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Adolescent Reproductive and Contraceptive Knowledge and Attitudes and Adult Contraceptive Behavior

Karen Benjamin Guzzo and

Department of Sociology, Bowling Green State University, 212 Williams Hall, Bowling Green, OH 43403, 419-372-3372

Sarah R. Hayford

Department of Sociology, The Ohio State University, 205 Townshend Hall, 1885 Neil Avenue Mall, Columbus, OH 43210, 614-292-9538

Abstract

Objectives—Ineffective and inconsistent contraceptive use is common among adults, perhaps due to limited knowledge about reproduction and unfavorable attitudes toward contraception. Knowledge and attitudes are first developed in adolescence. We test whether adolescent knowledge and attitudes have long-term implications for adult contraceptive behavior.

Methods—Using the National Longitudinal Survey of Adolescent to Adult Health, our analytical sample ($n=6,662$) consists of those asked sex and contraception questions at Wave I (1995; students aged 15 and older) and who were sexually active and not pregnant at the time of the Wave IV (2007–2008) survey. We examined whether adolescent attitudes toward contraception, knowledge of condoms and reproduction, and confidence in contraceptive knowledge were predictive of adult contraceptive efficacy and consistency using logistic regression.

Results—In models adjusted for a range of socioeconomic, demographic, and life course factors, favorable attitudes toward contraception in adolescence increased the odds (aOR 1.21, CI 1.08–1.36) of using more effective methods rather than a less effective or no method of contraception in adulthood, as did more accurate condom knowledge (aOR 1.07, CI 1.00–1.14) and more accurate reproductive knowledge (aOR 1.07, CI 1.00–1.13). Adolescents with more favorable attitudes toward contraception also used contraception more consistently as adults (aOR 1.27, CI 1.14–1.43), as did those with more accurate condom knowledge (aOR 1.10, CI 1.03–1.18).

Conclusions—Attitudes towards contraception and knowledge about condoms and reproduction acquired during adolescence are predictive of adult contraceptive behavior. Results suggest that comprehensive sex education during adolescence could improve effective contraceptive behavior throughout the life course.

Keywords

contraception; knowledge; attitudes; adolescence

Preventing unintended pregnancy has long been a public health goal.^{1,2} Although unintended pregnancy is often stereotyped as a problem of adolescence, it is common among adult women.³ Consistent use of the most effective methods of contraception is the key to preventing unintended pregnancy, yet 10% of women who are fecund, sexually active, and

not seeking pregnancy are not using any contraception, and more than 1 in 5 contraceptive users are not using the most effective methods.⁴ In addition, many women use contraception inconsistently.⁵ To reduce unintended childbearing, it is important to understand why sexually active men and women choose particular contraceptive methods, use no method at all, or fail to use contraception consistently.

A likely explanation is that adults vary in their reproductive and contraceptive knowledge and attitudes.^{6,7,8} Prior cross-sectional research has demonstrated that knowledge and attitudes are associated with contraceptive behavior,^{9,10} but much of this work focuses on adolescents,^{11,12,13} select populations such as teen parents¹⁴ or specific race groups,^{13,14} or uses small, qualitative samples^{15,16} – all of which impede generalizability. In addition, most previous research focuses on the short-term implications of knowledge and attitudes for behavior, with little attention to the possibly persistent impact of outlooks developed early in life.

For most people, information about the reproductive process and contraception is first received through school-based sex ed programs, with sometimes questionable content and accuracy and often with moral undertones.¹⁷ As adolescents mature and sexual activity becomes more common, frequent, and acceptable, they may learn about contraception – particularly condoms and withdrawal, which are the most commonly used contraceptive methods in adolescence¹⁸ – from their own experiences, the experiences of friends and family, or conversations with health care professionals.^{19,20} They may directly seek out further information²¹, and some public health agencies, colleges, and national organizations provide sex ed programs.²² However, formal opportunities to learn about sex, reproduction, and contraception are rare after high school,²³ and adults often feel uncomfortable discussing contraception with their partners.¹⁸ Even in medical settings, both patients and physicians are reluctant to have sexual health discussions.²⁴ Thus, the knowledge and attitudes about sex, reproduction, and condoms developed in adolescence may form the foundation of knowledge of, and attitudes toward, contraception more generally throughout the life course. As such, we hypothesize that adolescents' knowledge and attitudes influence contraceptive decision-making in adulthood.

To examine the long-term linkages of adolescent attitudes toward contraception, knowledge about condoms and reproduction, and confidence in that knowledge with adult contraceptive efficacy and consistency, we use a longitudinal, nationally representative sample, the National Longitudinal Study of Adolescent to Adult Health ("Add Health"). Add Health is uniquely suited to answering our research questions, as no other study has collected information about adolescents' knowledge and attitudes, followed them over time, and collected data on adult sexual behavior and contraception. Additionally, Add Health has a rich set of relationship, childbearing, and socioeconomic and demographic factors, permitting us to account for other factors linked in prior research to contraceptive use, including fertility-specific measures (union status, parity, and a history of trouble getting pregnant), early sex-related experiences (adolescent sexual experience and school-based sex ed), socioeconomic characteristics from adolescence (family structure and maternal education) and adulthood (employment status, education, health insurance), and demographic characteristics (gender and race-ethnicity).^{4,6,9,25,26,27}

METHODS

The Add Health study is a longitudinal, nationally representative school-based study of 20,745 7th-12th graders first interviewed in 1995 (Wave I). Follow-up surveys were conducted in 1996 (Wave II, only those still enrolled in school), 2001–2002 (Wave III, ages 18–26), and 2008 (Wave IV, ages 26–34). Data collection for Add Health was approved by the University of North Carolina School of Public Health Institutional Review Board. The details of both the initial and follow-up surveys have been described elsewhere.^{10,28}

Our analysis is restricted to adolescents aged 15 and older at Wave I, as only older teens were asked the questions regarding reproductive knowledge, condom knowledge, confidence in knowledge, and attitudes toward contraception (n=13,319). We also limit the analysis to those with no children at Wave I (n=12,048), as prior fertility experience may influence teens' knowledge about reproduction and contraception. Our analytical sample is further restricted to those who participated in Wave IV (n=9,058), had valid sampling weights (n=8,627), were sexually active in the 12 months prior to interview (n=7,224), had valid information on contraceptive behavior (n=7,109), were not currently pregnant (n=6,699), and had no missing data on any of the covariates, producing a final analytical sample of 6,662 individuals aged 24–32.

Adolescent knowledge and attitudes are measured with four indices (see Table 1). Reproductive knowledge is measured as the number of correct answers to four true/false questions about the reproductive process, including items such as “most women’s periods are regular and they ovulate 14 days after their periods” and “the most likely time to get pregnant is right after a period starts.” Condom knowledge is measured as the number of correct answers to five true/false questions about condoms, including items such as “it is important to have condoms fit tightly, leaving no space” and “it doesn’t matter how far down condoms are unrolled.” Correct answers are indicated in parentheses in Table 1 for both reproductive and condom knowledge questions. Confidence in contraceptive knowledge is an average of three items on a scale of 1=strongly disagree to 5=strongly agree (Cronbach’s $\alpha=0.70$) indicating whether respondents consider themselves to be “quite knowledgeable” about condoms, safe times to have sex, and withdrawal; higher scores indicate the respondent feels more knowledgeable and confident. The measure of contraceptive attitudes averages eight attitudinal items on a scale of 1=strongly agree to 5=strongly disagree (Cronbach’s $\alpha=0.77$), including such as “birth control is too much of a hassle” and “birth control interferes with pleasure.” Higher scores indicate more favorable attitudes toward contraception, and items are reverse coded when necessary. These measures have been used in prior Add Health research looking at influences on contraceptive behavior in the short term^{8,12,13}.

Adult contraceptive use is derived from a series of questions at Wave IV asking if the respondent or his/her partner(s) used one of 21 methods during the last 12 months; this measure does not refer to a specific relationship or partner but is a global measure of use in the year preceding the survey. Respondents could select more than one method; when multiple methods were listed, we categorized usage by the most effective method the respondent reported using. We then created a variable grouping specific methods into one of

three categories (along with a ‘no method’ category), based on the Centers for Disease Control’s categorization:²⁹ least effective (e.g., withdrawal, calendar, cervical mucus test, condom, sponge), effective (e.g., diaphragm, emergency contraception, oral contraceptives, pill, patch, ring), and most effective (e.g., implant, IUD, vasectomy, tubal ligation). Preliminary models (not shown) suggested only minimal differences between the categories of “no method used” and “least effective” methods and between “effective” and “most effective” methods, so we dichotomized this measure into “effective or better” vs. “least effective or none” in multivariate analyses (discussed below). Differences in results between the collapsed measure and the full measure are noted in the results section. Contraceptive consistency is based on the question “On average, how often do/did you (or your partner) use a contraceptive method of birth control or disease prevention?” with responses of none of the time, some of the time, about half of the time, most of the time, and all of the time. Because consistent use is the key to preventing unintended pregnancy, we dichotomize this variable into “all of the time” vs “less than all of the time” in multivariate analyses. Unlike contraceptive method type, contraceptive consistency refers to a specific partner (current or most recent).

The analyses include controls that have been linked to contraceptive use in prior research and that might be confounding associations with early attitudes and knowledge. Specifically, we control for background characteristics at Wave I that might be associated with both early attitudes and knowledge and later contraceptive use: family socioeconomic status (mother’s education and family structure); timing of first sex (whether respondent had sexual intercourse by Wave I); and a dichotomous indicator of school-based sex ed (based on whether the respondent reported learning about pregnancy and/or AIDS in school). We also control for individual characteristics that might be correlated with early adolescent experiences and access to, and use of, contraception: race-ethnicity; gender; socioeconomic status at Wave IV (education and a dichotomous indicator of being currently employed at least 35 hours a week); whether the respondent has health insurance; and whether the respondent has ever had fecundity issues (based on a yes/no response to a question about whether the respondent has ever had trouble getting pregnant or avoiding a miscarriage in any past relationship). Although we are not able to directly account for whether respondents are trying to get pregnant, we do control for important correlates of fertility intentions: number of children born (operationalized as no children, one child, and two or more children), relationship status with current or most recent partner (sexual relationship only or casually dating; dating frequently or exclusively; cohabiting; or married), and whether the respondent has given birth in the past 12 months.

We first present descriptive statistics summarizing adolescent reproductive and contraceptive knowledge and attitudes at Wave I and adult contraceptive method use and consistency at Wave IV. We then proceeded to test each knowledge and attitudinal measure bivariate using logistic regression (as both dependent variables are dichotomous); all four measures were a statistically significant predictor of one or both outcome variables (not shown). We then tested all four measures simultaneously for each dependent variable (not shown), and again, all four measures were statistically significant (though marginally so, for one measure) for one or both outcomes. We then tested full multivariate models with all the key independent variables as well as all covariates. In the interest of brevity, we only present the

adjusted odds ratios and confidence intervals from these final full multivariate models for the key independent variables. Additionally, we calculated standardized coefficients to assess the relative magnitude of the effect sizes for the main independent variables are comparable to that of other covariates. We do not present the full set of standardized coefficients, but do refer briefly to these results. Analyses adjust for the complex survey design using the 'svy' procedures in Stata 14.1. The Human Subjects Review Board at [institution blinded for review] approved the study.

RESULTS

The characteristics of the analytical sample (non-pregnant adults who reported having sex in the 12 months preceding the survey) are detailed in Table 2, with the distribution of key independent and dependent variables in Table 3. As Table 3 shows, the adolescents had moderately positive attitudes toward contraception at Wave I, with a mean score of 3.17 on the contraceptive attitudes scale (range of 0.625–5). The average number of correct answers on the contraceptive knowledge indicator was 3.38 (range of 1–5), and the average number of correct answers on the reproductive knowledge indicator was 1.91 (range of 1–4). The adolescents felt fairly confident about their knowledge of contraceptive methods, with an average of 3.83 on the confidence scale (range of 1–5). Looking at contraceptive behavior at Wave IV, 18% reported not using any method in the past year, 29% reported using a “least effective” method, 41% reported using an “effective” method and 12% reported using a “most effective” method. Thus, over half of the sample reported using an “effective” or “most effective” method. For contraceptive consistency with most recent partner, 37% reported using contraception none of the time (note that this differs from the estimate of ‘no method used’ above because it references use with a specific partner). One-tenth reported using contraception some of the time, 3% reported using contraception half of the time, 11% reported using contraception most of the time, and 39% reported using contraception all of the time.

Table 4 presents the adjusted odds ratios (aOR) and confidence intervals (CI) from logistic regressions predicting contraceptive efficacy over the past 12 months and predicting consistency with current or most recent partner; recall that both of these measures are dichotomized, with efficacy as “effective/most effective” vs. “no method/least effective” and consistency as “all of the time” vs. any other category. Looking first at efficacy, adolescent knowledge and attitudes are indeed significantly associated with efficacy. Those with more favorable attitudes toward contraception (aOR 1.21, CI 1.08–1.36) and who had more accurate knowledge about both condoms (aOR 1.07, CI 1.00–1.14) and reproduction (aOR 1.07, CI 1.00–1.13) in adolescence are significantly more likely to use an “effective” or “most effective” method than a “least effective” method or no method at all as adults. Further, these associations between adolescent attitudes and knowledge and adult contraceptive efficacy are not trivial. Standardized coefficients (not shown) are similar in magnitude to other important predictors of adult contraceptive use, such as relationship status, race-ethnicity, and age. Of the adolescent knowledge and attitudes measures, attitudes toward contraception are more strongly linked to adult contraceptive use than either of the knowledge measures. Contraceptive confidence is not significantly associated with efficacy of method use in these models; however, in multinomial models using the full four

categories of the dependent variable, those with higher confidence as adolescents are more likely to use a least effective method vs. no method as adults and marginally more likely to use an effective vs. least effective method.

Adolescent knowledge and attitudes are also associated with adult contraceptive consistency, as seen in the last columns of Table 4. More favorable attitudes toward contraception increase the odds of using contraception all of the time compared to less than all of the time (aOR=1.28, CI 1.14–1.43), as does more accurate knowledge about condoms (aOR=1.10, CI 1.03–1.18). As with efficacy, results using standardized coefficients (not shown) demonstrate that the effect sizes for contraceptive attitudes and condom knowledge on contraceptive consistency are similar in magnitude to other theoretically important covariates, such as race-ethnicity, education, and relationship status; again, attitudes toward contraception stand out as especially influential. Despite being a significant predictor of consistency at the bivariate level, confidence in contraceptive knowledge is not significant in the multivariate models; significance disappears in the presence of controls for adolescent sexual activity and maternal education.

DISCUSSION

Inconsistent and ineffective contraceptive use are important drivers of unintended pregnancy in the U.S.,⁵ yet the reasons why individuals do not use contraception more effectively remain elusive. We hypothesized that since adolescence is a key period for learning about the reproductive process, adolescents' knowledge and attitudes may have long-term implications for contraceptive behavior. Our hypothesis was supported: adolescent attitudes toward contraception and the accuracy of condom and reproductive knowledge are associated with contraceptive efficacy and consistency among sexually active adults nearly 15 years later. Specifically, more favorable attitudes toward contraception and more accurate knowledge of both condoms and reproduction during adolescence increased the odds of using effective or very effective methods over using less effective methods or using no method at all as adults. Additionally, adults were significantly more likely to use contraception all of the time in their current or most recent adult relationship when they had more favorable attitudes toward contraception and more accurate condom knowledge as adolescents.

The attitudes that people form and the knowledge they learn as teens seems to stay with them in ways that are consequential for contraceptive behavior over the long term. It is possible that knowledge about condoms and the reproductive system in adolescence directly influences contraceptive use in adulthood, providing the core information individuals have, and potentially build upon, throughout life. Alternatively, it may be the case that adolescents with greater condom knowledge also know more about other methods of contraception, including hormonal methods. Unfortunately, we do not have a measure of knowledge of other forms of contraception, so we cannot test this possibility. However, exploratory analysis showed that the impacts on contraceptive method choices are mainly attributable to the use of hormonal methods rather than barrier methods such as condoms. Thus, it seems unlikely that early condom knowledge directly influences use of other contraceptive methods; rather, adolescent condom knowledge may proxy a more general level of

contraceptive knowledge. Moreover, because condoms and withdrawal are the primary methods used as adolescents (especially during the mid-1990s), adolescents who know the most about relevant, age-appropriate methods may become adults with more accurate knowledge about common methods used at later life course stages (i.e., hormonal contraception, long-acting reversible contraception (LARCs), and so on). Still, to the extent that comprehensive sex ed programs increase knowledge of all methods and confidence in that knowledge, our results provide further support for these programs.

It is worth noting that, of the adolescent knowledge and attitudinal measures we examined, attitudes toward contraception were the most strongly related to both efficacy and consistency. When properly taught, information about contraceptive methods may also normalize contraceptive use more broadly. Our attitudinal measure included items indicating whether adolescents thought using contraceptives was a “hassle,” required “too much planning,” and was “difficult to get,” and individuals who disagreed with these measures used more effective methods and did so more consistently. This finding suggests that when contraception is viewed as a major undertaking rather than a normal part of a healthy sex life, consistent and effective contraception is less likely to occur. Conversely, when teens view using contraception as straightforward and morally acceptable, they use choose more effective contraceptive methods and use them more consistently.

Despite the strength of the study, particularly in establishing longitudinal linkages between knowledge and attitudes and subsequent behavior, there are some limitations. The longitudinal design precludes the possibility of reverse causation between contraceptive use and contraceptive knowledge, a problem challenging causal inference in cross-sectional studies. Still, it is possible that other unmeasured factors are driving both adolescent knowledge and attitudes and adult contraceptive use. We controlled for important potential confounders such as childhood family structure and adult educational attainment, but we could not account for all relevant factors. Further, we were not able to account for whether respondents were seeking to become pregnant. However, we control for factors strongly associated with fertility plans, including parity, relationship status, and age,²⁶ and thus it is unlikely that this omission drives the relationship between adolescent knowledge and attitudes and adult behavior found in our results.

There are limitations with our Wave I measures. Certainly, the measures are somewhat dated; there were no questions about IUDs, for instance, and the ease of obtaining contraception has changed. It would be preferable to have had questions about the knowledge of other types of contraception besides condoms, safe times, and withdrawal. To the extent that teens with accurate knowledge about the methods teens most often use would also be likely to have reliable sources of information about other methods as well, though, we would argue that these measures likely capture relevant aspects of adolescent contraceptive and reproductive knowledge. We also lacked direct information about the content of sex ed at school at Wave I, nor could we explicitly determine the source (i.e., a school-based sex ed program) of adolescent knowledge and attitudes. Finally, it is worth noting that we were unable to measure how knowledge and attitudes changed over the life course as these questions were not repeated when the respondents were adults, nor could we

track changes in contraceptive use across the four waves of data collection because contraceptive questions were not comparable across the surveys.

Nonetheless, this study makes an important contribution by documenting the long-term implications of adolescent knowledge and attitudes for adult reproductive behavior. Our findings that adolescent views and experiences set the stage for long-term patterns is consistent with other work; for instance, a growing body of research finds that behaviors and dynamics in romantic relationships in adolescence affect the formation and character of adult intimate relationships.^{30,31,32} Our analysis shows that early contraceptive attitudes may have a similarly long reach. We provide an initial assessment of the robustness and magnitude of these linkages. Future research is needed to complete our understanding of the pathways connecting adolescent knowledge and attitudes to adult outcomes, including potential change over time in knowledge and attitudes; the role of intervening sexual, contraceptive, and childbearing experiences; and possible variation over the life course in the strength of associations. The long-term importance of adolescent knowledge and attitudes suggests that the recent declines in the receipt of sex ed during adolescence³³ could negatively impact progress on reducing unintended fertility³ and supports the need to provide accurate reproductive and contraceptive information to adolescents. Although there is widespread evidence that comprehensive sex ed programs in schools reduce adolescent pregnancy,³⁴ our findings point to the potential for such programs to have a reach well beyond adolescence, increasing the ‘returns’ of such programs. Further, if adults lack the opportunity to gain additional knowledge or learn information that alters their view of contraception, our results point to the need for education that continues beyond early adolescence – in colleges and universities, but also in clinics and doctors’ offices.

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Significance

Previous research has linked knowledge and attitudes about contraception and reproduction to contraceptive behavior using cross-sectional data. This study is the first to establish a long-term linkage between adolescent knowledge and attitudes and adult behavior using a large, nationally representative sample. These findings support comprehensive sex education during adolescence and ongoing efforts in adulthood as a mechanism to improve contraceptive use over the long term as well as the short term, potentially reducing high levels of unintended childbearing in the United States.

Table 1**Specific Items Used In Reproductive and Contraceptive Knowledge and Attitudes**

Items	Answer set
<i>Reproductive knowledge (correct answer in italics)</i>	
When a woman has sexual intercourse, almost all sperm die inside her body after about six hours. <i>(false)</i>	True/false
Most women's periods are regular, that is, they ovulate (are fertile) fourteen days after their periods begin. <i>(false)</i>	
The most likely time for a woman to get pregnant is right before her period starts. <i>(false)</i>	
In general, a woman is most likely to get pregnant if she has sex during her period, as compared with other times of the month. <i>(false)</i>	
<i>Contraceptive knowledge (correct answer in italics)</i>	
When using a condom, the man should pull out of the woman right after he has ejaculated (come). * <i>(true)</i>	True/false
When putting on a condom, it is important to have it fit tightly, leaving no space at the tip. <i>(false)</i>	
Even if a man pulls out before he ejaculates (even if ejaculation occurs outside of the woman's body), it is still possible for the woman to get pregnant. * <i>(true)</i>	
Vaseline can be used with condoms, and they will work just as well. <i>(false)</i>	
As long as the condom fits over the tip of the penis, it doesn't matter how far down it is unrolled. <i>(false)</i>	
<i>Method confidence</i>	
You are quite knowledgeable about how to use a condom correctly.	1=strongly disagree to 5=strongly agree
You are quite knowledgeable about the rhythm method of birth control and when it is a "safe" time for a woman to have sex and not get pregnant.	
You are quite knowledgeable about the withdrawal method of birth control.	
<i>Contraception attitudes</i>	
In general, birth control is too much of a hassle to use.	1=strongly agree to 5=strongly disagree
In general, birth control is too expensive to buy.	
It takes too much planning ahead of time to have birth control on hand when you're going to have sex.	
It [is/would be] too hard to get a [girl/boy] to use birth control with you.	
For you, using birth control [interferes/would interfere] with sexual enjoyment.	
It is easy for you to get birth control.	
Using birth control is morally wrong. *	
If you used birth control, your friends might think that you were looking for sex.	

* reverse coded

Table 2

Analytical sample characteristics of Add Health Wave I & Wave IV (n=6,662)

	n	Weighted percentages/means
W4 age (mean, standard error)		29.9 yrs (0.033)
Race/ethnicity		
White	3740	69.6%
Black	1278	14.9%
Hispanic	1120	11.0%
Other	524	4.6%
Gender		
Male	3152	51.1%
Female	4895	49.0%
Maternal education		
Less than high school or missing	1254	17.2%
High school graduate/GED	2032	33.2%
Some college	1760	25.8%
College or higher	1616	23.8%
W1 family structure		
Both biological parents	3673	55.8%
Stepfamily	1078	16.1%
Single-parent family	1522	22.0%
Other family type	389	6.0%
W1 ever had sex		
No	3543	51.2%
Yes	3119	48.8%
W1 discussed pregnancy and/or AIDS in school		
No	614	9.8%
Yes	6048	90.2%
W4 health insurance		
No	897	15.1%
Yes	5765	84.9%
W4 education		
Less than high school	342	5.9%
High school graduate/GED	3474	52.0%
Some college	561	8.3%
Bachelor's degree	1678	25.2%
Graduate degree or higher	607	8.7%
W4 employment status		
Not employed	1779	26.5%
Employed	4883	73.5%
W4 parity		
No children	3078	46.0%

	n	Weighted percentages/means
One child	1512	22.4%
Two or more children	2072	31.6%
W4 self-reported fecundity issue		
No	5736	85.5%
Yes	926	14.5%
W4 relationship status		
Sexual relationship only or occasionally dating	436	5.9%
Frequently or exclusively dating	1265	17.8%
Cohabiting	1650	25.2%
Married	3311	51.1%

Note: May not total 100% due to rounding

Table 3

Means and distributions of key independent variables and dependent variables (n=6,662)

	n	Weighted percentages/means
<i>W1 reproductive & contraceptive knowledge & attitudes</i>		
Attitudes toward contraception (mean, standard error; range 0.625–5)		3.17 (.019)
Condom knowledge (mean, standard error; range 0–5)		3.38 (.032)
Reproductive knowledge (mean, standard error; range 0–4)		1.91 (.024)
Confidence in contraceptive knowledge (mean, standard error; range 0–5)		3.83 (.019)
<i>W4 contraceptive behavior</i>		
Most effective contraceptive type used in the 12 months preceding survey		
No method	1166	18.4%
Least effective method	2057	29.3%
Effective method	2706	40.8%
Most effective method	733	11.6%
Contraceptive consistency with current or most recent partner		
None of the time	2433	37.5%
Some of the time	704	10.0%
Half of the time	220	3.0%
Most of the time	729	10.7%
All of the time	2576	38.8%

Note: May not total 100% due to rounding

Table 4

Odds Ratios from Logistic Regression Predicting Contraceptive Efficacy and Consistency Used During the 12 Months Preceding the Wave IV Survey among Non-Pregnant Sexually Active Adults

	Efficacy		Consistency	
	Effective/most effective vs.		All of the time vs. Less	
	No method/least effective		than all of the time	
	Adj. RRR ^a	95% CI	Adj. RRR ^a	95% CI
<i>Reproductive & Contraceptive Knowledge & Attitudes</i>				
Attitudes toward contraception	1.22 ***	(1.08–1.36)	1.28 ***	(1.14–1.43)
Contraceptive knowledge	1.07 *	(1.00–1.14)	1.10 **	(1.03–1.18)
Reproductive knowledge	1.07 *	(1.00–1.13)	1.05	(0.97–1.13)
Confidence in contraceptive knowledge	0.95	(0.85–1.06)	1.04	(0.94–1.15)

^a Adjusted Odds Ratio

* p .05

** p .01

*** p .001

Note: Models include controls for W1 sexual experience, discussed sex and/or AIDS in school by W1, race/ethnicity, gender, W4 age, maternal age, W1 family structure, W4 health insurance, W4 education, W4 employment status, W4 parity, W4 self-reported fecundity issue, and W4 relationship status.