

Youth Tobacco Surveillance — United States, 2003–2006

LaTisha Marshall, MPH,¹ Anna Teplinskaya, MD,¹ Charlotte Steeh, PhD,¹ Jennifer Kahende, PhD,¹ Emmanuel Maurice, MS,¹ Kat Asman, MSPH,² Aneeqah Ferguson, MS,² Heather Ryan, MPH,¹ Peter Mariolis, PhD,¹ Renee Arazola, MPH,¹ Darylema Williams, MPH,¹ Erica R. Causey, MPH,¹ Natalie Whitney, MPH,¹ Mark Tabladillo, PhD¹

¹Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia

²Research Triangle Institute, Research Triangle Park, North Carolina

Methods

Sampling

NYTS: The 2004 and 2006 NYTS employed a three-stage cluster sample design to produce a nationally representative sample of public, Catholic, and other private school students in grades 6–12. NYTS was stratified by census region, Metropolitan Statistical Area (MSA) status, and state. Non-Hispanic black, Hispanic, and Asian students were oversampled.

2004 NYTS: In the first stage of sampling, 91 primary sampling units (PSUs) were selected from eight strata. In the second stage of sampling, from the selected PSUs, 288 schools were selected with probability proportional to school enrollment size. Of these 288 eligible schools, 267 participated in the survey, thus, the school response rate was 93%.

2006 NYTS: In the first stage of sampling, 91 PSUs were selected from eight strata. In the second stage of sampling, from the selected PSUs, 289 schools were selected with probability proportional to school enrollment size. Four schools in Louisiana were ineligible because of nonoperational status as a result of Hurricane Katrina. Of the 285

eligible schools, 261 participated in the survey, thus, the school response rate was 91.6%.

For both the 2004 and 2006 NYTS, the third sampling stage consisted of approximately five classes of an either required subject (e.g., English or social studies) or time period that were randomly selected from a class schedule provided by each participating school. Class schedules were constructed to ensure that all students in the eligible grades were accounted for once and were not duplicated. All students in the selected classes were eligible to participate in the survey.

The 2004 NYTS student response rate was 88.0%, resulting in an overall response rate (the school response rate multiplied by the student response rate) of 81.8% ($n = 27,933$). The 2006 NYTS student response rate was 87.6%, resulting in an overall response rate (the school response rate multiplied by the student response rate) of 80.2 % ($n = 27,038$).

A weighting factor was applied to each student record to adjust for nonresponse and for varying probabilities of selection. Weights were adjusted to ensure that the weighted proportions of students in each grade matched national population proportions on school level (middle school and high school), grade (6–12), sex, and race\ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, and Asian). Final adjusted weights were scaled to ensure that the weighted count of students was equal to the total sample size. SAS and SUDAAN were used to compute 95% confidence intervals (CIs). Two-sided *t*-tests were conducted to test for statistically significant differences between prevalence estimates. If the *p*-value was <0.05 , then prevalence estimates were considered statistically significant. Estimates are not presented if < 35 cases were in the denominator because results were considered imprecise.

YTS. The state-specific YTS employed a two-stage cluster sample design. The first-stage sampling frame included separate lists of middle schools and high schools containing any or all of the eligible grades of public and/or private schools. Schools were selected with a probability proportional to school enrollment size. The number of schools selected varied by state. At the second sampling stage, classes were randomly selected from a class schedule provided by each participating school. Class schedules were constructed to ensure that all students in the eligible grades were counted once and were not duplicated. All students in the selected classes were eligible to participate in the survey. The number of classes selected varied by state. SAS and SUDAAN were used to compute 95% CIs. Estimates are not presented if <35 cases were in the denominator because results were considered imprecise.

A total of 33 states conducted YTS at least one time during 2003 through 2006 and are reported here. These states achieved overall response rates of $\geq 60\%$ and data were weighted to adjust for nonresponse and varying probabilities of selection and to ensure that the sample mirrors the entire state population proportions on school level, sex, and race. Weighted estimates are representative samples of middle school and high school students in the state. YTS student sample sizes ranged from 1,165 to 12,040. School response rates ranged from 68.3% to 100.0%; student response rates ranged from 62.6% to 97.0%; and overall response rates ranged from 60.0% to 90.6% (Table 1). Only two states conducted a YTS more than two times during 2003–2006, therefore trends over time were not assessed.

Data Collection

Both the YTS and NYTS survey procedures were designed to protect student

privacy by ensuring that student participation was anonymous and voluntary. The survey was administered during one class period. Students completed a self-administered questionnaire in the classroom and recorded their responses on an answer sheet. Both questionnaires (NYTS and YTS) contained questions concerning tobacco use (cigarettes, cigars, pipes, smokeless tobacco, bidis,* and kreteks[†]), exposure to secondhand smoke, smoking cessation, tobacco-related school curriculum, minors' ability to purchase or obtain tobacco products, knowledge and attitudes about tobacco, and familiarity with pro-tobacco and anti-tobacco media messages. Before the surveys were conducted, local parental permission procedures were followed.

*Bidis (or beedies) are small brown cigarettes from India consisting of tobacco wrapped in a leaf and tied with a thread.

[†]Kreteks (i.e., clove cigarettes) are flavored cigarettes containing tobacco and clove extract.