

Do Adolescent Pregnancy and Childbearing Affect Younger Siblings?

By Patricia L. East

To understand the consequences of adolescent pregnancy and childbearing on siblings, a study compares 309 younger brothers and sisters of pregnant, parenting and never-pregnant teenagers. Compared with the younger siblings of never-pregnant teenagers, the younger sisters of pregnant teenagers see school and career as less important, are more accepting of adolescent childbearing, perceive younger ages as appropriate for first intercourse, marriage and childbearing and engage in more problem behavior. The younger sisters of parenting teenagers are more accepting of teenage childbearing than are younger sisters of never-pregnant teenagers and have more definite intentions of having a child at a young age. Compared with boys who have a never-pregnant older sister, younger brothers of pregnant and parenting teenagers are more accepting of nonmarital childbearing, ascribe more importance to childbearing, perceive fewer problems related to early childbearing, have lower self-esteem and report engaging in more drug use and partying behavior.

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Very little is known about how younger siblings are affected by an adolescent sister's pregnancy or childbearing. Frank Furstenberg stated in 1980 that "[how] the childbearer's parents, siblings, and other close relatives are affected by the birth of the child has been all but ignored."¹ More than 15 years later, this continues to be the case. Most research on the siblings of teenage mothers has focused almost exclusively on sisters' fertility-related outcomes, such as rates of adolescent pregnancy and childbearing; no attention has been paid to how brothers may be affected when a sister becomes pregnant or gives birth during adolescence.

The results of studies on younger sisters indicate that, when compared to girls of the same race and socioeconomic status, the sisters of teenage mothers are younger at sexual debut² and have higher rates of adolescent sexual activity³ and teenage childbearing.⁴ The younger sisters of teenage mothers may also possess particular psychosocial characteristics known to be associated with early fertility. A recent study found that they are highly accepting of nonmarital adolescent childbearing, perceive especially young ages as appropriate for life-course transitions such as mar-

riage and first birth, are very pessimistic about school and career options, and have higher-than-average rates of school truancy, school suspension and cigarette use.⁵

Whether these characteristics result from exposure to a parenting sister or to shared, within-family risk factors is not currently known.⁶ It does seem likely, however, that siblings would in some way be affected by a teenage sister's childbearing and that such effects would, in turn, influence the younger sisters' risk of pregnancy and the younger brothers' risk of causing a pregnancy.

Given these findings, social learning theory⁷ would suggest that younger siblings—both sisters and brothers—of a pregnant or parenting adolescent would adopt more liberal sexual and childbearing attitudes, view school and career pursuits more pessimistically and engage in more problem behavior such as early sexual activity. Permissive attitudes about sexual and childbearing behavior would be expected among younger siblings because older siblings serve as important role models for younger children within the family.⁸ Once younger siblings see their older sisters pregnant or parenting, they may become more tolerant and accepting of early sexual activity and early parenthood and may even view them as the norm.⁹

Younger siblings may see the effort involved in attaining school and career goals as unnecessary if they have seen their sister attain adult status and recognition through parenthood instead of through

educational or career achievements. Moreover, younger siblings may engage in problem behavior to compete with their sister for attention. Because women (regardless of their age) are often showered with attention and accorded higher status when they become pregnant or give birth, younger siblings might engage in early sexual behavior because they want—consciously or unconsciously—to become pregnant or to get someone pregnant so as to rival their older sister. In addition, younger siblings may engage in problem behavior in reaction to a sister's pregnancy because they may view the pregnancy as extending the limits of allowable and tolerated behavior or because they perceive that sanctions against or controls over such behavior are ineffective.¹⁰

Younger sisters would also be expected to be more strongly affected by a sister's early childbearing than would younger brothers. Modeling explanations of behavior assert that same-sex siblings are stronger role models than are opposite-sex siblings;¹¹ in addition, younger sisters would be more likely to identify with their sister's role as an expectant or actual mother. Moreover, a pregnant or parenting adolescent may provide increased opportunity for younger sisters to engage in sexual behavior by introducing them to an opposite-sex companion, discussing sex with them or encouraging them to date or to have a sexual relationship.¹²

A sister's pregnancy and childbearing might also provoke more jealousy and competition among younger sisters than among younger brothers, because the older sister has done something that the younger ones are also capable of, but have not yet done. On the other hand, to the extent that boys are socialized to believe that premarital sex is acceptable and natural, whereas girls are socialized to believe that it is wrong, an unmarried teenage sister's pregnancy (and implicit sexuality) might be more likely to produce negative feelings, such as shame and embarrassment, in younger sisters than in younger brothers.

This study was conducted to identify the attitudinal and behavioral consequences of an adolescent's pregnancy and childbearing for her younger siblings. It

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focused on families in which only one teenager either was pregnant or had delivered her first child no more than six months previously and in which that teenage pregnancy was the first in the family. The younger siblings in such families were compared with younger siblings of never-pregnant adolescents from families in which no teenage pregnancy had yet occurred. Although the study controlled for selected social, demographic and fertility characteristics in an effort to match the various family categories on factors associated with teenage childbearing (e.g., economic disadvantage and race), selectivity may still be at work in shaping younger siblings' outcomes. Disentangling the independent consequences of teenage pregnancy from the background factors that may contribute to it poses major analytic challenges¹³ and has been the subject of much recent debate.¹⁴

Certainly, early childbearing does not occur in isolation but rather within a community and within a family that in some way may precipitate or promote it. Thus, the societal and within-family risk factors that may have precipitated the older sister's pregnancy probably also exist for the younger siblings. Consequently, findings from this study need to be cautiously interpreted, with the understanding that differences in younger siblings' attitudes and behavior may reflect family and societal factors instead of or in addition to exposure to a pregnant or parenting sister.

Methods

Sample

The initial study participants were 322 younger siblings in early adolescence from 232 families. Families were invited to participate only if they met the following eligibility criteria: 1) They included a daughter aged 15–19 who had never been pregnant, was pregnant for the first time (and intended to continue the pregnancy and keep the child), or had delivered her first child no more than six months previously and had kept her child; 2) they included a child aged 11–16 who was either a full biological sibling or a half-sibling of the older daughter; 3) these siblings were currently living together and had lived together for at least the last five years; 4) no other child in the family had become pregnant or caused a pregnancy during adolescence; 5) the families identified themselves as either Hispanic or black;* and 6) the older sister and all participating younger siblings spoke English. Approximately 90% of all eligible families that were invited to participate did so.

Thirteen younger siblings were later excluded from the analysis because an adolescent in their family other than the identified older sister had previously become pregnant; the final sample was therefore 309 younger siblings—163 sisters and 146 brothers. Only one older sister from each participating family was included. In families with a pregnant or parenting daughter, that daughter was the designated older sister. If a family had two or more eligible never-pregnant older sisters, the youngest of those sisters was selected to participate. All eligible younger siblings were asked to take part in the study.

The study was conducted between June 1993 and February 1995. Pregnant and parenting older sisters were recruited from the Teen Obstetric Clinic at the University of California, San Diego, Medical Center (47% of the sample), from four local Planned Parenthood clinics (10% of the sample) and by referrals from participants to families who might be eligible for the study (43% of the sample). We reviewed the medical charts of all prospective subjects recruited from the medical center's obstetric clinic to verify that the current pregnancy or birth was their first; self-reported information was used to screen prospective subjects recruited from the Planned Parenthood clinics and by referral.

Never-pregnant teenagers were recruited from the Adolescent Medicine Clinic at the University of California, San Diego, Medical Center (41% of the sample), from Planned Parenthood clinics (13%) and by referral (46%). Because the Adolescent Medicine Clinic maintains or has access to all patients' medical records, we could verify that none of the subjects recruited at this site had ever been pregnant.

All recruitment sites were located in the same urban area. Participants recruited through the various sites did not differ by older sister's age or race or by younger siblings' age or race. The mean age of the older sisters was 17.0 (with a standard deviation of 1.4); the three groups of older sisters were comparable in mean age and in racial distribution (68% Hispanic and 32% black).

On average, the pregnant older sisters were six months pregnant (range, 2–9 months), and the parenting older sisters were four months postpartum (range, 1–6 months). Five parenting teenagers were married at the time of the study, and one never-pregnant teenager was separated; none of the other older sisters had ever been married.

The three family types did not differ in the age or racial distribution of the younger brothers and younger sisters.

Two-thirds of all younger siblings identified themselves as Hispanic and one-third as black. The mean age of the younger sisters was 13.7 and the mean age of the younger brothers was 13.6.

The average annual family income of the sample as a whole was \$16,050, with the families of pregnant (\$14,690) and parenting teenagers (\$13,915) earning significantly less than the families of never-pregnant teenagers (\$18,280; $F [2,168]=3.97$, $p<.05$).[†] Seventy-eight percent of the sample had at some time received welfare and 64% of families were receiving governmental subsidies at the time of the study. The families of pregnant and parenting teenagers were significantly more likely to have received welfare at some time than were the families of never-pregnant teenagers (91%, 100% and 63%, respectively; $\chi^2 [2]=28.98$, $p<.001$), and the families of pregnant and parenting teenagers were significantly more likely to be receiving welfare currently than were the families of never-pregnant teenagers (70%, 83% and 46%, respectively; $\chi^2 [2]=20.61$, $p<.001$).

The average family size was four children, and 47% of study families were mother-only households. Family size and household structure did not differ among the three family categories. Parents' mean educational level was 10th grade, with no difference by family category.

Procedure

A female research assistant who was bilingual in English and Spanish visited each family at home. During the one-hour visit, the participating younger siblings completed a short interview and a longer self-administered questionnaire, both in English, in a room separate from the rest of the family.

The mothers of 183 subjects (84% of all study families) also completed a short interview and questionnaire requesting basic demographic information. Sixty-three percent of mothers were interviewed in English and 37% in Spanish. There were no significant differences in responses between Spanish-speaking Hispanic mothers and English-speaking Hispanic mothers.

*Only Hispanic and black families were included because sample sizes for white families were expected to be too small for reliable analysis. Further, previous research has shown that white teenagers differ significantly from black and Hispanic teenagers on this study's outcomes, whereas black and Hispanic teenagers appear to be more similar to each other than to white teenagers. (See: Centers for Disease Control and Prevention, "Youth Risk Behavior Surveillance—United States, 1993," *Morbidity and Mortality Weekly Report*, Vol. 44, No. SS-1, 1995.)

†The F-statistic tests for equality of multiple means. If the F is statistically significant, the means are not equal.

Table 1. Mean scores of younger sisters on subscales measuring perceptions and behaviors, by older sister's pregnancy and childbearing status

Subscale (and range of possible scores)	Never-pregnant (n=83)	Pregnant (n=29)	Parenting (n=51)	F (2,161)
Future orientation (1–5)†,‡	4.43	4.10	4.09	3.40*
Perceived maternal strictness (1–5)	3.44	3.54	3.35	<1.00
Perceived maternal monitoring (1–5)	2.99	2.98	2.94	<1.00
Perceived parental approval of teenage childbearing (1–5)‡,§	1.60	1.88	2.39	12.26***
Acceptance of teenage sex (1–5)‡	2.07	2.50	2.70	3.75*
Acceptance of teenage childbearing (1–5)†,‡	1.84	2.16	2.34	3.98*
Acceptance of nonmarital childbearing (1–5)‡,§	2.07	2.30	2.72	4.12*
Life transition age norms for girls†,‡	21.94	20.92	21.08	3.07*
Life transition age norms for boys‡	22.53	21.65	21.06	2.77
Status from childbearing (1–5)‡	1.96	2.36	2.50	5.05**
Problems of early childbearing (1–5)	4.35	4.10	4.04	1.71
Intentions of early childbearing (1–5)‡,§	1.42	1.49	2.03	6.41**
Self-esteem (1–5)	3.80	3.67	3.92	<1.00
School problems (0–4)†,§	1.94	2.49	1.95	6.65**
Drug use (0–4)§	1.55	1.68	1.41	2.81
Partying (0–4)	1.26	1.36	1.34	1.51
Delinquency (0–4)†,§	1.27	1.69	1.39	4.21*
Sexual behavior (1–11)‡	3.25	4.03	4.88	3.31*
Sexual experience (0–1)‡	0.06	0.17	0.29	6.49**
Frequency of intercourse (0–4)‡	0.18	0.52	0.78	4.51*

* $p < .05$. ** $p < .01$. *** $p < .001$. †The difference between younger sisters of never-pregnant and pregnant adolescents is significant at $p < .05$. ‡The difference between younger sisters of never-pregnant and parenting adolescents is significant at $p < .05$. §The difference between younger sisters of pregnant and parenting adolescents is significant at $p < .05$. Notes: Sexual experience is the percentage of younger sisters who had had intercourse. In Tables 1 and 2, the F-statistic and follow-up contrasts were computed with controls for family income, parents' education and younger siblings' age and race.

The participating younger siblings and mothers were paid \$10 each. All subjects were assured of the confidentiality of their responses, and all questionnaires were coded using only an identification number.

Measures

The interview with the younger siblings included approximately 15 questions on their characteristics (e.g., age, race and grade in school), living situation and—if applicable—reactions to their older sister's pregnancy. The questionnaire involved 186 questions that made up 20 subscales. These subscales can be grouped into the following seven subject areas: 1) future orientation (perceived likelihood and importance of achieving school and career goals); 2) perceived level of parental strictness and monitoring; 3) sexual and childbearing attitudes (acceptance of adolescent and nonmarital childbearing and best ages for each gender to first have sex, get

married and have a child); 4) status attained through childbearing and intentions to start childbearing at a young age; 5) self-esteem (using the 20-item Rosenberg Self-Esteem Inventory);¹⁵ 6) problem behavior (four items on frequency of school problems such as truancy and suspension, five items on substance use, six items on "partying" behavior such as attending a party where marijuana was smoked or sneaking out of the house to go to a party, and seven items on delinquent behavior such as shoplifting, damaging property, running away from home or being picked up by police); and 7) sexual behavior (ever engaging in each of 11 progressively more intimate sexual activities with a person of the opposite sex, ranging from holding hands to sexual intercourse).

Response options for the problem behavior items were never (0), once (1), 2–3 times (2), 4–10 times (3) and more than 10 times (4). Sexual activity progression was scored according to the most intimate behavior engaged in, with a possible score range of 1–11. Two items indicating whether the younger siblings had ever engaged in sexual intercourse (0=no, 1=yes) and how frequently they had done so (scored in the same way as problem behavior) were also included. Questions on ideal ages for typical life transitions were open-ended. All scales other than those for problem behavior, sexual behavior and age norms involved a five-point Likert-scale response format. Responses were averaged across scale items so that the scale

range represents the possible score range (1–5). All scales yielded good reliability, with Cronbach's α exceeding .69 in all cases.

Analyses

To determine to what degree the characteristics and behavior of younger siblings varied according to the older sister's pregnancy and parenting status, we conducted a multivariate analysis of covariance on the seven domain scores; the data for younger brothers and younger sisters were analyzed separately. We selected appropriate control variables by computing correlations among a set of available family background variables that included mother's education, father's education, mother's age, annual family income, whether the family had ever received welfare, whether the family was currently receiving welfare, family size, younger sibling's age and younger sibling's race. The intercorrelation for mother's and father's education was .72, but all other intercorrelations were lower than .50. Because almost all respondents provided data for both mother's and father's education, a parental education score was formed by averaging the two scores; when the father's score was not available, the mother's alone was used.

We then conducted preliminary analyses in which we regressed the seven outcome scores stepwise onto the eight family background variables. Only four variables—current annual family income, parents' educational level, and younger sibling's age and race—contributed significant amounts of variance to any of the outcome scores.

Univariate Results

When all dependent variables were considered simultaneously and the effects of the four background variables were controlled, the differences among the means for the three family categories were statistically significant for both younger sisters (multivariate $F [14,308]=2.18, p < .01$) and younger brothers (multivariate $F [14,274]=1.74, p < .05$).^{*} Therefore, we conducted univariate follow-up analyses on the 20 scale scores for both younger sisters and younger brothers, controlling for the four family background variables.[†] We used Newman-Keuls tests to control for the number of contrasts.

Younger Sisters

The mean scores for younger sisters in each family category on the 20 attitudinal and behavioral subscales and the correspond-

*The multivariate F-statistic reveals whether the means for the three groups differ when all dependent variables are considered simultaneously. The univariate F-statistic reveals whether the means for the three groups differ for the corresponding dependent variable while, in this case, controlling for the covariates.

†For the 16% of younger siblings who did not have accompanying mother data on parents' educational level or family income, the mean of these scores was substituted for the missing value (as the covariate in the analyses). Substituting the mean for missing data is preferable to other methods, such as dropping subjects or dropping variables, particularly when missing data occur randomly or not in association with other substantive variables, as was the case here.

ing univariate F values are shown in Table 1. When compared with girls with a never-pregnant older sister, girls with a pregnant older sister saw school and career goals as significantly less important and were less likely to believe they would achieve their goals, were more accepting of teenage childbearing, perceived younger ages as appropriate for girls to first have sex, marry and have children, and engaged in more problem behavior at school and more delinquent behavior. The subgroup means for specific problem behaviors indicated that, when compared with the younger sisters of never-pregnant adolescents, the younger sisters of pregnant adolescents had higher rates of school suspension, disruptive behavior in class, fighting, stealing, destroying property and getting picked up by the police (not shown).

Many of these differences also appeared between girls who had a never-pregnant older sister and those who had a parenting older sister. In addition, girls who had a parenting older sister were almost five times as likely to be sexually experienced, had sexual intercourse more frequently and had engaged in significantly more intimate sexual behavior than had girls with a never-pregnant older sister.

Compared with girls who had a pregnant older sister, girls who had a parenting older sister perceived significantly greater parental approval of teenage childbearing, were more accepting of nonmarital childbearing and had more definite intentions to have a child themselves at an early age.

Younger Brothers

The mean subscale scores for younger brothers in each family category and the corresponding univariate F values are shown in Table 2. Compared with boys with a never-pregnant older sister, boys with a pregnant older sister and boys with a parenting older sister were more accepting of nonmarital childbearing, perceived childbearing as conferring greater status, perceived significantly fewer problems associated with early childbearing, had lower self-esteem, and reported engaging in more drug use and partying behavior (e.g., staying out all night at a party or going to a party where alcohol or drugs were used).

Unlike boys with a parenting older sister, those with a pregnant older sister were significantly more accepting of teenage sexual behavior than were boys with a never-pregnant older sister. The younger brothers of parenting teens, on the other hand, were significantly more accepting of adolescent childbearing and reported more

Table 2. Mean scores of younger brothers on subscales measuring perceptions and behaviors, by older sister's pregnancy and childbearing status

Subscale (and range of possible scores)	Never-pregnant (n=80)	Pregnant (n=24)	Parenting (n=42)	F (2,143)
Future orientation (1-5)	4.50	4.30	4.28	2.22
Perceived maternal strictness (1-5)	3.19	3.22	3.05	1.50
Perceived maternal monitoring (1-5)	3.01	3.24	2.87	<1.00
Perceived parental approval of teenage childbearing (1-5)	2.37	2.51	2.54	<1.00
Acceptance of teenage sex (1-5)†	2.60	2.98	2.80	2.56
Acceptance of teenage childbearing (1-5)‡	1.87	2.10	2.38	2.91
Acceptance of nonmarital childbearing (1-5)†,‡	2.31	2.73	2.68	3.90*
Life transition age norms for girls	21.61	21.29	21.27	1.24
Life transition age norms for boys	21.55	21.79	21.05	1.51
Status from childbearing (1-5)†,‡	2.36	2.94	2.89	4.00*
Problems of early childbearing (1-5)†,‡	4.09	3.79	3.54	5.19**
Intentions of early childbearing (1-5)	1.83	2.06	2.16	1.91
Self-esteem (1-5)†,‡	4.01	3.56	3.73	4.41*
School problems (0-4)‡	1.99	2.14	2.53	7.04***
Drug use (0-4)†,‡	1.44	1.64	1.68	2.77
Partying (0-4)†,‡	1.68	1.94	2.01	4.48*
Delinquency (0-4)	1.53	1.54	1.70	1.64
Sexual behavior (1-11)	4.65	4.71	4.92	<1.00
Sexual experience (0-1)‡	0.17	0.25	0.33	2.92
Frequency of sexual intercourse (0-4)	0.38	0.71	0.64	1.49

*p<.05. **p<.01. ***p<.001. †The difference between younger brothers of never-pregnant and pregnant adolescents is significant at p<.05. ‡The difference between younger brothers of never-pregnant and parenting adolescents is significant at p<.05. Note: Sexual experience is the percentage of younger brothers who had had intercourse.

school problems (e.g., cutting classes or being suspended from school) than did the younger brothers of never-pregnant teenagers; they were also almost twice as likely to have had sexual intercourse. There were no significant differences between boys with a pregnant older sister and those with a parenting older sister.

Interview Results

The interviewers asked the participating younger siblings if their sister's becoming pregnant or having a baby had made them want to have a baby too, scared them into being more careful about sex, "enlightened" them about the responsibilities of having a child of one's own, affected the time they spent with their mother and generally made their life harder or easier. The interviewers also asked the younger siblings how much their sister's pregnancy or birth had affected them. A five-point Likert-type scale was used to score the responses. Possible scores for the last two items ranged from 1 ("it has made it a lot easier for me" and "it has had no effect," respectively) to 5 ("it has made it a lot harder for me" and "it has had a big effect," respectively). Subjects were also asked to what degree they had felt the following emotions when they first found out their older sister was pregnant: proud, happy, embarrassed, jealous, sorry for her, sad, left out, envious and angry (at their sister). Possible scores ranged from 1 ("never felt this way") to 4 ("felt this way a lot").

Contrast analyses showed no differences between the younger siblings of pregnant

teenagers and the younger siblings of parenting teenagers on any of the interview questions. The younger siblings of both pregnant and parenting adolescents were most likely to report having felt happy for (a mean score of 3.0) and proud of their sister (2.6) when they first found out about her pregnancy and least likely to report having felt envious or jealous (1.3 for each). When asked to what extent their sister's pregnancy had scared them into being more careful about sex, girls reported being significantly more scared (3.5) than did boys (2.8; $t=3.18$, $p<.01$); when asked if their sister's pregnancy or parenthood had made life more difficult for them, girls reported higher degrees of difficulty (3.3) than did boys (2.7; $t=2.33$, $p<.05$).

Hispanic younger siblings reported significantly more embarrassment on first learning of their sister's pregnancy (1.5) than did black younger siblings (1.2; $t=2.34$, $p<.05$), although neither of these means indicates any great degree of embarrassment. Using a median-split age analysis within sex, younger siblings below the median age were more likely to report feeling proud ($p<.001$) and embarrassed ($p<.05$) about their sisters' pregnancy than were younger siblings who were older than the median age. There were no sex-by-age, sex-by-race, or age-by-race interaction effects on any of the interview items.

Discussion

The results of this study begin to reveal how younger siblings may be affected by an older sister's pregnancy and child-

bearing. The younger siblings of pregnant and parenting adolescents had sexual and childbearing attitudes and levels of problem behavior very different from those of the younger siblings of never-pregnant adolescents. Two sets of findings related to younger sisters were particularly telling. First, when compared to girls with a never-pregnant older sister, girls with a pregnant older sister saw school and career goals as less important, were more accepting of early childbearing and perceived younger ages as appropriate for girls to first have intercourse, marry and give birth to their first child.

These differences cannot be attributed to factors related to the younger sisters' age, race, family income or parents' educational level, which were statistically controlled in all analyses. An older teenage sister's pregnancy may alter girls' future expectations and their attitudes and values about childbearing. The younger sisters of pregnant teenagers may become more accepting of early childbearing and view teenage pregnancy as carrying less of a stigma.

The younger sisters of pregnant teenagers also appear to be more likely to engage in many highly visible delinquent acts, such as getting suspended from school, fighting, damaging property, stealing and getting picked up by the police. Such behavior may represent younger sisters' attempts to gain or compete for parental attention or be a means of expressing anger toward or jealousy of their older sister. Alternately, the younger sisters of pregnant teenagers may perceive that their sister's pregnancy has extended the limits on what constitutes allowable behavior. Interestingly, the levels of problem behavior among younger sisters were highest in the families of pregnant teenagers, and the levels of such behavior in the families of parenting teenagers were comparable to those in the families of never-pregnant teenagers. Thus, such behavior may be a short-lived phenomenon in reaction to an older sister's pregnancy.

As suggested in the introduction, these differences between the younger sisters of never-pregnant teenagers and the younger sisters of pregnant teenagers may reflect the latter group's selectivity into teenage childbearing. That is, the unmeasured family background factors that contributed to the older sister's pregnancy may be shaping the younger sister's outcomes. Further, younger siblings' predispositions toward early fertility could be compounded by or interact with the unique and independent effects resulting from a sister's pregnancy or childbearing

in shaping younger siblings' outcomes. Accounting adequately for selection into teenage childbearing, even within families, is enormously difficult and continues to be a central challenge in this area of research.¹⁶ Thus, the current set of findings should be interpreted cautiously and judiciously in light of these and other alternate explanations.

A second set of results, which are not likely to reflect selection factors, are the differences found between the younger sisters of pregnant teenagers and the younger sisters of parenting teenagers. Girls with a parenting sister perceived greater parental approval of early childbearing, were more accepting of nonmarital childbearing and had more definite intentions to have a child at an early age than did girls with a pregnant sister. Again, because many social and demographic characteristics were comparable or were statistically controlled, such differences may indicate how younger sisters are affected by an older sister's childbearing.

As Furstenberg has noted, even mothers who are initially disappointed because of their teenage daughter's pregnancy typically give much love and attention to her baby,¹⁷ a situation that may be interpreted by younger sisters as tacit acceptance of early childbearing. Moreover, mothers may find parenting their daughter's child extremely gratifying and may overtly encourage their teenage daughters to give them more grandchildren.¹⁸

The results for younger brothers provide less information about how they might be affected by a teenage sister's pregnancy or childbearing. No differences emerged between the younger brothers of pregnant teenagers and the younger brothers of parenting teenagers, and only one difference was found between the younger brothers of never-pregnant teens and the younger brothers of pregnant teens that was not also found for the younger brothers of parenting teens. The results did indicate, however, that boys who had a pregnant or parenting older sister were different from boys who had a never-pregnant older sister, with the former group being more accepting of nonmarital childbearing, perceiving early childbearing as less problematic, ascribing more importance to childbearing and having lower self-esteem. The younger brothers of pregnant and parenting teenagers also reported engaging in significantly more drug use and partying behavior than the younger brothers of never-pregnant teenagers.

For younger brothers, these character-

istics may represent preexisting risk factors or they could indicate that boys are affected when they first find out about their sister's pregnancy and undergo little change once she gives birth. Notably, the brothers of parenting teenagers reported engaging in significantly more problem behaviors in school, more drug use and more partying behavior, and were more likely to have had sexual intercourse than were the brothers of never-pregnant teenagers. This pattern indicates that the younger brothers of teenage mothers are engaging in many types of problem behavior that typically lead to even more risky behavior, such as frequent and unprotected sexual intercourse and, consequently, early parenthood.¹⁹ Hence, at this age, the brothers of teenage mothers appear vulnerable to early paternity, but further research is needed to determine whether this is the case.

The interview data revealed that, as hypothesized, younger sisters felt more negatively affected by their older sister's pregnancy or childbearing than did younger brothers, and that, as a result of their sister's pregnancy, younger sisters were more careful about avoiding pregnancy than were younger brothers. This may reflect the fact that girls are more likely to identify with an older sister than are boys, and that it is almost always the teenage woman who bears the full responsibility for child care. Thus, by seeing their older sister restricted by parenting responsibilities, girls may become aware that they would be similarly adversely affected by early childbearing. In this way, their sister's early childbearing may indeed have "scared" younger sisters into being more careful about pregnancy prevention.

As a whole, the current results support the findings from an earlier study using an independent sample of younger sisters of parenting teenagers.²⁰ While that study did not focus specifically on the first teenage pregnancy to occur within the family, its results showed that the younger sisters of childbearing teenagers were more accepting of nonmarital adolescent childbearing, had more pessimistic school and career expectations, and were more likely to have engaged in problem behavior than were the younger sisters of never-pregnant teenagers. Because such characteristics are known to correlate with early sexual activity and early childbearing, both sets of findings point to the increased risk of early sexual behavior and early nonmarital childbearing among the younger siblings of pregnant and childbearing teens.

Several limitations of the current study warrant specific comment. Most notable is this study's inability to establish firm causal links between younger siblings' attitudes and behavior and their older sister's pregnancy or childbearing. The differences among younger siblings by their older sister's pregnancy status do not necessarily imply a cause-and-effect relationship and may be due to variables not included in this analysis. Within-family factors such as permissive attitudes toward teenage sexuality and teenage childbearing within the families of parenting teenagers have been discussed as possible precursors to early pregnancy.²¹ On this point, however, results of the current study showed no differences among the three family types in children's perceptions of their mothers' strictness or their mothers' monitoring behavior. Nevertheless, further longitudinal inquiry would be needed to show true causation, particularly in the families of pregnant teenagers after delivery, or in the families of never-pregnant teenagers who subsequently become pregnant.

Interpretations of this study's results must also take into consideration the select nature of the sample, which included only black and Hispanic families, most of whom were currently receiving welfare. The nature of the sample limits the degree to which the findings are likely to hold for different populations, and caution should be exercised in generalizing beyond the population represented by the sample. Moreover, although sampling by referral is a useful and, in this case, necessary strategy for identifying subjects, the resulting sample may be biased to an unknowable extent because individuals may be part of a shared social network.

There is also some question whether the full impact of the older sister's pregnancy or childbearing could have been realized at the time of the study. For example, pregnant older sisters were on average six months pregnant, and parenting older sisters were on average four months postpartum. The first months postpartum are usually a particularly stressful time, with frequent night feedings and many adjustments needed to accommodate a young infant. However, the warm glow associated with having a new baby may not have worn off. In addition, many of the pregnant older sisters had not yet reached their third trimester, when physical complaints are most common. Thus, this study may have taken place too early to capture the full effects of a sister's pregnancy and parenting. Do younger siblings'

reactions change during the older sister's pregnancy or the postpartum period? Further research is needed on this issue.

Research should also extend beyond the categorical analysis of teenage childbearing versus nonchildbearing and begin to look at the timing of childbearing. Are younger siblings' outcomes dependent on whether an older sister's childbearing occurs very early (at ages 14–15 years) or later in adolescence (at ages 18–19)? This sample was too small to reliably address this issue.

As a whole, the results of this and other studies²² suggest that the younger siblings of pregnant and parenting teenagers are at particularly high risk of experiencing or causing an early pregnancy. It follows, then, that they would be a strategic population to target for pregnancy prevention. Such younger siblings are a relatively easy population to identify, as virtually all protocols of teenage obstetric clinics include a family history on pregnant adolescent clients. These younger siblings make up a critical target population who could benefit from pregnancy prevention services.

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