

Risks Among Youths Who Have Multiple Sisters Who Were Adolescent Parents

By Patricia L. East and Elizabeth A. Kiernan

Context: Past research has revealed that having a sister who gave birth as a teenager is associated with increases in young people's likelihood of engaging in risky sexual behavior. To date, however, no study has determined if having several sisters who were adolescent mothers further raises youths' chances of engaging in risky activities.

Methods: Data were collected from 1,510 predominantly Hispanic and black 11–17-year-olds in a California program for youths who have at least one pregnant or parenting sister. Correlational analyses, analyses of variance and regression analyses were conducted to assess the effects of having multiple teenage parenting sisters on a variety of outcomes that are known risk factors for teenage pregnancy.

Results: Twenty-four percent of participants had two or more sisters who had given birth as teenagers. The likelihood of having multiple adolescent parenting sisters was greatest in large families, but was unrelated to youths' other background characteristics. In analyses controlling for background factors, females with many parenting sisters had increased levels of behavioral problems (school problems, drug or alcohol use, and delinquent behavior) and an elevated likelihood of being sexually experienced. Having lived with two or more parenting sisters (as opposed to having lived with only one) was related to more permissive sexual and childbearing attitudes among young women and to earlier first intercourse among young men. Males with a sister who gave birth at a young age had elevated levels of delinquent behavior and promiscuous sexual behavior.

Conclusions: As the number of teenage parenting sisters rises, youths'—particularly females'—risk of pregnancy involvement increases beyond the level associated with having only one teenage parenting sister. Screening for the number, living situation and age at first birth of parenting sisters is likely to be useful for programs seeking to identify youths at high risk of an early pregnancy. *Family Planning Perspectives*, 2001, 33(2):75–80

Typically, at intake into a health clinic or social service agency, staff take an inventory of adolescent clients' family background. Oftentimes, they ask youths about their number of siblings and the number of their siblings who became pregnant or gave birth as teenagers. The latter information is gathered primarily because young people with pregnant or parenting teenage siblings are believed to be at risk for early pregnancy; presumably, the more parenting siblings a teenager has, the higher the risk.

Numerous reports have documented that having at least one teenage sister who has given birth is associated with elevated birthrates for adolescent women and

with higher rates of intercourse for adolescents of both genders.¹ However, no study has quantified the effects that having multiple teenage parenting sisters has on youths' development. In fact, all studies that have assessed the risks associated with having a pregnant or parenting sister have compared youths whose teenage sisters had never been pregnant with youths who had one or more pregnant or parenting sisters. Differences between these groups, however, may reside in the proportionally higher risk of those who have many pregnant or parenting sisters. Typically, the number of young people who have multiple teenage parenting sisters has been too small to permit an assessment of the potentially incremental risks associated with having more than one adolescent parenting sister.

We undertook this study to assess the potentially detrimental outcomes associated with having multiple teenage parenting sisters. We drew data from California youths who participated in the Adolescent Sibling Pregnancy Prevention

Program, a large, statewide intervention aimed at the siblings of pregnant and parenting teenagers. Many of the youths who participated in the program or its evaluation had more than one pregnant or parenting teenage sister. Thus, the data provide a unique opportunity to assess the incremental risks to adolescents' development associated with having many teenage parenting sisters.*

The goals of this study were fourfold. First, we wished to determine the extent to which the number of adolescent parenting sisters varies with youths' background and demographic factors, such as their race or ethnicity, family size and socioeconomic status. Second, we sought to determine at what level an increase in the number of parenting sisters is consequential for youths' attitudes, problem behaviors and sexual behaviors, net of family background factors. For example, do young people who have two parenting sisters show more problematic behaviors than those who have only one? Third, we examined how the number of teenage parenting sisters a youth actually lives with is associated with outcomes. Finally, we explored the association between the age at which sisters gave birth and youths' outcomes, with the expectation that a young age at birth was associated with more problematic outcomes.

Previous research suggests that the risk of being involved in a teenage pregnancy is higher for the sisters than for the brothers of parenting teenagers.² Moreover, a sister's early childbearing may more strongly and more negatively affect young women than young men because of strong within-gender role modeling and identification processes.³ Therefore, we con-

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*Many participants also reported having one or more brothers who impregnated a woman as a teenager. However, we did not examine these data because information about brothers' involvement in pregnancies may be seriously biased. For a descriptive analysis of why young men misreport their paternity, see: Anderson E, Sex codes and family life among poor inner-city youths, *Annals of the American Academy of Political and Social Sciences*, 1989, 501(1):59–78.

Table 1. Mean values (and internal reliability coefficients) of outcome variables used to assess the effect of having multiple parenting teenage siblings, or percentage distributions of youths, by outcome variables, among 11–17-year-olds participating in the Adolescent Sibling Pregnancy Prevention Program, California, 1997–1998

Variable	Mean or % (N=1,510)
Means	
Sexual/childbearing attitudes (range, 1–5)†	2.1 (.70)
Self-esteem (range, 1–5)†	4.4 (.53)
Sexual intentions (range, 1–5)†	2.2 (.72)
Childbearing intentions (range, 1–5)†	1.7 (.82)
Contraceptive intentions (range, 1–5)†	4.5 (.68)
Frequency of school problems (range, 0–4)‡	0.8 (.75)
Frequency of drug/alcohol use (range, 0–4)‡	0.6 (.82)
Frequency of delinquent behavior (range, 0–4)‡	0.5 (.66)
Age at first sex (range, 7–17)	13.7
No. of partners (range, 1–20)§	2.5
Frequency of sex in last three mos. (range, 0–35)§	2.7
Consistency of contraceptive use (range, 1–5)†	3.9
Percentage distributions	
Sexual status	
Sexually inexperienced	80.5
Sexually experienced	17.2
No response	2.3
Used contraceptive at last sex	
No	15.1
Yes	67.6
Sexually inexperienced/no response	17.3
Total	100.0

†Higher scores indicate more permissive attitudes, greater self-esteem, stronger intentions, higher frequency or greater consistency. ‡Frequency in the last three months, coded as 0=never, 1=once, 2=2–3 times, 3=4–10 times, 4=more than 10 times. §One outlier was omitted. Note: Figures in parentheses are alpha coefficients.

ducted all analyses separately for males and females.

We selected attitudinal, behavioral and sexual outcomes that are known to be risk factors for teenage pregnancy—for example, permissive sexual and childbearing attitudes, low self-esteem and various problem behaviors (drug and alcohol use, delinquent activities and school problems).⁴ Moreover, we assessed several characteristics of youths' sexual and contraceptive behaviors—such as their age at first intercourse, number of sexual partners and consistency of contraceptive use—that are more immediate indicators of pregnancy risk. It is important to recognize, however, that the risk factors we find to be associated with having many teenage parenting sisters could reflect within-family background factors that precipitated the sisters' pregnancies, or they could reflect the cumulative effects of having multiple teenage parenting sisters. In the discussion, we elaborate the interpretations one can draw from this study's results.

Methods

Data Collection

Between June 1997 and September 1998, all participants completed a short interview about their family background and a 59-

item self-administered questionnaire; youths completed the interview and questionnaire at the same time, either at their home or at a program agency office. Five percent completed the interview and questionnaire in Spanish; these young people did not differ from those who completed the English versions on any of the indicators used in this study. The interview was administered by a program staff member who was familiar with the participant and, often-times, with his or her family. All participants received a five-dollar gift certificate for completing the interview and questionnaire.

In the interview, participants were asked how many siblings they had, how many sisters had become pregnant at

age 19 or younger, and how many sisters had had a baby at age 19 or younger. They were asked to include full biological sisters, half-sisters, stepsisters and adoptive sisters. Because more than 95% of sisters' pregnancies had resulted in live births, we based our analyses on the number of sisters who had had a teenage birth, given that this is a more reliable measure than the number who had conceived. The interview also asked the age of each sister at the time she gave birth and whether she had lived with the participant at any time since becoming a mother.

Measures

The mean scores for scaled outcome variables and percentage distributions for categorical ones, based on the total sample, are shown in Table 1. Scale information is described below.

•*Sexual and childbearing attitudes.* Six items asked about participants' acceptance of teenage and nonmarital sex and childbearing. Response options ranged from one (signifying nonacceptance) to five (indicating acceptance).

•*Self-esteem.* Two items asked how positively the subject felt about himself or herself. Possible scores ranged from one (negative self-esteem) to five (positive self-esteem).

•*Problem behaviors.* Eleven items asked how many times in the last three months the participant had had school-related problems (i.e., been truant, suspended or expelled); had used drugs or alcohol (i.e., smoked cigarettes; drunk beer or wine; used marijuana; or used other drugs, such as crack or cocaine); and had engaged in delinquent-type behaviors (i.e., hit someone or gotten into a fistfight, run away from home, gotten stopped by police, or been part of a gang or engaged in gang activity). Response options were zero (never), one (once), two (2–3 times), three (4–10 times) and four (more than 10 times).

•*Sexual intentions.* Four items asked about the participant's intentions to have sex (i.e., within the next year, while still in high school, while still a teenager and before marrying). Teenagers responded on a scale of one (definitely intend not to have sex) to five (definitely intend to have sex).

•*Childbearing intentions.* Four items asked about the adolescent's intention to have a baby or, for males, become a father (i.e., within the next year, while still in high school, while still a teenager and before marrying). Possible responses ranged from one (definitely intend not to have a baby or become a father) to five (definitely intend to).

•*Birth control intentions.* Two items asked teenagers how likely they and their partners would be to use a condom and to use "some form of birth control" if they were to have intercourse. Response options ranged from one (definitely would not use) to five (definitely would use).

•*Sexual status.* Participants also indicated whether they had ever had vaginal sexual intercourse voluntarily (i.e., when they were not forced to do so). We specified voluntary intercourse to distinguish willful pregnancy risk behavior from coerced pregnancy risk.

•*Sexual and contraceptive behaviors.* Teenagers who responded that they had had voluntary vaginal intercourse also were asked their age at first intercourse and number of sexual partners; their frequency of sex within the last three months; their frequency of contraceptive use (with responses ranging from one, signifying never, to five, denoting always); and whether they had used a contraceptive at last intercourse.

Sample Characteristics

Study participants were 1,510 California residents aged 11–17 who were enrolled in the Adolescent Sibling Pregnancy Prevention Program. Data presented here

Table 2. Mean values of selected background characteristics among program participants or percentage distributions of participants, according to selected characteristics

Characteristic	Mean or % (N=1,510)
Means	
Age (range, 11–17)	13.7
Current grade in school† (range, 5→high school)	8.0
Teenager's mother's education (range, 4=college graduate)	9.4
Teenager's mother's age at first birth (range, 12–47)	19.1
No. of brothers (range, 0–10)	1.8
No. of sisters (range, 1–14)	2.8
Age when youngest parenting sister delivered (range, 11–19)	15.6
Percentage distributions	
Gender	
Male	39.9
Female	60.1
Race/ethnicity	
Hispanic	70.8
Black non-Hispanic	10.5
White non-Hispanic	9.7
Other	9.0
Locale	
Urban	67.5
Suburban	15.0
Rural	17.5
Region of California	
Northern	6.0
Central Valley	41.1
San Francisco Bay Area	5.7
Los Angeles/coastal	33.5
Southern	13.7
Family's aid status	
Receiving	67.3
Not receiving	9.3
No response	23.4
No. of teenage parenting sisters‡	
1	76.3
2	18.5
3	4.1
4	0.7
5	0.3
6	0.0
7	0.1
8	0.1
Total	100.0

†Two percent of participants had dropped out of school by the time of the intake interview. For these teenagers, we used the last grade attended in calculating the mean score. ‡Includes sisters who gave birth as teenagers and are currently in their 20s.

were collected at intake into the program (i.e., before the youths had received any services). Youths were eligible for the program if they had never been pregnant or caused a pregnancy and they had a brother or sister (defined as having at least one common biological parent) who had been involved in a pregnancy as a teenager or had been a teenage parent.

On average, participants were nearly 14 years old and were in eighth grade; females outnumbered males (Table 2). The sample consisted predominantly of Hispanic and black youths, the majority of whom lived in urban areas and in families receiving public assistance; about two-fifths were from the Central Valley, one-

third from Los Angeles and surrounding coastal areas, and the rest from other parts of the state. The youths' mothers' average level of education was about nine years; many had given birth as teenagers. In all, participants had about two brothers and three sisters each. Seventy-six percent had one sister who was a teenage parent, 19% had two and 5% had three or more; participants' youngest parenting sister had been, on average, about 16 years old at delivery. One in five participants were sexually experienced, and the average age at first intercourse was 13.7 years (Table 1).

Results

Parenting Sisters and Family Background

To determine the degree to which the number of adolescent parenting sisters varied with youths' family background characteristics, we conducted correlational analyses and analyses of variance. Correlational results indicated that the number of teenage parenting sisters rose significantly with the number of sisters ($r=.44$, $p<.001$) and with the number of brothers ($r=.10$, $p<.001$), but was not related to the participant's age or to the sister's age at first birth ($r<.05$ for each).

For the analyses of variance, we used the number of parenting sisters as the dependent variable and all of the background characteristics shown in Table 2 as independent variables. We conducted two analyses of variance for each background characteristic: one including no controls and one that controlled for family size (i.e., the number of siblings). In the analysis with no controls, the number of teenage parenting sisters was significantly increased among teenagers whose family received aid, those whose mother had less than an 11th-grade education and, especially, those whose mother had given birth at age 18 or earlier (Table 3). However, once we controlled for family size, the number of teenage parenting sisters was not associated with any of youths' background characteristics.

Together, the results of the correlational analyses and the analyses of variance suggest that teenagers from large families were the most likely to have multiple adolescent parenting sisters, but this likelihood did not differ according to other background characteristics.

Parenting Sisters and Youths' Outcomes

To examine the relationships between the number of teenage parenting sisters and youths' attitudes, problem behaviors and sexual behavior, we conducted re-

gression analyses for each outcome; we used logistic regression analysis for sexual status and contraceptive use at last sex, because these are dichotomous variables. Analyses were conducted separately for males and females; results are presented as regression coefficients or, for the logistic regressions, odds ratios.

The following background characteristics, which contributed significantly to the variance of the outcome variables, were used as control variables: age, race or ethnicity (coded as Hispanic vs. non-Hispanic), mothers' educational level, locale (coded as one=rural, two=suburban, three=urban), family's current receipt of aid (zero=no, one=yes) and region of California (zero=Northern, one=South-

Table 3. Mean number of teenage parenting sisters, and F values from analyses of variance, by youths' background characteristics

Characteristic	Mean
All	1.25
Gender	
Male	1.28
Female	1.33
F_1	1.56
F_2	<1.00
Race/ethnicity	
Hispanic	1.25
Black non-Hispanic	1.31
White non-Hispanic	1.13
Other	1.32
F_1	<1.00
F_2	1.13
Locale	
Urban	1.26
Suburban	1.21
Rural	1.26
F_1	<1.00
F_2	1.01
Region of California	
Northern	1.17
Central Valley	1.30
San Francisco Bay Area	1.22
Los Angeles/coastal	1.21
Southern	1.25
F_1	2.28
F_2	<1.00
Family's aid status	
Receives	1.17
Does not receive	1.27
F_1	4.22*
F_2	<1.00
Mother's education	
<11th grade	1.29
≥11th grade	1.21
F_1	4.24*
F_2	<1.00
Mother's age at first birth	
≤18	1.31
>18	1.16
F_1	19.06***
F_2	2.81

* $p<.05$. *** $p<.001$. Note: F_1 shows effects with no controls; F_2 shows effects when controlled for family size.

Table 4. Coefficients from multiple regression analysis and odds ratios from logistic regression analysis indicating the likelihood of various outcomes for young women, by selected characteristics

Predictor	Coefficients												Odds ratios	
	Sexual/child-bearing attitudes	Self-esteem	School problems	Drug/alcohol use	Delinquent behaviors	Sexual intentions	Child-bearing intentions	Birth control intentions	Age at first sex	No. of sexual partners	Frequency of sex	Consistency of method use	Sexual status†	Used method at last sex‡
Age	.12**	.04	.33***	.24***	.14***	.23***	.12**	-.03	.67***	.10	.23**	.13	2.19***	1.15
Hispanic§	-.08*	-.05	.11**	.07	.06	-.04	.09*	-.01	.08	-.15	.05	-.02	0.92	0.51
Mother's education	.10**	.02	.06	.13***	.09*	.10**	.09*	-.06	.01	.02	-.10	.20*	1.07	1.16
Family receives aid‡	-.03	.03	.06	.06	.05	.01	.04	.02	.01	-.12	.01	-.05	2.00*	0.81
Locale††	-.03	.03	.06	-.06	.00	-.02	-.03	-.01	.01	.08	-.15	.11	1.10	1.41
So. Calif.‡‡	.04	-.01	-.02	-.03	.02	.04	.03	.06	-.03	-.02	-.13	.00	0.99	0.60
No. of siblings	.03	-.08*	-.05	-.07	.02	-.02	.02	.07	.07	.05	.05	.01	0.90*	0.92
No. of parenting sisters§§														
1 vs. ≥2	.02	-.02	.06	.16***	.09*	.08*	.05	.02	.09	-.03	.12	.07	1.93**	1.17
1-2 vs. ≥3	.04	-.10*	.07*	-.05	.00	.01	.06	-.04	-.05	-.05	-.12	.06	0.71	0.77
F	3.66***	1.70	14.37***	10.57***	3.45***	7.71***	3.39***	1.26	12.67***	<1.00	2.33*	1.42	na	na
-2 log-likelihood	na	na	na	na	na	na	na	na	na	na	na	na	652.64***	111.05
df	9, 850	9, 850	9, 850	9, 850	9, 850	9, 850	9, 850	9, 850	9, 144	9, 144	9, 144	9, 144	9	9
N	860	860	860	860	860	860	860	860	154	154	154	154	853	151

*p<.05. **p<.01. ***p<.001. †0=sexually inexperienced; 1=sexually experienced. ‡0=no; 1=yes. §Reference group=non-Hispanic. ††1=rural; 2=suburban; 3=urban. ‡‡Reference group=Northern California. §§Includes sisters who gave birth as teenagers and are currently in their 20s. Note: na=not applicable.

ern*). Participants' number of siblings was also included as a control.

To determine the level at which an increase in the number of teenage parenting sisters is related to the outcomes, we created dummy variables contrasting youths who had only one teenage parenting sister with those who had two or more. A second dummy variable categorized participants who had one or two parenting sisters with those who had three or more. Significant effects associated with these variables will reveal the extent to which having more teenage parenting sisters adds to the effects of having fewer such sisters.

Results indicated that female participants' age and their mothers' educational level were significantly related to a number of outcomes (Table 4). As a young woman grew older or her mother's educational level increased, she became more permissive in her attitudes toward sex and childbearing, more likely to engage in problem behaviors, and more likely to intend to engage in imminent sexual behavior and early childbearing (coefficients, .09-.33). Compared with non-Hispanic young females, Hispanic women had less-permissive sexual and childbearing attitudes (-.08), but more frequent school problems and more positive intentions of early childbearing (.11 and .09, respectively). In addition, having many brothers and sisters

was related to a reduction in self-esteem (-.08) and a reduced risk of being sexually experienced (odds ratio, 0.9).

Compared with young women who had one parenting sister, those with two or more were significantly more likely to use drugs or alcohol frequently, to engage in frequent delinquent behavior and to intend to have sex in the near future (coefficients, .08-.16); they also were more likely to be sexually experienced (odds ratio, 1.9). (The proportion sexually experienced was 16% among young women who had one parenting sister and 23% among those who had two or more parenting sisters—not shown.) Female participants with three or more teenage parenting sisters had lower self-esteem and more frequent school problems than those with one or two teenage parenting sisters (coefficients, -.10 and .07, respectively).

For males, age, locale and region were significant predictors of problem behavior and sexual and childbearing intentions (Table 5). Males who were older, lived in more urban areas or lived in Northern California were more likely than younger, more rural or Southern California males to have school problems, to engage in delinquent behavior and to intend to father a child. Also of note, Hispanic young men had more frequent drug and alcohol use, but older ages at first sex, than their non-Hispanic counterparts, and males with many siblings had increased intentions to use contraceptives and a greater likelihood of actually having used a method at last intercourse. The number of teenage parenting sisters was significantly re-

lated only to males' sexual status: Twenty-seven percent of those who had three or more parenting sisters were sexually experienced, compared with 17% of those who had one or two parenting sisters (not shown); the odds ratio from the logistic regression analysis was 2.1.

Living with Parenting Sisters

According to participants' reports, 92% had at some time lived with a sister who had given birth as a teenager. Seventy-seven percent of the young people had lived with one parenting sister, 12% with two and 3% with three or more. To determine how the number of teenage parenting sisters the youth has lived with is associated with youths' outcomes, we computed regressions using the number of teenage parenting sisters ever lived with as the predictor and incorporating all of the background controls. Again, we created dummy variables to examine specific contrasts of number of parenting sisters lived with, and we performed separate calculations for males and females.

Results showed two significant effects for young women: Those who had lived with two or more teenage parenting sisters had more permissive sexual and childbearing attitudes (coefficient, .10; p<.01) and more definite intentions of early childbearing (coefficient, .09; p<.05) than those who had lived with only one. For young males, having lived with two or more adolescent parenting sisters was associated only with a younger age at first sex (coefficient, -.18; p<.05). At first intercourse, males who had lived with one

*Participants living in Northern California, the Central Valley and the San Francisco Bay Area (roughly half of the sample) were coded as living in Northern California; those living in Los Angeles, Orange and San Diego counties were coded as living in Southern California.

Table 5. Coefficients from multiple regression analysis and odds ratios from logistic regression analysis indicating the likelihood of various outcomes for young men, by selected characteristics

Predictor	Coefficients												Odds ratios	
	Sexual/child-bearing attitudes	Self-esteem	School problems	Drug/alcohol use	Delinquent behaviors	Sexual intentions	Child-bearing intentions	Birth control intentions	Age at first sex	No. of sexual partners	Frequency of sex	Consistency of method use	Sexual status†	Used method at last sex‡
Age	.19***	-.09*	.33***	.36***	.24***	.29***	.18***	-.07	.59***	.13	.08	.04	2.16***	1.08
Hispanic§	.00	-.00	.07	.09*	.03	.00	.05	.07	.30***	-.17	.14	-.02	0.79	0.19
Mother's education	.14**	.19***	.02	.04	.02	.07	.03	.04	-.08	.14	.06	.10	0.97	1.08
Family receives aid‡	.02	-.05	.10*	.08	.10*	.06	.06	-.01	.09	-.07	-.01	-.04	1.45	0.97
Locale††	.02	-.02	.13**	.05	.14**	.14**	.13**	-.03	-.06	.04	-.17	-.09	1.22	1.25
So. Calif.‡‡	.03	.05	-.12**	-.08	-.15**	.02	-.11*	.06	-.07	.01	.04	-.03	0.61	0.29
No. of siblings	.04	-.03	-.01	.00	-.04	.08	.06	.10*	.01	.11	.14	.15	1.00	0.78*
No. of parenting sisters§§														
1 vs. ≥2	-.04	.02	-.06	.04	-.01	-.01	-.02	-.03	-.17	.09	.04	.02	1.07	0.91
1-2 vs. ≥3	-.01	.01	.02	-.02	-.02	.03	.01	-.04	-.01	.02	-.10	-.06	2.07*	0.66
<i>F</i>	3.69***	3.01**	10.03***	10.40***	6.38***	7.82***	3.74***	1.27	8.60***	<1.00	<1.00	<1.00	na	na
-2 log-likelihood	na	na	na	na	na	na	na	na	na	na	na	na	407.91***	67.26
<i>df</i>	9, 545	9, 545	9, 545	9, 545	9, 545	9, 545	9, 545	9, 536	9, 90	9, 90	9, 90	9, 90	9	9
<i>N</i>	555	555	555	555	555	555	555	546	100	100	100	100	542	88

*p<.05. **p<.01. ***p<.001. †0=sexually inexperienced; 1=sexually experienced. ‡0=no; 1=yes. §Reference group=non-Hispanic. ††1=rural; 2=suburban; 3=urban. ‡‡Reference group=Northern California. §§Includes sisters who gave birth as teenagers and are currently in their 20s. Note: na=not applicable.

teenage parenting sister were, on average, 13.5 years old, whereas those who had lived with two or more adolescent parenting sisters were 12.9 years old.

Sisters' Age at Birth

To examine the association between sisters' age at birth and youths' outcomes, we first isolated the youngest age at which any of the parenting sisters gave birth; the mean was 15.6 years (range, 11–19). We then conducted regressions using the age of the youngest parenting sister as a predictor of youths' outcomes, controlling for all background characteristics and the number of teenage parenting sisters.

Results for females showed no statistically significant effects of the sister's age at first birth. Results for males, however, showed three statistically significant effects: The younger a male's sister was when she gave birth, the more frequently he engaged in delinquent behavior (coefficient, -.09; p<.05), the more sexual partners he had (coefficient, -.21; p<.05) and the more frequently he had sexual intercourse (coefficient, -.31; p<.01).

Discussion

Our results indicate that increases in the number of teenage parenting sisters were associated with elevated problem behaviors and pregnancy risk behaviors for both young men and young women. Several general findings are particularly noteworthy. While the number of parenting teenagers within a family was correlated with a number of factors—family size, family's receipt of government aid, mother's edu-

cation and, particularly, mothers' age at first birth—all of these relationships dissipated once the number of children within the family was taken into account. Thus, the likelihood of having multiple adolescent parenting sisters was highest within large families, but was unrelated to other demographic characteristics net of family size.

Increments in the number of teenage parenting sisters were related to a greater likelihood of being sexually experienced and to several kinds of problem behaviors among young females, but only to a greater likelihood of being sexually experienced among young males. These findings suggest that the number of parenting sisters may be more consequential for young women's development than for young men's. One possible explanation for this difference is that modeling tends to be stronger for same-sex siblings than for opposite-sex siblings, and females would be more likely than males to identify with their sisters' role as a parent.⁵ Having multiple sisters become parents may also incite more jealousy and competition among females than among males, and young women may act out their emotions in problem behavior to rival the childbearing sisters.⁶

Published reports contrasting youths who have no parenting sisters with youths who have one or more parenting sisters generally show larger effects than we found here.⁷ This is not surprising, however, given our finer-grained analysis of the number of parenting sisters. Although our results show evidence of meaningful gradations in youths' outcomes as a func-

tion of the number of parenting sisters, it is also possible that there is a "threshold" effect of having only one adolescent parenting sister. In fact, a first teenage pregnancy may have a stronger impact on youths than subsequent teenage pregnancies among other sisters, effectively redefining what constitutes allowable and tolerated behavior. Having a teenage sister become pregnant and bear a child is likely to be very stressful for all children in the family and may have significant ramifications for those within the household.⁸ Unfortunately, no study has had a sufficiently large sample to test both threshold and escalating effects associated with the number of parenting sisters.

The number of teenage parenting sisters that a youth has actually lived with was associated with a few unfavorable outcomes: more permissive attitudes and more definite intentions of early parenting for females, and a younger age at first intercourse for males. Although certainly not as extensive as the effects for the number of teenage parenting sisters, living with many teenage sisters (and, presumably, their babies) does appear to be problematic for youths, with the critical difference being between living with one parenting sister and living with two or more. It has been suggested that the children within the household are made vulnerable to an early pregnancy by several family-level changes triggered by a teenager's childbearing, such as diminished parental monitoring, weakened within-family sanctions against early nonmarital parenthood, increased family stress

and greater socialization toward early parenthood through modeling the older sister.⁹ Further research is needed to determine how and to what extent families are affected by a teenager's bearing a child and how these changes contribute to siblings' pregnancy risk.

Other findings revealed that having a sister become a parent at a young age was related to young men's more frequent delinquency and more promiscuous sexual behavior. The families of younger teenage mothers may experience more stress and disorganization than the families of older teenage mothers, and mothers of very young teenagers may become more preoccupied with helping them parent than the mothers of older teenage mothers.¹⁰ Mothers' preoccupation, then, may present a prime opportunity for the other children in the household to act out and have sex. Perhaps this occurred only for males because vigilant parental monitoring tends to be more necessary for curbing males' than females' misbehavior.¹¹

Several limitations of the current study warrant consideration. First, the results should be interpreted only as showing associations between the number of teenage parenting sisters and youths' outcomes, not as demonstrating causal connections. The associations that emerged may reflect the risk factors present in the siblings' shared background, or they may reflect the escalating effects of having many teenage childbearing sisters on youths' development. Thus, the findings should be interpreted judiciously, in light of these and other possible explanations.

The select nature of the sample also should be considered. All participants had at least one parenting sister, and all had agreed to participate in a community program or its evaluation. Moreover, all lived in California, and a large proportion of the youths were Hispanic. The degree to which findings may be generalized to other populations is limited. In addition, participants were largely in early adolescence (about half were aged 13 or 14); the

relationships found here may change as youths get older.

Our analyses also overlook the possibility that some of the young people's sisters had more than one baby as a teenager. Thus, the effects of this situation on siblings' development were not accounted for. In addition, youths reported the number of parenting sisters among their full biological siblings, half-siblings, stepsiblings and adoptive siblings. How long they had lived with these siblings and how well they knew these siblings were not assessed, but these factors are probably important for how youths are affected by a sister's parenting.¹²

It also should be noted that analyses examining sexual and contraceptive behavior included only 17% of the sample. Although this subsample had reduced power to detect relationships within the data, we included these outcomes so that youths' pregnancy risk behaviors could be examined.

As a whole, though, our results indicate that increases in the number of adolescent parenting sisters were associated with incrementally detrimental outcomes for youths. Therefore, screening for the number of parenting sisters, their age at birth and their living situation is likely to be useful for identifying youths at high risk of an early pregnancy.

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