Published in final edited form as:
Arch Sex Behav. 2014 February ; 43(2): 221–230. doi:10.1007/s10508-013-0164-3.

Prevalence and Predictors of Sexual Inexperience in Adulthood

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Abstract

The emergence of partnered sexual behavior represents an important developmental transition. However, little is known about individuals who remain sexually inexperienced well into adulthood. We used data from 2,857 individuals who participated in Waves I, III, and IV of the National Longitudinal Study of Adolescent Health (Add Health) and reported no sexual activity (i.e., oral-genital, vaginal, or anal sex) by age 18 to identify, using discrete-time survival models, adolescent sociodemographic, biosocial, and behavioral characteristics that predicted adult sexual inexperience. The mean age of participants at Wave IV was 28.5 years (SD = 1.92). Over 1 out of 8 participants who did not initiate sexual activity during adolescence remained abstinent as young adults. Sexual non-attraction significantly predicted sexual inexperience among both males (aOR = 0.5) and females (aOR = 0.6). Males also had lower odds of initiating sexual activity after age 18 if they were non-Hispanic Asian, reported later than average pubertal development, or were rated as physically unattractive (aORs = 0.6–0.7). Females who were overweight, had lower cognitive performance, or reported frequent religious attendance had lower odds of sexual experience (aORs = 0.7–0.8) while those who were rated by the interviewers as very attractive or whose parents had lower educational attainment had higher odds of sexual experience (aORs = 1.4–1.8). Our findings underscore the heterogeneity of this unique population and suggest that there are a number of different pathways that may lead to either voluntary or involuntary adult sexual inexperience. Understanding the meaning of sexual inexperience in young adulthood may have important implications for the study of sexuality development across the life course.

Keywords

Add Health; abstinence; virginity; asexuality

INTRODUCTION

The emergence of partnered sexual behavior during adolescence and early adulthood represents an important developmental transition (Brooks-Gunn & Paikoff, 1997; Halpern,

Waller, Spriggs, & Hallfors, 2006). While a large body of research has examined the predictors of early initiation of sexual behavior during adolescence (Zimmer-Gembeck & Helfand, 2008), little is known about the small percentage of individuals who remain sexually inexperienced well beyond adolescence. This group is of particular interest for a number of reasons. Exploring the correlates and predictors of adult sexual inexperience extends understanding of sexuality development beyond adolescence, provides an opportunity to examine the extent to which early experiences—including abstention during a normative period of transition—contribute to patterns of sexuality that extend over time, and builds knowledge of the implications of adolescent characteristics for adult sexuality. In this study, we examined associations between adolescent sociodemographic, biosocial, and behavioral characteristics and the likelihood of sexual inexperience during young adulthood.

Prevalence of Sexual Experience During Adolescence and Young Adulthood

Sexual activity prior to marriage represents the typical developmental pathway for the vast majority of Americans (Finer, 2007; Halpern et al., 2006). Data from the Youth Risk Behavior Surveillance System indicate that, as of 2009, 62% of adolescents in the United States in the 12th grade have had vaginal intercourse (Centers for Disease Control and Prevention, 2010). Many adolescents have also engaged in noncoital sexual activities, with approximately 55% of adolescents between the ages of 15 and 19 interviewed in Cycle 6 of the National Survey of Family Growth (NSFG) reporting ever having given or received oral-genital sex and 11% reporting having engaged in anal sex (Lindberg, Jones, & Santelli, 2008). Figures for the cohorts in the National Longitudinal Study of Adolescent Health (Add Health) are similar, with approximately 67% reporting oral-genital sex and 11% reporting anal sex experience by age 18 (Halpern & Haydon, 2012). By adulthood, sexual activity is nearly universal: 97% of men and 98% of women between the ages of 25–44 report having had vaginal intercourse (Mosher, Chandra, & Jones, 2005).

Adult Sexual Inexperience

Although the majority of individuals experience this transition during adolescence or early adulthood, a small minority remain sexually inexperienced far longer. Data from the NSFG indicate that about 5% of males and 3% of females between the ages of 25 and 29 report never having had vaginal sex (Mosher et al., 2005). While the percentage of sexually inexperienced participants drops slightly among older age groups, between 1% and 2% of both males and females continue to report that they have never had vaginal sex even into their early 40s. Other nationally representative surveys have yielded similar estimates of adult sexual inexperience (Billy, Tanfer, Grady, & Klepinger, 1993).

Little research has examined predictors and correlates of sexual inexperience among adults. Data that are available focus exclusively on abstention from vaginal sex without considering other sexual activities. In one of the few recent studies to examine this topic, Eisenberg, Shindel, Smith, Lue, and Walsh (2009) found that unmarried men and women were more likely to report never having had vaginal sex if they attended religious services on a weekly basis or did not drink alcohol in the past year. This study also documented differences by biological sex: men were less likely to be vaginal virgins if they had spent time in prison or served in the military and women were more likely to be virgins if they had obtained a college degree.

Individuals who have not experienced any type of sexual activity as adults, however, may differ from those who only abstain from vaginal intercourse. For example, vaginal virgins who engage in “everything but” vaginal sex—sometimes referred to as “technical virgins” (Uecker, Angotti, & Regnerus, 2008)—may abstain from vaginal sex in order to avoid its potential negative consequences (Halpern-Felsher, Cornell, Kropp, & Tschann, 2005). In

contrast, individuals who have neither coital nor noncoital sexual experience may have been unable to attract sexual partners or may have little interest in sexual involvement. Because prior analyses have generally conflated these two populations, we know virtually nothing about the prevalence or characteristics of young adults who have abstained from all types of sexual activity.

The Current Study

In the present study, we addressed limitations of prior research by examining lifetime abstention from both coital and noncoital behaviors (oral-genital, vaginal, and anal sex) in a nationally representative sample of young adults in the United States. Our analyses were structured around two research questions: (1) What is the prevalence of sexual inexperience (defined as abstention from oral-genital, vaginal, and anal sex) among young adults in the United States? (2) What adolescent sociodemographic, biosocial, and behavioral characteristics predict adult sexual inexperience?

We framed these questions using a life course perspective (Elder, 1998). Broadly speaking, the life course consists of a series of transitions, or changes in identity or social roles, which together make up unique educational, social, and vocational trajectories. Central to life course theory is the concept of “social time”—or age-graded social norms regarding the timing of life transitions. As applied to sexuality development, life course theory suggests that certain normative expectations exist about the transition to first romantic and sexual experiences, and that early departures from expected social timetables may influence future behavioral trajectories.

METHOD

Participants

We used data from the National Longitudinal Study of Adolescent Health (Add Health), a prospective cohort study of approximately 20,000 participants in Grades 7–12 in the 1994–1995 school-year. To date, four waves of data collection have followed Add Health participants from adolescence into adulthood. Additional details on the Add Health study design are available elsewhere (Harris et al., 2009). The current analysis used data from Wave I (1994–1995; n = 20,745; response rate = 78.9%; participants age 11–17) Wave III, (2001–2002; n = 15,197; response rate = 77.4%; participant ages 18–26), and Wave IV (2008; n = 15,701; response rate = 80.3%; participant ages 26–34), focusing on participants who participated in the Wave IV in-home interview and had valid sampling information (n = 14,800). We also used data from the parent interview, a 30-minute in-home interview conducted at Wave I with approximately 85% of parents of participating adolescents. Based on their retrospective sexual histories, we limited our analytic sample to those who reported no sexual activity (oral-genital, vaginal, and anal sex) by age 18.

After excluding 275 participants who were missing data on the age of initiation of oral-genital, vaginal, and/or anal sex, and the 11,668 participants who had experienced at least one of these sexual activities before age 19, we focused on 2,857 participants who were inexperienced at age 18. Sociodemographic, psychosocial, and behavioral covariates were selected primarily from Wave I. Due to missing data on these covariates (298 missing data on one or more biosocial variables; 50 missing data on one more behavioral variables; and another 35 missing sociodemographic information), our final analytic sample consisted of 1,302 female and 1,172 male participants. Among both males and females, the majority of participants in our sample were non-Hispanic White (males: 70%; females: 64%) and had at least one parent with post-high school education (males: 68%; females: 69%). At the time of

the Wave IV interview, the mean age of participants in our analytic sample was 28.5 years (SD = 1.92, range = 24–34).

Measures

Table 1 summarizes the measures used and the wave of Add Health at which they were measured.

Sexual inexperience—Our measures of sexual experience were based on Wave IV survey items that asked participants to indicate whether they had ever engaged in oral-genital, anal, or vaginal sex. Questions were worded as follows: Vaginal sex: "Have you ever had vaginal intercourse? (Vaginal intercourse is when a man inserts his penis into a woman's vagina)." Oral-genital sex: "Have you ever had oral sex? That is, has a partner ever put his/her mouth on your sexual organs or you put your mouth on his/her sex organs?" Anal sex: "Have you ever had anal intercourse? (By anal intercourse, we mean when a man inserts his penis into his partner's anus or butt hole)." Participants then indicated the age, in whole years, at which they first experienced each endorsed activity. Based on these items, we created a dichotomous indicator of *no sexual experience as of the Wave IV interview* (1 = no sexual experience; 0 = sexually experienced). Sexual behavior items were also used to calculate the age at which the *first sexual experience* occurred. Participants who answered "don't know" in response to any of the sexual behavior measures were coded as missing.[1]

Sociodemographic characteristics—We derived a self-reported, mutually exclusive measure of *race/ethnicity* consisting of non-Hispanic White (referent), non-Hispanic Black, non-Hispanic Asian, non-Hispanic other race, or Hispanic (any race) from the Wave I adolescent interview. We used data from the Wave I parent interview to create a five-category measure of *parental educational attainment* (less than high school, high school diploma or GED, some college or post-high school vocational education, or college graduate; referent = college graduate), selecting the highest level attained in households with two resident parents. When parental reports were unavailable (approximately 15% of the total adolescent sample), we substituted the adolescent's report of their parents' educational attainment. *Age at Wave IV* was calculated by subtracting the month and year of birth from the date of the Wave IV interview.

Biosocial characteristics—We used the Add Health Picture Vocabulary Test (AHPVT), administered at Wave I, as a proxy for *cognitive ability*. The AHPVT is a modified version of the Peabody Picture Vocabulary Test (PPVT) (Dunn, 1981). It includes 87 items that ask the participant to match words (read aloud by the interviewer) with pictorial representations. The PPVT is moderately correlated with other measures of intelligence, such as the Stanford-Binet Intelligence Scale (median correlation across studies = 0.62) and the Wechsler Intelligence Scale for Children (WISC) (median correlation across studies = 0.64) (Dunn, 1981). AHPVT scores were age-standardized to a mean of 100 and a SD of 15. Consistent with prior research using the AHPVT (Cheng & Udry, 2005), we categorized participants as scoring below 85, between 85 and 99, between 100 and 114, and 115 or above (referent = 100 to 114). These cut points parallel those used in intelligence classifications.

[1]Fifty-one participants who reported none of these sexual experiences but reported a marriage partner with a valid marriage date were coded as sexually experienced, with their age at marriage used as their age at first sexual experience. The vast majority of these participants showed patterns of responses (e.g., history of pregnancy or sexually transmitted infection) that indicated past sexual experience.

Our measure of *physical disability* was based on participants' reports of functional limitations or activity restrictions at Wave I and Wave III. Participants were classified as having a physical disability if they met criteria at either wave (1 = yes; 0 = no). Additional information on construction of the physical disability variable is available elsewhere (Haydon, McRee, & Halpern, 2011).

Measures of *Body Mass Index* (BMI) were calculated based on self-reported weight and height at the time of the Wave I. For participants younger than age 20, we used age- and sex-specific percentile cut points from the 2000 CDC growth charts to classify participants as underweight (BMI < 5th percentile), healthy weight (BMI between 5th and 84th percentile), overweight (BMI between 85th and 94th percentile), or obese (BMI greater than 95th percentile) (Ogden, Flegal, Carroll, & Johnson, 2002). For participants older than age 20, we defined underweight as a BMI of less than 18.5, normal weight as BMI between 18.5 and 24.9, overweight as BMI between 25.0 and 29.9, and obese as BMI greater than or equal to 30.

Lastly, we created a categorical measure of *perceived pubertal timing* (early, typical, or late; referent = typical) based on the participant's report, at Wave I, of whether he/she looked older, about average, or younger than same-age, same-sex peers.

As part of the Wave IV in-home adolescent interview, one interviewer rated each participant's *physical attractiveness* on a 5-point Likert scale ranging from "very unattractive" to "very attractive" (referent = about average).

Behavioral characteristics—At Wave I, participants reported whether they attended religious services once a week or more, between once a week and once a month, less than once a month, or never. We collapsed these response categories to derive a dichotomous indicator of *weekly religious attendance* (1 = yes; 0 = no).

We also considered four types of substance use: *adolescent cigarette use in the past 30 days* (1 = yes; 0 = no), derived from participants' report of the number of cigarettes (if any) smoked in the month prior to the Wave I interview; *adolescent alcohol use in past 12 months* (1 = yes; 0 = no), derived from participants' report of the frequency of alcohol use (if any) in the year prior to the Wave I interview; *adolescent binge drinking in the past 12 months* (1 = yes; 0 = no), derived from participants' report of whether they had ever had five or more drinks in a row in the year prior to the Wave I interview; and *adolescent marijuana use in the past 30 days* (1 = yes; 0 = no), derived from participants' reports of the number of times (if any) he or she had smoked marijuana in the month prior to the Wave I interview.

We created an *indicator of sexual non-attraction* (1 = yes; 0 = no), defined as reporting no attraction to either sex at Wave I, Wave III, or Wave IV. At Waves I and III, corresponding items asked whether participants had "ever had a romantic attraction" to a male and/or to female (yes/no). Items at Wave IV were similar with the exception that participants were asked whether they "were romantically attracted" to females and/or males.

Data Analysis

We documented the prevalence of sexual inexperience among young adults in the Add Health sample and the adult characteristics of these individuals using descriptive statistics. For our second aim—to identify the adolescent predictors of adult sexual inexperience—we used discrete-time survival models (Allison, 1982) for time to first sexual experience among participants who were sexually inexperienced at age 18. Our analyses measured time in terms of age and yearly interval. Then, using participants' reports of the age at which they initiated sexual activity, we measured their experience at yearly intervals from age 19

onwards. Models were stratified by biological sex, controlled for duration (age) effects, and accounted for Add Health's complex survey design using the Huber/White/sandwich estimator (Huber, 1967; White, 1980). Estimates and 95% confidence intervals are presented; no adjustment for multiple comparisons was made.

RESULTS

Prevalence and Characteristics of Sexually Inexperienced Adults

Overall, approximately 3% of Add Health participants reported no sexual experience by the time of the Wave IV interview. In Fig. 1, we present the percentages of sexually inexperienced participants by age and gender among those who were inexperienced at age 18. Initiation of sexual activity was concentrated at younger ages. While well over 50% of previously inexperienced men and women went on to initiate sexual activity between ages 19 to 21, less than 5% did so between ages 27 to 30 combined. Fifteen percent of males and 13% of females who had had no sexual experience (among oral-genital, vaginal, and anal sex) by age 18 remained sexually inexperienced by the Wave IV interview.

Table 2 compares the sociodemographic, biosocial, and behavioral characteristics of participants in these two groups—individuals who initiated sexual activity after age 18 and individuals who remained sexually inexperienced at the Wave IV interview—stratified by biological sex. In bivariate comparisons for males, lower cognitive performance (i.e., lower AHPVT scores), late pubertal timing, obesity, lower alcohol use, and sexual non-attraction were associated with continued inexperience at the Wave IV interview. Fewer characteristics distinguished the two groups of females. More females who were obese, of average rated attractiveness, and who ever reported sexual non-attraction remained sexually inexperienced in adulthood.

Adolescent Predictors of Adult Sexual Inexperience

Table 3 shows the discrete-time survival analysis results, stratified by biological sex, for those Add Health Wave IV participants who retrospectively reported no sexual experience prior to age 19. These models show the association between each independent variable and the propensity to initiate sexual activity, displayed as unadjusted and adjusted odds ratios.

Sociodemographic characteristics—In adjusted models, non-Hispanic Asian males were less likely to be sexually experienced after age 18 (aOR = 0.6) compared to their non-Hispanic White counterparts. Associations with race did not reach the 0.05 level of significance for females. However, among females only, lower parental educational attainment (less than high school and high school diploma or GED) was associated with higher odds of post-18 sexual experience compared to females whose parents were college graduates or higher (aORs = 1.4–1.8).

Biosocial characteristics—For both males and females, below average AHPVT scores (< 85) marginally decreased the odds of sexual initiation after age 18 in unadjusted models; however, this association persisted in adjusted models only for females (aOR = 0.7). Being rated as "attractive" or "very attractive" by an interviewer was associated with increased odds of sexual experience among both male and female participants, with odds ratios ranging from 1.3 to 1.8 in adjusted models.

In contrast to the associations listed above, relationships with pubertal timing and BMI were more strongly sex-specific. Male (but not female) participants who reported later than average pubertal development had significantly lower odds of sexual activity (aOR = 0.7) relative to those who reported typical pubertal timing. Among females only, being

categorized as overweight based on BMI was associated with a roughly 25% reduction in the odds of sexual experience in adjusted models.

Behavioral characteristics—In unadjusted models, sexually inexperienced adolescent males and females who reported using alcohol in the past year were more likely to go on to initiate sexual activity after age 18 compared to their counterparts who reported abstaining from alcohol (OR = 1.6 and 1.5, respectively). The odds for alcohol use were no longer statistically significant in adjusted models. Attendance at religious events one or more times per week during adolescence was associated with lower odds of sexual experience only among females (aOR = 0.8). Males and females who had ever expressed sexual non-attraction had substantially lower odds of engaging in sexual activity by Wave IV compared to those who reported having ever been attracted to males and/or females. The odds of initiating sexual activity among those with no sexual experience by age 18 was reduced by roughly half among both non-attracted males (aOR = 0.5) and non-attracted females (aOR = 0.6) in adjusted models.

DISCUSSION

To our knowledge, these results provide the first study of young adult sexual inexperience in a nationally representative sample that included both coital and noncoital sexual behaviors. Over 1 out of 8 participants who did not initiate sexual activity during adolescence remained fully abstinent as young adults. Patterns of associations between demographic, biosocial, and behavioral characteristics and sexual inexperience were similar, but not identical, for males and females. In most cases, these associations operated in expected directions based on prior research.

Individuals who remain sexually inexperienced as young adults are a heterogeneous group—that is, there are multiple and diverse predictors and pathways that may lead to adult sexual inexperience. The strong associations between asexuality and sexual inexperience suggest that, at least for some individuals, adult celibacy represents a voluntary choice stemming from a lack of sexual attraction. Consistent with estimates from other national samples (Bogaert, 2004), approximately 1% of all participants reported that they were not attracted to either sex; however, the overlap between sexual inexperience and sexual non-attraction was not complete. Among those individuals who reported no sexual experience as adults, only half of both males and females reported never having experienced a sexual attraction to either sex. These results were consistent with prior research indicating that asexuality and sexual inexperience are not one and the same and provide further evidence of the complex relationships among sexual identity, sexual attraction, and sexual behavior (Brotto, Knudson, Inskip, Rhodes & Erskine, 2010; Chasin, 2011).

Our results regarding the association between religious attendance and sexual inexperience among females add to a large body of research documenting postponed sexual involvement among highly religious individuals (Rostosky, Wilcox, Wright, & Randall, 2004). To the extent that celibacy among these individuals is a religious choice supported by a unique set of peer/community norms and expectations (Adamcyzk, 2009; Regnerus, 2003; Smith, 2003), sexual inexperience during adulthood may not necessarily be a source of frustration or distress. However, it appears that "religious tension" related to sexuality may be more important for young adult women (Kamen, 2000; Regnerus & Uecker, 2011), which may be one factor underlying the significant association we see for women but not men in present analyses.

Adolescent biosocial characteristics also distinguished sexually inexperienced adults. Adolescent overweight was associated with a greater likelihood of sexual inexperience

during young adulthood (though statistically significant only for females in multivariable models), indicating that associations between BMI and delayed sexual involvement documented during both adolescence (Halpern, 2005) and emerging adulthood (Halpern et al., 2006) may extend into later developmental periods as well. Among males, late perceived pubertal timing was also significantly associated with sexual status well into adulthood. While pubertal timing has been examined in relation to a number of risk behaviors during adolescence, surprisingly little research explores the extent to which its effects persist beyond adolescence, especially regarding sexuality. Although information is still mixed and appears to vary by domain, other studies have documented long-term implications of early pubertal timing with respect to psychopathology (Graber, Seeley, Brooks-Gunn, & Lewinsohn, 2004) and substance use (Biehl, Natsuaki, & Ge, 2007). Our findings extend this line of research to suggest that pubertal timing may have enduring effects on patterns of sexual development as well.

Still, the mechanisms by which late pubertal timing influences subsequent sexual patterns are unclear. One possibility is that substantially later maturation initiates a sexual and romantic trajectory that is consistently and increasingly off-time relative to same-age peers. Individuals who have no experience with precursors to sexual involvement (e.g., kissing, hand-holding, dating) as adolescents may have missed important developmental transitions and may find it increasingly difficult to “catch up” with their peers as they move into emerging and early adulthood (Donnelly, Burgess, Anderson, Davis, & Dillard, 2001). Although we lacked the appropriate data to explore this hypothesis, it is consistent with prior research documenting the importance of adolescent experiences for adult romantic and sexual patterns (Meier & Allen, 2009).

Strengths and Limitations

This analysis provided a first step towards understanding a population that has been largely invisible in prior research. Strengths include the use of a nationally-representative sample, the inclusion of potential correlates across multiple domains of influence, and a definition of virginity that extended beyond just vaginal intercourse. Limitations suggest a number of avenues for future research. Because of the small number of young adults who abstained from all types of sexual activity, we were unable to examine interactions among correlates of sexual inexperience. In addition, we lacked data on whether sexual inexperience among celibate participants was voluntary or involuntary; future research should examine whether the emotional and psychosocial implications of sexual inexperience vary by voluntariness of sexual status. Because of the size and geographic dispersion of the Add Health sample, it was not feasible to match participants and interviewers on sex and race/ethnicity; attractiveness ratings may not account for individual or cultural differences in perceptions of attractiveness.

Conclusions

Our findings underscore the heterogeneity of this unique population and suggest that there are a number of different pathways that may lead to either voluntary or involuntary adult sexual inexperience. Individuals may choose to abstain from sexual activity as adults for personal or religious reasons or they may desire sexual involvement but have difficulty initiating such relationships. Understanding the meaning of sexual inexperience in young adulthood may have important implications for the study of sexuality development. To that end, future research should more carefully examine the differential correlates and implications of voluntary and involuntary sexual inexperience across the life course.

Acknowledgments

Effort by Drs. Haydon, Herring, and Halpern was supported by grant R01HD57046, awarded to Dr. Halpern of the Carolina Population Center at the University of North Carolina at Chapel Hill by the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development. This research was also supported by grant 5 R24 HD050924, Carolina Population Center, awarded to the Carolina Population Center at the University of North Carolina at Chapel Hill by the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development. This research uses data from Add Health, a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, and funded by grant P01-HD31921 from the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Information on how to obtain the Add Health data files is available on the Add Health Web site (http://www.cpc.unc.edu/addhealth). No direct support was received from grant P01-HD31921 for this analysis. At the time this work was conducted, Drs. Haydon and McRee were doctoral students in the Department of Maternal and Child Health at the Gillings School of Global Public Health and Dr. Haydon was also a pre-doctoral trainee at the Carolina Population Center, both at the University of North Carolina at Chapel Hill.

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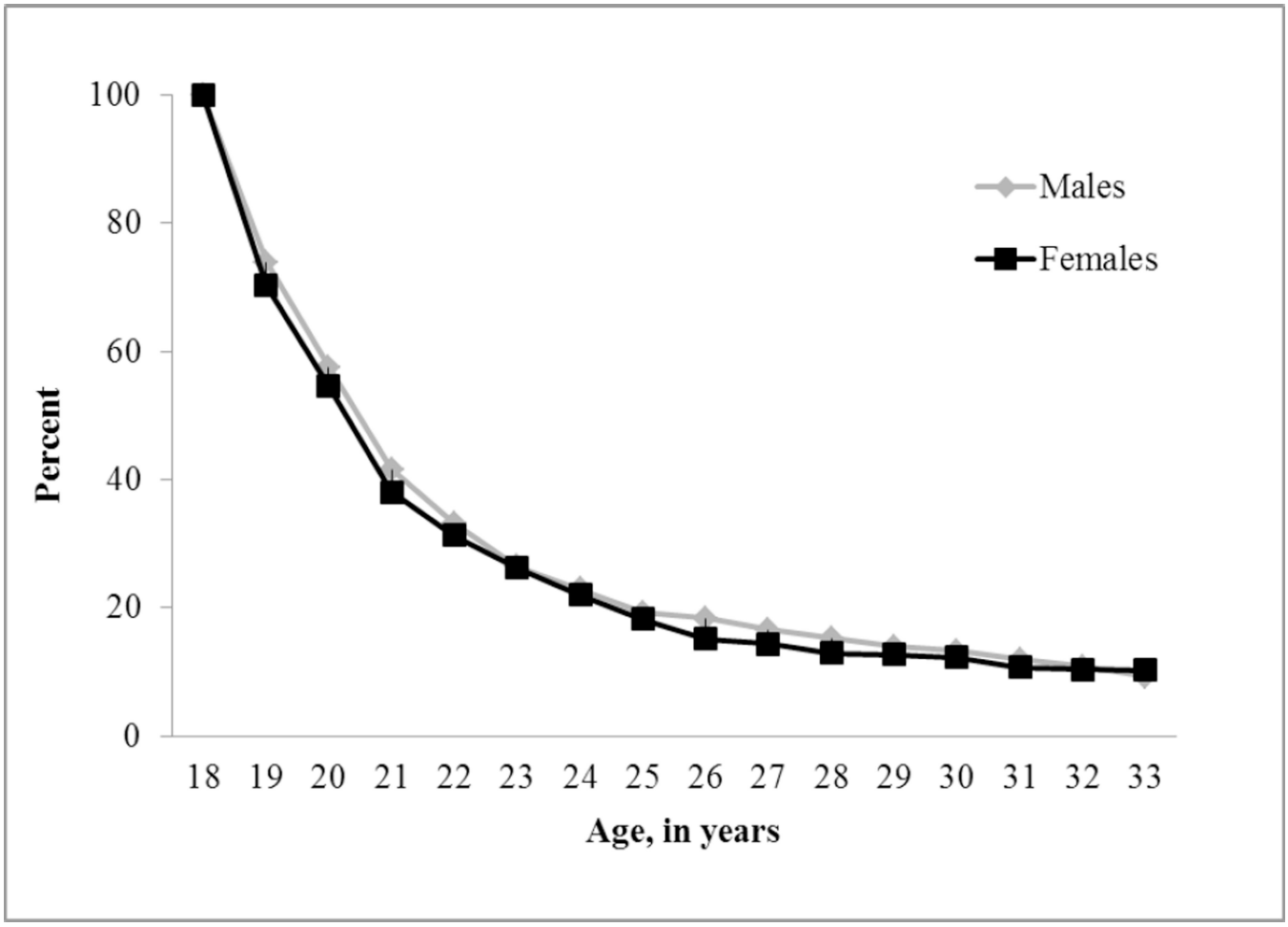

Figure 1.
Percentage sexually inexperienced, by age and biological sex

Table 1

Study measures by timing of data collection

	Wave I	Wave III	Wave IV
Sexual inexperience	X	X	X
Sociodemographic characteristics			
Race/ethnicity	X		
Parental education	X		
Biosocial characteristics			
Cognitive performance	X		
Has a physical disability	X	X	
Pubertal timing	X		
BMI	X		
Physical attractiveness			X
Behavioral characteristics			
Religious service attendance	X		
Cigarette use	X		
Alcohol use	X		
Binge drinking	X		
Marijuana use	X		
Sexual non-attraction	X	X	X

Table 2

Sample characteristics, by biological sex and sexual experience

	Overall				Males				Females			
	First experience after age 18 (*n* = 2,205)		No experience by Wave IV (*n* = 269)		First experience after age 18 (*n* = 1,038)		No experience by Wave IV (*n* = 134)		First experience after age 18 (*n* = 1,167)		No experience by Wave IV (*n* = 135)	
	n	%	n	%	n	%	n	%	n	%	n	%
Sociodemographic characteristics												
Race/ethnicity[b]												
Non-Hispanic White	1,200	67.6	131	63.4	607	71.8	58	58.1	593	63.2	73	69.4
Non-Hispanic Black	313	10.3	54	12.4	120	9.3	28	16.3	193	11.3	26	7.9
Non-Hispanic Asian	256	6.3	36	6.6	134	6.0	26	11.5	122	6.6	10	1.2
Hispanic (any race)	387	12.6	41	14.5	149	9.3	20	13.4	238	16.0	21	15.8
Non-Hispanic other	49	3.2	7	3.1	28	3.6	--	< .1	21	2.8	5	5.8
Parental education												
Less than high school	282	12.7	28	7.1	117	11.4	16	10.3	165	13.9	12	3.5
High school diploma/GED	401	18.2	52	27.9	184	18.5	34	35.2	217	17.9	18	19.6
Some college	582	28.0	73	27.9	301	29.4	32	26.4	281	26.5	41	29.6
College graduate	940	41.2	116	37.1	436	40.7	52	28.0	504	41.7	64	47.2
Biosocial characteristics												
Cognitive performance[a,b]												
< 85	348	13.6	56	29.9	129	11.1	32	31.1	219	16.1	24	28.7
85–99	531	24.5	64	21.6	239	24.9	33	24.7	292	24.0	31	18.1
100–114	783	36.7	81	27.9	399	38.6	35	26.9	384	34.7	46	29.0
>114	543	25.3	68	20.6	271	25.4	34	17.4	272	25.2	34	24.3
Has a physical disability	57	2.4	12	4.1	26	1.6	5	3.6	31	3.1	7	4.6
Pubertal timing[b]												
Early	695	32.1	77	27.0	349	34.7	34	20.1	346	29.5	43	34.9
Typical	963	43.7	115	37.9	428	40.6	56	31.5	535	46.9	59	45.0
Late	547	24.1	77	35.1	261	24.7	44	48.4	286	23.6	33	20.2
BMI[a,b,c]												
Underweight	87	3.8	19	6.5	56	4.9	14	10.0	31	2.6	5	2.6

	Overall				Males				Females			
	First experience after age 18 (*n* = 2,205)		No experience by Wave IV (*n* = 269)		First experience after age 18 (*n* = 1,038)		No experience by Wave IV (*n* = 134)		First experience after age 18 (*n* = 1,167)		No experience by Wave IV (*n* = 135)	
	n	%	n	%	n	%	n	%	n	%	n	%
Healthy	1520	66.9	158	50.0	668	63.5	78	49.1	852	70.4	80	51.0
Overweight	302	15.0	36	15.4	145	14.8	14	9.5	157	15.2	22	21.9
Obese	296	14.4	56	28.1	169	16.9	28	31.4	127	11.8	28	24.5
Physical attractiveness[a,c]												
Very unattractive	64	2.6	7	2.1	26	2.4	--	< 2.0	38	2.7	5	3.0
Unattractive	103	4.8	22	9.1	49	5.1	13	10.5	54	4.5	9	7.6
Average	1,084	49.9	167	68.3	597	54.9	80	64.7	487	44.7	87	72.4
Attractive	783	36.1	69	18.9	319	34.0	37	22.2	464	38.3	32	15.2
Very attractive	171	6.6	4	1.6	47	3.6	--	< 2.0	124	9.8	2	1.9
Behavioral characteristics												
Religious service attendance (at least weekly)	1,151	52.1	148	51.0	494	47.8	66	37.4	657	56.4	82	66.4
Cigarette use (past 30 days)	211	9.8	20	7.3	120	11.4	15	10.2	91	8.2	5	4.0
Alcohol use (past 12 mo)[a,b]	653	28.3	41	14.3	335	31.3	22	12.5	318	25.3	19	16.4
Binge drinking (past 12 mo)[b]	256	11.3	12	6.6	156	13.9	6	4.7	100	8.6	6	18.8
Marijuana use (past 30 days)	84	4.2	11	2.8	59	5.5	5	2.4	25	3.0	6	3.3
Sexual non-attraction (ever)[a,b,c]	360	16.5	96	48.1	171	16.3	47	48.6	189	16.7	49	47.4

Note: Percentages were weighted to yield nationally representative estimates. Dashes (--) indicate cell sizes too small to report.

[a] statistically significant ($p < .05$) difference for overall sample on design-based F test

[b] statistically significant ($p < .05$) difference among males on design-based F test

[c] statistically significant ($p < .05$) difference among females on design-based F test

Table 3

Odds of first sexual experience by Wave IV among participants who were sexually inexperienced at age 18, by biological sex.

	Males (*n* = 1,172)				Females (*n* = 1,302)			
	Unadjusted		Adjusted		Unadjusted		Adjusted	
	OR	95% CI	aOR	95% CI	OR	95% CI	aOR	95% CI
Sociodemographic characteristics								
Race/ethnicity								
Non-Hispanic White (ref)	-		-		-		-	
Non-Hispanic Black	0.76	0.53–1.07	0.84	0.59–1.19	1.04	0.79–1.38	1.20	0.88–1.65
Non-Hispanic Asian	0.72	0.49–1.06 †	0.61	0.43–0.88**	1.19	0.90–1.56	1.34	1.00–1.80†
Hispanic (any race)	0.88	0.57–1.35	0.94	0.65–1.37	0.88	0.61–1.27	0.82	0.60–1.12
Non-Hispanic other	1.22	0.79–1.89	1.54	0.96–2.48 †	0.65	0.38–1.11	0.63	0.39–1.02†
Parental education								
Less than high school	0.91	0.63–1.32	1.31	0.86–2.00	1.19	0.93–1.53	1.81	1.24–2.64**
High school diploma/GED	0.71	0.48–1.06 †	0.82	0.61–0.10	1.05	0.81–1.38	1.40	1.10–1.78**
Some college	0.92	0.71–1.20	1.03	0.84–1.26	1.03	0.74–1.45	1.10	0.84–1.44
College graduate (ref)	-		-		-		-	
Biosocial characteristics								
Cognitive performance								
< 85	0.60	0.34–1.04 †	0.85	0.54–1.34	0.60	0.35–1.05†	0.65	0.44–0.95*
85–99	0.88	0.64–1.21	1.00	0.76–1.31	0.90	0.72–1.12	0.97	0.76–1.23
100–114 (ref)	-		-		-		-	
> 114	1.13	0.89–1.42	1.09	0.85–1.39	0.89	0.69–1.14	0.95	0.74–1.22
Has a physical disability	0.66	0.31–1.38	0.68	0.37–1.26	0.71	0.41–1.25	0.77	0.39–1.50
Pubertal timing								
Early	1.00	0.81–1.23	0.86	0.68–1.08	0.99	0.75–1.30	1.06	0.84–1.33
Typical (ref)	-		-		-		-	
Late	0.62	0.42–0.09*	0.67	0.51–0.87**	0.92	0.72–1.19	0.87	0.67–1.13
BMI								
Underweight	0.66	0.43–1.03†	0.78	0.51–1.18	0.73	0.48–1.12	1.05	0.72–1.52

	Males (*n* = 1,172)				Females (*n* = 1,302)			
	Unadjusted		Adjusted		Unadjusted		Adjusted	
	OR	95% CI	aOR	95% CI	OR	95% CI	aOR	95% CI
Healthy (ref)	-		-		-		-	
Overweight	1.20	0.90–1.59	1.16	0.84–1.60	0.73	0.50–1.08	0.72	0.54–0.96*
Obese	0.70	0.48–1.03†	0.82	0.61–1.09	0.68	0.42–1.12	0.75	0.53–1.08
Physical attractiveness								
Very unattractive	1.30	0.83–2.04	0.95	0.45–2.03	1.23	0.70–2.19	1.39	0.81–2.39
Unattractive	0.65	0.45–0.96*	0.65	0.45–0.95*	0.87	0.45–1.69	0.91	0.54–1.52
Average (ref)	-		-		-		-	
Attractive	1.35	1.00–1.83†	1.27	1.00–1.61†	1.54	1.17–2.03**	1.33	1.07–1.65*
Very attractive	1.57	0.99–2.46†	1.46	1.01–2.12*	1.94	1.29–2.91**	1.80	1.23–2.62**
Behavioral characteristics								
Religious service attendance (at least weekly)	1.10	0.82–1.48	0.91	0.73–1.13	0.72	0.54–0.97**	0.78	0.61–0.99*
Cigarette use (past 30 days)	1.15	0.83–1.59	0.92	0.65–1.31	1.74	1.18–2.55**	1.39	0.98–1.98 †
Alcohol use (past 12 mo)	1.57	1.23–2.01***	1.24	0.95–1.61	1.49	1.06–2.08*	1.26	0.97–1.62 †
Binge drinking (past 12 mo)	1.54	1.16–2.06**	1.10	0.77–1.56	1.30	0.72–2.36	0.98	0.61–1.59
Marijuana use (past 30 days)	1.35	0.94–1.93	1.16	0.75–1.80	1.59	0.60–4.20	1.26	0.51–3.11
Sexual non-attraction (ever)	0.43	0.27–0.68***	0.51	0.38–0.69***	0.48	0.31–0.75***	0.57	0.42–0.77***
Multivariable model statistics			$F(37, 92) = 5.31$, $p < .001$				$F(37, 92) = 4.15$, $p < .001$	

Note: All models include duration (age) effects.

CI = confidence interval; OR = odds ratio; aOR = adjusted odds ratio; ref = referent category

† $p < .10$;

* $p < .05$;

** $p < .01$;

*** $p < .001$