

# Teenage Women's Use of Contraceptives in Two Populations

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**Background:** Adolescent patterns of contraceptive use might be different in various populations and might have changed in the last 30 years. More appropriate use of contraception could prevent unplanned pregnancy.

**Methods:** We interviewed 378 women in rural East Tennessee and 396 women in suburban-urban Baltimore, all of whom were aged 18 to 50 years, in a convenience sampling about their memories of sexual experiences and early contraceptive use.

**Results:** First sexual experiences began at a younger age in women from Tennessee than in women from Baltimore. Sexual experiences occurred at an earlier age during the last 15 years in Baltimore women. Contraceptive use at first sexual experience has approximately doubled in both locations, from 7% to 15% in Tennessee and from 42% to 75% in Baltimore during the last 15 years. The primary reason in Baltimore is increased use of condoms. Condom use in Tennessee is very low.

**Conclusions:** These two populations are using contraception and condoms differently. Although the two populations are diverse, it could help physicians to learn about the particular contraceptive practices of their patient population to help their patients more appropriately with their contraceptive needs. (J Am Board Fam Pract 2001;14:1–6.)

Patterns of adolescents' use of contraception are important concerns. "A sexually active teenager who does not use contraception has a 90% chance of pregnancy within one year."<sup>1</sup> Twenty percent of sexually active adolescents become pregnant yearly, and 78% of these pregnancies are unplanned.<sup>1</sup> One third of the unplanned teenage pregnancies end in abortion. Helping teenagers use contraception when they become sexually active is important to help reduce the number of unplanned pregnancies and therapeutic abortions.

Throughout the United States, the overall percentage of teenagers using contraception at first intercourse has increased during the 1980s. The Alan Guttmacher Institute reports that this increase has been caused by increased condom use.<sup>2</sup> Even so, one third of adolescents nationwide still do not use contraception at their first intercourse,<sup>1</sup> although many might know of contraceptive methods.<sup>3</sup> During the last 15 years, health care profes-

sionals, parents, educators, counselors, and the media have impressed teenagers with the need to use contraception to prevent an unplanned pregnancy and to use condoms to reduce the chance of sexually transmitted diseases, especially acquired immunodeficiency syndrome (AIDS).<sup>4,5</sup> Although the national averages reflect improvement in teenagers' use of contraception and condoms, individual populations can differ extensively.<sup>6,7</sup> It is essential to discover how teenagers in the population served are using contraception.

In this study we make two comparisons when examining first contraceptive use by teenagers: one comparison by different areas—rural Tennessee and urban Baltimore—and another comparison with time. By examining two populations of women, one in rural eastern Tennessee and one in urban-suburban Baltimore, and their remembered sexual histories and use of contraception, we were able to examine the actual teenage contraception use in these two groups. By comparing responses from those women who were older than age 30 years (who were adolescents 12 to 32 years ago), called "older women," with those from women who are now aged 30 years and younger (who were more recently adolescent), called "younger women," we

Submitted, revised, 22 May 2000.

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could assess the changes in contraception use during the last 15 years. The purpose of this study was to show that, although national contraceptive use rates might improve, certain populations still need considerable attention.

## Methods

Two convenience samplings of women who visited family practice offices were obtained. Female patients and female relatives or friends of patients who entered the waiting room of two family practice residency offices and who were between 18 and 50 years old were asked to participate in a face-to-face, anonymously-recorded, half-hour interview by one medical student interviewer. The East Tennessee State University and Medstar institutional review boards, which suggested asking only women older than 18 years, approved this study.

One practice was a family practice residency office in rural small town in eastern Tennessee. There were 378 women interviewed during two periods (June and July, 1997, and June and July, 1998). This office was located in a town of 40,000 and had a referral base of 250,000 in the surrounding rural area in central Appalachia. The second family practice residency office was located in suburban Baltimore, where it served a mixed urban-suburban population. During June and July, 1999, 396 women were interviewed in the second office. These two practices were chosen because the primary author was working in these areas at the time. The areas were known to be widely diverse socioeconomically, and examination of their contraceptive practices might show important differences.

After obtaining informed consent, the interviewers spent approximately a half-hour obtaining the women's demographic information, her memories of her sexual history, and her life history of birth control use. After the woman answered questions about marital status, education, and socioeconomic status, she was then specifically asked questions about her memories of the timing of her first sexual and contraceptive experiences. She was then asked what contraceptive she remembered she had first used, how long she used it, when she had stopped using that contraceptive, and why. This line of questioning was repeated for each reported contraceptive practice until the interview reached the woman's present method of contraception. This questionnaire had been pretested for 2 years in a

previous study. After the first population was interviewed, some questions were simplified to make it easier for the second population to understand them. The questionnaire, however, was essentially the same for both populations. Only 7 women refused to participate in the survey, 2 in Appalachia and 5 in Baltimore, most often because of time constraints.

Research assistants and the assistant director of research at East Tennessee State University entered the Tennessee data, which were then sent to the author in 1999 on discs. The primary author, using Excel spreadsheets, entered the Baltimore data. The statisticians at the MedAtlantic Research Institute converted the spreadsheets to SPSS. Variables were analyzed for correlation and significance by *t* test and chi-square. The two populations were compared, and the responses of those women aged 30 years or younger (age 18 to 30 years) were specifically compared with those older than 30 years (age 31 to 50 years).

## Results

### Demographic Values

There were 378 women who completed the survey in eastern Tennessee and 396 who completed it in Baltimore (Table 1). The age ranges were similar in both groups; approximately 60% were aged 30 years and younger and 40% were older than 30 years. The average age was similar in each group.

Except for age and sex, however, these two groups of women were markedly dissimilar. The populations differed in race ( $P = .00$ ), educational level obtained ( $P = .00$ ), employment ( $P = .00$ ), and marital status ( $P = .00$ ), but not in use of public assistance ( $P = .691$ ) (Table 1). In eastern Tennessee, 94% ( $n = 350$ ) were white, and 6% ( $n = 23$ ) were African-American, whereas in Baltimore 70% ( $n = 279$ ) were white, 26% ( $n = 104$ ) were African-American, and 2% ( $n = 7$ ) were Hispanic. In eastern Tennessee, significantly fewer women had any college education; only 21% ( $n = 82$ ) had any college education compared with 46% ( $n = 182$ ) in Baltimore.

Fewer women respondents in Baltimore were married ( $n = 135$ , 34%) and more were single ( $n = 181$ , 46%) than those in eastern Tennessee, where 201 were married (53%) and 53 were single (14%). Significantly more women in Baltimore worked full time and fewer were unemployed ( $P = .00$ ).

**Table 1. Demographic Information of Two Populations of Women.**

Demographic Characteristics	Eastern Tennessee No. (%)	Baltimore No. (%)	P Value ( $\chi^2$ )
Total number	378	396	
Age, years			.657 (.197)
18–30	227 (60)	245 (61)	
31–50	151 (40)	151 (39)	
Average (range)	29.37 $\pm$ 8.1 (18–50)	29.4 $\pm$ 8.6 (18–50)	
Race			.000 (66.33)
African-American	23 (6)	104 (26)	
White	350 (94)	279 (70)	
Hispanic	0 (0)	7 (2)	
Other	0 (0)	5 (2)	
Education			.000 (49.64)
> High school	82 (21)	182 (46)	
$\leq$ High school	295 (79)	213 (54)	
Marital status			.000 (91.71)
Married	201 (53)	135 (34)	
Single	53 (14)	181 (46)	
Widow, divorced, separated	123 (33)	80 (20)	
Use of public assistance			.691 (.158)
Yes	182 (48)	184 (46)	
No	196 (52)	212 (54)	
Currently employed			.00 (14.03)
Full time	115 (31)	174 (44)	
Part time	67 (18)	63 (16)	
No	191 (51)	159 (40)	

Note: not all study participants responded to questions on age, race, and education, so totals for these characteristics do not add up to group totals.

Slightly less than one half of both groups of women used some form of public assistance.

Less than one third of the population of women in eastern Tennessee had a yearly household income of more than \$20,000 and less than 5% had a yearly household income of more than \$40,000, whereas 75% of women in Baltimore had a yearly household income of more than \$40,000.

### ***Sexual and Contraceptive Experiences***

The percentage of women who reported their first sexual experience before the age of 16 years was similar in both groups (30% in Tennessee, 31% in Baltimore) (Table 2). Significantly more women in the Baltimore group (28%,  $n = 106$ ), however, reported their first sexual experience at age 18 years or later compared with those in Tennessee (14%,  $n = 47$ ) ( $P = .000$ ) (Table 2).

When comparing the older women with the younger women, the age at the first sexual encoun-

ter did not change significantly in the Tennessee group. For the Baltimore women, however, almost twice as many older women had their first sexual experience after the age of 18 years (42%,  $n = 60$ ) when compared with the younger women (22%,  $n = 46$ ).

Significantly more Tennessee women were older than Baltimore women when they first used contraception. Sixty-eight percent ( $n = 243$ ) of the Tennessee women did not use contraception until after the age of 18 years, whereas only 42% of Baltimore women waited to use contraception until after the age of 18 years.

The percentage of women who used contraception at or before initiation of sex was significantly greater for Baltimore group of women than Tennessee group of women and greater for the younger than the older women in both populations (Table 2 and Figure 1). Almost five times more women were likely to use contraception at or before their first

**Table 2. Women's Use of Contraception.**

Characteristics	Tennessee			Baltimore		
	Younger No. (%)	Older No. (%)	Total No. (%)	Younger No. (%)	Older No. (%)	Total No. (%)
Age < 16 years at first sex	66 (30)	42 (25)	108 (30)	86 (34)	33 (22)	119 (31)
Age > 18 years at first sex	44 (20)	23 (16)	67 (14)	46 (22)	60 (42)*	106 (28) <sup>†</sup>
Use of contraception before or at first sex	30 (15)	9 (7)	39 (12)	166 (67)	55 (36)	221 (57) <sup>†</sup>
Use condoms as first contraception	12 (5)	5 (3)	17 (5)	180 (75)	61 (42)	241 (70) <sup>†</sup>

Note: denominators for percentages for each characteristic are the number of women responding to each question, which is not always the total number of women in the age group.

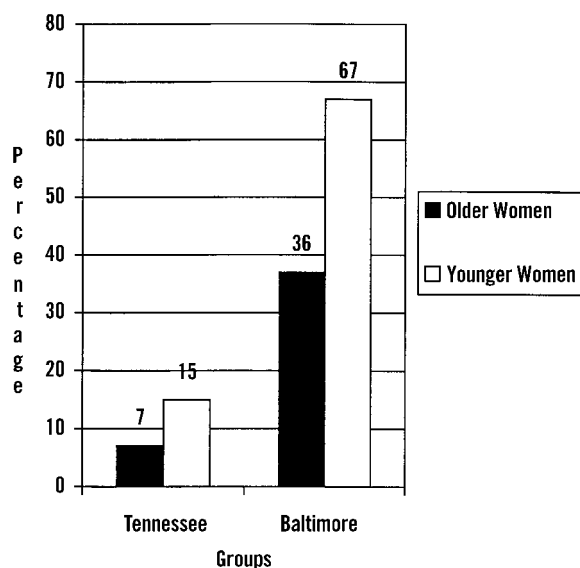
\* $P < .01$  for comparison of younger vs older Baltimore women.

<sup>†</sup> $P = .001$ .

sexual encounter in the Baltimore group of women than in the Tennessee group (57% vs 12%).

### First Type of Contraceptive

In the Tennessee population, only 55% ( $n = 205$ ) of the women listed their first type of contraceptive. Of these women only 5% ( $n = 17$ ) had used condoms as their first contraceptive, but the percentage who used condoms had doubled from 3% to 6% from the older to younger group. In the entire Baltimore group, however, 70% ( $n = 241$ ) women used condoms as their first contraception. The rate of condom use as first contraceptive had increased significantly in Baltimore group, also from 42% ( $n = 61$ ) in the older group to 75% ( $n = 180$ ) in the younger group (Table 2).



**Figure 1. Percentage of women using contraception at or before their first sexual experience.**

### Discussion

Nationally, more than one half of 17-year-olds has had intercourse, and 4 of 5 women had intercourse while a teenager.<sup>1</sup> Translating these national statistics into realities of dealing with adolescent populations in different areas and socioeconomic regions is important for the physicians. It could be incorrect to assume that national averages parallel local situations. By examining the reported patterns of sexuality and contraceptive use in teenagers in two populations, and by creating a historical perspective, comparing women older than 30 years (older women) with those aged 30 years or younger (younger women), it is possible to discover trends that can help physicians, families, and women increase appropriate contraceptive use and decrease periods of sexual activity without contraception.

Although similar by age, these two groups were very dissimilar in socioeconomic factors. The women in eastern Tennessee were poorer; more likely to be white, unemployed, and married; and less likely to have a college education than the women in Baltimore.

During the last 15 years, the use of contraception at or before the first sexual experience increased in both populations, almost doubling from older to younger women, as has been touted in the national averages. In Tennessee group, however, although the rate increased from older to younger women, it was at a much lower level than for the women in Baltimore (12% vs 57%) and the nation. In Tennessee, the use of contraception at or before their first sexual encounter doubled from 7% to 15% during the last 15 years. In Baltimore, the use of contraception also nearly doubled, and its percentages of use corresponded well to the percent-

ages reported nationally.<sup>2</sup> The use of contraception at or before the first sexual encounter rose from 36% for older women to more recently 67% in young women, which is equal to the two-thirds use rate nationally.<sup>1</sup>

Nationally, teenagers are using contraception earlier, more often, and at a higher rate in 1990 than they did in 1980.<sup>1</sup> The increase nationally has been mostly caused by an increase (almost doubling) in the use of condoms, from 48% to 65% during the 1980s.<sup>1,2</sup> Condom use was seldom reported by women in Tennessee; condoms were used as the first contraceptive method by only 5% of women. In Baltimore, however, the rate of condom use as first contraceptive was much higher and had increased significantly in younger women from that reported by older women. The rate of condom use as first contraceptive almost doubled, from 42% in the older women to 75% in the younger women.

This 33% increase in use of condoms could explain the increase use of contraception at or before first sexual experience in Baltimore as well. During a period when education about the risks of sexually transmitted diseases (STDs), AIDS, and pregnancy have been strongly disseminated and use of condoms strongly recommended, this group of Baltimore teenagers has significantly increased their use of condoms. The AIDS rate is higher in Baltimore than Tennessee, which might fuel the increase use of condoms in the Baltimore group. The group of Tennessee women uses condoms rarely.

How and when teenagers choose to use contraception depends on many factors. Many teenagers do worry about unprotected intercourse.<sup>8</sup> One study found that most teens (84%) attributed their failure to use contraceptives to fear of side effects and lack of motivation to avoid pregnancy.<sup>9</sup> There are multiple factors influencing the choice of using contraception and which contraception to use. Three important ones are availability, cost, and fear of sexually transmitted disease.

Two patterns emerge in this study. First, younger women report initiation of sexual intercourse at a younger age, but they also report using contraceptives, especially condoms, at or before their first sexual experience more often. As the result of the reality of AIDS, fear of STDs in areas of high STD prevalence, fear of AIDS, or improved education, less risky if younger sexual experiences

are occurring, at least in the Baltimore group of women. This increased contraceptive use could make unplanned pregnancy, STDs, and AIDS transmission less likely.

The second, more important, finding is that populations of women differ tremendously and that patterns of sexual experiences and contraception use, although modified by national trends, can differ extensively and widely from the national averages. Physicians caring for diverse populations of women must learn their patients' health care patterns, especially in terms of sexual experiences and contraceptive use. Whereas the group of Baltimore women we studied mirrored nationally reported trends, the group of Tennessee women was markedly different socioeconomically, sexually, and in the timing of their use of contraceptives.

Many early studies have questions about the reliability and communication between interviewer and woman. Sexual and contraceptive questions can mean different things to different people, making discussion of these data and conclusions difficult. Some groups of women, particularly recent adolescents (younger women) can be somewhat reluctant to discuss contraception or sexual practices. There can be a recall bias; older women might have forgotten more. Some women might not consider condoms to be birth control and forget to mention them.

The convenience sampling of this study could have resulted in a biased population. These two groups of women were compared only because the primary author encountered these two populations. They might be so different that any comparison or conclusion would be unfounded. The dissimilarity of the two populations and the differences in sexual history and contraception use underscore the absolute necessity that physicians and health care providers know their patient population. Educational methods and public health education meant to be used universally might be inappropriate for the population served. Although the use of condoms or appropriate early contraception seems to be important in many areas, reasons for their nonuse can be idiosyncratic to the area. Although AIDS is everywhere, its impact might be more strongly experienced in Baltimore, thus causing women to use condoms more, or public health and school education about STDs and pregnancy could be more effective in Baltimore. Research into methods to target special populations is important. Further



studies into other factors that influence the choice of the timing and type of contraception use in teenagers are essential. Research in other populations is also important for comparison.

## Conclusions

Although two groups of women studied were very dissimilar, in both populations women who were teenagers more recently were more likely to use contraception at their first sexual encounter than women who were teenagers more than 15 years ago. In this population of Baltimore women, contraception use at or before the first sexual encounter and condom use have increased significantly with time. There were still many women in the Tennessee group, however, who did not use condoms and who did not use contraceptives at or before their first sexual encounter. Physicians must know their populations and their practices to serve better the contraceptive needs of their populations.

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