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Characteristics of Sexually Active Teenage Girls Who Would Be Pleased with Becoming Pregnant

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Abstract

To investigate factors associated with favorable pregnancy attitudes among teenage girls. Participants were sexually active teenage girls aged 15–18 years old ($n = 965$) who took part in the 2002 or 2006–2010 National Survey of Family Growth (NSFG). Multinomial multivariable logistic regression was used to assess the likelihood of *being pleased* with a teenage pregnancy. Sixteen percent of sexually active teenage girls ($n = 164$) would *be pleased* (11 % a little pleased, 5 % very pleased) if they became pregnant. In a multivariable model, participants who had not yet discussed sexual health topics (i.e., how to say no to sexual intercourse or birth control) or had only discussed birth control with a parent were more likely to *be very pleased* with a teenage pregnancy than participants who had discussed both topics with a parent. Prior pregnancy, racial/ethnic group status, older age, and having parents with a high school education or less also increased the odds of being pleased with a teenage pregnancy. Being pleased with a teenage pregnancy was correlated with a lack of discussion of sexual health topics with parents, prior pregnancy, and sociodemographic factors (having less educated parents, racial/ethnic group status). Pregnancy prevention efforts can be improved by acknowledging the structural and cultural factors that shape teenage pregnancy attitudes.

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Keywords

Teenage pregnancy; Sexual education; Sexual health; Sexual behaviors—adolescent

Introduction

In 2009, US teenage birth rates hit a record low at 39.1 per 1,000 teenage women ages 15–19 [1]. Yet, enthusiasm over the progress made in declining teenage birthrates is tempered because even at its lowest rate in over 7 decades, the US still remains disproportionately affected by high rates of teenage births when compared with other developed countries [2, 3]. In fact, the US teenage birth rate is still as much as nine times higher than in other developed countries [4].

A number of studies suggest that adolescents with comprehensive sexual health knowledge about pregnancy prevention are more likely to engage in protected sexual intercourse [5–7]. Accordingly, a common recommendation to prevent teenage pregnancy includes providing contraceptive counseling to sexually active youth [8]. Aside from the popular media and one's peers, adolescents often receive sexual health information from their parent(s) and/or from a school or church setting. In fact, most recent data from the National Survey of Family Growth report that four out of every five teenage girls have had sexual health discussions with one or more parents [4, 9]. Moreover, nearly 90 % of US adolescents report having received formal sexual health education in school or church [4, 9].

Nonetheless, sexual health information about pregnancy prevention is unlikely to be effective when adolescents desire pregnancy. Attitudes toward pregnancy tend to be correlated with contraceptive behaviors during sexual intercourse. For instance, ambivalence towards pregnancy is associated with less consistent contraceptive use, unprotected sexual intercourse, and reliance on less effective contraceptive methods like the natural family planning method or withdrawal [10–13]. In addition, a substantial number of teenage girls who want to become pregnant often experience pregnancy at least once during their teenage years as reported by one study which found that 30 % of teenage girls who described favorable attitudes towards pregnancy became pregnant within a year [14]. Thus, some research indicates that favoring the idea of becoming pregnant during adolescence can signal a risk for teenage pregnancy.

In the present study, we examine relationships between measures of sexual health information received from a parent or in a more formal setting (i.e., school or church) and attitudes towards becoming pregnant during adolescence among sexually active teenage girls. In general, teenage births are more prevalent among members of underrepresented racial/ethnic groups (i.e., African Americans and Hispanics) and teenage mothers tend to encounter more economic disadvantage prior to pregnancy [15–17]. Therefore, we included in our analysis sociodemographic characteristics (for e.g., parental education and race/ethnicity) because of their known associations with teenage pregnancy.

Methods

Data Source and Participants

The study population was drawn from pooled data from the 2006–2010 and 2002 US National Survey of Family Growth (NSFG), designed by the National Center for Health Statistics [15]. Data was pooled from 2 cycles of the NSFG to increase sample size. The NSFG employed a multistage, stratified and cluster sampling design to provide national data on topics related to childbearing and reproductive health of men and women aged 15–44

years. The overall response rate was 79 % for the 2002 NSFG and 75 % for the 2006–2010 NSFG, which is deemed high in household survey research. Data were collected via inperson face to face interviews with a trained female interviewer who utilized computer assisted personal interviewing (CAPI) to record responses. Data were weighted to adjust for non-response and oversampling of minorities, such as African Americans, Hispanics, and adolescents of all races. The institutional review board at Washington University reviewed and approved the study.

In order for participants' data to be included in the statistical analyses, specific inclusion criteria were established. Because we were interested in examining correlates with adolescent girls of high school age who would *be pleased* with a pregnancy and could potentially become pregnant, we examined only girls 15–18 years of age who reported having already had intercourse (n = 1,067). We excluded participants who were married (n = 31) or currently pregnant/didn't know if pregnant (n = 48). Participants with missing data for our outcome of interest (n = 13) and independent variables of interest (n = 10) were also excluded, resulting in a sample of 965 sexually active teenage girls, 117 of whom had already given birth as an adolescent. Of the teenage girls who had already given birth, 34 % were Non-Hispanic White while 28 % were Hispanic, 28 % were African American and 9 % were other. Sixteen percent of girls who had previously given birth reported that they would be a *little pleased* and 10 % would be *very pleased* with a teenage pregnancy. Among all unmarried 15–18 year old girls, 37 % (n = 1,036) reported having had intercourse with a male, while 63 % (n = 1,632) had not.

Measures and Analysis

All questions used to construct variables were the same in both the 2002 and 2006–2010 NSFG data sets. We utilized NSFG data to examine the relationship between attitude toward pregnancy and formal sex education and sexual health discussions with a parent. Additional covariates were examined using NSFG data which included prior pregnancy and/or live birth, religiosity, and socio-demographic characteristics (parental education, racial/ethnic background, and age).

The outcome of interest, attitude toward pregnancy, was assessed by one NSFG question: “If you got pregnant now, how would you feel?” Participants selected from the following responses: very upset, a little upset, a little pleased, or very pleased.

We utilized two separate NSFG questions to determine exposure to formal sex education. In the first question, participants were asked about receiving “any formal instruction at school, church, a community center, or some other place about how to say no to sex” before the age of 18 years. In the second question, participants were asked about receiving “any formal instruction at school, church, a community center, or some other place about methods of birth control” before the age of 18 years. Participants were classified based on the type of formal sex education they received which included education instruction on both topics (how to say no to sex and birth control), one topic only (received sex education on either how to say no to sex or birth control), or no formal sex education instruction.

We also examined the sexual health messages delivered by a parent using one NSFG question, “Which, if any, of the topics shown (did you ever talk/have you ever talked) with a parent or guardian about?” The topics included: how to say no to sexual intercourse, methods of birth control, where to get birth control, and how to use a condom. Participants were classified as discussing how to say no and birth control sexual health messages with a parent when at least one of the three birth control topics (i.e., methods of birth control, where to get birth control, and how to use a condom) were discussed along with how to say no to sexual intercourse. Participants who discussed with a parent at least one of the three

birth control topics but not how to say no to sexual intercourse were classified as discussing birth control sexual health messages only. Last, participants who had not discussed with a parent any of the sexual health topics of interest were classified as such.

Five additional NSFG covariates considered in the analyses included previous pregnancies and/or live births, whether or not participant had any religious affiliation versus none, parent's level of educational attainment (i.e., one or both parents had: some college education or more versus high school graduate or less), racial/ethnic background (i.e., Non-Hispanic White, African American, Hispanic, and other), and age.

Multinomial logistic regression was used to calculate odds ratios and 95 % confidence intervals for associations between potential risk factors with each level of attitude regarding a teenage pregnancy (i.e., very pleased, a little pleased, a little upset) versus the reference group of being very upset. First, variables of interest were assessed in bivariate analysis. Then a multivariable multinomial logistic regression model was built in which all independent variables were included in the model. All analyses were performed using SAS-callable SUDAAN version 9.0.1, a software program that uses Taylor series linearization to adjust for design effects of complex sample surveys like the NSFG [16]. Sample weights were applied to all analyses. Descriptive statistics were used to summarize the data, and weighted percentages and means are presented.

Results

The majority of our sample included in the analysis would *be upset* with a teenage pregnancy (49 % would be *very upset* and 35 % would be *a little upset*), but 11 % reported that they would be *a little pleased* and 5 % would be *very pleased* with a teenage pregnancy. The majority of teenage girls in our sample (67 %) reported having received *formal* sex education instruction or instruction on both birth control and how to say no to sex while 8 % had not received *formal* sex education on either of these sexual education topics. Slightly over half of our sample (53 %) reported having discussed birth control and how to say no to sex with a parent while 22 % had not discussed either of these sexual education topics with a parent. Additional descriptive results are available in Table 1.

Associations with Being Pleased with a Teenage Pregnancy

The multivariable multinomial logistic regression model, as shown in Table 2, which included all independent variables examined (Table 2) was significant (Wald F 7.9, $df=48$, $p<.001$). In the multivariable model, teenage girls who had not yet discussed how to say no to sexual intercourse or birth control with a parent and those who had discussed birth control only were more likely to *be very pleased* (versus very upset) with a teenage pregnancy than girls who had discussed how to say no to sexual intercourse plus birth control sexual health messages with a parent (adjusted odds ratio [aOR] = 3.1, 95 % confidence interval 1.3–7.7 and aOR 3.1, 1.1–8.6, respectively). Teenage girls who reported a prior pregnancy but had not given birth were more likely to *be very pleased* (aOR 4.6, 1.4–15.3) and *a little upset* (aOR 3.5, 1.3–9.0) with a pregnancy versus being *very upset*. Teenage girls whose parents had a high school education or less (compared to some college or more) were more likely to *be very pleased* (aOR 3.6, 1.5–8.4), *a little pleased* (aOR 2.1, 1.2–3.4), and *a little upset* (aOR 1.7, 1.1–2.6) with a pregnancy versus being *very upset*. In comparison to Non-Hispanic Whites, African Americans and those classified as “other” (not Non-Hispanic White or Hispanic) were more likely to *be very pleased* with an adolescent pregnancy (aOR = 2.8, 1.2–7.0 and aOR = 6.2, 1.2–32.6, respectively) and *a little pleased* (aOR = 2.1, 1.04–4.1 and aOR = 5.2, 2.0–13.6, respectively) versus being *very upset*. Others were also more likely to be *a little upset* (aOR = 3.6, 1.5–8.8). Older girls were more likely to be *very pleased* (OR for 1 year increase in age 2.4, 1.5–4.0). Formal sex education significantly

associated with decreased risk of being very pleased with an adolescent pregnancy but the cell sample size was only 2. Religiosity and survey year did not reach significance in the multivariable model. Variance inflation factor (VIF) tests of collinearity indicated no signs of collinearity (VIF was less than 1.5 in all cases) among the independent variables.

Discussion

We utilized data from a nationally representative study to improve understanding of pregnancy attitudes among sexually active teenage girls within a multivariable context. Our results provide several insights that expand our understanding of attitudes toward pregnancy among adolescent girls. First and foremost, although we recognize the limitations in using one item to measure pregnancy attitude, our findings revealed that nearly 1 in 6 sexually active teenage girls would *be pleased* if they “got pregnant now” and potentially assert a favorable attitude towards their own teenage pregnancy.

Additionally, we found that nearly a quarter of the sampled teenage girls had not discussed how to say no to sexual intercourse or birth control methods with a parent. Moreover, the teenage girls who had not discussed these sexual health topics with a parent as well as those who had discussed birth control only (but not how to say no to sexual intercourse) were more likely to report being very pleased with a teenage pregnancy than girls who had discussed both topics with a parent. As a result, our findings support the importance of parent/adolescent sexual health discussions given the associations that we found between these conversations and attitudes towards teenage pregnancy. In a related study, protected intercourse more frequently occurs when parent/adolescent sexual health discussions occur prior to first sexual intercourse [17]. In addition, previous studies suggest that parental sexual discussions about contraceptives do, in fact, have a positive effect on the subsequent sexual behavior of adolescents, including increased condom use and fewer acts of sexual activity [18, 19]. Based on our findings, we recommend that parents assess their daughter’s attitudes towards teenage pregnancy and converse with them about sexual health topics including how to say no to sexual intercourse and birth control.

Another major finding of our study is that girls who had experienced a prior pregnancy but had not given birth were significantly more likely than never-pregnant counterparts to *be very pleased* and *a little upset* (versus being *very upset*) with an adolescent pregnancy. Our results lead us to speculate if subsequent adolescent pregnancies are intended. While past findings indicate that contraception accessibility might prevent subsequent adolescent pregnancies [20], it is unlikely that this approach alone would be effective in reducing a subsequent pregnancy if another pregnancy is desired.

African American teenage girls and those classified as “other” (not considered as Non-Hispanic White or Hispanic) were also more likely than their Non-Hispanic White counterparts to *be pleased* with a teenage pregnancy even after controlling for other covariates. Past studies have consistently documented more positive attitudes towards teenage parenting among girls from underrepresented racial/ethnic groups versus their Non-Hispanic White counterparts [14, 21–23]. Our findings further support the existing body of literature and underscore the need to better understand how the cultural values of some girls from underrepresented racial/ethnic groups may impact attitudes towards teenage pregnancy.

The findings of this study are limited by several factors. We used an existing data set in which other variables that may also impact participants’ attitudes towards pregnancy were not examined. Such factors include quality or frequency of sexual health communications with parents, and relationships or communications with friends, intimate partners, or other

adults. However, the results must be interpreted in the context of ongoing research on risk behaviors of adolescents and young adults, including those studies that provide more detailed measurements of potential determinants of attitudes towards pregnancy. We also rely on participants' self-report for all of the data which contain some unknown level of reporting error. Due to the cross-sectional and non-experimental design of the NSFG, we are unable to make any definitive conclusions about the direction of relationships. In addition, most of the variables were measured with single-items because multiple-item scales were not part of the NSFG interview. With regards to the NSFG queries on sexual health messages received by participants, both school and church instruction were grouped together as were categories on various sexual health topics that a parent may have discussed with their children. School instruction may differ significantly from church and/or community center instruction even if young people claim they both included "instruction on birth control." For example, in one context the instruction might have included only information about failure rates, while in another context the instruction might have entailed more comprehensive information about effectiveness, use, and side effects. Similarly, there are potentially significant qualitative differences between parent-child discussions about methods of birth control, where to get birth control, and how to use a condom. Nevertheless, the advantage of using the NSFG data is that these are of high quality, nationally representative, and no other publically available national dataset measures the constructs that we examined in this study.

Despite these limitations, the derived implications are significant. Given the relatively high rate of sexually active teenage girls in our study who would *be pleased* with a teenage pregnancy (1 in 6), we advise pregnancy prevention efforts to include routine assessments of attitudes towards teenage pregnancy and motherhood. Because we found that parent sexual health discussions are associated with sexually active girls' attitudes towards pregnancy, then family-focused prevention strategies should complement existing efforts aimed at reducing teenage pregnancy (e.g., sexuality education programs in schools). Also, racial/ethnic group status, and having parents with a high school education or less were identified as significant correlates of favorable teenage pregnancy attitudes and could signal potential risk factors for influential persons such as school counselors and/or health care providers who can potentially deliver important pregnancy prevention messages.

Sexuality education, in the traditional sense, conveys information on the technical aspects of how teenage pregnancy can be avoided via birth control methods or abstinence [5]. Importantly, our findings indicate that these current messages are having a negligible effect on teenage pregnancy attitudes. Pregnancy prevention efforts can be improved by acknowledging the structural and cultural factors that shape teenage pregnancy attitudes. In addition, pregnancy prevention efforts should identify strategies that are effective in educating youth to recognize that teenage pregnancy can be accompanied with lost educational and economic opportunities [24]. This prospect may be less convincing for some groups (e.g., low income and/or minority girls) until barriers to educational and economic opportunities are alleviated.

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Table 1

Descriptive characteristics of sexually active, unmarried teenage girls (N = 965)

	Very upset (n = 468)	A little upset (n = 333)	A little pleased (n = 113)	Very pleased (n = 51)
Formal sex education instruction				
Both how to say no to sex and birth control	66.5 % (61.0–71.6)	65.7 % (58.1–72.6)	71.0 % (58.7–80.9)	68.5 % (51.7–81.6)
How to say no to sex only	21.0 % (16.5–26.2)	18.1 % (13.3–24.2)	16.4 % (9.6–26.6)	17.2 % (7.5–34.5)
Birth control instruction only	5.7 % (3.7–8.7)	7.8 % (4.3–13.8)	4.9 % (1.7–13.0)	1.3 % (0.3–4.7)
No instruction on either topic	6.9 % (4.3–10.7)	8.4 % (5.1–13.7)	7.7 % (3.3–17.1)	13.1 % (6.2–25.6)
Parental sexual health discussions				
How to say no to sex and birth control	57.3 % (51.4–62.9)	51.0 % (43.7–58.3)	54.0 % (43.1–64.5)	29.3 % (17.2–45.1)
How to say no to sex only	7.7 % (5.1–11.4)	7.1 % (4.4–11.4)	3.0 % (1.0–8.2)	1.8 % (0.5–6.9)
Birth control discussions only	16.2 % (12.6–20.7)	20.2 % (15.3–26.3)	12.3 % (6.6–22.0)	28.1 % (14.1–48.0)
No discussions on either topic	18.8 % (14.9–23.5)	21.6 % (16.2–28.3)	30.8 % (22.2–40.9)	40.9 % (24.6–59.4)
Has been pregnant/given birth before				
No	87.5 % (82.5–91.3)	73.0 % (66.6–78.6)	72.0 % (59.0–82.0)	59.8 % (41.9–75.4)
Prior pregnancy but did not give birth	4.5 % (2.1–9.3)	14.4 % (9.7–20.8)	10.3 % (4.6–21.1)	20.1 % (8.7–39.9)
Prior pregnancy and did give birth	8.0 % (5.6–11.5)	12.7 % (8.6–18.2)	17.8 % (10.5–28.6)	20.2 % (10.0–36.6)
Religiosity				
Has a religious affiliation	79.4 % (74.7–83.4)	75.4 % (68.6–81.1)	84.9 % (71.8–92.6)	83.7 % (63.8–93.7)
Does not have a religious affiliation	20.6 % (16.6–25.3)	24.6 % (18.8–31.4)	15.1 % (7.4–28.2)	16.3 % (6.3–36.2)
Education of one or both parent(s)				
Some college education or more	68.7 % (63.3–73.7)	54.8 % (46.9–62.4)	47.8 % (36.6–59.3)	34.1 % (18.9–53.4)
High school graduate or less	31.3 % (26.4–36.8)	45.2 % (37.6–53.1)	52.2 % (40.8–63.4)	65.9 % (46.6–81.1)
Race/ethnicity				
Non-Hispanic white	66.9 % (61.3–72.0)	57.0 % (48.8–64.8)	45.1 % (33.5–57.3)	39.3 % (23.5–57.7)
African American	17.4 % (13.7–21.9)	20.5 % (16.0–25.8)	27.7 % (18.5–39.2)	29.8 % (16.9–47.0)
Hispanic	13.1 % (10.1–16.9)	14.1 % (9.7–20.1)	17.1 % (11.2–25.3)	21.4 % (11.0–37.5)
Other	2.6 % (1.3–5.1)	8.4 % (4.8–14.2)	10.1 % (4.3–22.1)	6.5 % (2.3–32.0)
Age, mean, 95 % CI	17.0 % (16.8–17.1)	17.1 % (17.0–17.3)	17.0 % (16.8–17.3)	17.6 % (17.4–17.9)
Survey year				
2002	53.4 % (47.0–59.8)	49.3 % (41.9–56.7)	56.1 % (44.4–67.1)	35.4 % (20.7–53.5)
2006–2010	46.6 % (40.2–53.0)	50.7 % (43.3–58.1)	43.9 % (32.9–55.6)	64.6 % (46.5–79.3)

Table 2
Multinomial multivariable logistic regression examining associations with pregnancy attitude, females

Weighted	Very pleased n = 51		A little pleased n = 113		A little upset n = 333	
	OR (95 % CI)	p	OR (95 % CI)	p	OR (95 % CI)	p
Formal sex education instruction						
Both how to say no to sex and birth control	1.0		1.0		1.0	
How to say no to sex only	0.7 (0.2–2.0)	.465	0.6 (0.3–1.3)	.218	0.9 (0.5–1.4)	.565
Birth control instruction only	0.2 (0.04–0.8)	.021	0.7 (0.2–2.4)	.566	1.2 (0.6–2.5)	.610
No instruction on either topic	1.3 (0.4–4.1)	.681	0.8 (0.3–2.3)	.702	1.1 (0.6–2.2)	.728
Parental sexual health discussions						
Both how to say no to sex and birth control	1.0		1.0		1.0	
How to say no to sex only	0.4 (0.08–1.9)	.238	0.3 (0.1–1.02)	.054	1.0 (0.5–1.9)	.909
Birth control discussions only	3.1 (1.1–8.6)	.028	0.8 (0.3–1.7)	.485	1.2 (0.7–2.0)	.460
No discussions on either topic	3.1 (1.3–7.7)	.014	1.5 (0.9–2.6)	.169	1.1 (0.7–1.8)	.738
Has been pregnant/given birth before						
No	1.0		1.0		1.0	
Prior pregnancy but did not give birth	4.6 (1.4–15.3)	.013	2.4 (0.7–7.9)	.154	3.5 (1.3–9.0)	.011
Prior pregnancy and did give birth	1.5 (0.5–4.6)	.433	2.0 (0.9–4.9)	.108	1.5 (0.8–2.9)	.207
Religiosity						
Has a religious affiliation	1.0		1.0		1.0	
Does not have a religious affiliation	1.2 (0.4–3.3)	.797	1.4 (0.6–3.3)	.487	0.8 (0.5–1.3)	.297
Education of one or both parent(s)						
Some college education or more	1.0		1.0		1.0	
High school graduate or less	3.6 (1.5–8.4)	.004	2.1 (1.2–3.4)	.006	1.7 (1.1–2.6)	.025
Race/ethnicity						
Non-Hispanic white	1.0		1.0		1.0	
African American	2.8 (1.2–7.0)	.024	2.1 (1.04–4.1)	.038	1.3 (0.8–2.1)	.302
Hispanic	2.5 (0.9–7.2)	.082	1.6 (0.9–3.0)	.138	1.1 (0.6–2.1)	.710
Other	6.2 (1.2–32.6)	.033	5.2 (2.0–13.6)	<.001	3.6 (1.5–8.8)	.006
Age (years) ^a	2.4 (1.5–4.0)	<.001	1.0 (0.8–1.4)	.863	1.2 (0.97–1.5)	.102
Survey year						

Weighted	Very pleased n = 51		A little pleased n = 113		A little upset n = 333	
	OR (95 % CI)	p	OR (95 % CI)	p	OR (95 % CI)	p
2002	1.0		1.0		1.0	
2006–2010	2.4 (0.98–5.7)	.055	0.9 (0.5–1.6)	.756	1.2 (0.8–1.7)	.355

Very upset if they “got pregnant now” (reference group): n = 468

^aOR for age is for 1 year increase in age