sites provided low-income young mothers and pregnant adolescents with educational and employment counseling, parenting education and life skills training, transportation, child care, and referral to health services. Because of its initial success in terms of welfare reductions, employment, and improved parenting skills, Project Redirection was expanded to an additional seven sites (169). Each program participant was assigned to a female community volunteer, who provided social support, practical assistance, and linkage between the program and the participant (170).

Project Redirection, which emphasized education and the development of job skills, had little effect on participants' pregnancy rates, contraceptive use, or repeat pregnancy rates, but it decreased the number of abortions among program participants<sup>103</sup> and increased participants' rates of school retention and completion, levels of employment, and parenting ability; it also improved the cognitive skills of

participants' children (169) and reduced the number of behavioral problems among children (67,170). Further, these advantages were maintained 5 years after enrollment in the Project Redirection pro-&am (67,169,170).

However, the final report on Project Redirection notes that, despite impressive gains for many individuals, the program should not be considered a panacea (169). At the close of the project, the majority of participating adolescent mothers had still not received their diplomas or passed the tests of general educational development (GED); were not working despite their desire to do so; had received AFDC at some point during the previous 12 months; and were living in poverty (169). One observation made by the researchers was that the participants' serious educational needs were probably not adequately met by the program, because educational services were not tailored to the participants' needs and because they were delivered off-site (169). Clearly, educational deficits can have a great deal to do with employability and poverty levels.

<sup>103</sup>The final report on Project Redirection notes the possible interaction between the program's success with parenting education and relative 'failure' with pregnancy and birth rates (169). According to Polit and her colleagues, "An environment that encouraged nurturing and vigilant maternal behavior, in which babies were given a lot of love and attention, could well have dampened interest in terminating [or otherwise reducing] unintended pregnancies' (169). The lesson to be drawn, according to the researchers, is not that the parenting education component of the program should be discarded or minimized (it apparently was responsible for the beneficial effects on the children of participating mothers), but that the family planning aspects (which were actually delivered off-site and implemented in a "fairly low-key" fashion) should be strengthened (169).

Drawing on the lessons of Project Redirection, Manpower Demonstration Research Corporation designed *New Chance*, a program for adolescent mothers begun in 1989 (126a). *New Chance* emphasizes integration of services, onsite provision of services, longer duration of services, greater intensity of services, greater obligations on the part of enrollees to participate regularly, comprehensiveness (educational development, employability development, personal and social development, health services, and services for participants' children), and an experimental evaluation design (126a), *New Chance* will not target adolescents younger than 17 (126a).

According to the National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing, the available evidence suggests that it may be important for comprehensive service programs for pregnant and parenting adolescents to take into account the age of the adolescents they serve, since the needs of younger adolescents and adolescents who remain in their families of origin may differ from the needs of older adolescents who are no longer in school or who are living independently (148). Also, as noted by Polit and her colleagues, because many comprehensive programs rely on other agencies to provide some of the services needed by their adolescent clients, the impact of these programs is likely to depend heavily on the availability and quality of brokered services. Indeed, one study of comprehensive care programs for pregnant and parenting adolescents concluded that most organizations offering these programs were not able to meet their goals because of a lack of resources, community support, problems in interagency collaboration, or a lack of adequate mechanisms for coordinating services to pregnant and parenting adolescents (218). Hofferth concluded that the comprehensive services model holds promise for improving outcomes for pregnant and parenting adolescents, but it appears that services must be truly comprehensive, client-focused, and intensive to be effective (86).

### Programs for Adolescent Fathers

Along with the increasing recognition of the importance of involving young men in pregnancy prevention efforts has come greater interest in including adolescent and young adult fathers in the provision of services. Some concerns about the adolescent and young adult fathers of children born



**Make a baby-make a lifetime commitment.**

*Photo credit: The North Carolina Coalition on Adolescent Pregnancy*

**Adolescent females have traditionally been the target group for special services for adolescent parents and their children. Over the last decade, however, several comprehensive service programs for adolescent fathers have been established. The programs for fathers are generally intended to improve adolescent fathers' ability to support their children and to improve their ability to be good parents.**

to adolescent mothers have centered less on the welfare of the fathers, however, than on the fathers' limited ability to behave "responsibly" toward the family they have helped to create (i.e., by providing financial support) and have tended to focus on issues of establishing paternity and child support (1). Adolescent and young adult fathers have been included in many youth employment and job training programs, but such programs typically have paid little attention to their status as parents and make little effort to adapt program services to their parental roles (148).

Over the last decade, however, several comprehensive service programs for adolescent fathers have been established. These comprehensive service pro-

grams for adolescent fathers operate through a variety of organizations (e.g., existing adolescent pregnancy programs for young women, schools, community service agencies). The programs are generally intended to improve adolescent fathers' ability to support their children and to improve their parenting skills, and provide a variety of services, including education (dropout prevention, remedial education, or GED classes), employment and employability services (e.g., job training, job counseling, and vocational education), individual counseling, parenting skills training, and legal representation and advocacy for paternity establishment and child support issues (1a,99).

The *Teen Father Collaboration*, a national demonstration project initiated and supported by the Ford Foundation, has been a model for comprehensive service programs designed for adolescent fathers (and the only adolescent fathers' project with systematic evaluation data) (116). Eight sites were selected to extend existing service programs for adolescent mothers to include adolescent fathers. Outreach strategies, types of services offered, and locations of service provision varied from site to site; local agencies were not expected to implement and test any particular model of service delivery, nor were any adolescent fathers placed in a comparison group receiving no or different services (178). Instead, each agency had to struggle to understand and meet the needs of its own local population of adolescent fathers. Evaluation of the results of the project were also limited by the facts that the adolescent fathers who took part were entirely self-selected, and that there was a high attrition rate (178); thus, any findings should be viewed cautiously. An evaluation component found that, overall, nearly half of the adolescent fathers not enrolled in school at the beginning of the project (and for whom outcome data were available) returned to school or began a GED program subsequent to their participation; over 60 percent of the adolescent fathers who had been unemployed at the start of the project were able to get a job and provide financial support (as well as in-kind contributions and emotional support) to their partners and children, and over 80 percent of participating fathers had daily contact with their children (178).

Public/Private Ventures has begun a program similar in some respects to the Teen Father Collaboration called the *Young Unwed Fathers Project* (169b). The purpose of the project is to help local

agencies respond to the mandate of the Family Support Act of 1988 (Public Law 100-485) that, effective October 1990, welfare agencies require adolescent fathers to contribute to the support of their children (169b). As Public/Private Ventures notes, the Family Support Act's mandate is only one part of the story: "Enabling the young men to fulfil their obligations is the job of other agencies in the community" (169b).

The Young Unwed Fathers Project is designed to demonstrate how the needed agency connections can be made, and how the enabling services can be delivered effectively (169b). Six communities were selected to test a variety of paths toward providing unwed adolescent fathers with training and jobs at a wage level equal to meeting family responsibilities, and education for and support in the fathering role. The young men in each program will be enrolled for up to 1 year, with followup counseling and support for an additional 6 months. The demonstration project's research questions include: "Which program strategies, involving which agencies, best attract, retain, and produce positive effects on the young men? What are the effects? And is cost a factor in the program components that produce outcome variations?" (169b).

### **Conclusions About the Effectiveness of Programs To Prevent Negative Outcomes of Adolescent Pregnancy and Parenthood**

Although national statistics on adolescent births do not readily provide information on the socioeconomic status of the adolescents (e.g., 207b), other information clearly indicates that becoming a mother places an adolescent and her child in a precarious situation in terms of immediate socioeconomic status and both the mother's and child's future (70,148,195a). One of the most definitive lessons to be learned from interventions that have attempted to improve the lives of adolescent mothers and their children is that such mothers and children typically have need for an extraordinary range of support and services. These services can include income support, health services, further education, employability training, job skills, transportation, housing, parenting education, social support, and child care (e.g., 169). It is for just this reason that many have suggested that, when thinking of interventions dealing with adolescent pregnancy and childbearing, pregnancy prevention be made the highest priority (148).

Adolescent fathers are a less visible part of the picture and have received less programmatic attention than adolescent mothers. Available data suggest that they too often have serious needs for a range of remedial services (e.g., 195a).

That there are now several model programs for the provision of a comprehensive range of services to pregnant and parenting adolescents and their children (e.g., 47a,150a,169a) should not disguise the fact that it is more than likely that many pregnant and parenting adolescents will face serious barriers to getting the services they need (150a). Typically, model and demonstration programs are only that: models for what could be, rather than illustrations of strategies that serve all or most of those in need.

In its review of services for pregnant and parenting women and their children, the bipartisan National Commission To Prevent Infant Mortality found that many needy pregnant women and their children face numerous “roadblocks” to receiving care (see box 10-D). As an example of what can befall a particular woman, the commission provided the following case study (150a):

In January 1988, Jolene wasn’t feeling well and wanted a pregnancy test. However, because the local public health clinic only offered tests on certain days of the week which were inconvenient for her, she went to a local Planned Parenthood. After learning she was pregnant, Jolene began seeking out services. Her first stop was at the Food Stamp office. While there, she learned about AFDC benefits and was referred to another service center to apply for them and for Medicaid.

She next went to the community Women’s Center for prenatal care, only to be told to return in two weeks for an eligibility determination appointment. When she did, she was referred to the Central Clinic downtown to apply for WIC services and to University Hospital to establish hospitalization eligibility. She was finally given an appointment for three weeks later at the Women’s Center, and was told to go back to the downtown Central Clinic for an HIV test.

After giving birth, Jolene returned for family planning services, but found that they were only provided 2 days per week. All told, Jolene made nine trips in 6 weeks to begin care and receive Medicaid eligibility.

This case study does not address multiple other needs that a “Jolene” may have had: for housing, child care, education, parent skills training, job training, employment, and transportation (see box

**Box 10-D—Roadblocks to the Provision and Coordination of Care for Pregnant and Parenting Women and Children: Findings of the National Commission To Prevent Infant Mortality**

**According** to the National Commission To Prevent Infant Mortality, there are numerous roadblocks to the provision of care for pregnant and parenting women and their children.

**Roadblocks to the provision of care:**

- Lack of Medicaid coverage;
- Insufficient physicians, certified nurse-midwives, or nurse practitioners in the clinic or the community-especially true of rural and inner-city areas;
- . Physicians who refuse to accept Medicaid, or who have dropped their obstetrical practice because of the high cost of malpractice insurance;
- Lack of treatment programs for substance-abusing pregnant women and mothers;
- . Lack of transportation;
- . Lack of child care;
- . Inconvenient service hours;
- . Language and cultural barriers;
- Fragmentation of programs and services such as Medicaid, the Special Supplemental Food Program for Women, Infants, and Children (WIC), housing assistance, and other programs.

**Roadblocks to the coordination of care:**

- The fact that Federal, State,** and local governments typically respond to one health or social crisis at a time;
- Increases in the numbers of programs and the size of government, resulting in “vertical fragmentation”;
- . Fragmentation between administrating agencies and service providers (so-called “horizontal fragmentation”);
- . Multiple funding streams;
- Different definitions, terminology, and factors for determining eligibility and benefits.

SOURCE: National **Commission To Prevent** Infant Mortality, *One-Stop Shopping: The Road to Healthy Mothers and Children* (Washington DC: April 1991).

10-A earlier in this chapter). Neither does it address the needs of the father of “Jolene’s” baby.

A major point made by the National Commission To Prevent Infant Mortality and other observers is that programs should be designed around the needs

and characteristics of the clients, rather than around the habits and traditional orientations of the providers (150a).

OTA suggests that, in addition to the barriers listed in box 10-D, a reason that comprehensive, integrated services may not have been implemented is that they appear to be expensive. It is encouraging that organizations such as Public/Private Ventures are beginning to include examination of program costs in some of their demonstration projects (169b). In order to advance the case for comprehensive, integrated services for pregnant and parenting adolescents, it may be necessary to demonstrate (if such is the case) that such programs are cost-effective in comparison to most currently available alternatives.

### **Major Federal Programs and Policies Pertaining to Adolescent Pregnancy and Parenting**

A number of Federal health, educational, and human services programs offer services that may either help prevent adolescent pregnancy or may affect the outcome of adolescent pregnancy. These include the Title X Family Planning Program and the Title XX Adolescent Family Life (AFL) Program under the Public Health Service Act (see table 10-10). Title X and Title XX are discussed further below.

Also discussed briefly below are various other health benefit, income support, education, training, and food and nutrition programs that are relevant to adolescents who are at risk of pregnancy or are pregnant or parenting (160).<sup>104</sup> In many cases, there are few data on the use of these other programs by adolescents.<sup>105</sup> A recent review concluded that there are essentially no Federal programs specifically designed to ameliorate the long-term consequences of adolescent pregnancy and childbearing (196).

#### ***The Title X Family Planning Services and Research Program***

Title X of the Public Health Service Act was established by the Family Planning Services and

Population Research Act of 1970 (Public Law 91-572). At the Federal level, it is administered by the Office of Population Affairs in DHHS. As shown in table 10-10, Title X provides Federal grants to public and nonprofit entities that operate family planning clinics for predominantly low-income women (including adolescents) in need of subsidized family planning services; it also supports family planning research, training and information and educational activities. The Title X program is the major source of Federal funding (\$130 million appropriation in fiscal year 1990) for public and private nonprofit family planning clinics that offer contraceptive and other services (e.g., screening for STDs, pregnancy testing and counseling, and sometimes prenatal care) to predominantly low-income clients.<sup>106</sup> Furthermore, it is the only Federal program designed *specifically* to provide family planning services.

During the 1970s, the appropriation for the Title X program increased steadily, peaking in 1981 at \$161 million. Since 1982, the appropriation has not exceeded \$140 million. Furthermore, the Title X family planning program has not been formally reauthorized by Congress since the end of fiscal year 1985. Instead, it has been reauthorized through the appropriations process via continuing resolutions (196,197). In 1988, Congress appropriated \$138.3 million for Title X, and in 1990, it appropriated \$130 million. For fiscal year 1991, the administration requested \$139 million for the family planning program (197). As in previous years, the budget request assumed enactment of the administration's proposal to recast the Title X into an authority for block grants for State family planning programs (197).

Title X Family Planning Clinics—Title X grantees (including public and private nonprofit entities such as county health departments, Planned Parenthood affiliates, and hospital outpatient departments) operate some 4,000 family planning clinics across the country. In fiscal year 1989, clinics that received Title X funds served more than 4.3 million clients (predominantly low-income females), including 1.4

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<sup>104</sup>For further discussion of these programs, see J.G. Dryfoos, *Adolescents at Risk* (47a).

<sup>105</sup>See ch. 19, "The Role of Federal Agencies in Adolescent Health," in Vol. III for a general discussion of Federal programs related to adolescent health.

<sup>106</sup>Federal funding for family planning services also comes primarily from three other sources: the social services block grant (Title XX of the Social Security Act), Medicaid (Title XIX of the Social Security Act), and the maternal and child health block grant (Title V of the Social Security Act) (74c). These programs are discussed below.

**Table 10-1 O-Overview of Title X and Title XX of the Public Health Service Act\***

Program	Purpose	Priorities	Funding level	Total adolescents served in a year
Title X of the Public Health Service Act (Family Planning Services and Research Act of 1970)	To provide grants for entities that operate approximately 4,000 public or private nonprofit family planning clinics across the country. Also to fund training for personnel to improve the delivery of family planning services; to promote service delivery improvement through research on family planning and population issues; and to develop and distribute information on family planning.	Clinics that receive Title X money are supposed to offer a broad range of family planning methods and services. <sup>b</sup> Priority for clinic services is given to low-income clients. In fiscal year 1987, national priority areas for service grants were family involvement of Title X adolescent clients, infertility services, natural family planning services, male involvement, sexually transmitted diseases, AIDS, adolescent abstinence from sexual intercourse, and regionally identified areas of concern.	\$130 million appropriation in fiscal year 1990. Since about one-third of the Title X clients are adolescents, about one-third of this (\$43 million) funding is used for adolescents.	Of the estimated 4.3 million predominantly female clients served annually by Title X clinics, about one-third (1.4 million) of whom are adolescents ages 15 through 19.
Title XX of the Public Health Service Act (Adolescent Family Life Program)	To provide grants for: 1) demonstration projects that seek to prevent adolescent pregnancy by encouraging adolescents to abstain from premarital sexual activity, <sup>c</sup> and 2) demonstration projects that provide care services for pregnant or parenting adolescents. <sup>d</sup> Also to support research on the societal causes and consequences of adolescent pregnancy, and child-rearing to support evaluative research to identify effective services; and to disseminate results of research projects.	One-third of Title XX funds goes to demonstration projects for adolescent pregnancy prevention that primarily encourage sexual abstinence; two-thirds goes to demonstration projects that provide innovative approaches to the delivery of care services for pregnant and parenting adolescents. Priority is given to grant applicants who serve areas with a high incidence of adolescent pregnancy, serve areas with a high proportion of low-income families.	\$9.5 million annual appropriations for 1990 through 1992. All Title XX funding is for adolescents under age 19.	Pregnancy prevention projects in 1982: 54,000 females and 48,000 males. Projects that provide care services to pregnant or parenting adolescents in 1986: 10,728 females and 3,387 male partners.

<sup>a</sup>Title X and Title XX of the Public Health Service Act are both administered by the Office of population Affairs within the U.S. Department of Health and Human Services (DHHS).  
<sup>b</sup>Family planning services provided by Title X clinics include a broad range of contraceptive methods, screening for sexually transmitted diseases (STDs), infertility services, and natural family planning. The use of Title X funds for abortion as a method of family planning has been prohibited by statute and regulations since the enactment of the Title X program. For its first 17 years, Title X program was administered under regulations that required employees of clinics receiving Title X money to provide nondirective counseling (about abortion as well as childbirth) to women who requested information about managing an unintended pregnancy. In 1988, however, DHHS issued regulations that prohibited employees of Title X clinics from providing counseling and referrals for abortion services. That regulation was challenged, but a May 1991 ruling by the U.S. Supreme Court upheld it (*Rust v. Sullivan*, 111 S. Ct. 1759 (1991)).  
<sup>c</sup>Title XX projects are prohibited by the Title XX law from providing family planning services other than counseling and referral unless such services are not otherwise available in the community. Title XX projects are statutorily prohibited from providing abortions, abortion counseling, and abortion referrals.  
<sup>d</sup>Under Title XX, care services for pregnant or parenting adolescents include pregnancy testing and maternity counseling, adoption counseling and referrals, primary and preventive health services including prenatal and postnatal care, nutrition information and counseling, referral for screening and treatment of STDs, referral to pediatric care, family life education, educational and vocational services, referrals to maternity services, mental health services and referrals, child care to enable the parent to go to school or work, consumer education and homemaking, and family planning services.

SOURCE: Office of Technology Assessment, 1991.

million adolescent females ages 15 to 19 (47a,196).<sup>107</sup> Title X clinics are rarely visited by young males unless they are accompanying a female partner (148).

Title X clinics offer a broad range of family planning methods (including contraceptives that have to be delivered by a clinic or a private physician) and services. In 1983, for example, 99 percent of family planning agencies offered pregnancy testing, 92 percent offered pregnancy counseling, 95 percent offered testing for STDs, 70 percent offered community education; 71 percent offered treatment for STDs; 60 percent offered infertility counseling; 50 percent had programs for parents; 47 percent had special staff for helping teenagers; 46 percent offered prenatal care; 44 percent had teen outreach; 39 percent had programs for adolescent mothers; 31 percent offered genetic counseling; and 20 percent had programs for young men (148,193a).

The services that are most commonly provided to adolescents at an initial visit to a family planning clinic include information concerning various methods of contraception (e.g., their use, effectiveness, and potential risks), counseling in the choice of an appropriate method; a medical evaluation involving a pelvic examination, breast examination, blood pressure check, blood test, and a Pap smear (148,193b). About two-thirds of first visits involve a pregnancy test and urinalysis to test for possible contraindications

to the use of some contraceptive method. In addition, about two-thirds of all first visits include testing for STDs (193b).<sup>108</sup>

Family planning clinics are generally more willing than private physicians are to provide contraceptive services to unmarried adolescents under age 18 without parental consent or notification (148).<sup>109</sup> The provision of contraceptives to adolescents by Title X clinics has been controversial,<sup>110</sup> but the courts have thus far held that adolescents may obtain Title X family planning services without parental consent or notification (196).<sup>111</sup> Thus, although Title X grantees are statutorily required to encourage family involvement for adolescent patients, Title X clinics can provide contraceptive services to adolescents without parental consent or notification,<sup>112</sup>

Because the Title X program is supposed to serve low-income women in need of subsidized family planning services, the services provided by Title X clinics are generally offered at lower fees than are charged by private physicians (148,161). Clinics that receive Title X funds must provide family planning services free of charge to individuals whose incomes do not exceed 100 percent of the Federal poverty guidelines. For individuals whose income is between 100 percent to 250 percent of the poverty level, fees are determined on a sliding payment schedule. Adolescents seeking family plan-

<sup>107</sup>The number of adolescents using family planning clinics increased dramatically between 1969 and 1983, from 214,000 to 1.6 million (148). The proportion of adolescent clinic patients also increased rapidly in the early years of the Title X program, but since 1979, the percentage has been stable at about 33 percent (148).

<sup>108</sup>Information on the prevalence of HIV infection and STDs among U.S. adolescents is presented in ch. 9, "AIDS and Sexually Transmitted Diseases: Prevention and Services," in this volume.

<sup>109</sup>Physicians in States that do not have explicit consent laws for minors have been found significantly less likely to serve unmarried teenagers on their own authority (148, 161). In States without explicit consent laws for minors, adolescents may have better access to contraceptive services through family planning clinics than through private physicians (148). As noted in ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III, a little under half of the States and the District of Columbia have statutes that specifically authorize minors to give their own consent for what are variously described as contraceptives, birth control services, or services for the prevention of pregnancy. In the other States, there are no laws specifically authorizing minors to give consent or the laws are ambiguous.

<sup>110</sup>In 1983, DHHS attempted unsuccessfully to implement regulations requiring Title X family planning clinics receiving Title X funds to notify parents when contraceptives were prescribed for their unemancipated adolescent children. The regulations were challenged, however, and ultimately, two Federal courts enjoined DHHS from implementing them. For further discussion, see ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in vol. III.

<sup>111</sup>I see ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III for a review of Federal and State law pertaining to parental consent and notification in situations involving family planning services and other health services related to sexual activities (e.g., STD treatment, pregnancy-related health services).

<sup>112</sup>A study published in 1980 found that nearly two-thirds of adolescents seeking contraceptive services from organized family planning providers thought their parents knew they were doing so, but a significant minority said their parents were not aware they were using the services (148,193c). Among the adolescents whose parents did not know, a large proportion said they would not come to a family planning clinic if parental notification were required.

ning services without parental consent are generally assumed to be medically indigent (47a).

The use of Title X funds for abortion ‘as a method of family planning’ has been prohibited by statute (sec. 1008) and by regulations since the enactment of the Title X program (55a,197). Prior to 1988, DHHS had interpreted this directive as having no bearing on speech and information between a pregnant woman and her physician or counselor at a clinic receiving Title XX funds. Thus, Title X clinics were able to provide abortion counseling and referrals for many years.

In 1988, however, DHHS issued new Title X regulations prohibiting clinics that receive Title X funds from providing abortion counseling or referrals to pregnant women (53 FR 2921). Section 59.8 of the 1988 regulations specifies that “once a client served by a Title X project is diagnosed as pregnant, she must be referred for appropriate prenatal and/or social services by furnishing a list of available providers that promote the welfare of the mother and unborn child. If a pregnant client asks for information about abortion or its availability, the Title X clinic counselor is to reply that “the project does not consider abortion an appropriate method of family planning.” Section 59.9 of the 1988 regulations requires a Title X project to be “organized so that it is physically and financially separate’ from “prohibited activities.” Finally, Section 59.10 of the regulations prohibits Title X clinics from engaging in activities that “encourage, promote, or advocate abortion.” The prohibition reaches all activities or information that “assist’ a woman in obtaining abortion or that make the abortion option more “accessible.

A number of State governments and private organizations initiated court action to prevent implementation of these Title X regulations (9b,197), but the regulations were upheld on statutory and constitutional grounds by the U.S. Supreme Court in a May 1991 ruling [*Rust v. Sullivan*, 111 S. Ct. 1759 (1991)]. If in response some large-scale providers of family planning services no longer accept Title X funds, adolescents’ access to contraception and abortion could be seriously limited. As this volume of this Report was being prepared for publication, the U.S. Congress was considering various amend-

ments to Public Law 91-572. If passed and signed by the President, some of these amendments would codify that Congress did not mean to exclude abortion *counseling* as part of its 1970 prohibition on providing abortions in Title X clinics. Passage of such an amendment would help ensure that adolescents (as well as other individuals) could continue to get access to abortions as needed and as legally available to them.<sup>113</sup>

**Research and Other Activities Supported by Title X Funds**--In addition to providing grants for family planning clinics, Title X funds training for personnel to improve the delivery of family planning services; promotes service delivery improvement through research; and develops and disseminates information on family planning (197). Title X grants for research related to family planning, training of personnel for family planning clinics, and the development and dissemination of information on family planning are handled directly by the Office of Population Affairs. Topics of research include problems of human fertility and infertility, development of effective methods for fertility regulation, evaluation of contraceptive methods, and research in the changes in population structure (202).

Some observers have suggested that these efforts may not be adequate to meet current needs. In 1990, the National Academy of Sciences’ Committee on Contraceptive Development criticized the United States for a recent lack of leadership in the development of contraceptive technologies (130). The National Academy of Sciences’ committee also said that additional attention to the factors that would “promote contraceptive use among individuals not seeking to become pregnant is also important (130).

### ***The Title XX Adolescent Family Life Program***

The Adolescent Family Life (AFL) program under Title XX of the Public Health Service Act was enacted as part of the Omnibus Budget Reconciliation Act of 1981 and is administered by the Office of Population Affairs within DHHS. As shown in table 10-10, the Title XX AFL program awards Federal grants for two types of demonstration projects: 1) projects that seek to prevent adolescent pregnancy (primarily by encouraging abstinence from sexual

<sup>113</sup>As noted above, and in ch. 17, “Consent and Confidentiality in Adolescent Health Care Decisionmaking,” in Vol. III, legal restrictions on adolescents’ independent access to abortion include certain State requirements for parental consent and notification. Federal constitutional law concerning the permissible scope of State regulation of abortion as interpreted by the U.S. Supreme Court appears to be in flux.

activity), and 2) projects that provide health and social services (including adoption) for pregnant or parenting adolescents. In addition, the Title XX AFL program supports research on the causes and consequences of adolescent pregnancy and parenting (196,202).

From the time of its inception, the Title XX AFL program has been funded with appropriations that have not exceeded \$15 million per year (e.g., \$14.9 million in fiscal year 1984, \$14.7 million in 1985, \$14.5 million in 1986, \$14.0 million in 1987, \$9.5 million in 1988, and \$9.5 million in 1989) (202). The AFL program's formal authorization expired in 1985. Since then, the program has been reauthorized through the appropriations process via continuing resolutions. In fiscal year 1990, Congress appropriated \$9.5 million for the AFL program.

About one-third of Title XX AFL funding goes to demonstration projects for *adolescent pregnancy prevention*. AFL adolescent pregnancy prevention projects seek to find the means, within the context of the family, to reach male and female adolescents before they become sexually active in order to promote abstinence from premarital sexual relations (196). These projects emphasize the importance of abstaining from sexual intercourse except in the context of marriage, parent-child communication, and the development of skills to resist peer pressure.

Most of the other two-thirds of Title XX AFL funding goes to demonstration projects that provide *care for adolescents who are pregnant or parenting*. AFL adolescent care projects provide, directly or by referral, health and social services that include pregnancy testing and maternity counseling; adoption counseling; primary and preventive health care; nutritional information; screening for venereal diseases; education and vocational services; and mental health services (196). Title XX projects are not permitted to offer adolescents contraceptive services unless they are not otherwise available in the community and cannot provide abortions, abortion counseling, or abortion referrals. Adolescents must be under age 19 to participate in AFL demonstration projects, and they are generally required to have parental consent (196).

As of 1989, the AFL program was administering 88 demonstration projects around the country (196). In 1982, AFL pregnancy prevention projects served 102,000 adolescents under age 19 (48,000 males and over 54,000 females). In 1986, AFL care projects

served approximately 15,000 pregnant and parenting adolescents (10,728 females, 3,387 males); these projects also served 6,274 family members and 5,689 infants of adolescent mothers.

These data say nothing about the impact of AFL projects on either the prevention of adolescent pregnancies or the amelioration of the negative effects of adolescent pregnancies. All the AFL projects are required to include an evaluation component. However, few AFL projects to date have included experimental or even adequate quasi-experimental designs which would enable firm conclusions to be drawn about the impact of these programs (220a).

In a 1991 review of evaluations of AFL-funded pregnancy prevention curriculum programs, White and White concluded that there is a need for comprehensive examination of such programs to be made available in academic publications (220a). The evaluations they were able to locate came from a variety of sources, including testimonials by project directors. White and White noted that many of the evaluations lacked important details about methodological procedures; many may not have been objective (220a). White and White noted that "the lack of available information inhibits researchers in their attempts to design further program evaluations, causes speculation about the efficacy of the programs, and prohibits informed policy recommendations" (220a). They suggested that Federal funding for evaluation research on the programs be increased (220a). Increasing the funding for evaluation research would be no small feat within the existing Title XX budget of less than \$10 million. But if rigorous evaluations are not increased and improved methodologically, important questions about the effectiveness of federally funded pregnancy prevention programs will not be able to be answered.

### ***Other Federal Programs Pertaining to Adolescent Pregnancy and Parenting***

Although it has been noted that there are no Federal programs specifically designed to ameliorate the long-term consequences of adolescent pregnancy and childbearing (196), there are several policies and programs that may be helpful to pregnant and parenting adolescents. The fact that these and other Federal programs were not well coordinated provided some of the impetus for the

recently announced reorganization of several DHHS programs for children and families (202b). As discussed below, it is not yet clear how effective this Federal reorganization will be in terms of service delivery at the local level or in terms of the needs of adolescents specifically. Further, the reorganization affects only selected programs in DHHS and does not specifically include housing, education, or labor programs; nor does it include Medicaid.

Various Federal programs apart from Title X and Title XX of the Public Health Service Act offer services that are relevant to the problems confronted by adolescents who are at risk of pregnancy or who are already pregnant or parenting (196).<sup>114</sup>

- . Medicaid—Medicaid (Title XIX of the Social Security Act) is a federally aided, State-administered program that was established in 1965 to provide medical assistance for very low-income people meeting specific income and family structure requirements.<sup>115</sup> Some—though not all—poor adolescents are covered by Medicaid. At the Federal level, Medicaid is administered by the Health Care Financing Administration in DHHS.

In order to receive Federal Medicaid funds, States are required to offer a specific minimum benefit package that includes, among other things, hospital inpatient and outpatient services, physician services, nurse midwife services, and family planning services. Thus, Medicaid is a source of Federal financing of *family planning services* and supplies for low-income adolescents, who meet the program's eligibility

requirements.<sup>116</sup> Many adolescents living in poverty are not eligible for Medicaid, so not all poor adolescents can get family planning services through Medicaid. As noted elsewhere in this Report, in fiscal year 1988, Medicaid spent an estimated \$16 million on family planning services for the 4.583 million adolescents ages 10 through 18 who were enrolled in the program (\$3 million or \$1 per capita for the 2.657 million adolescents ages 10 to 14 and \$10 million or \$7 per capita for the 1.928 million adolescents ages 15 to 18).<sup>117</sup> Medicaid reimbursement for contraceptive services provided to adolescents is accepted by the vast majority of family planning clinics (90 percent in 1983), but a significant percentage (53 percent in 1983) of the private physicians who could give adolescent patients contraceptives will not accept Medicaid reimbursement (148).<sup>118</sup>

In addition to being a source of funding for contraceptive services, Medicaid is a source of Federal financing for *pregnancy-related care* for low-income women and pediatric care for children. The Omnibus Budget Reconciliation Act of 1989 (Public Law 101-239) required States to extend Medicaid eligibility to all pregnant women and children up to age 6 with family incomes up to 133 percent of the Federal poverty level.<sup>119</sup> An important policy issue which the recent extension of Medicaid eligibility did not address, however, is the effect of declining Medicaid participation rates among specialists in obstetrics/gynecology and pediatrics on Medicaid enrollees' access to care.<sup>120</sup>

<sup>114</sup>It also should be noted that Title IX of the Education Amendments (1972) prohibits discrimination in education because of pregnancy, childbearing, or marital status (148). Consequently, all school systems receiving Federal funds must allow pregnant adolescents to remain in school throughout pregnancy and to return after the birth of their child (148).

<sup>115</sup>Eligibility for Medicaid has generally been linked to participation in the AFDC cash welfare program. AFDC eligibility hinges not only on whether family income and resources fall within the State's AFDC limits but also, with few exceptions, on whether the family has a "deprivation factor" (i.e., at least one parent is dead, disabled, continually absent from the home, or as of October 1990, in two-parent families where the principal bread winner is unemployed). For a discussion of Medicaid eligibility requirements, coverage, payment policies, etc., as they pertain to adolescents, see ch. 16, "Financial Access to Health Services," in Vol. III.

<sup>116</sup>In fiscal year 1985, Federal funds constituted 84 percent of public expenditures on contraceptive services and supplies. Family planning services grants under Title X of the Public Health Service Act accounted for 34 percent; Medicaid reimbursements accounted for 34 percent; social services block grant funds accounted for 10 percent; and maternal and child health block grant funds accounted for 6 percent (74c).

<sup>117</sup>See table 16-8 inch. 16, "Financial Access to Health Services," in Vol. III For a breakdown of Medicaid expenditures on adolescents ages 10 through 18 by type of service.

<sup>118</sup>In fiscal year 1983, \$108 million of Medicaid funds were used to reimburse organizations and private physicians for contraceptive services for all ages (148).

<sup>119</sup>Poor adolescents' access to Medicaid was changed by the Omnibus Budget Reconciliation Act of 1990 (Public Law 101-508), which required that beginning July 1, 1991, children born after Sept. 30, 1983, with family incomes up to 100 percent of the Federal poverty level, are to be phased in to the Medicaid program. This change will not, therefore, affect the current generation of adolescents.

<sup>120</sup>Medicaid participation rates and the effect of Medicaid payment policies on access to care and the availability of qualified providers are discussed further in ch. 16, "Financial Access to Health Services," in Vol. III.

The use of Federal Medicaid funds to subsidize poor women's *abortions* has been statutorily prohibited since the implementation of the Hyde Amendment in 1977 (74c). Hyde Amendments have been attached to the annual appropriations bills for DHHS and the U.S. Department of Labor every year since 1977. Federal Medicaid funds can be used for abortions only in the tiny number of cases in which a woman's life is threatened if a pregnancy is carried to term.<sup>121</sup>

- *Maternal and Child Health Block Grant Program, under Title V of the Social Security Act*—As discussed elsewhere in this Report, the Title V Maternal and Child Health Services Block Grant Program, is administered at the Federal level by the Bureau of Maternal and Child Health of the Health Resources and Services Administration within the Public Health Service of DHHS.<sup>122</sup> Federal maternal and child health block grants are awarded to the States, which in turn provide grants directly to public and private providers of maternal and child health care services. The goal is to “assure access to quality maternal and child health services, especially for those with low incomes and living in areas with limited availability of health services.” Title V is also used to provide funds for special projects of regional and national significance (SPRANS) that contribute to maternal, infant, and child health. In fiscal year 1988, the appropriation for the Title V program was \$52.6 million. Eighty-five percent (\$444.3 million) was allocated to State health agencies to help them promote, improve, and deliver maternal and child health services, and 15 percent (\$82.3 million) was set aside for SPRANS. Title V funds may, but do not have to be, used for family planning services.

States have wide latitude in establishing the types of maternal and child health services—e.g., family planning services, prenatal, delivery, and postpartum care for low-income mothers, well-child care—that are provided and the

distribution of funds to support those services (74c). Expenditures for specific services under the maternal and child health block grant program are nearly impossible to identify, largely because the Federal Government does not require the collection or reporting of pertinent data (199). The problem is exacerbated by the fact that there are no requirements regarding minimum services or eligibility (199). As a consequence, very little is known about who receives what types of services under the maternal and child health block grant. It is virtually impossible to determine the amount of Title V funding for services to adolescents or their children or the adequacy of services they receive.

- *Community and migrant health centers*—The community health center program is one of the largest categorical grant programs, providing maternal and child health care, as well as other services, to residents of medically underserved areas (199). In fiscal year 1985, community health centers received \$383 million in Federal funding (199). Nearly half of community health center users are without health insurance (199). As discussed elsewhere in this Report, funds are provided to community and migrant health centers by the Health Resources and Services Administration's Bureau of Health Care Delivery and Assistance. In 1989, 814,000 adolescents received care in community and migrant health centers, including 117,000 females ages 10 to 14 who received family planning services.<sup>123</sup> In 1988, community and migrant health centers rated teen pregnancy, infant mortality, and comprehensive perinatal care programs as their top priorities (135 b). In fiscal year 1988, the Bureau of Health Care Delivery and Assistance awarded \$20 million in grants to fund comprehensive perinatal care programs to provide primary health care services to low-income pregnant women and infants at 206 community and migrant health centers. These comprehensive perinatal care programs pro-

<sup>121</sup>A number of States use their own monies to provide publicly funded abortions for poor women (74c).

<sup>122</sup>More information on the Title V maternal and child health block grant program is provided in ch.18, “Issues in the Delivery of Services to Selected Groups of Adolescents,” and in ch. 19, “The Role of Federal Agencies in Adolescent Health,” in Vol. III. Under the proposed reorganization of certain programs in DHHS, administration of the maternal and child health block grant would be moved to the new Administration on Children and Families (202b,222a).

<sup>123</sup>Comparable data on adolescents ages 15 and over who received family planning services are not available. As noted in ch. 19, “The Role of Federal Agencies in Adolescent Health+” in Vol III, the collection of data on the use of community and migrant health centers by adolescents ages 15 and above was discontinued about 8 years ago.

vial case-managed, coordinated perinatal services to 6 percent of all U.S. pregnant adolescents under the age of 20 and 29 percent of pregnant adolescents 15 years of age and under (207d).

- *Social Services Block Grant Program, under Title XX of the Social Security Act*—As discussed elsewhere in this Report, the Title XX Social Services Block Grant Program, which is administered by the Office of Human Development Services in DHHS, provides block grants to States for social services.<sup>124</sup> States are given wide discretion in determining what services will be provided, who will be eligible for services, and how the funds will be distributed in the State. Some States use social services block grants for family planning services and for foster care and adoption services and health-related services, but there is little information on how many adolescents or children born to adolescents are affected.
- *Aid to Families With Dependent Children (AFDC) program*—As discussed elsewhere in this Report, the AFDC program is a cash assistance program for needy families with children that is administered by the States within broad Federal guidelines.<sup>125</sup> At the Federal level, it is administered by the Family Support Administration of DHHS. Families started by women under age 20 account for the majority of families on welfare, but adolescent parents constitute a small portion of the AFDC population at any given point. In fiscal year 1987, 121,000 adolescents (85 percent of whom were females) received AFDC benefits as heads of household (201 b). Congress enacted major welfare reform in the Family Support Act of 1988 (Public Law 100-485). To give families receiving AFDC an opportunity to become self-sufficient, the Family Support Act required all States to implement a comprehensive education, job training, and work experience program

known as the Job Opportunity and Basic Skills (JOBS) program by October 1, 1990 (150b). With few exceptions, all AFDC mothers ages 16 through 19 years of age must participate in the JOBS program or face the prospect of a cut in their AFDC benefit.<sup>126</sup> States must provide adolescent JOB participants with child care, transportation, and any other support services (e.g., parent education, counseling, peer support groups) that they deem necessary for an adolescent parent to participate in the JOBS program. If States lack the resources to provide the necessary support services or if there is no JOBS program in the area, AFDC mothers ages 16 to 19 cannot be required to participate in JOBS.<sup>127</sup>

If well implemented, the JOBS program could have a substantial positive impact on adolescent parents. According to the National Health Policy Forum, the Family Support Act effect on adolescent parents and their children to date is not yet known, in part because DHHS reporting rules initially did not require the collection of very detailed program information (150b).<sup>128</sup> In April 1991, the Center for Law and Social Policy conducted a survey of the States to fill the information gap and learn about adolescent parent participation in JOBS. That survey found that there were about 25,000 adolescent parents participating in JOBS in the 24 States that reported adolescent parent data (150b). About two-thirds of these 25,000 adolescents were in five States (Ohio, Florida, Illinois, Connecticut, and Oklahoma). The 24 States varied widely in the extent to which they were serving all of their AFDC adolescent parents (e.g., Oregon was estimated to be serving 69 percent of its adolescent mothers, Ohio serving 60 percent, and 10 other States were serving between 30 and 54 percent, while Massachusetts was serving about 13 percent and California was serving about 2 percent)

<sup>124</sup>More information on the Title XX Social Services Block Grant Program is provided in ch. 18, "Issues in the Delivery of Services to Selected Groups of Adolescents," and in ch. 19, "The Role of Federal Agencies in Adolescent Health," in Vol. III.

<sup>125</sup>For further discussion of the AFDC program see ch. 18, "Issues in the Delivery of Services to Selected Groups of Adolescents," and ch. 19, "The Role of Federal Agencies in Adolescent Health," in Vol. III.

<sup>126</sup>Adolescents ages 16 and over are exempt if they are either ill or incapacitated, are needed at home because their child is ill or incapacitated, are in school full time, or are in their second or third trimester of pregnancy (150 b).

<sup>127</sup>According to the National Health Policy Forum, this is a sizable loophole in the Family Support Act's requirements for adolescent participation in the JOBS program (150b).

<sup>128</sup>New DHHS reporting rules will become effective in October 1991 and will require detailed program information but will not require information on the types of supportive services that States are providing (150b).

(150b). The Center for Law and Social Policy's survey also found that educational placements of JOBS adolescent mothers were generally far more common than job training or work placements, although some States (e.g., Iowa, Missouri, Ohio, and Oklahoma) had substantial numbers in job training. Only eight States could report how many JOBS parents were receiving child care subsidized under JOBS, and these data showed substantial variation among the States (150b).

- *Child Support Enforcement Program*—As discussed elsewhere in this Report, the Child Support Enforcement Program was established in 1975 under Title IV-D of the Social Security Act. This program is aimed at helping States locate absent fathers, establish their paternity, and enforce their child support obligations. At the Federal level, the Family Support Administration provides assistance to States to help them operate programs that offer services to individuals and families to help them collect child support from absent parents.<sup>129</sup> The number of single adolescent mothers rearing children affected by this program and the nature of the program's effects on adolescent parents or their children are unknown.
- *Food and nutritional assistance programs such as the Special Supplemental Food Program for Women, Infants, and Children (WIC) and the Food Stamp Program*—As discussed elsewhere in this Report, the U.S. Department of Agriculture's Food and Nutrition Service administers several programs that provide food assistance to low-income individuals and families, including the Food Stamp program, WIC, and various child nutrition programs.<sup>130</sup> Under the WIC program, participants receive vouchers for food such as milk, cheese, fruit juices, eggs, dry beans, iron-fortified cereal, and infant formula (88). Pregnant, breastfeeding, or postpartum adolescents make up an estimated 2.8 percent of WIC participants (200a). An evaluation of the prenatal part of WIC in Massachu-

setts found that the program improved pregnancy outcomes among all participants, but especially among teens and unmarried women (88,117a). To OTA's knowledge, there is no comparable information on the percentage of Food Stamp program participants who are breastfeeding, or postpartum adolescents or their children. There is also no information on the extent to which existing food and nutritional assistance programs meet the needs of adolescents who are pregnant or parenting and their children.

- *Employment programs for economically disadvantaged youth*—As discussed elsewhere in this Report, the U.S. Department of Labor, through its Employment and Training Administration, supports training and employment programs for economically disadvantaged youth under the 1982 Job Training Partnership Act. Titles II-A and II-B authorize block grants to the States. In 1989, \$715.1 million in Title II-A funds was earmarked to support training services for economically disadvantaged adolescents, and \$709.4 million in Title II-B funds was designated for support of the Summer Youth Employment and Training Program for adolescents. \*31 Title IV authorizes federally administered programs such as the Job Corps, a joint venture between the U.S. Department of Labor, private corporations, and nonprofit organizations that provides employment and training in primarily residential centers for disadvantaged adolescents and young adults ages 16 to 21.<sup>132</sup> In program year 1989, there were 100,000 participants in the Job Corps.
- *Other programs*—A variety of Federal programs discussed elsewhere in this Report may assist pregnant or parenting adolescents by, for example, providing child care assistance (e.g., the Head Start Program, Child Care Food program, comprehensive child development centers); housing assistance (e.g., low-income public housing, leased housing assistance); funding for projects for substance-abusing

<sup>129</sup>The Child Support Enforcement Program is discussed in ch.18, "Issues in the Delivery of Services to Selected Groups of Adolescents," and ch. 19, "The Role of Federal Agencies in Adolescent Health," in Vol. III.

<sup>130</sup>These programs are discussed in ch.19, "The Role of Federal Agencies in Adolescent Health," in Vol. III.

<sup>131</sup>The Federal Summer Youth Employment and Training Program provides more than 650,000 low-income teenagers throughout the country with 7 to 8 weeks of employment during the summer. Funding from this program was used to support the Summer Training and Education (STEP) Program discussed earlier in this chapter.

<sup>132</sup>For additional information about these and other programs administered by the U.S. Department of Labor, see ch.19, "The Role of Federal Agencies in Adolescent Health" in Vol. III.

pregnant and postpartum women (e.g., alcohol, drug abuse, and mental health block grants to States); finding for community and migrant health centers that provide primary health care and other services to medically underserved populations; and other services,

As noted elsewhere in this Report, there are few data on the utilization of many of these Federal programs by adolescents, on expenditures for adolescents, or on the adequacy of available services in terms of meeting adolescents' needs. Furthermore, a U.S. General Accounting Office report issued in July 1986 said little is known about the effectiveness of services provided for adolescents under these programs (195b,196). Numerous other health, education, labor, employment and social service agencies may have contact with adolescents at risk of pregnancy, or already parenting, or have the potential to serve them. Although the array of programs may present a vast set of potential means of assistance for sexually active, pregnant, or parenting adolescents, there are substantial barriers to the effective use of such programs and services by adolescents (see, e.g., 150a).<sup>133</sup> In addition, some services needed by adolescents may not be available either generally or in a specific adolescent community (169).

The lack of coordination among programs relevant or potentially relevant to adolescents at the Federal level is discussed in Volume III of this report, Strategies to improve coordination at the Federal and local levels have been described by the National Commission To Prevent Infant Mortality ( 150a). Furthermore, in April 1991, DHHS announced a reorganization of some programs in a new Administration for Children and Families (202b). The reorganization would combine all programs of the Family Support Administration and the Office of Human Development Services, and the Title V maternal and child health block grant program administered by the Health Resources and Services Administration (202 b). One purpose of the new administration would be to bring together Federal initiatives affecting pregnant and parenting adolescents. Because specific features of the reorganization were still being debated as this volume was being prepared, OTA could not evaluate the potential effectiveness of this reorganization in delivering coordinated, comprehensive services to pregnant

and parenting adolescents. Congress may want to investigate the effects of the reorganization specifically on programs for pregnant and parenting adolescents in the future.

## Conclusions and Policy Implications

The United States has higher adolescent pregnancy rates, birth rates, and abortion rates than a number of other industrialized countries. Of the roughly one million U.S. adolescents who become pregnant each year, about half a million give birth. In 1988, there were 488,941 births to U.S. females under age 20 (478,353 to females ages 15 to 19 and 10,588 to females under age 15). The overall birth rate among U.S. adolescents has leveled off since the mid- 1970s, but birth rates among black adolescents have been increasing rather steadily since 1984. Furthermore, the birth rate among unmarried U.S. adolescents has been skyrocketing. Whereas one-fifth of births to U.S. females under age 20 in 1970 were births to single mothers, about two-thirds of births to U.S. females under age 20 in 1988 were births to single mothers (312,499 births to single females ages 15 to 19 and 9,907 births to single females under age 15).

These trends related to adolescent pregnancy and childbearing are disturbing in light of meager Federal involvement in workable pregnancy prevention efforts and efforts to assist pregnant and parenting adolescents. For a decade, U.S. executive branch policy has emphasized the teaching of abstinence over any other approach to the prevention of pregnancy. While seeking to delay sexual involvement may be appropriate and effective for some adolescents who are not yet sexually active, there is no evidence that the promotion of abstinence alone is an appropriate or effective approach to pregnancy prevention for the large group of adolescents who are already sexually active. On average, 65 percent of U.S. males ages 15 to 19 and 53 percent of U.S. females ages 15 to 19 report that they have had sexual intercourse.

Policy and program changes are needed to prevent adolescent pregnancy and to improve the lives of adolescent parents and their children. In making these changes, efforts should be made to involve adolescent males as well as females. OTA's review of the literature on adolescent pregnancy prevention

<sup>133</sup>Also see Vol. III of this Report, *Adolescent Health: Crosscutting Issues in the Delivery of Health and Related Services*.

suggests conclusions similar to those of the National Academy of Sciences' Panel on Adolescent Pregnancy and Childbearing and other analyses (47a,107a). There is no "magic bullet" for the prevention of adolescent pregnancy. Rather, young adolescents who are not already sexually active should be encouraged to delay sexual activity, and sexually active adolescents should be provided with both the capacity (e.g., contraceptives, information) and motivation (e.g., life skills training, the hope of obtaining jobs) to avoid too-early pregnancy and childbearing. Promising models for the provision of contraceptives (e.g., SLHCs) and enhancing motivation exist; both additional support and more rigorous evaluation of these models are needed. Also needed is support for research on contraceptive technology development, as well as investigation into the reasons for the high contraceptive failure rates among adolescents.

Although preventing too-early childbearing among U.S. adolescents is clearly preferable, careful evaluations of efforts such as Project Redirection suggest that investing in improving the lives of adolescent mothers and their children has clear benefits. Such programs ought to be extended to additional numbers of adolescent parents.

Abortion is a legal alternative to parenthood for pregnant adolescents, but not an option that a pregnant adolescent makes lightly. For adolescents who may choose abortion, there are geographic and financial limitations on access to abortions, as well as legal ones. Many births to adolescents are unwanted.<sup>134</sup> If the Federal Government is not going to act more decisively to prevent pregnancies among U.S. adolescents or to make life for adolescent parents and their children less onerous, it could act to make abortion more available.

Finally, males—both adolescent and older males—seem to have been largely forgotten in discussions of adolescent pregnancy and parenting. New efforts to increase child support enforcement among unwed and otherwise absent fathers may eventually be effective in inculcating a sense of responsibility and obligation in sexually active males, but greater access to contraception and increased motivation to avoid unprotected sexual intercourse are probably also necessary.



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Specific options for congressional consideration pertaining to adolescent pregnancy and parenting are listed in Volume I.

## Chapter 10 References

1. Abrahamse, A. F., Morrison, P. A., and Waite, L.J., *How Family Characteristics Deter Early Unwed Parenthood*, paper presented at the annual meeting of the Population Association of America, Boston, MA, 1985.
- 1a. Adams, G., and Pittman, K., *Adolescent and Young Adult Fathers: Problems and Solutions* (Washington DC: Children's Defense Fund, 1988).
2. Adler, E. S., Bates, M., and Merdinger, J.M., "Educational Policies and Programs for Teenage Parents and Pregnant Teenagers," *Family Relations* 34:183-187, 1985.
3. Adler, N.E., "Emotional Responses of Women Following Therapeutic Abortion," *American Journal of Orthopsychiatry* 45:446-454, 1975.
4. Adler, N.E., David, H. P., Major, B.N., et al., "Psychological Responses After Abortion," *Science* 248:41-44, 1990.
5. Adler, N.E., and Dolcini, P., "Psychological Issues in Abortion for Adolescents," *Adolescent Abortion: Psychological and Legal*

<sup>134</sup>Even at the time of birth, one out of four adolescents overall and one out of three black adolescents say that their baby was unwanted at conception (207c).

- Issues*, G.B. Melton (ed.) (Lincoln, NE: University of Nebraska Press, 1986).
6. Alan Guttmacher Institute, *Teenage Pregnancy: The Problem That Hasn't Gone Away* (New York, NY: 1981).
  7. Alan Guttmacher Institute, *Risk and Responsibility: Teaching Sex Education in America's Schools Today* (New York, NY: 1989).
  8. Alan Guttmacher Institute, *Teenage Pregnancy in the United States: The Scope of the Problem and State Responses* (New York, NY: 1989).
  - 8a. Alan Guttmacher Institute, "Teenage Sexual and Reproductive Behavior in the United States," *Facts in Brief*, New York, NY, no date.
  9. Allen, J. P., Philliber, S., and Hoggson, N., "School-Based Prevention of Teenage Pregnancy and School Dropout: Process Evaluation of the National Replication of the Teen Outreach Program," *American Journal of Community Psychology* 18(4):505-524, 1990.
  - 9a. Academy of Pediatrics and American College of Obstetricians and Gynecologists, *Guidelines for Perinatal Care* (Evanston, IL: 1982).
  - 9b. American Public Health Association, "Title X Clinics and Abortion Counseling Fight Is Before High Court," *The Nation's Health* 21 (1): 1, 8, January 1991.
  - 9c. Anderson, E., "Neighborhood Effects on Teenage Pregnancy," *The Urban Underclass*, C. Jencks and P.E. Peterson (eds.) (Washington, DC: Brookings Institution, 1991).
  10. Arnold, C. B., "A Condom Distribution Program for Adolescent Males, *Readings in Family Planning: A Challenge to the Health Professions*, D.V. McCalister, V. Thiessen, and H. McDermott (eds.) (St. Louis, MO: Mosby, 1973)
  11. Ashton, J. R., "Patterns of Discussion and Decision-Making Amongst Abortion Patients," *Journal of Biosocial Science* 12:247-259, 1980.
  12. Bachrach, C. A., "Adoption Plans, Adopted Children, and Adoptive Mothers," *Journal of Marriage and the Family* 48:243-253, 1986.
  - 12a. Bachrach, C. A., and Horn, M. C., "Marriage and First Intercourse, Marital Dissolution and Remarriage: United States, 1982," *Advance Data From Vital and Health Statistics of the National Center for Health Services*, No. 107, April 1985.
  13. Baldwin, W., "Adolescent Pregnancy and Childbearing—Growing Concerns for Americans," *Population Bulletin* 31:3-34, 1977.
  14. Baldwin, W., and Cain, V. S., "The Children of Teenage Parents," *Family Planning Perspectives* 12:34-43, 1980.
  - 14a. Bane, M.J., and Ellwood, D., "One Fifth of the Nation's Children: Why Are They Poor?" *Science* 245: 1047-1053, 1989.
  15. Barth, R. P., Fetro, J. V., Leland, N., et al., "Preventing Teenage Pregnancy With Social and Cognitive Skills," *Journal of Adolescent Research*, in press.
  16. Barth, R. P., and Schink, S. P., "Coping With Daily Strain Among Pregnant and Parenting Adolescents," *Journal of Social Service Research* 7(2):51-63, 1983.
  - 16a. Bauman, K. E., and Uldry, J.R., "Subjective Expected Utility and Adolescent Sexual Behavior," *Adolescence* 16:527-535, 1981.
  17. Billy, J., and Udry, J.R., "Adolescent Sexual Behavior and Friendship Choice," *Social Forces* 62:653-678, 1984.
  18. Bingham, M., Edmondson, J., and Stryker, S., *Choices: A Teen Woman's Journal for Self-Awareness and Personal Planning* (Santa Barbara, CA: Advocacy Press, 1983).
  - 18a. Blum, R. W., and Resnick, M., "Adolescent Sexual Decisionmaking: Contraception, Pregnancy, Abortion, Motherhood," *Pediatric Annals* 11(10):797-805, 1982.
  - 18b. Blum, R. W., Resnick, M., and Stark, T., "The Impact of Parental Notification Law on Adolescent Abortion Decisionmaking," *American Journal of Public Health* 77(5):619-620, 1987.
  19. Booth, W., "Teenage Pregnancy's Risks Reevaluated: Motherhood Can Be Rational Response to Poverty, Studies Find," *Washington Post*, p. AU, Feb. 18, 1990.
  - 19a. Bose, J., "Adoption and Parenting Decision Making Among Adolescent Females," Minneapolis, MN, no date.
  20. Bracken, M.B., Hachamovitch, M., and Grossman, G., "The Decision To Abort and Psychological Sequelae," *Journal of Nervous and Mental Disease* 158:154-162, 1974.
  21. Branch, A. Y., Milliner, J., Bloom, S. P., et al., *Summer Training and Education Program (STEP): Report on the Pilot Experience* (Philadelphia, PA: Public/Private Ventures, 1985).
  22. Branch, A. Y., Milliner, J., and Bumbaugh, J., *Summer Training and Education Program (STEP): Report on the 1985 Experience* (Philadelphia, PA: Public/Private Ventures, Summer 1986).
  23. Brindis, C., "A Synthesis of Recent Evaluation Findings on School-Based Health Centers," paper presented at "The Growth of School-Based Health Services: Communities Building Linkages for Youths at Risk," workshop sponsored by the National Health Policy Forum, George Washington University, Washington, DC, Nov. 28, 1989.
  - 23a. Brindis, C., Barth, R., and Loomis, A., "Continuous Counseling: Case Management with Teenage Parents," *Social Casework* 68(3):164-172.
  24. Brindis, C.D., and Jeremy, R.J., *Adolescent Pregnancy and Parenting in California: A Strategic Plan for Action* (San Francisco, CA: Sutter Publications, 1988).
  - 24a. Broderick, C. B., "Sexual Behavior Among Pre-Adolescents," *Journal of Social Issues* 22:6-21, 1966.
  25. Brooks-Gunn, J., and Furstenberg, F.F., "Coming of Age in the Era of AIDS: Sexual and Contraceptive Decisions," *Milbank Quarterly* 68(suppl.1):59-84, 1990.
  - 25a. Burt, M., "Risk Factors Associated With Poor Pregnancy Outcomes and Adolescents as a Special Group," contract paper prepared for the Office of Technology Assessment, U.S. Congress, Washington DC, Sept. 30, 1986.
  26. Burt, M., Kimmich, M., Goldmuntz, J., and Sonenstein, F., *Helping Pregnant Adolescents: Outcomes and Costs of Service Delivery* (Washington, DC: Urban Institute, 1984).
  27. Cagampang, H., Gerritz, W., and Hayward, G., *Pregnant and Parenting Minors and California Schools: Policy Analysis for California Education* (Berkeley, CA: University of California at Berkeley and Stanford University, 1987).
  28. Card, J.J., "Executive Summary," *Evaluating and Monitoring Programs for Pregnant and Parenting Teens*, J. Card (ed.) (Los Altos, CA: Sociometrics, 1988).
  29. Card, J.J., and Wise, L.L., "Teenage Mothers and Teenage Fathers: The Impact of Early Childbearing on the Parents' Personal and Professional Lives," *Family Planning Perspectives* 10:199-205, 1978.
  30. Cates, W., "Adolescent Abortions in the United States," *Journal of Adolescent Health Care* 1:18-25, 1980.
  31. Cates, W., Schulz, K.F., and Grimes, D. A., "The Risks Associated With Teenage Abortion," *New England Journal of Medicine* 309:621-624, 1983.
  32. Center for Population Options, Support Center for School-Based Clinics, Houston, TX, *Clinic News* 3(3), 1987.
  33. Center for Population Options, *Teenage Pregnancy and Too-Early Childbearing: Public Costs, Personal Consequences* (Washington DC: 1989).
  34. Chamie, M., Eisman, S., Forrest, J. D., et al., "Factors Affecting Adolescents' Use of Family Planning Clinics," *Family Planning Perspectives* 14: 126-182, 1982.
  35. Children's Defense Fund, *Adolescent Pregnancy Prevention Clearinghouse, Adolescent Pregnancy: An Anatomy of a Social Problem in Search of Comprehensive Solutions* (Washington DC: 1987).
  36. Children's Defense Fund, *Adolescent Pregnancy Prevention Clearinghouse, Child Care: An Essential Service for Teen Parents* (Washington, DC: 1987).
  - 36a. Christopher, F. S., and Roosa, M. W., "An Evaluation of an Adolescent Pregnancy Prevention Program: Is 'Just Say No' Enough?" *Family Relations* 39:68-72, 1990.

37. Cvejic, H., Lipper, I., Kinch, R.A., et al., "Followup of 50 Adolescent Girls 2 Years After Abortion," *Canadian Medical Association Journal* 116:44-46, 1977.
38. Cvetkovich, G., and Grote, B., "Psychological Development and the Social Problem of Teenage Illegitimacy," *Adolescent Pregnancy and Childbearing: Findings From Research*, C. Chilman (cd.), National Institutes of Health, Public Health Service, U.S. Department of Health and Human Services, NIH Pub. No. 81-2077 (Washington DC: U.S. Government Printing Office, December 1980).
- 38a. Danielson, R., Marcy, S., Plunkett, A., et al., "Reproductive Health Counseling for Young Men: What Does it Do?" *Family Planning Perspectives* 22:1 15-121, 1990.
39. Danish, S.J., "Athletes Coaching Teens: A School-Based Prevention Program," paper presented at the American Psychological Association convention New Orleans, LA, August 1989.
40. Darabi, K. F., and Ortiz, V., "Childbearing Among Youth Latino Women in the United States," *American Journal of Public Health* 77:25-28, 1987.
41. Dawson, D.A., "The Effects of Sex Education on Adolescent Behavior," *Family Planning Perspectives* 18(4):162-170, 1986.
42. Decision Sciences, Inc., unpublished data from random sampling by telephone of Portland School District residents, Portland, OR, 1986.
43. Devaney, B.L., and Hubley, K. S., Mathematical Policy Research, Inc., "The Determinants of Adolescent Pregnancy and Childbearing," report prepared for the National Institute of Child Health and Human Development, National Institutes of Health, Public Health Service, U.S. Department of Health and Human Services, Washington, DC, 1981.
44. Deykin, E. Y., Campbell, L., and Patti, P., "The Postadoption Experience of Surrendering Parents," *American Journal of Orthopsychiatry* 54:271-280, 1984.
45. Dryfoos, J., "Review of Interventions in the Field of Prevention of Adolescent Pregnancy," preliminary report prepared for the Rockefeller Foundation New York, NY, 1983.
46. Dryfoos, J., "Review of Programs and Services To Foster Responsible Sexual Behavior on the Part of Adolescent Boys," report prepared for the Carnegie Corporation of New York, New York, NY, 1985.
47. Dryfoos, J., *Putting Boys in the Picture: A Review of Programs To Promote Sexual Responsibility Among Young Males* (Santa Cruz, CA: Network Publications, 1988).
- 47a. Dryfoos, J., *Adolescents at Risk: Prevalence and Prevention* (New York, NY: Oxford University Press, 1990).
48. Durant, R.H., Jay, S., Seymore, C., "Contraceptive and Sexual Behavior of Black Female Adolescents," *Journal of Adolescent Health Care* 11:326-334, 1990.
49. Earle, J., Roach, V., and Fraser, K., *Female Dropouts: A New Perspective* (Washington DC: National Association of State Boards of Education, 1987).
- 49a. Eddinger, L., Office of Population Affairs, Office of the Assistant Secretary of Health, Public Health Services, U.S. Department of Health and Human Services, personal communication Aug. 2, 1990.
50. Edwards, L. E., Steinman, M.E., Arnold, K. A., et al., 'Adolescent Pregnancy Prevention Services in High School Clinics,' *Family Planning Perspectives* 12:6-14, 1980.
- 50a. Eisen, M., Zellman, G. L., Leibowitz, A., et al., "Factors Discriminating Pregnancy Resolution Decisions of Unmarried Adolescents," *Genetic Psychology Monographs* 108:69-95, 1983.
51. Eisen, M., Zellman, G.L., and McAlister, A.L., "Evaluating the Impact of a Theory-Based Sexuality and Contraceptive Education Program," *Family Planning Perspectives* 22(6):261-271, 1990.
- 51a. Elliott, D. S., and Morse, B.J., "Drug Use Delinquency and Sexual Activity," *Drug Abuse and Adolescent Sexual Behavior, Pregnancy, and Parenting*, C.L. Jones (cd.), National Institute on Drug Abuse, Alcohol, Drug Abuse, and Mental Health Administration, Public Health Service, U.S. Department of Health and Human Services, in press.
52. Elster, A.B., and Lamb, M.E. (eds.), *Adolescent Fatherhood* (Hillsdale, NJ: Lawrence Erlbaum Associates, 1986).
- 52a. Ensminger, M.E., "Adolescent Sexual Behavior as it Relates to Other Transition Behaviors in Youth," *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing. Volume 11: Working Papers and Statistical Appendixes*, S.L. Hofferth and C.D. Hayes (eds.), Panel on Adolescent Pregnancy and Parenting, Committee on Child Development Research and Public Policy, Commission on Behavioral and Social Sciences and Education, National Research Council, National Academy of Sciences (Washington DC: National Academy Press, 1987).
53. Evans, J., Selstad, G., and Welcher, W., "Teenagers: Fertility Control Behavior and Attitudes Before and After Abortion, Childbearing, or Negative Pregnancy Test," *Family Planning Perspectives* 8:192-200, 1976.
54. Ezzard, N. V., Cates, W., Kramer, D.G., et al., "Race-Specific Patterns of Abortion Use by American Teenagers," *American Journal of Public Health* 72:809, 1982.
55. Ezzard, N. V., Cates, W., and Schulz, K.F., "The Epidemiology of Adolescent Abortion in the United States," *Perspectives on Abortion*, P. Sachdev (cd.) (Metuchen, NJ: Scarecrow, 1985).
- 55a. Family Planning Perspectives, "Documents: U.S. Supreme Court Considers New Title X Regulations," *Family Planning Perspectives* 23(1):38-40, 1991.
56. Fennelly-Darabi, K., and Cairns, G., "Abortion Among Hispanics in the United States," paper presented at the annual meeting of the American Public Health Association New Orleans, LA, 1987.
- 56a. Fine, M., "Sexuality, Schooling, and Adolescent Females: The Missing Discourse of Desire," *Harvard Educational Review* 58(1):29-53, 1988.
57. Fischman, S.H., "The Pregnancy Resolution Decisions of Unwed Adolescents," *Nursing Clinics of North America* 10:(3)217-227, October 1975.
- 57a. Flaherty, E., and Maracek, J., Philadelphia Health Management Corp., "Psychological Factors Associated With Fertility Regulation Among Adolescents," report prepared for the National Institute of Child Health and Human Development National Institutes of Health, Public Health Service, U.S. Department of Health and Human Service, Washington DC, 1982.
58. Forrest, J.D., "Proportion of U.S. Women Ever Pregnant Before Age 20: A Research Note," Alan Guttmacher Institute, New York, NY, 1986.
59. Forrest, J. D., Hermalin, A.I., and Henshaw, S.K., "The Impact of Family Planning Clinic Programs on Adolescent Pregnancy," *Family Planning Perspectives* 13:109-116, 1981.
- 59a. Forrest, J.D., and Singh, S., "The Sexual and Reproductive Behavior of American Women, 1982-1988," *Family Planning Perspectives* 22(5):206-214, 1990.
60. Fox, G. L., "The Family's Role in Adolescent Sexual Behavior," *Teenage Pregnancy in a Family Context*, T. Ooms (cd.) (Philadelphia, PA: Temple University Press, 1981).
61. Franklin, D.L., "Race, Class, and Adolescent Pregnancy: An Ecological Analysis," *American Journal of Orthopsychiatry* 58:339-354, 1988.
62. Freeman, E., Sondheimer, S. J., and Rickels, K., "Influence of Maternal Attitudes on Urban, Black Teens' Decisions About Abortion v. Delivery," *Journal of Reproductive Medicine* 30:731-735, 1985.
63. Freeman, E.W., "Influence of Personality Attributes on Abortion Experiences," *American Journal of Orthopsychiatry* 47:127-133, 1977.
- 63a. Friede, A., Baldwin, W., Rhodes, P.H., et al., "Young Maternal Age and Infant Mortality: The Role of Low Birth Weight," *Public Health Reports* 102(2):192-199, 1987.

64. Friede, A., Hogue, C.J., Doyle, L.L., et al., "Do the Sisters of Childbearing Teenagers Have Increased Rates of Childbearing?" *American Journal of Public Health* 76:1221-1224, 1986.
65. Fuller, M., and Fuller, R., "Teen Health Clinics: An Unproven Approach," *International Review of Natural Family Planning* 10:163-168, 1986.
66. Furstenberg, Jr., F. F., *Unplanned Parenthood: The Social Consequences of Teenage Childbearing* (New York, NY: Free Press, 1976).
67. Furstenberg, Jr., F.F., Brooks-Gunn, J., and Chase-Lansdale, L., "Teenaged Pregnancy and Childbearing," *American Psychologist* 44:313-320, 1989.
68. Furstenberg, Jr., F. F., Brooks-Gunn, J., and Morgan, P., *Adolescent Mothers in Later Life* (Cambridge, NY: Cambridge University Press, 1987).
- 68a. Furstenberg, Jr., F. F., Brooks-Gunn, J., and Morgan, S. P., "Adolescent Mothers and Their Children in Late Life," *Family Planning Perspectives* 19(4):142-152, 1987.
69. Furstenberg, Jr., F. F., Hecceg-Baron, R., Mann, D., et al., "Parental Involvement: Selling Family Planning Clinics Short," *Family Planning Perspectives* 14:140-144, 1982.
70. Furstenberg, F. F., Levine, J. A., and Brooks-Gunn, J., "The Children of Teenage Mothers: Patterns of Early Childbearing in Two Generations," *Family Planning Perspectives* 22(2):54-61, 1990.
71. Gabrielson, I. W., Klerman, L. V., Currie, J. B., et al., "Suicide Attempts in a Population Pregnant as Teenagers," *American Journal of Public Health* 60:2289-2301, 1970.
- 71a. Garn, S. M., Pesick, S. D., and Petzold, A. S., "The Biology of Teenage Pregnancy: The Mother and the Child," *School-Age Pregnancy and Parenthood: Biosocial Dimensions*, J.B. Lancaster and B.A. Hamburg (eds.) (New York, NY: Aldine de Gruyter, 1986).
72. Geronimus, A. T., "On Teenage Childbearing and Neonatal Mortality in the United States," *Population and Development Review* 13:245-279, 1987.
73. Gilchrist, L. D., and Schinck, S. P., "Coping With Contraception: Cognitive and Behavioral Methods With Adolescents," *Cognitive Therapy and Research* 7:379-388, 1983.
74. Glasow, R. D., *School-Based Clinics, The Abortion Connection* (Washington, DC: National Right To Life Educational Trust Fund, 1988).
- 74a. Glazer, S., "Sex Education: How Well Does It Work," *Congressional Quarterly's Editorial Research Reports* Vol. 1, No. 28, June 23, 1989.
- 74b. Gold, R.B., and Kemy, A. M., "Paying for Maternity Care," *Family Planning Perspectives* 17:103-111, 1985.
- 74c. Gold, R. B., and Macias, J., "Public Funding of Contraceptive, Sterilization and Abortion Services," *Family Planning Perspectives* 18(6):259-263, 1986.
- 74d. Greenhouse, L., "Five Justices Uphold U.S. Rule Curbing Abortion Advice," *New York Times*, p. A1, May 24, 1991.
75. Gross, J., "Anti-Abortion Revival: Homes for Unwed Mothers," *New York Times*, pp. 1,25, July 23, 1989.
- 75a. Hamburg, B. A., "Subsets of Adolescent Mothers: Developmental, Biomedical, and Psychological Issues," *School-Age Pregnancy and Parenthood*, J.B. Lancaster and B.A. Hamburg (eds.) (New York, NY: Aldine de Gruyter, 1986).
- 75b. Harlan, W., Grille, G., Carononi-Huntley, J., et al., "Secondary Sex Characteristics of Boys 12 to 17 Years of Age: The U.S. Health Examination Survey," *Journal of Pediatrics* 95(2):293-297, 1980.
76. Hatcher, R. A., Guest, F., Stewart, F., et al., *Contraceptive Technology 1988-1989*, 14th rev. ed. (Atlanta, GA: Printed Matter, Inc., 1988).
- 76a. Health Insurance Association of America, "State Legislative and Regulatory Charts," Washington, DC, February 1989.
- 76b. Health Insurance Association of America, "Research Bulletin: The Cost of Maternity Care and Childbirth in the United States, 1989," Washington DC, December 1989.
77. Hechinger, F.M., "The First Step in Improving Sex Education: Remove the Hellfire," *New York Times*, p. B9, May 24, 1989.
78. Henshaw, S. K., "Freestanding Abortion Clinics: Services, Structure, Fees," *Family Planning Perspectives* 14:248-256, 1982.
- 78a. Henshaw, S. K., Alan Guttmacher Institute, New York, NY, personal communication, May 21, 1990.
79. Henshaw, S.K., Forrest, J.D., and Van Vort, J., "Abortion Services in the United States, 1984 and 1985," *Family Planning Perspectives* 19:63-70, 1987.
80. Henshaw, S. K., and O'Reilly, K., "Characteristics of Abortion Patients in the United States, 1979 and 1980," *Family Planning Perspectives* 15:5-16, 1983.
81. Henshaw, S. K., and Silverman, J., "The Characteristics and Prior Contraceptive Use of U.S. Abortion Patients," *Family Planning Perspectives* 20: 158-168, 1988.
- 81a. Henshaw, S. K., and Van Vort, J., "Teenage Abortion, Birth, and Pregnancy Statistics: An Update," *Family Planning Perspectives* 21(2):85-87, 1989.
- 81b. Henshaw, S.K., and Van Vort, J., "Abortion Services in the United States, 1987 and 1988," *Family Planning Perspectives* 22:102-108, 1990.
82. Hecceg-Baron, R., Furstenberg, Jr., F. F., Shea, J., et al., "Supporting Teenagers' Use of Contraceptives: A Comparison of Clinic Services," *Family Planning Perspectives* 18(2):61-66, 1986.
83. Herz, E.J., Olson, L. M., and Reis, J. S., "Family Planning for Teens: Strategies for Improving Outreach and Service Delivery in Public Health Settings," *Public Health Reports* 103:422-430, 1988.
84. Hofferth, S.L., "The Children of Teen Childbearers," *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing. Volume II: Working Papers and Statistical Appendixes*, S.L. Hofferth and C.D. Hayes (eds.), Panel on Adolescent Pregnancy and Childbearing, Committee on Child Development Research and Public Policy, Commission on Behavioral and Social Sciences and Education, National Research Council, National Academy of Sciences (Washington, DC: National Academy Press, 1987).
85. Hofferth, S. L., "Contraceptive Decisionmaking Among Adolescents," *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing. Volume II: Working Papers and Statistical Appendixes*, S.L. Hofferth and C.D. Hayes (eds.), Panel on Adolescent Pregnancy and Childbearing, Committee on Child Development Research and Public Policy, Commission on Behavioral and Social Sciences and Education, National Research Council, National Academy of Sciences (Washington, DC: National Academy Press, 1987).
86. Hofferth, S.L., "The Effects of Programs and Policies on Adolescent Pregnancy and Childbearing," *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing. Volume II: Working Papers and Statistical Appendixes*, S.L. Hofferth and C.D. Hayes (eds.), Panel on Adolescent Pregnancy and Childbearing, Committee on Child Development Research and Public Policy, Commission on Behavioral and Social Sciences and Education, National Research Council, National Academy of Sciences (Washington, DC: National Academy Press, 1987).
- 86a. Hofferth, S.L., "Factors Affecting the Initiation of Sexual Intercourse," *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing. Volume II: Working Papers and Statistical Appendixes*, S.L. Hofferth and C.D. Hayes (eds.), Panel on Adolescent Pregnancy and Childbearing, Committee on Child Development Research and Public Policy, Commission on Behavioral and Social Sciences and Education, National Research Council, National Academy of Sciences (Washington DC: National Academy Press, 1987).
87. Hofferth, S.L., "Teenage Pregnancy and its Resolution" *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing. Volume II: Working Papers and Statistical Appendixes*, S.L.

- Hofferth and C.D. Hayes (eds.), Panel on Adolescent Pregnancy and Childbearing, Committee on Child Development Research and Public Policy, Commission on Behavioral and Social Sciences and Education, National Research Council, National Academy of Sciences (Washington, DC: National Academy Press, 1987).
88. Hofferth, S.L., "Programs for High-Risk Adolescents: What Works?" *Evaluation and Program Planning* 14(1,2):3, 1991.
  89. Hofferth, S.L., and Moore, K.A., "Early Childbearing and Later Economic Well-Being," *American Sociological Review* 44:784-815, 1979.
  90. Hofferth, S. L., Moore, K.A., and Caldwell, S.B., "The Consequences of Age at First Childbirth: Labor Force Participation and Earnings," report prepared for the National Institute of Child Health and Human Development, National Institutes of Health, Public Health Service, U.S. Department of Health and Human Services, Washington, DC, 1978.
  91. Hogan, D.P., and Kitagawa, E. M., "Family Factors in the Fertility of Black Adolescents," paper presented at the annual meeting of the Population Association of America, Pittsburgh, PA, 1983.
  92. Hogan, D.P., and Kitagawa, E. M., "The Impact of Social Status, Family Structure, and Neighborhood on the Fertility of Black Adolescents," *American Journal of Sociology* 90:825-855, 1985.
  - 92a. Horwitz, S. M., Klerman, L. V., Jekel, J. F., et al., "School-Age Mothers: Predictors of Long-Term Educational and Economic Outcomes," *Pediatrics* 87(6):862-868, 1991.
  93. Howard, M., "Postponing Sexual Involvement Among Adolescents: An Alternative Approach to Prevention of Sexually Transmitted Diseases," *Journal of Adolescent Health Care* 6:271-277, 1985.
  94. Howard, M., "Helping Youth Postpone Sexual Involvement," *New Universals: Adolescent Health in a Time of Change*, D. Bennett and M. Williams (eds.) (Curtin, Australia: Brolga Press, 1988).
  95. Howard, M., and McCabe, J. B., "Helping Teenagers Postpone Sexual Involvement," *Family Planning Perspectives* 22:21-26, 1990.
  96. Inazu, J.K., and Fox, G.L., "Maternal Influence on the Sexual Behavior of Teenage Daughters," *Journal of Family Issues* 1:81-102, 1980.
  - 96a. Ingram, D.D., Makuc, D., and Kleinman, J. C., "National and State Trends in the Use of Prenatal Care, 1970-83," *American Journal of Public Health* 76(4):417, 1986.
  97. Jones, E.F., and Forrest, J.D., "Contraceptive Failure in the United States: Revised Estimates From the 1982 National Survey of Family Growth?" *Family Planning Perspectives* 21(3): 103-109, 1989.
  - 97a. Jones, E. F., Namerow, P., and Philliber, S., "Adolescents' Use of a Hospital-Based Contraceptive Program," *Family Planning Perspectives* 14:224-233, 1982.
  98. Jones, E.F., Forrest, J.D., Goldman, N., et al., *Teenage Pregnancy in Industrialized Countries* (New Haven, CT: Yale University Press, 1986).
  - 98a. Jones, J. B., and Philliber, S., "Sexually Active But Not Pregnant," *Journal of Youth and Adolescence* 12(3):235-251 1983.
  99. Kahn, J. S., and Bolton, Jr., F.G., "Clinical Issues in Adolescent Fatherhood," *Adolescent Fatherhood*, A.B. Elster and M.E. Lamb (eds.) (Hillsdale, NJ: Lawrence Erlbaum Associates, 1986).
  - 99a. Kalmus, D., Namerow, P. B., and Cushman, L.F., "Adoption Versus Parenting Among Young Pregnant Women," *Family Planning Perspectives* 23(1):17-23, 1991.
  100. Kasun, J., "Family Planning Expenditures in California," *Heartbeat*, pp. 12-13, Winter 1982.
  - 100a. Katchadourian, H., "Sexuality," *At the Threshold: The Developing Adolescent*, S.S. Feldman and G.R. Elliott (eds.) (Cambridge, MA: Harvard University Press, 1990).
  101. Kates, N., "Burying Time: The Dollar-a-Day Program," case program for use at Kennedy School of Government (c16-90-%1.0), Harvard University, Cambridge, MA, 1990.
  102. Kellam, S.G., Ensminger, M.E., Branch, J., et al., "The Woodlawn Mental Health Longitudinal Community Epidemiological Project," *Handbook of Longitudinal Community Epidemiological Project*, S.A. Mednick, M. Harway, K.M. Finello (eds.) (New York, NY: Praeger, 1984).
  103. Kermey, A. M., *Sex Education and AIDS Education in the Schools: A Survey of State Policies, Curricula and Program Activities* (New York, NY: Alan Guttmacher Institute, 1989).
  104. Kenney, A.M., Guardado, S., and Brown, L., "Sex Education and AIDS Education in the Schools: What States and Large School Districts Are Doing," *Family Planning Perspectives* 21(2):56-64, 1989.
  - 104a. Kessel, S., Hutchins, V., Placek, P., et al., "Trends in Underlying Medical Conditions, Complications of Pregnancy, and Complications of Pregnancy, and Complications of Labor to Mothers of In-Wedlock Live Hospital Births: United States, 1972 and 1980," paper presented at the annual meeting of the Southern Regional Demographic Group, Orlando, FL, 1984.
  105. Kinard E. M., and Klerman, L. V., "Teenage Parenting and Child Abuse: Are They Related?" *American Journal of Orthopsychiatry* 50(3): 481-488, 1980.
  106. Kinard, E. M., and Reinherz, H., "School Achievement and Aptitude in Children of Adolescent Mothers," paper presented at the annual meeting of the American Public Health Association Montreal, Canada, 1984.
  107. Kirby, D., *Sexuality Education: An Evaluation of Programs and Their Effects* (Santa Cruz, CA: Network Publications, 1984).
  - 107a. Kirby, D., "Research on Effectiveness of Sex Education Programs," *Theory Into Practice* 28(3):165-171, 1989.
  108. Kirby, D., Director, Research, Center for Population Options Washington DC, personal communication, April 1990.
  109. Kirby, D., Harvey, P., Claussenius, D., et al., "A Direct Mailing to Teenage Males: Its Impact on Knowledge, Attitudes, and Sexual Behavior," Center for Population Options, Washington, DC, 1988.
  110. Kirby, D., Waszak, C. S., and Ziegler, J., *An Assessment of Six School-Based Clinics: Services, Impact and Potential* (Washington, DC: Center for Population Options, 1989).
  111. Kisker, E.E., "The Effectiveness of Family Planning clinics in Serving Adolescents," *Family Planning Perspectives* 16(5):212-218, 1984.
  112. Kisker, E. E., "Teenagers Talk About Sex, Pregnancy and Contraception," *Family Planning Perspectives* 17(2):83-90, 1985.
  113. Klerman, L. V., "Evaluating Service Programs for School-Age Parents: Design Problems," *Evaluation and the Health Professions* 1:55-70, 1979.
  114. Klein L. V., Bracken, M.B., Jekel, J.F., et al., "The Delivery-Abortion Decision Among Adolescents," *Pregnancy in Adolescence: Needs, Problems, and Management*, I.R. Stuart and C.F. Wells (eds.) (New York, NY: Van Nostrand Reinhold, 1982).
  115. Klerman, L. V., and Jekel, J., *School-Age Mothers: Problems, Programs and Policy* (Hamden, CT: Shoe String Press, 1973).
  116. Klinman, D. G., Sander, J.H., Rosen, J.L., et al., "The Teen Father Collaboration: A Demonstration and Research Model," *Adolescent Fatherhood*, A.B. Elster and M.E. Lamb (eds.) (Hillsdale, NJ: Lawrence Erlbaum Associates, 1986).
  117. Koo, H. P., and Dunteman, G. H., Research Triangle Institute, Research Triangle, NC, "Reanalysis of Changes in Teenage Pregnancy Rates in Denmark Area and Comparison Counties," prepared for Center for Chronic Disease Prevention and Health Promotion, and Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA, 1990.
  - 117a. Kotelchuck, M., Schwartz, J., Anderka, K., et al., "WIC Participation and Pregnancy Outcomes: Massachusetts Statewide

- Evaluation Project, *American Journal of Public Health* 74: 1086-1092, 1984.
118. Ktsanes, V., "Assessment of Contraception by Teenagers," report prepared for the National Institute of Child Health and Human Development National Institutes of Health, Public Health Service, U.S. Department of Health and Human Services, Bethesda, MD, 1977.
  119. LeBolt, S. A., "Mortality From Abortion and Childbirth: Are the Population Comparable?" *Journal of the American Medical Association* 248: 188-191, 1982.
  120. Levin, M., Emory University, Atlanta, GA, "Consequences of Being Born to an Adolescent Mother," report prepared for the National Institute of Child Health and Human Development, National Institutes of Health, Public Health Service, U.S. Department of Health and Human Services, Washington, DC, 1983.
  121. Levy, S. R., Iverson, B. K., and Walberg, H.J., "Adolescent Pregnancy Programs and Educational Interventions: A Research Synthesis and Review," *Journal of the Royal Society of Health* 3:99-103, 1983.
  122. Lewin, T., "Studies Cause Confusion on Impact of Teenage Pregnancy," *New York Times*, p. A19, Mar. 7, 1990.
  123. Lewis, C. E., and Lewis, M. A., "Peer Pressure and Risk-Taking Behaviors in Children," *American Journal of Public Health* 74:580-584, 1984.
  124. Lieberman, E.J., "The Psychological Consequences of Adolescent Pregnancy and Abortion," *Adolescent Pregnancy and Childbearing: Findings From Research*, C.S. Chilman (ed.), National Institutes of Health, Public Health Service, U.S. Department of Health and Human Services, NIH Pub. No. 81-2077 (Washington, DC: U.S. Government Printing Office, December 1980).
  - 24a. Lipsett, J., Public Information Press Assistant, Department of Communications and Development, Alan Guttmacher Institute, New York, NY, personal communication, Feb. 27, 1991.
  - 24b. Lundberg, S., and Plotnick, R. D., "Effects of State Welfare, Abortion and Family Planning Policies on Premarital Childbearing Among White Adolescents," *Family Planning Perspectives* 22(6):246-275 1990.
  125. Maciak, B. J., Spitz, A. M., Strauss, L. T., et al., "Pregnancy and Birth Rates Among Sexually Experienced U.S. Teenagers—1974, 1980, and 1983," *Journal of the American Medical Association* 258:2069-2071, 1987.
  126. Major, B., Mueller, P., and Hildebrandt, K., "Attribution, Expectations, and Coping With Abortion," *Journal of Personality and Social Psychology* 48:585-599, 1985.
  - 126a. Manpower Demonstration Research Corporation "New Chance—A New Initiative for Adolescent Mothers and Their Children: Project Overview," New York, NY, October 1989.
  127. Marine, D. D., and King J. C., "Nutrition Concerns During Adolescence," *Pediatric Clinics of North America* 27: 125-139, 1980.
  128. Marsiglio, W., "Adolescent Fathers in the United States: Their Initial Living Arrangements, Marital Experience and Educational Outcomes," *Family Planning Perspectives* 19(6):240-251, 1987.
  - 128a. Marsiglio, W., "Pregnant Teens and Pregnancy Resolution Decisions: The Role of Male Partners," *TEC Networks*, Newsletter of the Too-Early-Childbearing Networks of Programs Funded by the Charles Stewart Mott Foundation Washington, DC, No. 29, June 1991.
  129. Marsiglio, W., and Mott, F. L., "The Impact of Sex Education on Sexual Activity, Contraceptive Use and Premarital Pregnancy Among American Teenagers," *Family Planning Perspectives* 18(4): 151-162, 1986.
  130. Mastroianni, L., Donaldson, P. J., and Kane, T. T., *Developing New Contraceptives: Obstacles and Opportunities* (Washington, DC: National Academy Press, 1990).
  131. Mathematica Policy Research, Inc., Princeton, NJ, "Overview of the DHHS/OFA-Sponsored Teenage Parent Demonstration," prepared by R. Maynard and D. Polit for U.S. Department of Health and Human Services, Washington, DC, Nov. 30, 1987.
  132. McConnell, N. F., and Dore, M. M., *Crittenton Services: The First Century* (Washington, DC: National Florence Crittenton Mission, 1983).
  133. McLaughlin, S. D., Manninen, D. L., and Winges, L.D., "Do Adolescents Who Relinquish Their Children Fare Better or Worse Than Those Who Raise Them?" *Family Planning Perspectives* 20(1):25-32, 1988.
  134. Menken, J., "The Health and Demographic Consequences of Adolescent Pregnancy and Childbearing," *Adolescent Pregnancy and Childbearing: Findings From Research*, C. Chilman (ed.), National Institutes of Health, Public Health Service, U.S. Department of Health and Human Services, NIH Pub. No. 81-2077 (Washington, DC: U.S. Government Printing Office, December 1980).
  135. Michigan State Board of Education, Project Outreach, Opinions of Michigan Citizens About Public Schools, "Fifth Annual Statewide Michigan Education Survey," Lansing, MI, 1986.
  - 135a. Miller, P. Y., and Simon, W., "Adolescent Sexual Behavior: Context and Change," *Social Problems* 22:58-76, 1974.
  - 135b. Mitchum, F., Policy Analyst, National Association of Community Health Centers, Inc., personal communication, Dec. 14, 1990.
  136. Monsour, K., and Stewart, B., "Abortion and Sexual Behavior in College Women," *American Journal of Orthopsychiatry* 43:803-814, 1973.
  137. Moore, K. A., and Burt, M. R., *Private Crisis, Public Cost: Policy Perspectives on Teenage Childbearing* (Washington, DC: Urban Institute, 1982).
  138. Moore, K.A., and Caldwell, S., "The Effect of Government Policies on Out-of-Wedlock Sex and Pregnancy," *Family Planning Perspectives* 9:164-169, 1977.
  139. Moore, K. A., Peterson, J. L., and Furstenberg, Jr., F.F., "Starting Early: The Antecedents of Early Premarital Intercourse," revised paper presented at the annual meeting of the Population Association of America, Minneapolis, MN, 1984.
  - 139a. Moore, K. A., Peterson, J. L., and Furstenberg, Jr., F.F., "Starting Early: The Antecedents of Early, Premarital Intercourse," revised draft of a paper presented at the annual meeting of the Population Association of America, Minneapolis, MN, 1985.
  140. Moore, K.A., Simms, M. C., and Betsey, C.L., *Choice and Circumstance: Racial Differences in Adolescent Sexuality and Fertility* (New Brunswick, NJ: Transaction Books, 1986).
  141. Moore, K.A., and Stief, T. M., "Changes in Marriage and Fertility Behavior: Behavior Versus Attitudes of Young Adults," paper prepared for Child Trends, Inc., Washington DC, July 1989.
  - 141a. Moore, K.A., Wenk, D., Hofferth, S.L., et al., "Trends in Adolescent Sexual and Fertility Behavior," *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing, Volume II: Working Papers and Statistical Appendixes*, S.L. Hofferth and C.D. Hayes (eds.), Panel on Adolescent Pregnancy and Childbearing, Committee on Child Development Research and Public Policy, Commission on Behavioral and Social Sciences and Education, National Research Council, National Academy of Sciences (Washington, DC: National Academy Press, 1987).
  142. Morrison, D., "Adolescent Contraceptive Behavior: A Review," *Psychological Bulletin* 98:538-568, 1985.
  143. Mosher, W.D., "Contraceptive Practices in the United States, 1982-1988," *Family Planning Perspectives*, 22(5): 198-205, 1990.
  - 143a. Mosher, W. D., and Bachrach, C.A., "First Premarital Contraceptive Use in the United States: Determinants and Trends, 1960s-1982," paper presented at the annual meeting of the Population Association of America, San Francisco, CA, April 1986.
  144. Mott, F. L., *Fertility Related Data in the 1982 National Longitudinal Survey of Work Experience of Youth: An Evaluation of Data Quality and Some Preliminary Analytical Results* (Columbus,

- OH: Center for Human Resource **Research**, Ohio State University, 1983).
- 144a. **Mott, F.L.**, "The Patterning of Female **Teenage** Sexual Behavior and Attitudes," paper presented at the 1983 **annual** meeting of the American Public **Health** Association, Dallas, TX, November 1983, revised January 1984.
- 144b. **Mott, F.L.**, and **Haurin, R.J.**, Center for Human Resource Research, Ohio State University, "The Inter-Relatedness of Age at First Intercourse, Early Pregnancy, Alcohol, and Drug Use Among American Adolescents," prepared for the Bureau of Labor Statistics, U.S. Department of Labor and National **Institute** of Child Health and Human Development, National Institutes of **Health**, Public Health Service, U.S. Department of Health and Human Services, **Washington**, DC, July 1987.
145. **Mott, F.L.**, and **Marsiglio, W.**, "Early Childbearing and **Completion** of High School," *Family Planning Perspectives* 17:287-292, 1985.
- 145a. **Mott, F.L.** and **Mott, S. H.**, "Prospective Life Style Congruence Among American Adolescents: **Variations** in the Association Between Fertility Expectations and Ideas Regarding Women's Roles," *Social Forces* 63(1):184-208, 1984.
146. **Muraskin, L.**, "Adolescent Pregnancy and the Adoption Alternative," prepared for the Office of Adolescent Pregnancy **Programs**, Office of Population Affairs, U.S. Department of Health and Human Services, **Washington** DC, 1983.
- 146a. **Nathanson, C.A.**, and **Becker, M.H.**, "Aspirations, Opportunity Structures, and Reproductive Roles as Determinants of **Contraceptive** Behavior Among Adolescent Girls," paper presented at the annual meeting of the Population Association of America, **Pittsburg**, PA, 1983.
147. National Academy of Sciences, Institute of Medicine, Committee To Study Outreach for Prenatal Care, Division of Health Promotion and Disease Prevention *Prenatal Care: Reaching Mothers, Reaching Infants*, S.S. Brown (ed.) (Washington DC: National Academy Press, 1988).
148. National Academy of Sciences, National Research Council, Commission on Behavioral and Social Sciences and **Education**, Committee on Child Development Research and Public Policy, Panel on Adolescent Pregnancy and Childbearing, *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing, Volume I*, C.D. Hayes (ed.) (**Washington**, DC: National Academy Press, 1987).
149. National Academy of Sciences, National Research Council, Commission on Behavioral and Social Sciences and **Education**, Committee on Child Development Research and Public Policy, Panel on Adolescent Pregnancy and Childbearing, *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing, Volume II: Working Papers and Statistical Appendices*, S.L. Hofferth and C.D. Hayes (eds.) (Washington DC: National Academy Press, 1987).
- 149a. National Association of Community Health Centers, *Mothers, Infants, and Community and Migrant Health Centers: A Report of the First of the Comprehensive Perinatal Program* (Washington, DC: December 1989).
150. **National** Commission on the Role of the School and the Community in **Improving** Adolescent **Health**, *Code Blue: Uniting for Healthier Youth* (Alexandria VA: National Association of State Boards of **Education**, 1990).
- 150a. **National** Commission To Prevent Infant Mortality, *One-Stop Shopping: The Road to Healthy Mothers and Children* (Washington, DC: April 1991).
- 150b. **National Health Policy Forum**, The George Washington University, "Teen Parents, Their **Children**, and the Family Support **Act**: the Challenge of Improving Outcomes," Issue Brief No. 574, Washington DC, July 1990.
151. Newcomer, S., Gilbert, M., and **Udry, J.R.**, "Perceived and Actual Same Sex Behavior as Determinants of Adolescent Sexual Behavior," paper presented at the annual meeting of the American Psychological Association Montreal, Canada, 1980.
152. Newcomer, S., and **Udry, J.R.**, "Adolescent Sexual Behavior and Popularity," *Adolescence* 18:5 15-522, 1983.
153. Nickel, P. S., and **Delany, H.**, *Working With Teen Parents: A Survey of Promising Approaches* (Chicago, IL: Family Resource **Coalition**, 1985).
154. **O'Connell, M.**, and **Rogers, C.C.**, "Out-of-Wedlock Births, Premarital Pregnancies, and Their Effects on Family Formation and Dissolution," *Family Planning Perspectives* 16(4): 157-162, 1984.
155. Oldenburg, D., "Teen Mothers and Supportive MOMS," *Washington Post*, p. D5, Mar. 28, 1989.
156. **Olsen, J.A.**, and **Weed, S.E.**, "Effects of Family Planning Programs for **Teenagers** on Adolescent Birth and Pregnancy Rates," *Family Planning Perspectives* 18(20):153-169, 1986.
157. **Olsen, L.**, "Social and Psychological Correlates of Pregnancy Resolution Among Adolescent Women: A Review," *American Journal of Orthopsychiatry* 50:432-445, 1980.
158. **Olsen, R.J.**, and **Farkas, G.**, Ohio State University, "The Effect of Economic Opportunity and Family Background on Adolescent Fertility Among Low-Income Blacks," report prepared for the **National Institute** of Child Health and Development, National Institutes of **Health**, Public Health Service, U.S. Department of Health and Human Services, **Rockville**, MD, 1987.
159. Ooms, T., and **Herendeen, T.O.**, "Teenage Parenthood, Poverty and Dependency: Do We Know How to Help?" Background **Briefing** Report of the Family Impact Seminar, sponsored by American Association for Marriage and Family Therapy, Research and Education Foundation Washington DC, Oct. 13, 1989.
160. Ooms, T., and **Herendeen, T.O.**, "Evolving State Policies on **Teen** Pregnancy and Parenthood: What More Can the **Feds Do To Help?**" Background Briefing Report of the Family Impact **Seminar**, sponsored by American Association for Marriage and Family Therapy, Research and Education Foundation, Washington DC, July 20, 1990.
161. Orr, M. T., and **Forrest, J. D.**, "The Availability of Reproductive Health Services From U.S. Private Physicians," *Family Planning Perspectives* 17(2):63-69, 1985.
162. **Panner, R.**, **Baran, A.**, and **Sorosky, A. D.**, "Birth Parents Who Relinquished Babies for Adoption Revisited," *Family Process* 17:329-337, 1978.
163. **Philliber, S.**, "Teen Outreach: Results of the First Year of a National Replication," unpublished report to the Charles Stewart **Mott** Foundation **Flint, MI**, 1985.
- 163a. **Philliber, S.**, and **Allen, J.**, "Teen Outreach: The Fifth Year of National **Replication**, Data From the 1988-89 School Year," **Philliber** Research Associates, Accord, NY, no date.
164. **Philliber, S.**, and **Allen, J.**, "Summary Data From **Teen** Outreach Sites, 1984- 1989," **Philliber** Research Associates, Accord, NY, 1990.
165. **Philliber, S.**, **Namerow, P.**, **Kaye, J.**, et al., Columbia University, New York, NY, "Pregnancy Risk-Taking Among **Adolescents**," final report prepared for the National Institute of Child Health and Human Development National Institutes of Health, Public Health Service, U.S. Department of Health and Human **Services**, Bethesda, MD, 1983.
166. **Pittman, K.**, and **Adams, G.**, *What About the Boys? Teenage Pregnancy Prevention Strategies* (Washington DC: Children's Defense Fund, 1988).
167. **Polit, D. F.**, "Effects of a Comprehensive Program for Teenage Parents: Five Years After Project Redirection" *Family Planning Perspectives* 21(4):164-169, 1989.
168. **Polit, D.F.**, **Kahn, J.R.**, and **Enman, G. M.**, "Contraceptive **Decisionmaking** in Adolescent Couples," report prepared for the National Institute of Child Health and Human Development, National Institutes of **Health**, Public **Health** Service, U.S. Department of Health and Human Services, Bethesda, MD, 1981.
169. **Polit, D.F.**, **Quint, J. C.**, and **Riccio, J.A.**, "The Challenge of Serving **Teenage** Mothers," Manpower Demonstration Research

- Corporation, New York, NY, October 1988.
- 169a. Pratt, W.F., Mosher, W. D., **Bachrach, C. D.**, et al., "Understanding U.S. Fertility: Findings From the National Survey of Family Growth, Cycle III," *Population Bulletin* 39:1-42, 1984.
- 169b. Public/Private Ventures, *Annual Report, 1990* (Philadelphia, PA: 1991).
170. Quint, J. C., and **Riccio, J.A.**, *The Challenge of Serving Pregnant and Parenting Teens* (New York, NY: Manpower Demonstration Research Corporation, 1985).
- 170a. **Reingold, J. R.**, and Associates, Inc., *Current Federal Policies and Programs for Youth*, prepared for the William T. Grant Foundation, Commission on Work, Family and Citizenship, New York, NY, August 1989.
171. Reis, J., Reid, E., Herr, T., et al., "Family Planning for Inner-City Adolescent Males: Pilot Study," *Adolescence* 23(88):953-960, 1987.
- 171a. **Resnick, M.**, "Studying Adolescent Mothers' Decision-Making About Adoption and Parenting," *Social Work* 29(1):5-10, 1984.
- 171b. **Rickel, A. U.**, and **Allen, L.**, *Preventing Maladjustment From Infancy Through Adolescence*, Vol. 11, Development Clinical and Psychiatry Series (Beverly Hills, CA: Sage Publications, 1987).
172. **Roosa, M. W.**, "Adolescent Mothers, School Drop-Outs and School Based Intervention Programs," *Family Relations* 35:3 13-317, 1986.
- 172a. **Roosa, M. W.**, and **Christopher, F.S.**, "Evaluation of an Abstinence-Only Pregnancy Prevention Program: A Replication," *Family Relations* 39:363-367, 1990.
173. **Rosen, R. H.**, "Adolescent Pregnancy Decision-Making: Are Parents Important?" *Adolescence* 15:43-54, 1980.
174. **Rosenfield, A.**, "Modem Contraception: A 1989 Update," *Annual Review of Public Health* 10:385-401, 1989.
175. **Rosoff, J. I.**, and **Kenney, A. M.**, "Title X and Its Critics," *Family Planning Perspectives* 16(3):1 11-119, 1984.
176. **Sahler, O.**, "Adolescent Parenting: Potential for Child Abuse and Neglect?" *Pediatric Annals* 9:67-75, 1980.
177. **Sander, J.**, and **Klinman, D.**, *The Final Report of the Teen Father Collaboration* (New York, NY: Bank Street College of Education, 1986).
178. **Sander, J. H.**, and **Rosen, J. L.**, "Teenage Fathers: Working With the Neglected Partner in Adolescent Childbearing," *Family Planning Perspectives* 19(3): 107-110, 1987.
179. **Schinke, S. P.**, "School-Based Model for Preventing Teenage Pregnancy," *Social Work in Education* 4:34-42, 1982.
180. **Schinke, S. P.**, **Blythe, B. J.**, and **Gilchrist, L. D.**, "Cognitive-Behavioral Prevention of Adolescent Pregnancy," *Journal of Counseling Psychology* 28:451-454, 1981.
181. **Schinke, S. P.**, and **Gilchrist, L.D.**, *Life SkiZ's Counseling With Adolescents* (Baltimore, MD: University Park Press, 1984).
- 181a. **Schlitt, J. J.**, *Realizing the Promise of Family Life Education* (Washington, DC: Southern Center on Adolescent Pregnancy Prevention, Southern Regional Project on Infant Mortality, Southern Governors' Association, May 1991).
182. **Scott-Jones, D.**, **Roland, E.J.**, **White, A. B.**, "Antecedents and Outcomes of Pregnancy in Black Adolescents," *Black Adolescents*. R.L. Jones (ed.) (Berkeley, CA: Cobb & Henry, 1989).
183. **Scott-Jones, D.**, and **White, A. B.**, "Correlates of Sexual Activity in Early Adolescence," *Journal of Early Adolescence* 10:221-238, 1990.
184. **Senderowitz, J.**, and **Paxman, J. M.**, "Adolescent Fertility: Worldwide Concerns," *Population Bulletin* 40:1-49, 1985.
185. **Serow, E. G.**, and **Schmitt, K.**, "Cash Awards for Teens Who Stay (CATS) Program," *Public Health Reports* 105:97, 1990.
- 185b. **Singh, S. A.**, **Torres, A.**, and **Forrest, J. D.**, "The Need for Prenatal Care in the United States: Evidence From the 1980 National Natality Survey," *Family Planning Perspectives*, 17: 118-124, 1985.
- 185c. **Sipe, C. L.**, **Grossman, J. B.**, and **Milliner, J.A.** *Summer Training and Education Program (STEP): Report on the 1987 Experience* (Philadelphia, PA: Public/Private Ventures, Summer 1988),
186. **Smith, M.J.**, and **Grow, L. J.**, *Services to Unmarried Mothers in 1969* (New York, NY: Child Welfare League of America, 1971).
- 186a. **Solem** and Associates, "Family Communication Program: Final Report, Executive Summary," San Francisco, CA, 1982.
- 186b. **Sonenstein, F.L.**, **Pleck, J.H.**, and **Ku, L. C.**, "Sexual Activity, Condom Use and AIDS Awareness Among Adolescent Males," *Family Planning Perspectives* 21(4): 152-158.
187. **Sonenstein, F.L.**, **Pleck, J.H.**, and **Ku, L. C.**, "Patterns of Sexual Activity Among Adolescent Males," paper presented at the annual meeting of the Population Association of America, Toronto, Canada, May 1990.
- 187a. **Stuffman, A.R.**, **Earls, F.**, **Robins, L.N.**, et al., "Adolescent Sexual Activity and Pregnancy: Socioenvironmental Problems, Physical Health, and Mental Health" *Journal of Youth and Adolescence* 16(5):497-509, 1987.
188. **Stout, J.W.**, and **Rivara, R.P.**, "Schools and Sex Education: Does It Work?" *Pediatrics* 83:375-379, 1989.
- 188a. **Streissguth, A.P.**, **Aase, J. M.**, **Clarren, S. K.**, et al., "Fetal Alcohol Syndrome in Adolescents and Adults," *Journal of the American Medical Association* 265:1961-1967, 1991.
189. **Strobino, D.**, "The Health and Medical Consequences of Adolescent Sexuality and Pregnancy: A Review of the Literature," *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing. Volume II: Working Papers and Statistical Appendixes*. S.L. Hofferth and C.D. Hayes (eds.), Panel on Adolescent Pregnancy and Childbearing, Committee on Child Development Research and Public Policy, Commission on Behavioral and Social Sciences and Education, National Research Council, National Academy of Sciences (Washington, DC: National Academy Press, 1987).
190. **Taylor, I. B.**, **Wadsworth, J.**, and **Butler, N.R.**, "Teenage Mothering, Admission to Hospital, and Accidents During the First Five Years," *Archives of Disease in Childhood* 58(1):6-11, 1983.
191. **Teenage Pregnancy and Parenting Program of San Francisco, TAPP: A Public-Private Partnership for School Dropout Prevention of Pregnant and Parenting Teens (San Francisco, CA: 1987).**
192. **Thorton, A.**, and **Camburn, D.**, "The Influence of the Family on Premarital Sexual Attitudes and Behavior," paper presented at the annual meeting of the American Sociological Association Detroit, MI, 1983.
193. **Tolchin, M.**, "Two-Thirds of States Have Programs To Cut Costs of Teen Pregnancies," *New York Times*, p. 24, June 17, 1990.
- 193a. **Torres, A.**, "The Effects of Federal Funding Cuts on Family Planning Services, 1980-1983," *Family Planning Perspectives* 16(3):137, 1984.
- 193b. **Torres, A.**, and **Forrest, J. D.**, "Family Planning Clinic Services in the United States, 1983," *Family Planning Perspectives* 17:30-35, 1985.
- 193c. **Torres, A.**, **Forrest, J.D.**, and **Eisman, S.**, "Killing Parents: Clinic Policies and Adolescents' Use of Family Planning and Abortion Services," *Family Planning Perspectives* 12:284-292, 1980.
194. **Trussell, J.**, "Teenage Pregnancy in the United States," *Family Planning Perspectives* 20(6):262-272, 1988.
195. **Upchurch, D. M.**, and **McCarthy, J.**, "The Timing of a First Birth and High School Completion," *American Sociological Review* 55:224-234, 1990.
- 195a. U.S. Congress, Congressional Budget Office, *Sources of Support for Adolescent Mothers* (Washington, DC: September 1990).
- 195b. U.S. Congress, General Accounting Office, "Teen Pregnancy: 500,000 Births a Year But Few Tested Programs," *GAO/PEMD-86-16BR*, Washington DC, July 1986.
- 195c. U.S. Congress, House of Representatives, Select Committee on Children, Youth, and Families, *U.S. Children and Their Families: Current Conditions and Recent Trends, 1989* (Washington, DC: U.S. Government Printing Office, 1989).
- 195d. U.S. Congress, House of Representatives, Committee on Ways and Means, *Overview of Entitlement Programs: 1991 Green Book-Background Material and Data on Programs Within the*

- Jurisdiction of the Committee on Ways and Means*, WMCP 102-9 (Washington DC: U.S. Government Printing Office, May 7, 1991).
196. U.S. Congress, Library of Congress, Congressional Research Service, Education and Public Welfare Division, "Teenage Pregnancy: Issues and Legislation," issue brief prepared by R.E. Wasem, Washington, DC, updated Mar. 20, 1989.
197. U.S. Congress, Library of Congress, Congressional Research Service, Education and Public Welfare Division, "Family Planning: Title X of the Public Health Service Act," issue brief prepared by M. Ford, Washington DC, June 4, 1990.
198. U.S. Congress, Office of Technology Assessment, *World Population and Fertility Planning Technologies: The Next 20 Years*, OTA-H-345 (Washington, DC: U.S. Government Printing Office, February 1982).
199. U.S. Congress, Office of Technology Assessment, *Healthy Children: Investing in the Future, OTA-H-345* (Washington, DC: U.S. Government Printing Office, February 1988).
- 199a. U.S. Congress, Office of Technology Assessment *Indian Adolescent Mental Health, OTA-H-446* (Washington, DC: U.S. Government Printing Office, January 1990).
200. U.S. Congress, Office of Technology Assessment, Adolescent Health Project, Youth Advisory Panel, meeting in Washington, DC, September 1989.
- 200a. U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis and Evaluation, Alexandria, VA, personal communication June 13, 1990.
201. U.S. Department of Commerce, Bureau of the Census, *United States Population Estimates, by Age, Sex, and Race: 1980 to 1987*, Current Population Reports, Population Estimates and Projections, Series P-25, No. 1022 (Washington, DC: U.S. Government Printing Office, March 1988).
- 201a. U.S. Department of Health and Human Services, Family Support Administration, Office of Communications, "Job Opportunities and Basic Skills (JOBS) Training Program," Washington, DC, no date.
- 201b. U.S. Department of Health and Human Services, Family Support Administration, Office of Family Assistance, Division of Program Evaluation *Characteristics of State Plans for Aid to Families With Dependent Children Under Title IV-A of the Social Security Act* (Washington, DC: 1988).
202. U.S. Department of Health and Human Services, Office of the Assistant Secretary of Health, Office of Population Affairs, response to 1989 Office of Technology Assessment questionnaire regarding adolescent health initiatives, Washington DC, 1989.
- 202a. U.S. Department of Health and Human Services, Office of the Assistant Secretary of Health, Office of Population Affairs, Office of Adolescent Pregnancy Programs, *The Adolescent Family Life Demonstration Projects: Program and Evaluation Summaries* (Washington, DC: 1987 update).
- 202b. U.S. Department of Health and Human Services, Office of Human Development Services, Administration for Children, Youth, and Families, *HHS News*, Apr. 15, 1991.
- 202c. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, "Abortion Surveillance, 1986- 1987," *Morbidity and Mortality Weekly Report* 39(ss-2):23-56, June 1990.
- 202d. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, "Premarital Sexual Intercourse Among Adolescent Women—United States, 1970- 1988," *Morbidity and Mortality Weekly Report* 39(51 and 52):929-932, Jan. 4, 1991.
- 202e. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, *Health United States, 1989*, DHHS Pub. No. (PHS) 901232 (Hyattsville, MD: March 1990).
- 202f. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, *Health United States, 1990*, DHHS Pub. No. (PHS) 91-1232 (Hyattsville, MD: March 1991).
203. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital Statistics, *Vital Statistics of the United States, Volume 1: Natality* (Washington, DC: U.S. Government Printing Office, various years).
204. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital Statistics, "Advance Report of Final Natality Statistics, 1984," *Monthly Vital Statistics Report* 35(4), 1984.
205. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital Statistics, unpublished data on Hispanic childbearing, Washington DC, 1986.
206. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital Statistics, unpublished data on the marital status of Asians, Hyattsville, MD, 1987.
207. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital Statistics, "Induced Terminations of Pregnancy: Reporting States, 1987," *Monthly Vital Statistics Report* 38 (no. 9, suppl.), DHHS Pub. No. (PHS) 90-1120, Jan. 5, 1990.
- 207a. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital and Health Statistics, "Use of Family Planning Services in the United States: 1982 and 1988," *Advance Data From Vital and Health Statistics of the National Center for Health Statistics, No. 184*, Apr. 11, 1990.
- 207b. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital Statistics, "Advance Report of Final Natality Statistics, 1988," *Monthly Vital Statistics Report* 39 (no. 4, suppl.), DHHS Pub. No. (PHS) 90-1120, Aug. 15, 1990.
- 207c. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital and Health Statistics, "Wanted and Unwanted Childbearing in the United States: 1973-88," *Advance Data From Vital and Health Statistics of the National Center for Health Statistics, No. 189*, DHHS Pub. No. (PHS) 90-1250, Sept. 26, 1990.
- 207d. U.S. Department of Health and Human Services, Public Health Service, Health Resources and Services Administration, Bureau of Child Health Care Delivery and Assistance, response to 1989 Office of Technology Assessment questionnaire regarding adolescent health initiatives, Rockville, MD, 1989.
208. U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute for Child Health and Human Development, Center for Population Research, "Adolescent Pregnancy and Childrearing: Rates, Trends, and Research Findings," Bethesda, MD, March 1990.
209. U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General, "Surgeon General's Report on Abortion," *Congressional Record*, 33(1) p. E906, Mar. 21, 1989.
210. U.S. Department of Labor, Employment and Training Administration, and Office of Policy, Evaluation, and Research, *Evaluation of the Economic Impact of the Job Corps Program*, contract report prepared by C. Mallar, et al., Mathematical Research, Inc., Princeton, NJ, 1978.
211. Vecchiolla, F.J., and Mazza, P.L., *Pregnant and Parenting Adolescents: A Study of Services* (Washington, DC: Child Welfare League of America, 1989).
212. Ventura, S., *Natality Statistician*, National Center for Health Statistics, Centers for Disease Control, Public Health Service,

- U.S. Department of Health and Human Services, personal communication, Bethesda, MD, May 1990.
213. Ventura, S., Taffel, S., and Mosher, W., "Estimates of Pregnancies and Pregnancy Rates for the United States, 1976-1981," *Public Health Reports* 100:31-34, 1985.
  214. Ventura, S., Taffel, S., and Mosher, W., "Estimates of Pregnancies and Pregnancy Rates for the United States, 1976- 1985," *American Journal of Public Health* 78:506-511, 1988.
  215. Vincent, M.L., Clearie, A. F., and Schluchter, M.D., "Reducing Adolescent Pregnancy Through School and Community-Based Education," *Journal of the American Medical Association* 257:3382-3386, 1987.
  216. Wallace, H., Weeks, J., and Medina, A., "Services for and Needs of Pregnant Teenagers in Large Cities of the United States, 1978," *Public Health Reports* 97:583-588, 1982.
  217. Washington University, Center for Adolescent Mental Health, "Project Redirection" *Program Profile* 3(1), 1985.
  218. Weatherly, R. A., Perlman, S. B., Levine, M. H., et al., "Comprehensive Services for Pregnant Teenagers and Teenage Parents: How Successful Have They Been?" *Family Planning Perspectives* 18(2):73-78, 1986.
  219. Weed, S. E., Institute for Research and Evaluation, "Evaluation of Family Planning Programs on Teenage Pregnancy," prepared for the Senate Committee on Labor and Human Resources, U.S. Congress, Washington, DC, July 30, 1987.
  - 219a. Weed, S. E., and Olsen, J.A., "Effects of Family-Planning Programs on Teenage Pregnancy-Replication and Extension," *Family Planning Perspective* 20(3):173-195, 1986.
  220. Weed, S. E., and Olsen, J. A., Institute for Research and Evaluation, "Evaluation Report of the Sex Respect Program: Results for the 1988-1989 School Year," submitted to Office of Adolescent Pregnancy Programs, Office of Population Affairs, Office of the Assistant Secretary of Health, U.S. Department of Health and Human Services, Washington, DC, no date.
  221. Whitley, B. E., and Schofield, J. W., "A Meta-Analysis of Research on Adolescent Contraceptive Use," *Population and Environment* 8:173-203, 1986.
  - 221a. White, C.P. and White, M.B., "Adolescent Family Life Act: Content, Findings, and Policy Recommendations for pregnancy prevention Programs," *Journal of Clinical Child Psychology* 20(1):58-70, 1991.
  222. Wilson, B., Director of Survey Research, Edgell Communications, survey of the readership of *Physician's Management* magazine reported in the *Washington Times*, p. B6, July 6, 1989.
  - 222a. Wilson, R., Deputy Assistant Secretary, Administration for Children and Families, U.S. Department of Health and Human Services, remarks at Southern Regional Project on Infant Mortality, Adolescent Pregnancy Prevention Leadership Consortium, Baltimore, MD, June 28, 1991.
  223. Winter, L., "The Role of Sexual Self-Concept in the Use of Contraceptives," *Family Planning Perspectives* 20(3): 123-127, 1988.
  - 223a. Winter, L., and Breckenmaker, L. C., "Tailoring Family Planning Services to the Special Needs of Adolescents," *Family Planning Perspectives* 23:24-30, 1991.
  - 223b. Yamaguchi, K., and Kandel, D., "Drug Use and Other Determinants of premarital Pregnancy and its Outcome: A Dynamic Analysis of Competing Life Events," *Journal of Marriage and the Family* 49:257-270, 1987.
  224. Zabin, L. S., Hardy, J.B., Streett, R., et al., "A School, Hospital, and University-Based Adolescent Pregnancy Prevention Program," *Journal of Reproductive Medicine* 29:421-426, 1984.
  - 224a. Zabin, L. S., Hirsch, M.B., Smith, E.A., et al., "Adolescent Sexual Attitudes: Are They Consistent?" *Family Planning Perspectives* 16: 181-185, 1984.
  225. Zabin, L. S., Hirsch, M.B., Emerson, M.R., "When Urban Adolescents Choose Abortion: Effects on Education, Psychological Status and Subsequent Pregnancy," *Family Planning Perspectives* 21(6):248-255, 1989.
  226. Zabin, L. S., Hirsch, M.B., Smith, E.A., et al., "Adolescent Pregnancy Prevention Program: A Model for Research and Evaluation" *Journal of Adolescent Health Care* 7:77-87, 1986a.
  227. Zabin, L. S., Hirsch, M.B., Smith, E. A., et al., "Evaluation of a Pregnancy Prevention Program for Urban Teenagers," *Family Planning Perspectives* 18(3):119-126, 1986b.
  228. Zabin, L. S., Hirsch, M. B., Streett, R., et al., "The Baltimore Pregnancy Prevention Program for Urban Teenagers: I. How Did It Work?" *Family Planning Perspectives* 20(4):182-187, 1988.
  - 228a. Zabin, L. S., Kantner, J.F., and Zelnik, M., "The Risk of Adolescent Pregnancy in the First Months of Intercourse," *Family Planning Perspectives* 11(4):215-222, 1979.
  229. Zabin, L. S., Zabin, L. S., and Clark, S. D., "Why They Delay: A Study of Teenage Family Planning Clinic Patients," *Family Planning Perspectives* 13:205-217, 1981.
  230. Zellman, G.L., "Public School Programs for Adolescent Pregnancy and Parenthood: An Assessment," *Family Planning Perspectives* 14:119-126, 1982.
  231. Zelnik, M., and Kantner, J., "Sexual and Contraceptive Experience of Young Unmarried Women in the United States, 1976 and 1971," *Family Planning Perspectives* 9:55-71, 1977.
  - 231a. Zelnick, M., and Kantner, J. F., "Sexual Activity, Contraceptive Use, and Pregnancy Among Metropolitan-Area Teenagers," *Family Planning Perspectives* 12:5, 1980.
  232. Zelnik, M., and Kim, Y. J., "Sex Education and its Association With Teenage Sexual Activity, Pregnancy and Contraceptive Use," *Family Planning Perspectives* 14: 117-126, 1982.
  233. Zelnick, M., Koenig, M. A., and Kim, Y.J., "Sources of Prescription Contraceptives and Subsequent Pregnancy Among Young Women," *Family Planning Perspectives* 16(1):6-13, 1984.
  234. Zelnik, M., and Shah, F.K., "First Intercourse Among Young Americans," *Family Planning Perspectives* 15(2):64-70, 1983.
  235. Zelnik, M., Kantner, J., and Ford, K., *Sex and Pregnancy in Adolescence* (Beverly Hills, CA: Sage Publications, 1981).
  236. Zuckerman, B. S., Amaro, H., and Beardslee, W., "Mental Health of Adolescent Mothers: The Implications of Depression and Drug Use," *Developmental and Behavioral Pediatrics* 8:111-116, 1987.