Teenage Pregnancy and Associated Risk Behaviors Among Sexually Abused Adolescents

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CONTEXT: *Previous research suggests a link between adolescent pregnancy and sexual abuse history, but most studies have used clinical samples of females only and single measures of abuse.*

METHODS: *Associations between pregnancy involvement, risk behaviors and sexual abuse were examined in sexually experienced teenagers from the Minnesota Student Surveys of 1992 (N=29,187) and 1998 (N=25,002). Chi-square tests assessed differences in pregnancy involvement and related risk behaviors among four groups of adolescents, categorized by type of abuse experienced: none, incest only, nonfamilial only or both. Odds ratios for pregnancy involvement and risk behaviors, adjusted for grade level and race, were calculated for each gender by using logistic regression analysis.*

RESULTS: *Sexual abuse was reported by 6% of males and 27% of females in 1992, and by 9% and 22% in 1998. Reports of pregnancy involvement were significantly more common among abused adolescents (13–26% of females and 22–61% of males, depending on type of abuse) than among nonabused adolescents (8–10%). Abused adolescents were more likely than others to report risk behaviors, and teenagers reporting both abuse types had the highest odds of pregnancy involvement and risk behaviors. The differential in the odds of pregnancy involvement and most behaviors was larger between nonabused and abused males than between nonabused and abused females.*

CONCLUSIONS: *Teenage pregnancy risk is strongly linked to sexual abuse, especially for males and those who have experienced both incest and nonfamilial abuse. To further reduce the U.S. teenage pregnancy rate, the pregnancy prevention needs of these groups must be adequately addressed.*

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Since the early 1990s, rates of adolescent sexual initiation and pregnancy in the United States have declined,[1] while teenagers' contraceptive use has increased.[2] Nevertheless, each year in the United States more than one million adolescent pregnancies occur, and more than four million adolescents receive a diagnosis of a sexually transmitted disease (STD).[3] The risk of becoming pregnant or getting someone else pregnant is higher for some teenagers than for others, and continued progress in reducing unintended pregnancy and risky sexual behaviors among teenagers requires targeting interventions to groups at greatest risk.

One group potentially at increased risk is teenagers who have been sexually abused. Sexual abuse can alter perceptions about sexual behavior and influence judgment in forming intimate relationships, and thereby lead to earlier sexual debut, more sexual partners and an increased risk of sexual violence in intimate relationships.[4] Sexually abused adolescents have experienced the violation of their most intimate boundaries, which can create a sense of powerlessness in relationships and may impair their ability to negotiate contraceptive use.[5] As a result, sexually abused adolescents are less likely than their nonabused peers to use condoms or other forms of birth control.[6]

Methods of coping with abuse may also put a teenager at risk for pregnancy involvement. Two common sequelae of sexual abuse are substance abuse and running away from home. Substance use before intercourse increases the risk for multiple partners and unprotected sex.[7] Physiological changes in the brain as a result of the traumatic stress of sexual abuse make it more likely that abused teenagers who cope by using mood-altering substances will become chemically dependent,[8] and they may turn to sex work to support their substance use.[9] In addition, if the perpetrator is a family member, adolescents often attempt to escape the abuse by running away from home, living on the street and engaging in survival sex, or they may be placed in foster care or another out-of-home arrangement after disclosure of the abuse. Runaway and out-of-home youth—those who report living alone or living with foster parents or nonrelated adults—are more likely to have a history of sexual abuse than other youth are.[10] Sexually abused youth are also more likely to engage in prostitution and survival sex.[11] All of these behaviors have been linked to teenage pregnancy involvement.[12]

Previous studies have suggested a link between sexual abuse history and teenage pregnancy, although the strength of the relationship has varied according to study sample and design, and the definition of sexual abuse used. Many studies exploring the relationship between teenage pregnancy involvement and sexual abuse history have used nonrepresentative cohorts, such as convenience samples of

teenage mothers drawn from clinical sites or home visiting programs.[13] In these studies, 40–70% of teenage mothers reported a history of sexual abuse. Other studies, involving samples from child protective services or clinical caseloads, have been limited to teenagers with investigated cases of sexual victimization.[14] In one such study, Widom and Kuhns[15] found no relationship between sexual abuse and teenage pregnancy; however, they studied only substantiated abuse cases from the court system among children aged 11 or younger at the time of the abuse. Such a sample is unlikely to represent the wider population, because the risk of sexual abuse continues throughout adolescence and because sexual abuse is both underreported and less likely than other forms of abuse to be adjudicated.[16]

Some studies have explored the link between sexual abuse and pregnancy in nonclinical, school-based samples, although not necessarily with large or representative samples. School-based surveys in the late 1980s, in Minnesota[17] and Alabama,[18] found a higher prevalence of pregnancy among adolescents who had been sexually abused than among nonabused participants. The 1986–1987 Minnesota survey used a statewide, stratified, randomly selected sample; the 1988 Alabama survey used a nonrandom sample of students from several rural and urban school districts. Unlike most previous studies of sexual abuse and teenage pregnancy, both of these included adolescent males and found that pregnancy involvement was at least twice as common among abused males as it was among their nonabused peers.

During the 1990s, several population- and school-based surveys used one or more questions about sexual abuse; these included some of the statewide Youth Risk Behavior Surveys (YRBS), which are conducted every few years by the Centers for Disease Control and Prevention,[19] and similar surveys that are repeated in multiple years.[20] Most studies drawn from these more representative samples also report a link between sexual abuse and risky sexual behaviors, including teenage pregnancy,[21] in both males and females. Indeed, a study from the 1997 Massachusetts YRBS found that the risk for sexual behaviors and teenage pregnancy among abused adolescents was greater for males than for females, although adolescent females are more commonly sexually abused than adolescent males are.[22]

While these studies address many shortcomings of earlier ones, they too have limitations. Most school-based adolescent health surveys have used a single item measuring sexual abuse, typically defined solely as "forced intercourse"; this definition excludes the traumatic experiences of adolescents sexually abused without genital penetration. Such surveys may undercount sexually abused adolescent males: Because the abuse of males involves oral sex more often than it does intercourse,[23] many sexually abused males may not identify their abuse as intercourse. Even if a wider definition is used (e.g., the Massachusetts YRBS refers to "forced sexual contact"), a single-item measure does not allow studies to examine whether risks differ by type of abuse—incest, abuse by someone outside the family or multiple forms of abuse.

The Minnesota Student Survey, which has been conducted every three years since 1989, differs in important ways from other large-scale adolescent health surveys. It includes more than one item assessing sexual abuse, using a wider definition of sexual abuse. The survey does not use a stratified, randomly selected sample; instead, it is a census study of nearly all ninth and 12th graders in Minnesota. It asks questions assessing risk behaviors associated with teenage pregnancy, including contraceptive practice, number of sexual partners, running away from home and out-of-home living situation. The survey thus creates an opportunity to explore the link between sexual abuse history and teenage pregnancy for more than one type of abuse, for both males and females, and in more than one cohort of adolescents.

We sought to test the association between a history of sexual abuse and teenage pregnancy involvement, as well as sexual and other risk behaviors associated with teenage pregnancy, among sexually experienced participants in the 1992 and 1998 Minnesota Student Surveys. An additional purpose was to explore the association between gender, type of abuse and pregnancy involvement.

The first of three hypotheses we tested was that adolescents—male and female—who report a history of sexual abuse will be significantly more likely than their nonabused peers to report pregnancy involvement. Our second hypothesis was that adolescents who report a history of sexual abuse will be more likely to report risky sexual behaviors and other risk factors for teenage pregnancy than their nonabused peers will. The third hypothesis was that although the relationships will be similar, the strength of the relationships will vary by gender and type of sexual abuse.

While it seems logical that the type of sexual abuse—incest, nonfamilial abuse or both—might alter the likelihood of pregnancy involvement, we found no published studies that explored this potential variation or suggested a direction to the relationships we hypothesized. Therefore, although we predicted a difference in the strength of the association between abuse and teenage pregnancy according to type of abuse, we could not predict which type of abuse would be associated with the greatest risk of pregnancy involvement. Similarly, no studies have compared the risk for pregnancy involvement between adolescent males and females. Thus, we could not predict whether the relationship between teenage pregnancy involvement and sexual abuse history would be stronger for males or females.

METHODS

Design and Sample

We conducted a secondary analysis of data from the 1992 and 1998 Minnesota Student Surveys, anonymous pencil and paper surveys assessing health and risk behaviors among ninth and 12th graders; we chose surveys six years apart to ensure two independent cohorts. The Minnesota Student Survey is conducted statewide by the Minnesota Department of Education in the high schools of all participating public school districts, including alternative schools

TABLE 1. Percentage distribution of sexually experienced ninth- and 12th-grade students, by type of sexual abuse ever experienced, according to gender, 1992 and 1998 Minnesota Student Surveys

Type of abuse	1992		1998	
	Female (N=13,741)	Male (N=15,446)	Female (N=12,159)	Male (N=12,843)
None	72.6	94.1	78.3	91.2
Incest only	3.9	0.9	3.9	1.1
Nonfamilial only	17.1	2.9	13.3	4.3
Both types	6.4	2.2	4.5	3.4
Total	100.0	100.0	100.0	100.0

and group-home settings, and is administered in classrooms during school hours.

Passive parental consent and active student assent were secured for the surveys. In 1992, 99% of Minnesota school districts participated, and in 1998, 92% did. On the basis of enrollment records, the Department of Education estimated that 75% of ninth- and 12th-grade Minnesota public school students participated in 1992 and 1998.[24] Detailed demographic information on the overall samples is reported elsewhere.[25]

As in other studies that have explored risk factors for teenage pregnancy, especially among youth with a history of sexual abuse,[26] we included in our analysis only sexually experienced respondents—those who indicated that they had ever had sexual intercourse or had ever been or gotten someone pregnant (29,187 students in 1992 and 25,002 in 1998).

Two survey items determined which teenagers were considered sexually experienced: "Have you ever had sexual intercourse ('gone all the way')?" and "How many times have you been pregnant or gotten someone pregnant?" (The second item was used to capture the few teenagers reporting previous pregnancy involvement but not intercourse; pregnancy could result from rape, which may be considered a form of violence rather than sex.)

In 1992 and 1998, a slight majority of the sexually experienced teenagers were male (53% and 52%, respectively), and nearly two-thirds were 12th graders (63% and 59%, respectively). Most respondents identified themselves as white (89% and 82%), as is the case in the overall Minnesota population.

Measures

The Minnesota Student Survey uses a relatively comprehensive definition of sexual abuse, mirroring that used in the state's criminal sexual conduct laws. In both years, identical questions assessed two types of sexual abuse—incest ("Has any older or stronger member of your family ever touched you sexually or had you touch them sexually?") and nonfamilial sexual abuse ("Has any adult or older person outside the family ever touched you sexually against your wishes or forced you to touch them sexually?"). We grouped respondents into four categories according to a combined measure of sexual abuse: no abuse, incest only, nonfamilial abuse only or both.

Pregnancy involvement was assessed by responses to the question "How many times have you been pregnant or gotten someone pregnant?" We considered students to have had pregnancy involvement if they provided a response other than zero times or "not sure." In addition, we included the items from both surveys about sexual behaviors that previous research has linked to pregnancy involvement: number of opposite-gender partners in the past year, condom use at last intercourse, frequency of birth control use and frequency of condom use ("If you have sexual intercourse, how often do you or your partner use [birth control/condoms]?"). Response options for the questions about frequency of use were always, often, sometimes, rarely and never; because small proportions indicated rarely or never, we combined these two categories. We also included two sexual risk behaviors assessed in the 1992 survey only: frequency of drinking or other drug use before intercourse (responses ranged from always to never) and ever receiving an STD diagnosis. Other risk behaviors measured in both surveys that are associated with sexual abuse and with pregnancy involvement and were included in the analysis were running away from home in the past year and currently living out of home.

Analysis

To examine the possible associations between pregnancy involvement, sexual behaviors or other risk behaviors and abuse history, we used contingency tables and Pearson chi-square tests to assess significant differences among the four groups. Because adolescent females are more likely to report sexual abuse than adolescent males are, and extensive research has found differences between the genders in risk behaviors, we conducted all analyses separately for males and females. To compare gender differences in the strength of the relationship between type of sexual abuse and teenage pregnancy and the various risk behaviors, we calculated odds ratios based on type of sexual abuse, using logistic regression analysis. Given slight differences in the prevalence and type of sexual abuse by school grade and race or ethnicity in the two cohorts,[27] the analyses controlled for these factors; nonabused teenagers served as the reference group.

RESULTS

In 1992, 27% of sexually experienced female respondents and 6% of sexually experienced males reported a history of any type of sexual abuse; the proportions for 1998 were 22% and 9%, respectively (Table 1). In both years, the majority of sexually abused males and females reported having experienced nonfamilial abuse only; the smallest proportion reported having experienced incest only.

Bivariate Findings

In both years, higher proportions of abused females than of nonabused females reported ever having been pregnant (in 1992, 14–26% vs. 11%; in 1998, 13–22% vs. 10%); females reporting both incest and nonfamilial abuse had the

TABLE 2. Percentage of sexually experienced adolescents reporting pregnancy involvement and related risk behaviors, by gender, according to survey year and type of sexual abuse ever experienced

Gender and risk behavior	1992					1998				
	None	Incest only	Non-familial only	Both	χ^2 (df)	None	Incest only	Non-familial only	Both	χ^2 (df)
Female										
Was ever pregnant	10.5	13.5	18.4	25.6	237.90 (3)***	10.2	13.4	16.6	21.9	113.21 (3)***
Had multiple male partners in past year	35.9	38.5	44.3	52.9	163.07 (6)***	35.1	38.8	46.6	57.1	203.34 (6)***
Never/rarely uses birth control	19.8	22.1	22.5	29.5	66.83 (6)***	22.0	31.7	28.7	35.9	93.50 (6)***
Never/rarely uses condoms	31.8	35.9	38.1	42.0	92.69 (6)***	29.4	35.3	34.2	42.3	53.24 (6)***
Used no condom at last sex	48.0	52.9	54.6	55.8	75.86 (6)***	44.0	49.6	51.5	57.6	64.96 (6)***
Ran away in past year	13.0	18.5	22.0	34.0	339.25 (3)***	15.1	22.2	30.4	45.3	481.41 (3)***
Does not live at home	4.5	10.3	7.6	17.4	264.60 (3)***	5.0	13.2	7.8	18.2	204.49 (3)***
Regularly uses alcohol/ drugs before sex	26.4	27.2	30.8	33.7	48.54 (6)***	u	u	u	u	na
Ever had an STD	4.9	5.8	7.4	9.8	50.88 (6)***	u	u	u	u	na
Male										
Ever got someone pregnant	10.0	28.8	22.3	61.4	933.71 (3)***	8.1	27.1	23.5	31.3	413.20 (3)***
Had multiple female partners in past year	46.1	60.3	57.8	80.5	956.79 (6)***	48.0	54.3	72.8	81.8	327.37 (6)***
Never/rarely uses birth control	23.6	40.6	31.5	53.5	192.24 (6)***	27.6	43.2	42.6	58.9	232.46 (6)***
Never/rarely uses condoms	24.0	45.0	30.2	59.2	264.46 (6)***	25.2	33.1	39.6	62.8	317.65 (6)***
Used no condom at last sex	38.6	49.2	42.3	67.4	136.85 (6)***	38.3	50.8	53.3	67.1	175.96 (6)***
Ran away in past year	9.7	34.9	25.7	60.5	976.33 (3)***	14.1	42.0	41.4	67.6	1,099.10 (3)***
Does not live at home	5.8	15.9	11.2	22.5	188.67 (6)***	5.7	21.0	11.0	16.8	154.68 (6)***
Regularly uses alcohol/ drugs before sex	30.0	42.7	39.2	68.8	259.64 (6)***	u	u	u	u	na
Ever had an STD	4.8	17.6	10.0	36.9	646.91 (6)***	u	u	u	u	na

***Difference in prevalences among the four groups is significant at p<.001. *Notes:* df=degrees of freedom. u=unavailable. na=not applicable.

highest proportion of ever-pregnant respondents (Table 2). Similarly, adolescent males in either year who had been sexually abused were significantly more likely than those who had not to report having gotten someone pregnant (in 1992, 22–61% vs. 10%; in 1998, 27–31% vs. 8%). The prevalence of pregnancy involvement among abused teenagers was substantially greater in males than in females. Among males, those who had experienced both incest and nonfamilial abuse had the highest proportion indicating pregnancy involvement; almost two in three such males in 1992, and one in three in 1998, had gotten someone pregnant.

For each type of risk behavior examined, prevalence in females was significantly higher among those reporting any type of abuse than among nonabused adolescents; females who had experienced both types of abuse had the highest prevalence of each risk behavior. The differential, however, varied by type of abuse. More than half the females who reported both types of abuse said they had had multiple sexual partners in the past year, compared with slightly more than one in three nonabused females. Some 22–32% of females who had experienced only incest or nonfamilial abuse, and 30–36% who had experienced both abuse types, reported using birth control never or rarely, compared with 20–22% of their nonabused peers. Condom use was even less prevalent than birth control use: About four in 10 abused females reported never or rarely using condoms, compared with three in 10 nonabused females; at least half in each abuse category reported using no condom at last intercourse, compared with fewer than half of nonabused females.

Among females, 13–15% of nonabused respondents, compared with 34–45% of those reporting both abuse types, had run away from home; 5%, compared with 17–18%, were currently not living at home. Some 27–34% of abused females reported regularly using alcohol or other drugs before intercourse, compared with 26% of nonabused adolescents. As well, the proportion of females reporting both types of abuse who had an STD history was double that of nonabused females.

For males, the findings were similar to those for females, but differences were more pronounced. Although fewer than half of nonabused males reported having had more than one female sexual partner in the past year, the proportions were 54–60% among those who had experienced incest only, 58–73% for those reporting nonfamilial abuse only and 81–82% for those reporting both. More than half of males who had experienced both types of abuse reported never or rarely using birth control or condoms, compared with approximately one-quarter of nonabused males. Some 67% of males who had experienced both abuse types, and 42–53% of those who had experienced either type alone, reported not using a condom at last intercourse, compared with 38–39% who had experienced no sexual abuse.

Among males, 10–14% of nonabused respondents, compared with 61–68% of those reporting both abuse types, had run away; 6%, compared with 17–23%, were not living at home. Although 30% of nonabused males in 1992 reported regularly using alcohol or other drugs before intercourse, considerably higher proportions of abused males reported this behavior: 39–43% of those who had experienced incest

TABLE 3. Adjusted odds ratios from logistic regression analysis assessing risk of pregnancy involvement and related risk behaviors among sexually experienced Minnesota adolescents, by type of sexual abuse ever experienced, according to gender and survey year

Risk behavior and type of abuse	Female		Male	
	1992	1998	1992	1998
Ever involved in a pregnancy				
None (ref)	1.00	1.00	1.00	1.00
Incest only	1.31	1.36	3.28	3.98
Nonfamilial only	1.93	1.77	2.42	3.17
Both	2.87	2.29	11.68	4.48
χ^2 (df)	268.41 (11)***	163.79 (9)***	749.41 (11)***	347.43 (9)***
Multiple partners in past year				
None (ref)	1.00	1.00	1.00	1.00
Incest only	ns	ns	1.63	ns
Nonfamilial only	1.40	1.56	1.56	2.56
Both	1.97	2.32	4.28	4.22
χ^2 (df)	147.90 (11)***	227.38 (11)***	342.82 (11)***	762.31 (11)***
Never/rarely use birth control				
None (ref)	1.00	1.00	1.00	1.00
Incest only	ns	1.47	2.24	1.67
Nonfamilial only	1.14	1.15	1.45	1.69
Both	1.45	1.50	3.39	3.31
χ^2 (df)	694.75 (11)***	1,006.65 (11)***	655.28 (11)***	803.90 (11)***
Never/rarely use condoms				
None (ref)	1.00	1.00	1.00	1.00
Incest only	1.24	1.37	2.86	1.46
Nonfamilial only	1.41	1.35	1.41	1.95
Both	1.78	1.97	4.90	5.00
χ^2 (df)	254.35 (11)	183.52 (11)***	273.19 (11)	332.52 (11)***
Used no condom at last sex				
None (ref)	1.00	1.00	1.00	1.00
Incest only	1.27	1.34	1.75	1.73
Nonfamilial only	1.39	1.50	ns	1.90
Both	1.62	2.03	3.78	3.43
χ^2 (df)	349.17 (11)	312.70 (11)***	286.36 (11)	245.71 (11)***
Ran away in past year				
None (ref)	1.00	1.00	1.00	1.00
Incest only	1.42	1.40	4.49	3.80
Nonfamilial only	1.77	2.02	3.01	3.80
Both	2.93	3.72	11.90	11.49
χ^2 (df)	876.79 (11)	1,405.97 (11)***	852.71 (11)	1,305.65 (11)***
Not living at home				
None (ref)	1.00	1.00	1.00	1.00
Incest only	2.44	2.84	2.53	3.80
Nonfamilial only	1.80	1.68	1.90	1.72
Both	4.66	4.23	3.52	2.92
χ^2 (df)	323.56 (11)***	307.03 (11)***	400.78 (11)	344.37 (11)***
Ever had an STD				
None (ref)	1.00	na	1.00	na
Incest only	ns	na	3.78	na
Nonfamilial only	1.54	na	2.09	na
Both	2.03	na	9.07	na
χ^2 (df)	86.91 (11)***	na	492.80 (11)***	na
Regularly use alcohol/drugs before sex				
None (ref)	1.00	na	1.00	na
Incest only	ns	na	1.84	na
Nonfamilial only	1.26	na	1.59	na
Both	1.44	na	5.91	na
χ^2 (df)	80.43 (11)***	na	382.73 (11)***	na

***p<.001 for model. *Notes:* Analyses were adjusted for race/ethnicity and current grade. For all odds ratios shown, p<.01. ref=reference category. df=degrees of freedom. ns=not significant. na=not applicable.

or nonfamilial abuse only, and 69% who had experienced both. The proportion reporting having had an STD was twice as high among males reporting nonfamilial abuse only as among nonabused males, and was seven times as high among males reporting both abuse types as among nonabused males.

Multivariate Findings

In the logistic regression analysis, males and females who had experienced any kind of sexual abuse had significantly increased odds of pregnancy involvement; those who had experienced more than one type of abuse had the highest odds of pregnancy involvement (Table 3). The differential was considerably larger for abused males than for females reporting the same types of abuse. For example, among 1992 respondents, the odds for males reporting both incest and nonfamilial abuse were 12 times as high as those for males reporting no sexual abuse history; the odds for females reporting both abuse types were three times as high as those for nonabused females.

Most of the risk behaviors showed patterns similar to those observed for pregnancy involvement: Adolescents reporting any type of sexual abuse, especially those reporting both types, were significantly more likely than their nonabused peers to engage in risky behavior. However, risk behaviors varied somewhat among those who had experienced only one type of abuse. Adolescent females who had experienced incest only were no more likely than nonabused females to report multiple sexual partners in the past year, to never or rarely use birth control (in 1992 only), to use alcohol or drugs before intercourse, or to have had an STD (in 1992 only); their odds of all other risk behaviors were significantly higher than those of nonabused females. In contrast, adolescent females who had experienced nonfamilial abuse only were significantly more likely than nonabused females to report each risk behavior. Adolescent males reporting incest only were significantly more likely than nonabused males to report all the risk behaviors except multiple partners in the 1998 survey, and males who had experienced only nonfamilial abuse had higher odds of all the risk behaviors except no condom use at last intercourse in 1992.

In general, abuse was associated with larger differentials in risk behavior among males than among females. There were a few exceptions. Neither males reporting incest only in 1998 nor females reporting incest only in either survey year had elevated odds of having had multiple partners in the past year. Males and females reporting nonfamilial abuse only in 1992 had similarly increased odds of saying they used a condom rarely or never. The difference between nonabused adolescents and those reporting either incest or nonfamilial abuse only in the likelihood of living away from home was similar for males and females, except for males reporting incest only in 1998. Finally, females reporting both types of abuse had higher odds than males reporting both types of abuse of living out of home.

DISCUSSION

Among sexually experienced high school students in Minnesota in 1992 and 1998, those who had been sexually abused were significantly more likely than their nonabused peers to report pregnancy involvement and risk behaviors associated with teenage pregnancy. Generally, among the teenagers who had experienced sexual abuse, those who

had experienced incest only had the lowest odds of risk behaviors and pregnancy, and those who had experienced both incest and nonfamilial abuse had the greatest likelihood of pregnancy involvement and risk behaviors. Although a higher proportion of females than males in both survey years reported any type of sexual abuse, abused males had greater adjusted odds of pregnancy involvement and most risk behaviors than females reporting the same types of abuse.

These results support findings from earlier adolescent health surveys, although the current study had more precise measures for type of sexual abuse. The odds of pregnancy involvement and the associated risk behaviors among adolescent males and females in both survey years were similar to those reported from the 1997 Massachusetts YRBS.[28] Among sexually abused males, the prevalence of pregnancy involvement was similar to those from the 1995 Vermont and Massachusetts YRBS,[29] despite the more ethnically diverse student population in Massachusetts. Pregnancy involvement for females and males in this study was somewhat higher than that reported among a more representative sample of Alabama adolescents;[30] this difference may be due to the narrower definition of sexual abuse and sampling techniques used in the earlier study. This similarity of findings suggests that the relationship between teenage pregnancy and sexual abuse is not limited to one geographic region, or racial or ethnic group, and is relatively consistent over time. It also suggests that the interventions that helped to reduce teenage pregnancy during the 1990s were not as effective in addressing sexually abused teenagers' risk behaviors and reasons for pregnancy involvement.

There were differences in both prevalence and risk of pregnancy for different types of sexual abuse among both females and males. Prevalence of pregnancy involvement was lower among teenagers who had experienced incest only than among other abused adolescents, possibly because of the lower odds of involvement in some pregnancy-related risk behaviors. However, teenagers reporting incest only are the smallest group of sexually abused adolescents in the population.

Experiencing sexual abuse by more than one source is a profound risk factor for various poor outcomes, and teenage pregnancy is no exception. For teenagers who have experienced incest only, a supportive relationship with a caring adult outside the family might foster resilience and effective coping strategies. Likewise, when a teenager has been sexually abused by someone outside the family or has experienced date rape, supportive parents can lessen the distress, foster positive coping strategies and improve long-term outcomes.[31] But when a teenager has been sexually exploited both within and outside the family, who can be trusted to help? For health care providers, developing therapeutic relationships with such teenagers can be difficult and may require persistent, respectful efforts at fostering trust.

Alternatively, the higher risk for pregnancy that we observed among those who had experienced both types of abuse could be explained by increased trauma due to multiple perpetrators. Given the wording of the sexual abuse questions in these surveys, however, teenagers who had been sexually abused by more than one family member but no one outside the family would still fall in the incest-only group, and those abused by multiple adults outside the family but no family member would fall in the nonfamilial-only group. Thus, there is no sure way to disentangle the potential impact of the number of perpetrators and number of sources of abuse in these surveys.

Why might sexually abused males be at greater risk for teenage pregnancy involvement and associated risk behaviors than sexually abused females? Previous studies have suggested two explanations. The first pertains to family environment. Sexually abused adolescent males tend to report more dysfunctional family environments than abused adolescent females do—including greater likelihood of substance abuse and domestic violence, regardless of whether the abuse was incest or nonfamilial abuse.[32] If they are less likely to have supportive families who can help mitigate the trauma of sexual abuse, then they may be more likely to use negative coping methods—such as substance abuse, running away and risky sexual behaviors—that put them at risk for teenage pregnancy involvement.

The second explanation is based on culturally prescribed gender expectations. Adolescent males are far less likely than adolescent females to report sexual abuse, possibly because they are less likely to be victims of abuse, because they are less likely to identify their early and unwanted sexual experiences as abuse or because society's messages surrounding experiences of sexual abuse engender deeper shame and prevent their reporting the abuse.[33] Societal messages about masculinity and sexual behavior tend to portray males as the initiators of sexual contacts, and young men are expected to take the dominant role in sexual relationships; but a male youth who has been victimized has had that control taken away, and this may challenge his sense of masculine identity. Fathering a child is a potent symbol of masculinity and could restore the abused teenager's sense of identity.

To complicate the process for adolescent males, the majority of sexual abuse perpetrators are adult men, regardless of the victim's gender. Same-gender sexual abuse may create confusion about sexual identity, especially since sexual identity develops during adolescence, and a homosexual or bisexual orientation carries additional stigma in U.S. society. Fathering a child is one way to counter appearances of sexual minority status. However, the opposite has also been found: Gay, lesbian and bisexual teenagers are more likely than heterosexual teenagers to report a history of sexual abuse, in part because their sexual minority status leads to less family protection.[34] In some cases, sexual abuse by family members is even a response to disclosure of a teenager's gay or bisexual orientation.[35] Gay, lesbian and bisexual teenagers are also more likely to report teenage pregnancy involvement than their heterosexual peers.[36] The unique issues of sexually abused adolescent males and sexual minorities are not regularly addressed in teenage pregnancy prevention programs.

Strengths and Limitations

This study has several strengths and limitations. Its strengths include the use of large, population-based samples from two cohorts surveyed several years apart, the use of multiple measures of sexual abuse and the resulting ability to analyze the results separately by gender and abuse type. The findings are consistent across cohorts, strengthening the results. Previous studies have been unable to compare the strength of the association between teenage pregnancy and sexual abuse among youth who have experienced different types of sexual abuse, and to compare adolescent males with females.

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The limitations of the study are those of all cross-sectional, school-based adolescent health surveys. Self-reports, even in an anonymous survey, may result in an undercount of abused youth. Furthermore, given the wording of the questions, sexual abuse by peers was not captured. Absent students and dropouts are not represented in these findings; in addition, teenagers who have run away or are parents are less likely than others to attend school. Another limitation is that the surveys are restricted to a single Midwestern state; however, the similarity of our findings to those of studies from the East Coast and the South suggests that our results may be generalizable beyond the Midwest. Because of the cross-sectional nature of the survey, determining which came first—abuse or teenage pregnancy—is impossible. However, given that the peak age for sexual abuse is typically between seven and 13 years for females and males (i.e., usually before puberty is complete),[37] pregnancy involvement probably came after sexual abuse for most respondents reporting both.

Although confirming the link between sexual abuse, gender and teenage pregnancy in large, population-based studies is useful, it is but a first step. Not all sexually abused teenagers become teenage parents or engage in the risky behaviors associated with teenage pregnancy involvement; understanding what factors mediate these risks will help guide effective teenage pregnancy prevention programs for sexually abused youth. Longitudinal studies can help identify the impact of the timing of abuse on development, risk behaviors and teenage pregnancy involvement.

Implications

This study has several practical implications. First, adolescent health care providers should routinely screen males and females, including teenagers who report prior pregnancy involvement or who are parents, for a history of sexual abuse. Clinicians should be prepared to provide referrals to supportive services in their communities, and to advocate for services when none are available, especially for adolescent males.

It is important to screen for type of sexual abuse, and to be aware of the possibility of multiple perpetrators both within and outside the family. In addition, sexual abuse often occurs in conjunction with other types of family problems—such as domestic violence, physical abuse and neglect, and parental substance abuse—which can substantially reduce the family support available for a sexually abused teenager, exacerbate the trauma from the abuse and model coping mechanisms that could further increase the risk of teenage pregnancy involvement.[38] In fact, we were concerned that sexual abuse in our analyses could have been a proxy for trauma resulting from experiences of multiple forms of family violence. However, we explored this possibility in additional logistic regression analyses (not shown) and found that in the presence of other family dysfunction, sexual abuse independently predicted pregnancy involvement for males reporting any sexual abuse and females reporting nonfamilial abuse only or both abuse types. Nevertheless, when a teenager has disclosed a history of sexual abuse, clinicians should screen for a range of types of family dysfunction.

Second, in addition to providing information about contraception and healthy sexual relationships, health education and counseling for sexually active teenagers should address the needs of sexually abused youth and should explore their risk behaviors and methods of coping with the abuse. Similarly, sexual health curricula in high schools should take into account the likelihood that some students, both males and females, have been sexually abused, and should include information to help reduce the stigma of this hidden trauma and to connect teenagers to appropriate resources. Teenage pregnancy prevention campaigns should be sensitive to the messages they send to the community at large and the potential effects on sexually abused adolescents. Many teenage pregnancy prevention programs focus exclusively on females, and on negotiating more effective contraceptive practices with partners; even programs that include males may not address sexual coercion and abuse. Finally, teenage pregnancy and parenting services should provide outreach and services for adolescent males, including assessment and intervention for sexual abuse, to help prevent repeat pregnancies during adolescence.

Sexually abused adolescents are a group whose pregnancy involvement has gone relatively unnoticed, and whose pregnancy prevention needs have not been adequately addressed. To continue reducing teenage pregnancy rates in the United States, we must target interventions to those at increased risk.

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