



Analysis of knowledge and attitudes of adult groups before and after attending an educational presentation regarding adolescent sexual activity

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Objective: To assess changes in knowledge and attitudes of adult groups before and after attending an educational presentation on adolescent sexual health.

Study design: A diverse group of adults attended the presentations and completed a presurvey and postsurvey containing 10 knowledge questions, 3 opinion questions, and demographics.

Results: Survey forms were completed by 3661 participants before and 3605 participants after 62 educational programs during the 2002 to 2003 school year. Adult participants consisted of school employees, adults attending parent presentations, health care professionals, adults at community presentations, and teachers. Presurveys revealed a significant lack of information by all groups, with health care professionals answering 37.9% and other adults answering 30.2% correct. All groups demonstrated significant ($P = .0005$) improvements in knowledge and a shift in attitude, favoring the delay of sexual activity until at least after high school from 94% before the survey to 98% after the survey ($P < .0001$) and the delay until marriage from 77% to 91.5% ($P < .0001$).

Conclusion: Educating adults on the ramifications of adolescent sexual activity results in significant increases in knowledge and the proportion who think teens should delay sexual activity.

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Sexual activity among adolescents has gained national attention because of its multiple consequences including teen pregnancy, sexually transmitted diseases (STDs), and a huge socioeconomic burden. Unfortu-

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nately, adolescents and parents often have inaccurate information with regard to the ramifications of early onset of sexual activity among adolescents and the health risks of multiple sexual partners. Of the 4,021,726 births in the United States in 2002, 10.8% (432,808) were to teenage mothers, 80.2% of whom were not married.¹ It is estimated that families started by teens aged 17 years or less result in costs of 29 billion dollars annually in the United States.² Since its peak in 1991, the teen pregnancy rate has declined 30% to its lowest level in 2002.¹

Interestingly, the only 2 articles published to date in the medical literature analyzing the decline attribute the majority of the decreasing teen pregnancy rate to delaying the onset of sexual debut.^{3,4} Of the estimated 18,900,000 new cases of STDs that occur each year in the United States, approximately half occur in teens and young adults.⁵ According to the Centers for Disease Control and Prevention (CDC), this STD epidemic results in additional billions of dollars in evaluation, diagnostic tests, and treatment of the infection and its sequelae.⁶ In a 2004 *American Journal of Obstetrics and Gynecology* review, Genuis and Genuis⁷ assessed the current STD pandemic and its consequences, emphasizing delayed sexual debut, partner reduction, and the avoidance of risky sexual behaviors as essential factors in reducing this enormous health burden.

If delaying sexual debut is effective in decreasing teen pregnancy and STDs, then determining who influences sexual activity is crucial. Studies confirm the vital role of parents and other adults in adolescents' decisions about sexual activity. Results from the Longitudinal Study on Adolescent Health published in *JAMA* report that parent's disapproval of adolescents having sex is 1 of the most significant factors in teens delaying sexual activity.⁸ In another nationally representative survey of adolescents, conducted by the National Campaign to Prevent Teen Pregnancy, teens say their parents influence their decisions about sex more than friends, siblings, or the media.⁹ If adults are most influential in adolescent sexual behavior, programs that educate adults on the outlined ramifications and their influential role in delaying sexual debut must be developed and evaluated.

To assist with adolescent sex education, Scott & White Memorial Hospital/Texas A&M Health Sciences Center College of Medicine initiated a sex education program that included not only a curriculum for middle school students (aged 10-14 years) but also seminars for teachers, parents, community organizations, and health care professionals (HCPs). After reviewing the published literature on the problems of adolescent sexual activity, a group of professionals including doctors, attorneys, and educators developed the program. Realizing the documented importance of adults in influencing sexual decisions of adolescents, programs detailing the ramifications of early onset of sexual activity were developed for a diverse group of adult audiences.

Knowledge deficiencies by parents and other influential adults may lead to recommendations and guidance not favorable to optimal adolescent health. The aim of this study was to correlate adults' knowledge concerning adolescent sexual activity and its outcomes with their attitudes regarding adolescent's initiation of sex as well as what information should be given to adolescents by parents and HCPs. Because adolescents receive information from a variety of adult groups, our program was delivered to a diverse group including teachers, health

care professionals, school personnel, parents, and community members. Correlation of knowledge base and attitudes were assessed prior to and after an educational intervention.

Material and methods

To assess knowledge base and opinions, adult groups attending Scott & White adolescent sexual health conferences and presentations during the academic year 2002-2003 primarily in the central Texas area were anonymously surveyed immediately prior to and after a presentation on adolescent sexual health. Although length of time and amount of material presented at the educational venues varied, all groups were postsurveyed after the initial presentation usually lasting 1 to 2 hours. All nonmedical adult groups received a presentation entitled "What Adults Need to Know About Teens and Sex," whereas medical professionals received a presentation entitled "Adolescent Sexual Health: The Critical Role of Healthcare Professionals." Information presented included current published medical data on ramifications of adolescent sexual activity including socioeconomic and legal issues. Educational programs were developed under the direction of a board-certified obstetrician-gynecologist and contraceptive researcher (P.J.S.) with program content from the CDC and National Institutes of Health publications/guidelines along with peer-reviewed medical journals. All presentations were given by HCPs (staff physicians, medical students, residents) who had previously attended a Scott & White adolescent sexual health training conference.

The survey included 10 knowledge questions concerning published information on adolescents specifically related to sexual activity. The survey also included 3 opinion questions concerning viewpoints on adolescent sexual activity and information adolescents should receive from parents and doctors. The forms contained the same knowledge and attitude questions, with wording appropriate for the group. Demographic information included age, race, parental status, gender, and marital status. This survey instrument was designed and tested during the prior academic year to establish the unified set of knowledge questions that tested the same factual information in all adult groups and common set of attitude questions and demographic variables.

The adults were divided into 6 distinct groups. Group I included parents attending an optional evening 2-hour presentation prior to implementation of the sex education curriculum in their child's middle school. Group II was made up of all school employees including administrators; teachers; and ancillary school personnel including janitors, cafeteria workers, and bus drivers attending mandatory 2-hour district-wide presentations. Group III consisted of civic organizations and businesses familiar with the program requesting a presenta-

Table I Size of adult groups (means with range and average difference with SE) during the study interval

Group		Total number of adults	Number of sessions	Average number surveyed before	Average number surveyed after	Difference (before-after)
I	Parent groups	1082	26	42 (2 to 176)	39 (2 to 173)	2.5 ± 1.5
II	School district employees	1495	9	166 (33 to 711)	172 (32 to 758)	-6.1 ± 2.5
III	Community groups	364	12	30 (7 to 51)	29 (7 to 46)	0.9 ± 2.1
IV	Teacher training programs	214	5	43 (27 to 73)	43 (27 to 73)	0.0 ± 3.3
V	HCPs attending CME conferences	393	7	56 (20 to 143)	52 (20 to 144)	3.7 ± 2.8
VI	HCPs attending adolescent sexual health conferences	113	3	38 (29 to 47)	35 (32 to 39)	2.7 ± 4.3
Total		3661	62	3661	3605	56

Using ANOVA methods for repeated measures, group sizes differed ($P < .01$) among types of groups, whereas the change in the number of participants surveyed before and after each program did not differ ($P = .60$).

tion. Group IV was comprised of middle school teachers assigned to implement the curriculum attending a mandatory 2-day training conference. Group V was comprised of HCPs attending a variety of continuing medical education (CME) conferences for primary care providers in which 1 of the many topics included an approximately 60-minute presentation on "Adolescent Sexual Health: The Critical Role of Healthcare Professionals." This presentation was given by a practicing obstetrician-gynecologist (P.J.S.) who is frequently asked to speak at medical conferences on women's health issues. Group VI consisted of HCPs attending a 2-day Scott & White CME conference devoted entirely to adolescent sexual health issues. Groups V and VI were composed of primary care HCPs, primarily physicians (obstetrician-gynecologists, family medicine).

Identical, anonymous survey forms were distributed and collected immediately prior to and after the presentation and entered into data files via a scantron device. Comparisons were made between pretest and posttest knowledge scores and attitude questions and further grouped by various demographic characteristics including age, parental and marital status, and HCP.

Data were tabulated into spreadsheets and migrated to Statistica software (StatSoft, Tulsa, OK) for statistical comparisons. Comparisons were made, taking into account the repeated measures aspects of preprogram and postprogram testing and surveying. Proportions were calculated for scores on knowledge exams and for choices of individual attitude questions for each of the courses. These values were analyzed with analysis of variance using general linear methods for repeated measures with post hoc tests. Arcsin transformation was performed when needed to maintain homogenous variance terms for the proportional data.

For postsurvey attitude testing in relationship to parental status, χ^2 methods were used. For all comparisons, a $p < .05$ was taken as indicating significance. For a final analysis of factors related to attitude choices,

multiple logistic regression was performed using dichotomous characteristics (married, parent, female, white non-Hispanic, and younger than 50 years of age) as independent variables and the dichotomous choices of 3 attitude questions. Maximum likelihood χ^2 was used to assess the significance of each of these analysis models and results are reported as ORs with 95% CIs.

Results

Demographics

A total of 7266 survey forms were completed by 3661 participants before and 3605 participants after the 62 presentations to 6 distinct adult groups (Table I). The largest number of adult participants was school district employees (group II) at mandatory district-wide presentations, followed by adults attending voluntary parent presentations (group I). As seen in Table I, before-survey and after-survey completion by attendees did not differ ($P = .60$).

Demographic variables including age group, race, parental status, gender, and marital status did not differ ($P = .95$ Wilks multivariate analysis) between surveys collected before or after the presentation. It appeared that everyone in attendance completed the surveys because no blank forms were returned. Attendees arriving late, after the pretest was completed and the presentation had begun, did not complete the pretest and were instructed not to complete a posttest. At one mandatory school district presentation (group II), approximately 10 individuals arrived after the pretest was completed but went ahead and completed the posttest because no one had instructed them not to do so. Only a small number of participants had to leave before the posttest was distributed and completed because less than 2% (approximately 60) who completed a pretest did not complete the posttest.

Table II Composition (mean percent with SE) of adult groups and comparison between parent groups and others based on presurvey

Groups	Female	Married	White, non-Hispanic	Nonparent	Under age 50 yr
I Parent groups	81 ± 3	88 ± 2	80 ± 3	2 ± 2	83 ± 3
II School district employees	79 ± 3	79 ± 3*	88 ± 6	20 ± 3*	82 ± 13
III Community groups	73 ± 4	80 ± 3*	73 ± 5	17 ± 3*	74 ± 4
IV Teacher training programs	63 ± 6*	73 ± 4*	80 ± 8	27 ± 5*	76 ± 6
V HCPs attending CME conferences	67 ± 5*	77 ± 4*	81 ± 6	30 ± 4*	80 ± 8
VI HCPs attending adolescent sexual health conferences	59 ± 8*	91 ± 5	84 ± 10	14 ± 6*	73 ± 5
<i>P</i> value for differences between groups*	.014	.003	.54	<.0001	.23

* Groups that differed from parent groups in composition with $P < .05$ using Fishers least significant difference post hoc following analysis of variance for comparisons of arcsin transformations of percentages of group composition.

Table III Percent correct answers to the 10 knowledge questions

Question topic	Healthcare professionals		Other adults	
	Before	After	Before	After
1. Condoms and STD prevention	11.3	69.9	10.1	40.6
2. Most common STD	64.0	90.3	48.8	89.2
3. High school sexual activity rates	31.4	95.1	17.9	92.4
4. Legal age of consent to have sex	33.8	90.7	32.9	60.9
5. Age of aggravated sexual assault	6.5	87.7	5.3	85.5
6. Percent herpes asymptomatic	47.2	94.9	45.0	68.2
7. Factors that delay teen sex	45.3	81.6	40.4	63.9
8. Teen pregnancy rate decline	38.3	96.8	24.1	92.1
9. Percent infected with HSV-2	43.1	80.9	47.2	86.3
10. HPV usually has no sequelae	58.3	85.8	30.6	49.4
Average score	37.9	87.4	30.2	75.8

HSV-2, Herpes simplex virus type 2.

The composition of these groups varied with regard to gender, marital status, and parental status (Table II). Adults attending parent presentations (group I) were more likely to be female, married, and parents ($P < .05$), compared with middle school teachers (group IV) and HCPs attending CME conferences (group V). However, racial mix and age did not differ among the 6 groups.

Knowledge

As seen in Table III, the 506 HCPs (groups V and VI) had a pretest score of 37.9% and posttest score of 87.4% ($P < .001$). The 10-item knowledge test was examined for reliability. The Cronbach alpha of 0.84 with low interitem correlation of 0.35 demonstrate that this component of the survey is reliable. The nonmedical adult audiences (groups I-IV) averaged 30.2% correct on the pretest and 75.8% on the posttest. The reliability (0.80 Cronbach alpha and 0.30 interitem correlation) of this modified instrument for lay adults is similar to that for HCPs.

Questions tested knowledge on STDs, teen pregnancy, and legal issues. Despite commonly published

medical information and frequent well-publicized press releases, the majority of adults including those with health care backgrounds lacked correct information on important adolescent sexual health issues (Table III). For example, only 38.3% of HCPs (groups V and VI) and 24.1% of the other adult groups (groups I-IV) knew that the teenage pregnancy rate in the United States was decreasing consistently over the last 10 years (question 8) as documented by the National Center for Health Statistics.¹ When asked for which STD had condoms been shown to greatly reduce transmission, only about 1 in 10 knew HIV was the correct answer (question 1), as stated by the National Institutes of Health workshop on condom effectiveness, documenting an estimated 85% reduction in transmission of HIV.¹⁰

The majority of adults in all groups did not know that 1 in 5 people older than age 12 years in the United States are infected with genital herpes simplex virus type 2 (question 9) and that the majority of infected individuals are unaware they are infected (question 6).¹¹⁻¹³ When asked what was the STD with the most new cases per year, 64% of HCPs answered human papillomavirus (HPV) correctly, compared with 48.8% of other adult groups (question 2).¹⁴ The majority of HCPs and other

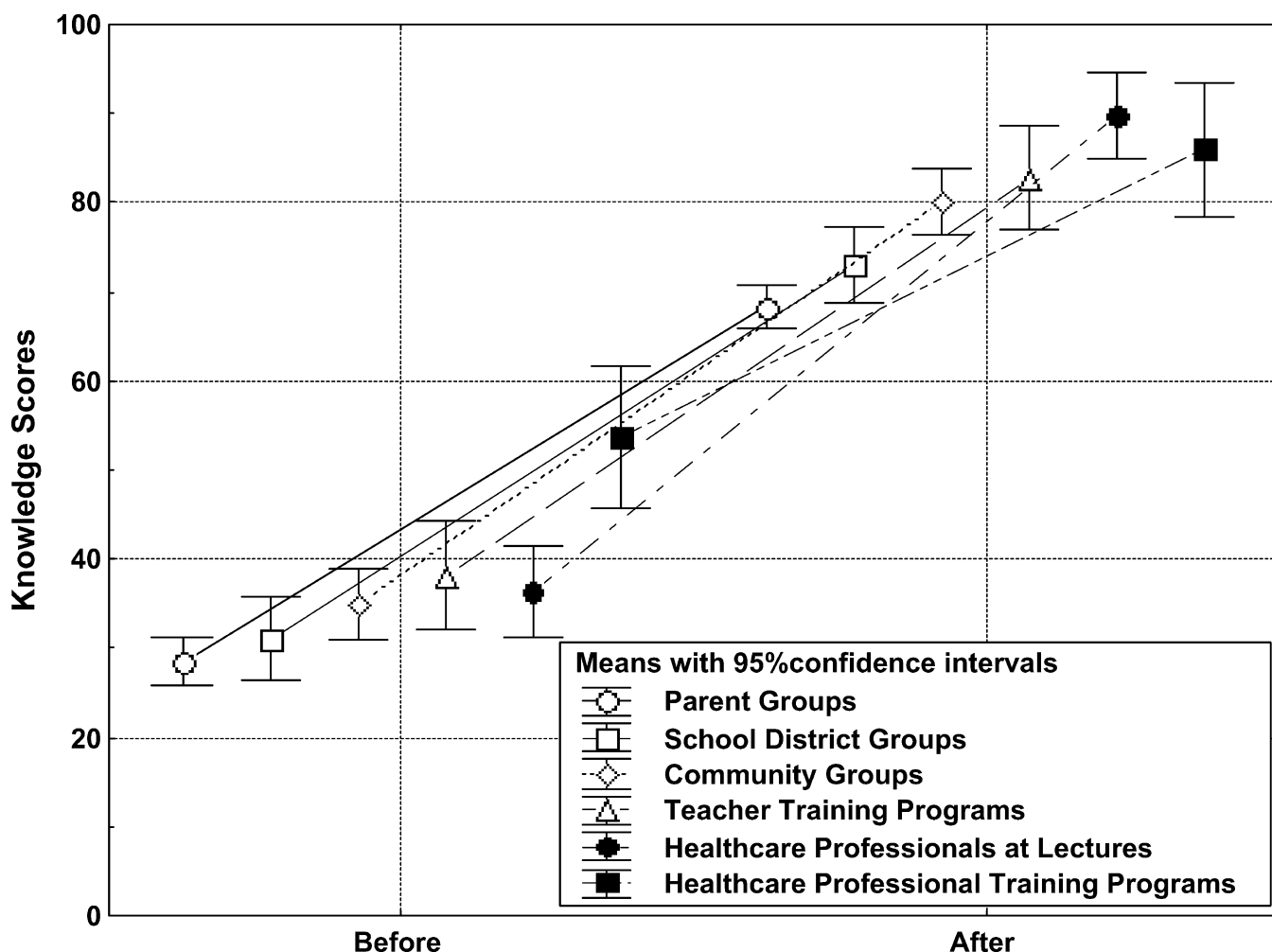


Figure 1 Comparison of knowledge scores of adult participants. The types of groups differed ($P < .0005$) in score on knowledge tests. Within groups there was a difference in scores between tests conducted before and after the events ($P < .0005$), and the amount of improvement varied between groups ($P = .001$).

adults were not aware that most people infected with HPV have no associated health problems (question 10).¹⁵ When asked about factors associated with teens delaying sexual activity, only 38.3% of HCPs and 24.1% of other adults were aware of the important influence of parents' viewpoints, school involvement, and pledges to delay sexual activity (question 7).⁸

Importantly, only 31.4% of HCPs and 17.9% of the other adult groups were aware that the number of high school students having ever had sexual intercourse has decreased over the last 10 years in the United States (question 3) as documented by CDC surveys.¹⁶ Specifically related to Texas, only 1 in 3 adults knew the legal age to consent to sex in the state is 17 years (question 4), and only about 6% knew that sex with someone 13 years of age or younger is aggravated sexual assault or "statutory rape" (question 5).¹⁷

Although groups differed in their average scores before and after presentations, Figure 1 demonstrates

the significant improvements in knowledge ($P = .0005$). HCPs attending adolescent sexual health conferences (group VI) had a significantly ($P < .02$) higher knowledge score before the programs and were more likely ($P < .001$) to have attended a prior presentation.

Attitudes

The survey forms included 3 standardized opinion questions pertaining to viewpoints on adolescent sexual activity and information. Respondents were asked: "I think teens should: (a) have sex at whatever age they want; (b) wait until after high school to have sex; (c) wait until after college/trade school to have sex; (d) wait until marriage to have sex; or (e) I don't know." The vast majority (94%) chose waiting until at least after high school (options b, c, and d), increasing to 98% after the program ($P < .0001$). The majority in all groups indicated that waiting until marriage was the preferred

Table IV Percent of respondents with the attitude that people should wait until marriage to have sex

Groups		Presurvey response		Postsurvey response	
		Mean %	95% CI	Mean %	95% CI
I	Parent groups	80	74-86	94	91-98
II	School district employees	79	69-89	92	87-98
III	Community groups	82	74-91	94	89-98
IV	Teacher training programs	73	60-87	88	81-95
V	HCPs attending CME conferences	53	42-65	76	70-83
VI	HCPs attending adolescent sexual health conferences	83	66-100	95	86-100

Using analysis of variance for repeated measures and arcsin transformation of percentages, presentation groups differed ($P < .0005$) and presurvey responses differed ($P < .0001$) from postsurvey responses. There were no significant interactions ($P = .43$).

option prior to the presentation (77.0%) increasing to 91.5% ($P < .0001$) after the presentation.

There were significant variations among groups with regard to when initiation of sex should occur (Table IV). Although the majority of HCPs attending CME lectures (group V) thought people should wait until marriage, they had the lowest frequency of choosing this response both before (53%) and after (76%) the program. On the opposite end of the spectrum, HCPs attending training conferences specifically on adolescent sexual health (group VI) were most likely to support the attitude of delaying sex until marriage both before and after attending the program. Characteristics of adults who favored delaying sexual activity until marriage included being a parent (odds ratio [OR] 2.2, confidence interval [CI] 1.4-3.3.). Group V had the highest percentage of nonparents, which may have been related to attitude choice. Marital status, gender, race, and age were not significant factors. As demonstrated in Table I, attendance did not change significantly before and after the programs so the change in attitude, as with the change in knowledge, appears related to the information acquired during the educational program.

Adults were also asked, "If a 14-year-old goes to the doctor, the doctor should: (a) not ask about sex; (b) ask about sex, encourage abstinence, and discuss failure rates of birth control; (c) ask about sex and discuss how to practice safe sex; or (d) ask about sex and discuss both abstinence and safe sex." The majority of respondents chose either b or d, but there was a significant ($P < .0001$) shift in survey answers. Prior to the program, 36.2% chose option b and 50.2% chose option d. As seen in Figure 2, after the program the majority (72.4%) favored option b when seeing a 14-year-old in the office. This was particularly the case if the adult was married (OR 1.3, CI 1.01-1.7).

Adults were then asked to respond to the question, "A parent today should: (a) discourage teens from having sex before marriage; (b) discourage teens from having sex but discuss safe sex; (c) not have a problem with their teen having sex as long as they use birth control/condoms; (d) not discuss sex with their teens; or

(e) I don't know." Less than 3% chose either options c, d, or e. Compared with the response before the program, there was a statistically significant ($P < .0001$) shift after the program from response b to response a. Prior to the program, 58.0% chose response b and 39.3% chose response a. As seen in Figure 3, the majority in all groups (75.4%) after the program favored option a. Group V favored option b more frequently than the other groups, which may have been related to the characteristics of this group of HCPs. Characteristics of adults who favored discouraging sex before marriage included being married (OR 1.4, CI 1.1-1.9) and being a parent (OR 1.5, CI 1.1-1.9). Characteristics of adults who did not favor discouraging sex before marriage included being female (OR 0.7, CI 0.5-0.9) and being younger than 50 years of age (OR 0.7, CI 0.5-0.9).

The results apply to a diverse group of adults, including HCPs, but may not apply to all areas of the United States. Groups differed in whether they were voluntarily attending the educational programs. Groups I (parent presentations), III (community groups), and VI (HCPs attending adolescent sexual health conferences) selected to attend the programs. Groups II (school district employees) and IV (middle school teachers) included 1709 adults (46.7% of the total) who were mandated to attend. Group V (HCPs attending CME conferences) were registrants at women's health care conferences.

Comment

Providing accurate, current information to teens, and those adults who influence them, on the issues of sexual activity is important to impact changes in behavior that can positively affect their lives. Adolescent sexual activity can create a multitude of medical, legal, and socioeconomic sequelae not only for the adolescents but also for society as well. Although the CDC has documented through the Youth Risk Behavior Surveillance that the number of high school students engaging in sexual intercourse has declined from 1991 to 2003 (57.4% of

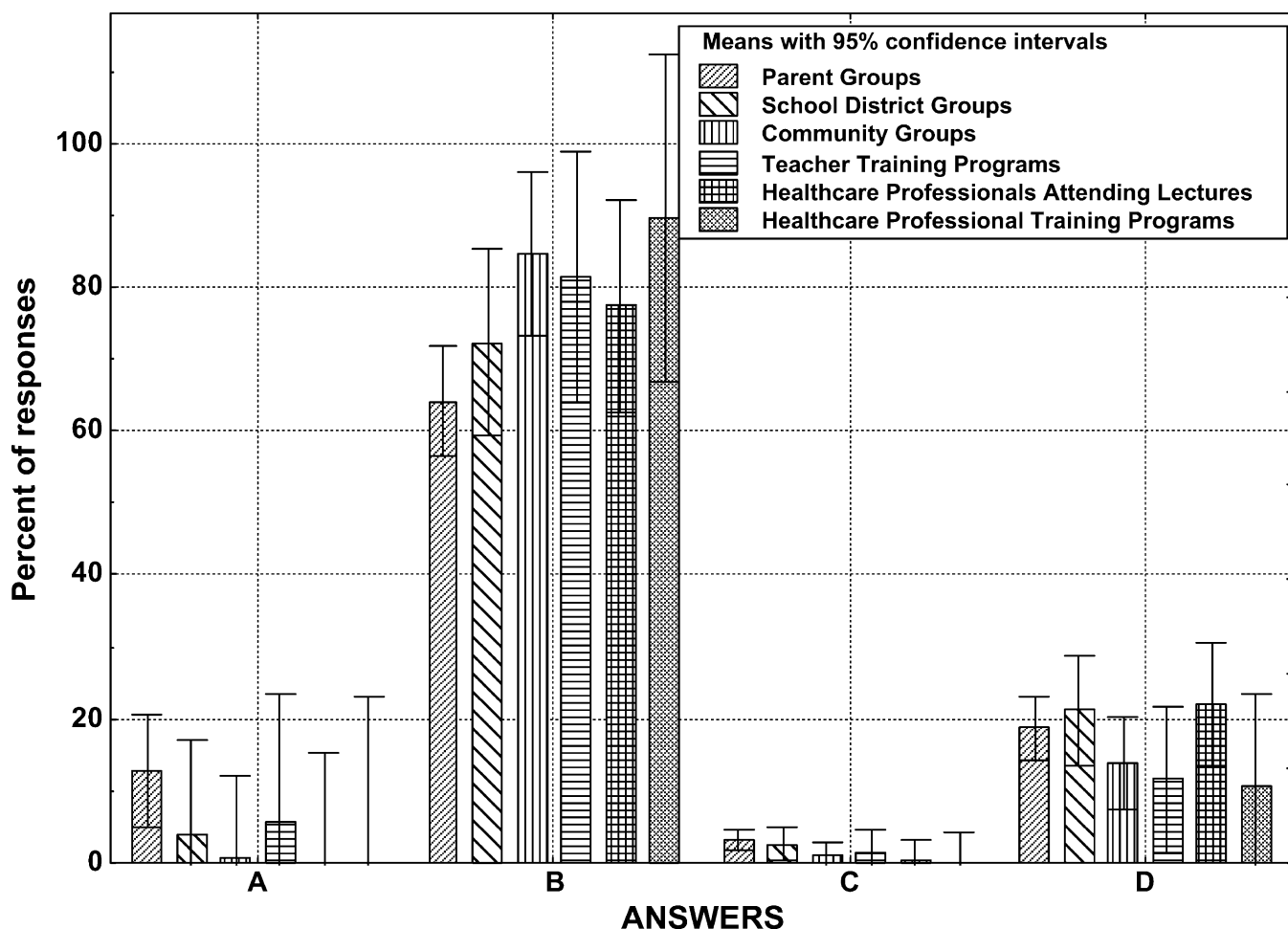


Figure 2 Percent of adults responding after the presentation to the question, “ If a 14-year-old goes to the doctor, the doctor should ____.” Choices included: (A) not ask about sexual activity; (B) ask about sexual activity, encourage abstinence, and discuss failure rates of birth control including condoms; (C) ask about sexual activity and discuss how to practice safe sex using condoms; (D) ask about sexual activity and discuss both abstinence and how to practice safe sex using condoms. There were no difference between groups ($P = .93$). Difference between choices are significant ($P < .0001$). There were no interaction between groups and choices ($P = .055$).

males and 50.8% of females in 1991 to 47% and 45.3%, respectively, in 2003), the overall rate is still high and fraught with medical repercussions.¹⁶ Researchers estimate that approximately 9.1 million STDs annually occur among persons aged 15 to 24 years.⁵ Most STDs are asymptomatic, making it difficult to diagnose, treat, and counsel those infected.^{11,15,18} The problems of STDs in adolescents are well known to obstetricians-gynecologists who deal with the complications including cervical dysplasia, recurrent herpes simplex virus type 2 (HSV-2), and pelvic inflammatory disease often leading to infertility, ectopic pregnancies, and acute/chronic pelvic pain. The 432,808 births to teenagers that occurred in the United States in 2002 are often associated with adverse medical and socioeconomic issues that have an impact on the family, community, and all of society, including welfare dependency, poverty, lack of educational preparedness, and inadequate workforce training.^{1,2}

Considering the health and socioeconomic impact of adolescent sexual activity, it is important to evaluate who and what influence teenage sexual behavior. Our data along with several national surveys give insight into the role of adults who have contact with teens. In December 2003, Zogby International surveyed more than 1000 parents in the United States. When asked what is the best message for programs to send young people in high school, 93% of parents responded that adolescents should be taught to abstain from sexual activity until after high school, after high school and in a potential marriage relationship, or until marriage.¹⁹ In December 2004, the National Campaign to Prevent Teen Pregnancy surveyed more than 1000 parents and 1000 teens on the issues surrounding adolescent sexual activity. In this national survey, 91% of adults and 94% of teens thought it was “somewhat” or “very” important for teens to be given a strong message

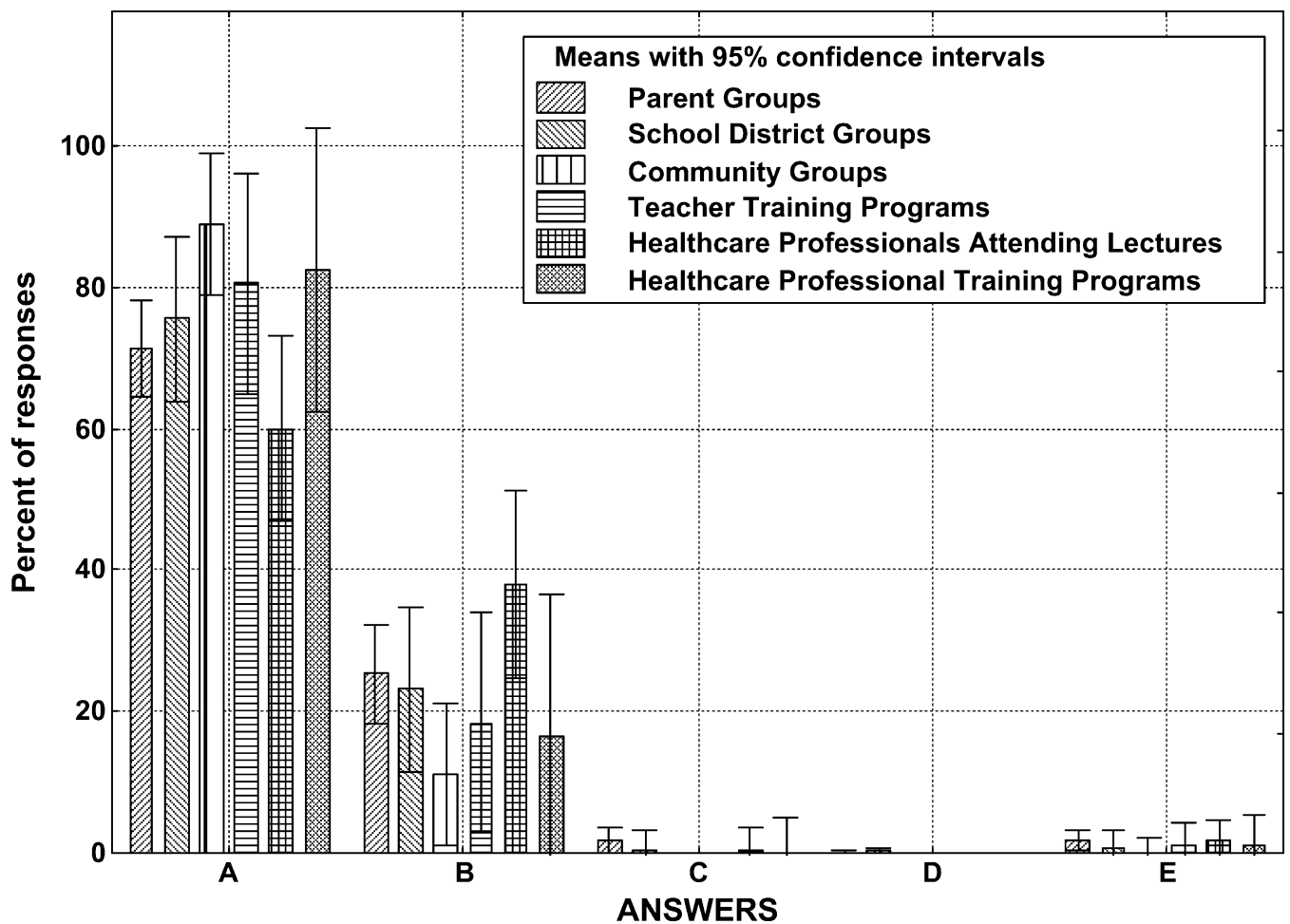


Figure 3 Percent of adults responding after the presentation to the question, “A parent today should ____.” Choices included: (A) discourage teens from having sex before marriage; (B) discourage teens from having sex but discuss safe-sex measures; (C) not have a problem with their teen having sex as long as they use birth control including condoms; (D) not discuss sex with their teens; (E) I don’t know which choice is best. There were no difference between groups ($P = .48$). Differences between choices are significant ($P < .00001$), and interaction between groups and choices is significant ($P = .0004$).

from society to not have sex until at least after high school.⁹

Our results of adults’ opinions on when adolescents should become sexually active are also consistent with those of other surveys. Ninety-four percent of adults taking our presurvey thought teens should at least wait until after high school to have sex, increasing to 98.0% on the postsurvey. This overwhelming common ground message of encouraging adolescents to wait until at least after high school to engage in sexual activity is seen in all groups surveyed, including medical professionals.

Not included in other adult surveys concerning adolescent sexual health, our report documents the lack of knowledge by most adults in many areas of adolescent sexual activity. Even HCPs do not know many important facts with regard to STDs, teen pregnancy, and legal issues. When educated on issues concerning adolescents and sex, all adult groups increased knowledge

scores significantly ($P = .0005$). More importantly, there was a statistically significant shift not only in the knowledge scores but also a corresponding shift in attitudes. Adults who listed themselves as parents on the surveys were statistically more likely to favor delaying sexual activity.

We were surprised at the change in attitude in all groups after the presentation. There was a statistically significant shift favoring discussions of abstaining from sexual activity when a doctor encounters a 14-year-old in the office. Similarly, a shift occurred in messages that teens should receive from parents, favoring abstaining from sexual activity. These changes occurred in all groups, despite voluntary or mandatory attendance at the presentations. Variations among groups in attitudes may be related to variation in group characteristics, especially in relation to the percentage of adults who were parents and were married. For example, HCPs in

group V who attended the adolescent sexual activity conference as a CME event least frequently had the attitude that sexual activity should be delayed until marriage and were also least frequently parents, whereas parents in all groups most frequently had the attitude that sexual activity should be delayed until marriage.

Several factors may have influenced the statistically significant difference in opinions seen after the programs. All groups did learn valuable information. Importantly, most adults in attendance, including HCPs, were not aware of the decreasing teen pregnancy rates in the United States over the past 10 years¹ and were not aware of the significant decline in high school students having sexual intercourse as reported by the CDC.¹⁶ Becoming aware of these trends documented by government health care agencies may have altered opinions.

There have been only 2 published reports analyzing the factors responsible for the decreasing teen pregnancy rates in the United States over the past decade. Mohn et al³ analyzed contraceptive use and sexual activity rates among high school students to assess their degree of influence on the declining pregnancy rates noted from 1991 to 1995. They concluded that 67% of the decline in pregnancy among single teenagers during that interval was secondary to declining rates of vaginal intercourse.³ Santelli et al⁴ from the CDC also evaluated the effect of changes in sexual behaviors among high school students to explain the decline in teen pregnancy rates in the 1990s. They concluded that 53% of the decline in pregnancy rates can be attributed to decreased sexual experience and 47% to improved contraceptive use.⁴

These reports confirm that continuing to encourage a delayed onset of sexual activity can play a major role in reducing the teen pregnancy rate. Although improved hormonal contraceptives have the potential to further the current decline in teen pregnancy, they will provide no reduction in STD acquisition. In an article in this journal, Genuis and Genuis⁷ reviewed the serious consequences of current STDs, the limitations of barrier contraception, and the need for HCPs to focus on primary prevention of behaviors predisposing individuals to STD risk.

What is the role of obstetrician-gynecologists in the important issue of adolescent sexual health? First, they can review sex education curricula in their communities for content and accuracy. But to do so, they must have the facts themselves. They can also discuss sexual issues in the office but, more importantly, in the community to adolescents in schools and youth groups and to adult groups. Adolescents need the facts from a knowledgeable medical professional, and parents need the same information along with the knowledge of the important role they play in their child's sexual decisions. As obstetrician-gynecologists dealing with adolescents are well aware, when kids become sexually active, health problems can and often do occur. In our current continuing medical emphasis on risk avoidance and

primary prevention of disease in all areas of women's health care, encouraging adolescents to defer the onset of sexual debut can lead to significant health benefits.

Previous studies^{8,9} have documented the important role of adults in the behaviors of adolescents. We have documented the knowledge base and attitudes with regard to adolescent sexual activity of a diverse group of adults who interact with this age group and how an educational intervention can influence changes. We are continuing to develop and research additional adult components to reach a larger group of individuals that have an impact on adolescents. Realizing the vital role of parents and other adults in the lives of adolescents, more evidence-based sex education programs that include programs for adults are needed, thus determining interventions that can positively influence healthy adolescent behaviors.

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