

The Consistency of Self-Reported Initiation of Sexual Activity

By Janet L. Lauritsen and C. Gray Swicegood

In an analysis of the consistency of self-reported age at first intercourse using longitudinal data from the National Youth Survey, 28–32% of adolescents reported an age at first intercourse inconsistent with the information they provided up to seven years later as adults. Overall, white females were the most likely to offer consistent responses (70%), while black males were the least likely to do so (27%). Multivariate analyses indicated that in addition to race and gender, some social and economic factors were significantly associated with inconsistent reporting. For example, those who lived in a two-parent household were less likely than those from a one-parent family to report an earlier age at first intercourse as adolescents than they reported as adults. After controlling for these inconsistencies, overall predictors of adolescent sexual behavior remained unchanged. Although the analysis could not determine which time period reflected more accurate data, it does suggest limitations to using self-reported data to construct estimates of adolescent sexual activity and to evaluate programs designed to alter adolescent sexual behavior.

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While many studies continue to explore the demographic and public health implications of increased sexual activity among American adolescents, a surprisingly small portion of this research has focused on the accuracy of the data used to measure sexual behavior. Is there any reason to suspect misreporting in the age of sexual initiation?

A recent major study of sexual behavior in the United States¹ concluded that there is, since individuals tend to reinterpret the meaning and significance of all experiences, including sexual experiences, with time. Furthermore, the authors acknowledge that individuals often re-evaluate their earlier adolescent sexual activity and experiences of coerced sex from the perspective of their current views and those of their friends, family, the media and public opinion.

Among the causes contributing to possible misreporting is the fact that national surveys often obtain information on adolescent sexual activity from respondents who are at least 18 years old. For these respondents, adolescent experiences

may be many years in the past. The accuracy of reporting on sensitive matters relating to sexual behavior can also shift as the culture changes, and that accuracy may vary with age.

Because, by definition, self-reports of the initiation of sexual activity cannot be externally validated, the scientific literature has necessarily focused on the consistency and reliability of reporting, through two broad analytic strategies. The first examines the consistency within data reported by the same individual at different times.² The relatively few studies on this topic have found that some participants provide contradictory information over time about their own sexual experiences, and that these inconsistencies are correlated with race and gender. These findings suggest that errors in the measurement of sexual activity are not random and, consequently, that differences in sexual behavior by subgroups may be consistently biased across data sources. The correlates and consequences of inconsistency in reporting warrant more extensive investigation for this reason.

The second strategy for testing the reliability of self-reporting examines aggregate consistency across multiple national data sources. These comparisons have suggested that American women have reliably reported their age of sexual initiation.³ However, this strategy has several limitations. In most cases, the survey data were obtained from retrospective questions

posed to adult respondents. If inconsistent reporting occurs primarily during adolescence, then reasonably reliable patterns of reporting across studies are not surprising. Consistency across studies does not demonstrate that adults' retrospective reports on sexual behavior are more accurate than those obtained from younger respondents, nor does such aggregate consistency address the question of individual-level patterns of response error.

In this article, we ask three basic questions about the measurement of sexual activity during adolescence and early adulthood. First, how consistent are self-reported data on age at first sexual intercourse? Second, what factors are associated with inconsistent reporting? And third, what are the implications of inconsistent reporting for studying the determinants of age at first intercourse?

The following analysis expands on previous ones by assessing the impact of many factors on the consistency of reporting on sexual behavior. Furthermore, our sample is more nationally representative and more sexually experienced than the samples on which prior within-subject consistency research was based. To understand the potential limitations of self-reporting across the life course, we compare the responses that respondents gave as adults to the data they provided as adolescents.

Our analyses are guided by research on how cognitive processes influence responses to survey items.⁴ We have broadly classified factors known to produce response errors in survey data into three groups: factors associated with the respondent's characteristics (including the motivation to participate in the study and personality traits); factors related to the interviewing task itself (such as item structure, problems of self-presentation—e.g., the provision of socially desirable responses and of answers when the answer is unknown—and the importance of the requested information); and factors associated with interviewer characteristics (such as age, race and gender).⁵

We focus here on the contribution to response errors of the first two factors only—those related to the respondents'

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Table 1. Characteristics of respondents, National Youth Survey, 1977–1984

Characteristic	% or mean	Standard deviation (and range)
Race and sex†		
% white female	41	na
% black female	7	na
% white male	42	na
% black male	10	na
Mean age at baseline	13.84	(1.95, 11–17)
% living with two parents†	81	na
Family income scale‡	4.23	(2.33, 1–10)
Neighborhood disorder index†	–0.02	(0.97, –0.65–5.87)
Grade point average†	3.75	(0.81, 1–5)
% saying first intercourse was forced‡	3	na
First intercourse feelings scale‡	2.69	(1.32, 1–6)
Mean age at first intercourse‡		
Recalled as adult	16.27	(2.52, 11–24)
Reported as adolescent	17.61	(2.53, 11–24)

†Data collected at baseline, N=1,624 because 101 youths of other races were excluded from the analysis. ‡Among those who ever had sexual intercourse, N=1,203. Note: na=not applicable.

characteristics and those associated with the interview itself. We also consider the relationship between the circumstances of first intercourse and consistency in reporting. Finally, we discuss the implications of inconsistent reporting for estimating the determinants of age at initiation of sexual activity.

Data and Measures

Our study is based on information obtained in the first six waves of the National Youth Survey (NYS),⁶ a longitudinal study originally designed to gauge the incidence and prevalence of delinquency and drug use among U.S. adolescents. The first wave of data collection in 1977 included personal interviews with 1,725 youths aged 11–17, as well as interviews with one parent or guardian. Respondents were chosen through a multistage, random sampling of households. (The overall participation rate was 73%, with no apparent bias by age, race, sex or place of residence.⁷)

For Waves 2–5, data were gathered annually from 1978 through 1981, while data for the sixth wave were collected in 1984. All interviews were conducted in February or March of a given year. Although large sets of items were repeated across the panels of the NYS, various questions were

*Family income was assessed using an ordinal measure ranging from one (lowest income) to 10 (highest income). The neighborhood disorder measure was a standardized index based on the results of a principal components analysis of a series of questions regarding neighborhood conditions (Cronbach's alpha=.79). The specific problems assessed included vandalism; the presence of "winos and junkies;" abandoned, rundown or poor housing; and occurrence of burglaries, thefts, assaults and muggings. Grade-point average was evaluated using an ordinal measure ranging from one (lowest grade) to five (highest grade).

†Youths of other races were too few to be included in the analyses (N=101).

added to each wave, depending on the topical focus of different funding agencies. All six waves included questions on sexual activity.

The overall level of loss to follow-up is low, given that the six waves cover an eight-year period. Approximately 87% of the original sample was interviewed in the sixth wave. Furthermore, attrition in the sample was unrelated to responses to the sexual activity measures, or to the respondents' age, race and gender.

The NYS is an appropriate data set for assessing the consistency of self-reported sexual activity because it contains responses to a set of items asked annually for a period spanning eight years. We compared the answers that respondents gave as adolescents to the information they provided as adults. In waves 1–5, all respondents were asked, "How many times in the last year have you had sexual intercourse with a person of the opposite sex?" This question was asked near the end of the interview, approximately one-third of the way through a list of more than 40 delinquency items. The nonresponse rate for the specific sexual activity item was very low (less than 2%), perhaps due to the fact that the NYS was designed to estimate a broad range of delinquency behaviors and did not focus on sex-related issues.

The sixth wave of the longitudinal survey contained additional items on sexual activity. Respondents were first asked "Have you ever had sexual intercourse with a person of the opposite sex?" If they answered yes, respondents were asked to estimate the frequency of recent sexual activity (separately for nonmarital and marital incidents). Several items later, interviewers asked, "How old were you when you first had sexual intercourse with someone of the opposite sex?" To estimate the extent of contradictory responses, we compared responses to this item to those from the item about sexual activity in the preceding year asked in the first five waves.

We assessed the external reliability of these NYS data by comparing the cumulative percentage who were sexually active by a given age (from the Wave 6 retrospective item) with comparable estimates from other national data sets for the same

time period. This comparison revealed that the NYS data on the proportions sexually active at a given age by race and gender were very similar to those reported in other surveys of young women and men.⁸

In our examination of the relationships between respondents' characteristics and their consistency in reporting sexual activity, we focus on a set of factors shown to be related to adolescent sexual activity; data on the social and economic circumstances of the respondent's household were collected in the Wave 1 interview with a parent or guardian. The variables in this analysis include the respondent's gender and race, their age at the time of the first interview, whether they lived with both parents at Wave 1, family income at Wave 1, neighborhood conditions at Wave 1 (measured by a standardized neighborhood disorder index) and grade-point average at Wave 1.⁹

Wave 6 of the NYS asked sexually experienced respondents additional questions about their first intercourse. We examined two of these measures—whether first intercourse was forced or voluntary, and the respondent's feelings about that first experience (scored on a 1–6 scale, with one representing very positive and six meaning very negative). Finally, in an open-ended item at the end of each of the six interviews, respondents were asked if any of the questions had made them uncomfortable. Respondents who mentioned that the questions on sexual activity had made them uncomfortable were coded as one in a series of six dichotomous variables.

Descriptive data collected in Waves 1 and 6 are presented in Table 1. Overall, 83% of the sample were white, and 17% were black.[†] The mean age at first intercourse reported by the sample when they were adolescents (collected during an annual interview) was 17.6 years, while the age respondents recalled as adults (in answering the retrospective item at Wave 6) was 16.3 years. The mean score on feelings about one's first experience was 2.7 (roughly midway between very positive and very negative), and 3% of those who had ever had intercourse said their first experience had been forced.

Classification Scheme

We classified consistency in self-reporting by grouping subjects into one of three broad categories—consistent, inconsistent and "left-censored." Respondents were considered *consistent* under two primary circumstances: They consistently reported no sexual activity over the six waves and answered "no" to the Wave 6 screen-

ing item on whether they had ever had sex; or their age the first time they reported sexual activity in an annual interview was within one year of the age given in response to the retrospective question in Wave 6. Since respondents were asked to report sexual activity for the previous calendar year in Waves 1–5, respondents who were age 16 when they first reported sexual activity in the previous year may have been 15 at the time it actually took place.

In addition, if a respondent reported no sexual activity in Waves 1–5, but his or her retrospectively recalled age fell between the fifth and sixth wave, we considered that respondent to be consistent and to be sexually active. Because this approach is weighted toward classifying participants as consistent in their responses, the levels of inconsistency reported in this article are conservative estimates.

We coded respondents as *inconsistent* if they said they had never had sex in Wave 6, but earlier reported at least one incident of sexual intercourse in an annual interview, or if the sexual activity data collected at the annual interviews did not match within one year the age given in the retrospective item. For instance, a respondent who was 12 years old in Wave 1 might have reported three acts of intercourse in the previous year, yet in Wave 6 (at age 19), reported that first intercourse occurred at age 16.

In such a case, the interviews apparently identified some level of sexual activity not captured by the retrospective measure. This type of inconsistency may reflect memory failures as an adult or may indicate that some respondents were improperly claiming to be sexually active when they were very young (either deliberately or because they did not fully understand the question).

Another type of inconsistency would result if the age at first intercourse taken from the annual interview was later than that recalled retrospectively. For example, even though in a given wave a 13-year-old (or a 14-year-old, given the one-year recall period in the annual measure) might have reported no sexual activity in the previous year, he or she might retrospectively recall at Wave 6 having had first intercourse at age 13. This type of error also may be a function of memory, or it may reflect respondents' unwillingness to admit early sexual activity to an interviewer.

Some respondents stated in Wave 6 that their age at first intercourse was more than one year before their age at the first wave of data collection, when they were initially asked if they had had intercourse in the

previous year. We classified these respondents as *left-censored* (i.e., too far to the "left" to be evaluated), since their age of initiation measure cannot be directly compared to any annual interview data. Such individuals may have been among the relatively older of the respondents aged 11–17 at the first wave of data collection, or they may have recalled a very early age at first intercourse on the retrospective item in Wave 6. Where appropriate, we retained these individuals in our analyses to preserve the correlations among the various factors of interest.

We investigated the predictors of inconsistency in self-reporting by estimating a series of multinomial logit models that compared respondents who gave consistent answers with all others (including those for whom data were left-censored). We first estimated a baseline model that included age, race and gender, and then constructed a final model that included additional significant predictors.

Results

Patterns of Inconsistency

Overall, 60% of the respondents in the NYS were consistent (i.e., either the age calculated from the annual interviews and that recalled retrospectively matched, or no sexual activity was reported) and 28% were inconsistent (Table 2). Data for the additional 12% were left-censored. If we exclude the latter respondents, 32% of the remaining study participants were inconsistent in their reports about first intercourse.

There were significant differences in the overall levels of consistency across racial and gender subgroups ($p \leq .05$). Young white women were most likely to report the same age in response to both items or to report no sexual activity at all (70%), followed by white men (59%), black women (49%) and black men (27%). Moreover, whites, especially white women, were much more likely than black respondents to report no sexual activity in each of the six waves.

The types of inconsistency also varied across racial and gender subgroups. A greater proportion of black men and women than of white men and women indicated an earlier age at first intercourse in an interview during their adolescence

Table 2. Percentage distribution of respondents, by consistency in their self-reported age at initiation of sexual activity, according to gender and race

Measure	All (N=1,405)	Female		Male	
		White (N=582)	Black (N=99)	White (N=592)	Black (N=132)
Consistent	59.8	70.4	48.5	58.6	27.3
Age reported=age recalled	45.4	52.2	45.5	43.6	23.5
No sexual activity	14.4	18.2	3.0	15.0	3.8
Inconsistent	28.4	24.5	43.4	28.0	36.4
Age reported <age recalled	15.2	9.6	30.3	16.0	25.0
Age reported >age recalled	13.2	14.9	13.1	12.0	11.4
Left-censored	11.7	5.0	8.1	13.3	36.4
Total	100.0	100.0	100.0	100.0	100.0

Notes: "Age reported" refers to the age of respondents at the annual interview in which they first reported having had intercourse in the past year. "Age recalled" refers to the age at first intercourse as recalled retrospectively by respondents seven years after baseline.

than they recalled as adults. There may be several explanations for this pattern. First, young black adults may be somewhat more likely than young white adults to forget the timing of events occurring earlier in their lives, or they might be more likely than the others to provide more socially approved responses as adults. Alternatively, when these respondents were younger, they might have been more likely than the others to claim they had engaged in sexual intercourse in the previous year when they had not (which means they would have overreported sexual activity in the annual interviews).

The second type of inconsistency in responses—reporting an age at first intercourse in an annual interview later than the age recalled retrospectively—was somewhat equally distributed across race and gender subgroups. That is, blacks and whites of both sexes were either equally likely as adolescents to fail to admit having recently had sex at the time (which would result in underreporting early sexual activity) or were equally likely as adults to mistakenly recall a younger age for first intercourse.

Complete data were unavailable for a disproportionate number of black men; such left-censored respondents were either the oldest at Wave 1 or had started sexual intercourse too early for comparable data to be in the annual interview reports. For instance, 36% of black males indicated in Wave 6 that they first had intercourse more than one year before their participation in the first wave, a proportion about seven times that among young white women. If we remove these censored cases from consideration, however, the rankings of the consistency categories by race and gender subgroups remain relatively unchanged.

Predictors of Inconsistent Reporting

Ideally, we wish to determine whether inconsistencies in reports of sexual initiation over time are a function of memory failure or false statements. While the NYS data do not allow us to determine which respondents have misrepresented age at first intercourse, we can evaluate whether discrepancies in reports appear to be related to memory tasks, such as the complexity of previously reported sexual histories, or to the length of time between the first survey wave in which sexual activity was reported and Wave 6. For instance, we would expect youths who had initiated sexual activity around the time of Wave 6 to recall their age at first intercourse more accurately than would other respondents. (Research on other types of behavior has found that recalling dates, or ages, for events is more difficult as the number and timing of previous events increases and as the length of the recall period increases.¹⁰)

To consider whether the complexity of a memory task plays a role in accuracy, we had to designate one of the reference measures as the “true” response. We assumed that the annual interviews elicited the “true” age at first intercourse, then examined whether the length of time since the first interview indicating sexual activity was related to consistency in reporting. We used only respondents who had ever had intercourse by Wave 6 and only those for whom complete annual data are available. We measured the length of time as the difference between the respondents’ age at Wave 6 and their age at the first mention of sexual intercourse in an annual interview.

We found no statistically significant relationship between this interval and the percentage who were consistent in their responses. For example, young adults who first reported activity seven years before Wave 6 were just as consistent in their re-

sponses as were those whose first mention was three years before Wave 6 (57% versus 53%). Thus, respondents who had to think back over longer periods of time were no less consistent than were those who had initiated sexual activity more recently.

We also examined the relationship between the frequency of annual reports of sexual activity (i.e., whether activity was continuously reported in each wave subsequent to the initial mention or intermittently) and the likelihood of consistency in responses. After excluding respondents whose first sexual experience occurred between Waves 5 and 6 (who would automatically be defined as consistent), we found that only 32% of all NYS respondents had continuous sexual histories. Moreover, there was no statistically significant difference in the consistency of reporting between respondents who had continuous sexual histories and those who reported sexual activity intermittently (59% versus 64%).

Characteristics that predict inconsistency are examined in Table 3. The first column in each panel presents the results of the multinomial logit analysis examining the likelihood that age, race and gender influence reporting. To consider whether subgroup differences are influenced by other characteristics, we also examined the effects of family structure, income, neighborhood conditions and grade-point average. The second column shows the results once these additional factors are introduced into the analysis.

Black females, black males and white males were significantly more likely than white females to report an earlier age at first intercourse during adolescence than they indicated as adults. Age at the time of the first interview, however, had no influence on this type of inconsistency.

Among the additional background variables, only family structure significantly

predicted this type of inconsistency: Adolescents from two-parent families were significantly less likely than those who lived in other types of families to report an earlier age at first intercourse during adolescence than they reported as adults. The inclusion of the additional variables also reduced the differences between black youths (male and female) and white females, but significant race and gender differences remained. When we converted the logit coefficients into odds ratios, we found that black males, black females and white males were approximately five, three and two times more likely than white females to be inconsistent in their response in this way.

The coefficients in the second panel indicate that black males were significantly more likely than white females to infer an older age at first intercourse in the annual interview than when the question was asked retrospectively. This difference was no longer statistically significant, however, once controls were introduced. Age remained a significant predictor of this inconsistency in self-reporting, with adolescents who were older at the time of the first interview being more likely than younger adolescents to misreport their age in this direction. In addition, both family income and grade-point average were negatively related to this type of inconsistency, with youths from poorer families and those with lower grades being more likely to give an older age for first sex as an adolescent than as an adult.

The variables that significantly predicted the left-censoring of data are shown in the last panel of the table. Data were more likely to be censored among older respondents, blacks, white males, youths with lower grades and those from poorer households and more run-down neighborhoods. Because age was controlled for in these models, the predictors of being in

Table 3. Multinomial logit coefficients (and standard errors) for variables predicting inconsistency in self-reported data on age at sexual initiation, and coefficients predicting left-censored data

Variables	Age reported <age recalled		Age reported >age recalled		Left-censored	
	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted
Age	0.03 (0.04)	0.03 (0.05)	0.21*(0.05)	0.22*(0.05)	0.69*(0.07)	0.72*(0.07)
Black female†	1.53*(0.28)	1.17*(0.30)	0.16 (0.37)	-0.18 (0.40)	1.19*(0.48)	0.13 (0.53)
Black male†	1.93*(0.29)	1.67*(0.31)	0.86*(0.35)	0.50 (0.36)	3.53*(0.35)	2.71*(0.37)
White male†	0.63*(0.19)	0.62*(0.19)	0.05 (0.18)	-0.00 (0.19)	1.31*(0.26)	1.12*(0.27)
Two-parent family‡	na	-0.64*(0.22)	na	0.04 (0.25)	na	-0.45 (0.27)
Family income	na	-0.03 (0.04)	na	-0.14*(0.04)	na	-0.16*(0.05)
Grade-point average	na	-0.17 (0.11)	na	-0.21*(0.11)	na	-0.73*(0.14)
Neighborhood disorder index	na	0.00 (0.08)	na	0.03 (0.09)	na	0.28*(0.10)
Constant	-2.35*(0.62)	-1.00 (0.79)	-4.50*(0.66)	-3.30*(0.82)	-12.87*(1.04)	-9.60*(1.20)
Model chi-square	305.80	386.25	305.80	386.25	305.80	386.25
df	12	24	12	24	12	24

*p<.05 (two-tailed test). †Reference group is white females. ‡Reference group is all other family types. Note: na=not applicable.

Table 4. Logistic regression coefficients (and standard errors) predicting initiation of sexual activity by a specific age, at baseline and after adjustment for inconsistencies in self-reported age at sexual initiation and by substituting adolescent reports for retrospective reports

Explanatory variable	Age 14			Age 16			Age 18		
	Baseline	Adjusted for inconsistency	Adjusted by substitution	Baseline	Adjusted for inconsistency	Adjusted by substitution	Baseline	Adjusted for inconsistency	Adjusted by substitution
Black female	-0.51 (0.42)	-0.47 (0.47)	0.53 (0.34)	-0.06 (0.26)	0.03 (0.28)	0.51* (0.25)	0.74* (0.33)	0.77* (0.34)	1.19* (0.34)
Black male	1.86* (0.26)	1.67* (0.33)	2.25* (0.27)	1.32* (0.25)	0.99* (0.28)	1.77* (0.25)	1.32* (0.36)	0.93* (0.37)	1.21* (0.30)
White male	0.93* (0.21)	0.74* (0.23)	1.13* (0.21)	0.47* (0.13)	0.38* (0.15)	0.78* (0.13)	0.33* (0.14)	0.26* (0.13)	0.47* (0.13)
Two-parent family	-0.36 (0.21)	-0.34 (0.26)	-0.49* (0.20)	-0.38* (0.17)	-0.37* (0.18)	-0.60* (0.17)	-0.61* (0.21)	-0.55* (0.22)	-0.84* (0.21)
Family income	-0.20* (0.05)	-0.21* (0.06)	-0.13* (0.04)	-0.13* (0.03)	-0.12* (0.03)	-0.09* (0.03)	-0.05 (0.03)	-0.03 (0.03)	-0.01 (0.03)
Grade-point average	-0.38* (0.10)	-0.05 (0.13)	-0.40* (0.10)	-0.53* (0.08)	-0.40* (0.09)	-0.43* (0.08)	-0.54* (0.09)	-0.45* (0.09)	-0.39* (0.08)
Neighborhood disorder index	0.21* (0.08)	0.26* (0.09)	0.21* (0.07)	0.20* (0.07)	0.19* (0.07)	0.17* (0.07)	0.10 (0.08)	0.09 (0.08)	0.06 (0.08)
Age reported <age recalled	na	0.56* (0.23)	na	na	1.38* (0.18)	na	na	1.65* (0.27)	na
Age reported >age recalled	na	-1.52* (0.43)	na	na	0.10 (0.18)	na	na	0.45* (0.20)	na
Left-censored	na	2.90* (0.24)	na	na	9.24 (7.78)	na	na	7.75 (7.84)	na
Constant	0.05 (0.45)	-1.57* (0.55)	-0.10 (0.43)	2.21* (0.35)	1.21* (0.39)	1.61* (0.34)	3.51* (0.40)	2.70* (0.42)	2.61* (0.37)
Model chi-square	181.31	413.77	203.51	193.00	445.69	213.00	122.97	239.45	121.72
df	7	10	7	7	10	7	7	10	7

*p<.05 (two-tailed test). Note: na—not applicable.

the left-censored category most likely pertain to the processes of early initiation of sexual activity (or to reporting it as such). In general, the predictors of left-censoring overlap with those predicting the two types of inconsistency.

While comparatively older youths at the first interview were more likely to have reported early sexual activity retrospectively than contemporaneously, these respondents were no more likely to report at the end of an interview that the sexual activity questions had made them uncomfortable; nor were they more likely to avoid answering the question (not shown). Given the nonsignificant impact of the memory tasks found earlier, we interpret this as evidence of underreporting: Adolescents who do not want to reveal that they are sexually active may prefer to make false claims about their experiences rather than refuse to answer the question or state that they are uncomfortable with the question. Such respondents may feel that not answering or confessing discomfort means admitting that one is sexually active.

We also found that the older youths in this category tended to be inconsistent by one year, in that those who recently began sexual activity (according to the retrospective report) waited until the second wave of interviews before reporting that they were sexually active. It may be that despite assurances of confidentiality, some youths took a wait-and-see approach before reporting these experiences. These findings fit with prior research that suggests that most survey respondents want to appear cooperative and to provide answers, no matter how uncomfortable they may feel.¹¹

We also considered in the models the

self-reported characteristics of an adolescent's first sexual experience, including whether the act was voluntary and how the respondent felt about it (not shown). (Ninety-one percent of the adolescents who said their first experience was forced were female.) These models were necessarily limited to respondents who said that in the Wave 6 interview they had ever had intercourse. When we added these first intercourse variables—whether it had been forced and the adolescent's feelings at the time—to the models (not shown), neither had a significant impact on inconsistent reporting of sexual behavior.

Consequences of Inconsistency

In the final set of empirical analyses, we used logistic regression procedures to examine the extent to which inconsistent responses might affect conclusions typically drawn from statistical models of adolescent sexual behavior. We first made baseline estimates of whether the respondent was sexually active at various ages—14, 16 or 18—using the retrospective measure of age at first intercourse.

We then focused on the stability of these estimates by adjusting for reporting inconsistencies. The first adjustment controlled for the two types of response inconsistencies in which the reported age at first intercourse was either older or younger than that recalled retrospectively, and for left-censoring of the data. (This strategy is analogous to using dichotomous variables to control for nonresponse or for missing data.)

In the second adjustment, we recalculated the baseline estimates using an alternative adjustment process, whereby the

annual interview data on age at first intercourse were substituted for the dependent variable among respondents coded as inconsistent. This permits us to examine whether switching the contradictory information provided by the respondent makes a difference in typical estimates of age at initiation. By comparing the parameter estimates for the explanatory variables in these nine logistic regression models (three models for three dependent variables), we see how inconsistent reporting might alter the substantive conclusions of research in this area.*

As Table 4 shows, statistical significance in the baseline estimates, or the lack of it, did not change after adjustments, with three exceptions. The first two were relatively minor. For the analysis of initiation of intercourse by age 14, family structure was not significant in the baseline estimate, but it attained significance when the results were adjusted by substituting the annual data for the retrospective data. However, the shift was rather small, as in each instance the coefficient either just missed or just attained statistical significance.

In addition, the effect of grade-point average on sexual initiation by age 14, which was significant in the baseline model, became nonsignificant when the results were adjusted for inconsistency. Much of the change in this coefficient can be attributed to the fact that grades were strongly correlated with the data being left-censored.

However, the remaining instance of change resulting from adjustment proce-

*We also conducted similar analyses using the annual measures as the foundation for the dependent variables (not shown). Those results parallel the substantive conclusions drawn from Table 4.

dures was of greater substantive concern. The coefficients for black females fluctuated widely in the models predicting initiation of intercourse by age 14 and by age 16, although the variable only reached statistical significance in the model for initiation by age 16 that was adjusted by substitution of the annual data for the retrospective data: In the baseline estimates and those adjusted for age inconsistency, black females were no more likely than white females to retrospectively report initiation by age 16, but after age at the annual interview was substituted among inconsistent respondents, black females became significantly more likely than white females to have initiated sexual activity by age 16.

The relatively higher level of inconsistency in reporting among black females raises substantial uncertainty about the differences between white females' and black females' age at first intercourse. These differences in early sexual activity are especially likely to be influenced by inconsistency in reporting. However, given the small numbers of blacks overall in the NYS data, more research with larger samples is necessary to confirm these findings.

Finally, the potential impact of inconsistent reporting was more pronounced when the dependent variable was initiation of intercourse at younger ages: The results for initiation by age 18 fluctuated only slightly between the baseline estimates and the adjusted estimates, while the results for ages 14 and 16 were more sensitive to adjustment. The greater stability at later ages is not surprising, since, regardless of the measure used (retrospective vs. annual), most respondents have reported sexual activity by age 18. Previous research also found less consistency across surveys when examining ages of initiation younger than 16.¹² Our findings suggest that this cross-survey inconsistency in reporting reflects more than sampling variation.

Discussion and Conclusions

Inconsistency in reporting had a limited impact on the expected determinants of age at initiation of sexual activity: Estimates that were adjusted for inconsistency were generally quite similar to baseline estimates. Therefore, inconsistent reporting does not appear to affect the direction or magnitude of most of the predictor variables.

We offer three caveats to these general conclusions. First, the NYS data lack sufficient numbers of respondents to conduct race- and gender-specific analyses. Given the substantial differences in the overall

levels of inconsistency between subgroups, the estimates for less-consistent subgroups are likely to be more strongly influenced by controls for consistency than those for the total sample. Subgroup differences in the consistency of self-reported data will also affect the likelihood that significant predictors of age at initiation of intercourse will be found in within-group analyses.

Second, we examined only a small slice of the universe of possible dependent variables. We did not, for example, examine the probability of initiating activity during a particular period (conditional on being sexually inexperienced at the beginning of that period). This more common event-history analysis may be more sensitive to misreporting than cumulative experience.

Third, and most importantly, our results have little to say about validity. Measures based on either the retrospective question on age at initiation or the more contemporaneous repeated panel question about the prior year's activity are subject to misreporting. The levels of inconsistency that we have documented indicate that such misreporting may be substantial for either or both measures, but they do not allow us to determine the relative superiority of one or the other. Indeed, some portion of the respondents categorized as consistent may be misreporting their experience on both measures.

Our analyses revealed a considerable amount of inconsistency in individuals' self-reported sexual activity. Nearly one-third of respondents were classified as inconsistent when their responses to questions asked annually about the number of times they had had sexual intercourse in the preceding year were compared with their response to a question asking how old they had been when they first had sexual intercourse. In general, we found white females to be the most consistent in their responses, followed by white males, black females and, finally, black males.

Neither memory-related tasks nor the self-reported characteristics of the first event independently predicted such inconsistent reporting. Instead, inconsistency was primarily related to individual factors. Retrospectively recalling an age younger than that reported in an annual interview was significantly related to age at first interview. This suggests that adolescents may underreport sexual activity, depending on how recently that activity took place relative to the timing of the first interview. This type of inconsistent reporting was distributed fairly equally

among racial and gender subgroups.

On the other hand, retrospectively recalling an older age at first intercourse than reported in an annual interview was significantly related to race, gender and family structure. Black males and females, white males and adolescents from single-parent families were all more likely to be inconsistent in this direction. Given our overall findings, we do not believe that such misreporting is simply a function of memory tasks or misunderstanding the question. Rather, we suspect that it reflects self-presentation factors commonly found in interview situations.¹³

However, our analyses cannot reveal when respondents are more likely to be influenced by such social processes. As noted earlier, this type of error could result if young adolescents claim to be sexually active when they are not or if, as adults, they claim they initiated sexual activity at a later age than they actually did. Researchers have often suspected that adolescent males are prone to such claims of precocious sexual activity; our finding that race also significantly affects this type of misreporting further complicates the issue and suggests that research is needed to explore how social processes influence survey responses.

According to our final set of analyses, despite relatively high levels of inconsistency and the fact that response errors were correlated with known predictors of sexual initiation, most substantive conclusions were not altered when controls for inconsistency were included in analytic models of age at first intercourse.

These findings raise questions about the limitations of self-reported data for constructing measures of the incidence or prevalence of sexual behavior among young adolescents, for identifying at-risk populations and for evaluating the effects of programs designed to change individuals' behaviors. Given the predictors of inconsistency and their levels found here, we believe that any statements about historical changes or subgroup differences in the average age at sexual initiation should be made with caution. Similarly, levels of inconsistent reporting may be high enough to threaten the results of some assessments of interventions designed to lower the age of sexual initiation. Our results suggest that program evaluators need to explicitly consider the role of survey response error in their efforts to gauge program impact.¹⁴

Since our examination of within-subject reliability used just one data source, it is unclear how similar these results would

be if we had used other sources of data. Even though the NYS estimates on age at first intercourse were very similar to those of other national surveys, design effects—including the interviewer-administered (rather than self-administered) questionnaire and the embedding of the sexual activity item in a set of delinquency questions—may have some bearing on our results. We also were unable to assess the influence of interviewer characteristics on respondents' answers. Further research needs to determine whether the race and gender of the interviewer interacts with the race and gender of the respondent, particularly when respondents are adolescents and young adults.

Many other factors, including the ordering of questions in the instrument and interviewer instructions prior to administering the questions, suggest important areas to study to better understand the strengths and limitations of self-reported measures of sexual behavior. Controlled experiments represent the most direct method of examining these issues,¹⁵ which we believe are worthy of serious consideration.

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