

WHY DOES ADULT AFRICAN-AMERICAN SMOKING PREVALENCE IN CALIFORNIA REMAIN HIGHER THAN FOR NON-HISPANIC WHITES?

Objectives: To explain why, contrary to national trends, adult California African-American (AA) smoking prevalence remains higher than for non-Hispanic Whites (W) and to explore how future rates might change.

Methods: Data from the random-digit-dialed California Tobacco Surveys from 1990 to 2002 ($N \approx 16,000$ – $21,000$) allowed for the examination of differences in current smoking prevalence, ever smoking (uptake), and successful smoking cessation over time by race/ethnicity and age group.

Results: African-American (AA) adolescent (12–17 years) smoking prevalence was lower than Ws through 1996, but similar thereafter because of marked declines for Ws. After 1990, AA young adult (18–29 years) smoking prevalence was consistently 25% lower than Ws', and no evidence of delayed AA smoking initiation was seen. However, among older age groups (30–44 years and 45+ years), AA smoking prevalence was much higher, yielding higher overall adult (18+ years) prevalence. While ever smoking (uptake) was generally lower among AAs, successful cessation (5+ years) was much lower among AA adults, especially older age groups.

Conclusions: Continued higher adult California AA smoking prevalence results from less successful quitting in older age groups. Increased successful cessation is critical for reducing near-term prevalence. Long-term forecasting is difficult because both AA and W adolescents now smoke at comparably low rates. (*Ethn Dis.* 2005;15:505–511)

Key Words: African American, Cessation, Ethnicity, Prevalence, Race, Smoking

Dennis R. Trinidad, PhD; Elizabeth A. Gilpin, MS;
Martha M. White, MS; John P. Pierce, PhD

INTRODUCTION

Nationally, recent declines in African-American adult smoking prevalence have led to a rate similar to that of non-Hispanic Whites, 22.3% and 24.0% respectively, in 2001.¹ Unfortunately, in California, a state with one of the lowest overall smoking rates in the nation,² this has not been the case; African-American adult smoking prevalence still remains higher than that of non-Hispanic Whites.³ In 2002, adult current-smoking prevalence was 20.8% for African Americans compared to 16.8% for non-Hispanic Whites. The national and California definition of current smoking was the same.

In attempting to explain the historically higher African-American adult prevalence rates, researchers have postulated that African Americans initiate smoking at older ages than non-Hispanic Whites. This assertion seems reasonable since beginning in the late 1970s, African-American adolescents have exhibited much lower smoking prevalence rates than non-Hispanic Whites,^{4,5} and some evidence exists for delayed initiation among African Americans.^{4–7} However, one alternative explanation is that older cohorts of African Americans, who initiated smoking decades previously, had much higher smoking uptake rates. Further, even if smoking uptake rates were similar for African Americans and non-Hispanic Whites, if African-American smokers have been less successful in quitting compared to non-Hispanic Whites, then adult smoking prevalence would remain higher. Both of these alternative explanations might account for the continued higher African-American smoking prevalence in California.

Large surveillance studies of African-

American adult smoking prevalence have generally considered the aggregated adult population and have not examined smoking prevalence or other smoking behavior measures by age.^{5,8–11} Thus, little information exists about how prevalence in different age groups might aggregate to produce the observed overall prevalence differences. Further, without examining trends in uptake and cessation, explaining these differences or determining where prevalence might be headed is difficult.

The primary goal of this study is to explain whether the stubbornly higher overall adult smoking prevalence among African Americans in California compared to non-Hispanic Whites is from delayed initiation or from higher smoking uptake rates and/or lower cessation rates among older cohorts of African Americans. We used data from the large, population-based California Tobacco Surveys to examine smoking prevalence trends from 1990 to 2002 in adolescents and young adults; we looked for evidence of delayed initiation and differences in smoking uptake, prevalence, and successful quitting among adults. A secondary goal was to speculate how relative adult prevalence for these two racial groups might change in the future, in light of recent trends.

METHODS

Data Source

The California Tobacco Surveys (CTS) are large, population-based, random-digit-dialed surveys designed to monitor changes in tobacco use and attitudes in California. They have been conducted every three years from 1990 to 2002, as part of the evaluation of the

From the Cancer Prevention and Control Program, Cancer Center, University of California, San Diego, La Jolla, California.

Address correspondence and reprint requests to John P. Pierce, PhD; Cancer Prevention and Control Program, Cancer Center; University of California, San Diego; 9500 Gilman Drive, MC 0645; La Jolla, CA 92093-0645; 858-822-2380; 858-822-2399 (fax); jppierce@ucsd.edu

In 2002, adult current-smoking prevalence [in California] was 20.8% for African Americans compared to 16.8% for non-Hispanic Whites.

California Tobacco Control Program.¹² The detailed methods for each CTS are described elsewhere.³ Briefly, a five-minute screener interview with a household adult collects demographic and smoking status information for each resident. Some household residents are then selected for an approximately 25-minute extended interview. For adults, the probability of selection was much higher if the person was reported to have smoked within the past five years.

Table 1 presents data on the number of adults and adolescents enumerated, response rates, and the percentages of African Americans and non-Hispanic Whites for each CTS. The non-Hispanic White population has declined as a proportion of the total California population, with a corresponding increase in the percentage of Hispanics and Asian/Pacific Islanders.¹³ African Americans have remained at a fairly constant relative percentage of the total population. Over the period indicated, the household-level response rates for the CTS have declined, and this decline in response has occurred for other state surveillance systems as well.¹⁴ However, a careful analysis indicated that the samples obtained were at least as representative of the population in later years, when the household response rates had declined, as they were in earlier years when they were higher.¹⁴ Further, estimates of adult smoking prevalence from the CTS were very similar to state-specific estimates from the Current Population Survey,¹⁵ which showed much less

Sample characteristics for each California Tobacco Survey year analyzed

	1990	1993	1996	1999	2002
Adults (18+ yrs; screener interview)					
# of adults enumerated	65,139	61,848	78,337	93,554	71,233
Household response rate (%)	75.1	70.0	55.3	51.1	45.7
% African American	5.1	5.2	5.8	5.6	5.1
% Non-Hispanic White	70.2	67.1	62.9	59.0	58.2
Adolescents (12-17 yrs; extended interview)					
# of adolescents surveyed	5,040	5,531	6,252	6,090	5,857
Extended interview response rate (%)	76.3	80.3	71.2	75.5	66.6
% African American	5.9	5.8	7.1	6.8	6.6
% Non-Hispanic White	57.8	58.5	54.8	47.8	47.3

of a decline in household response rates.¹⁵

Adults

As indicated above, the CTS screener interview enumerated all household residents and obtained demographic information, including age, race/ethnicity, and smoking status information for each. The present analysis uses adult data from the screener survey.

Adolescents

In all survey years except 1999, all adolescents (12-17 years of age) in a household were selected for an extended interview. In 1999, only one household adolescent was randomly selected for an interview; other adolescents in the household were not eligible and were not interviewed if a completed interview was not obtained for the adolescent selected. After obtaining consent from a household adult, the interviewer made an appointment to call the adolescents back several days later for the extended interview.

Measures

Adult Smoking Behavior

Adults enumerated on the screener survey were considered *ever smokers* if they reported or were reported to have smoked at least 100 cigarettes in their lifetime. The prevalence of ever smoking is used in this report as a measure of adult smoking uptake. In 1990 through 1999, the screener respondent

reported if each household member (including self) now smoked. In 2002, the question was changed to whether the household member now smoked every-day, some days, or not at all. Smoking "now" prior to 2002 or "everyday or some days" in 2002 classified the adult as a *current smoker*.

Successful cessation was defined from the screener survey as report of not smoking now and an answer of "no" to a follow-up question about whether quitting took place within the past five years. We report the quit ratio as the percentage of ever smokers who were successful (5+ year) quitters.

Adolescent Current Smoking Prevalence

Adolescent extended interview respondents were asked if they had ever smoked a cigarette. Those who answered "yes" to this question were then asked, "Think about the last 30 days. On how many of these days did you smoke?" Those who gave an answer other than zero were considered adolescent *current smokers*. All others were considered non-smokers for determining prevalence.

Statistical Analysis

Each survey was weighted so that population estimates could be computed. First, base weights were computed from the probability of household selection and/or the probability of being selected for an extended interview.³ These

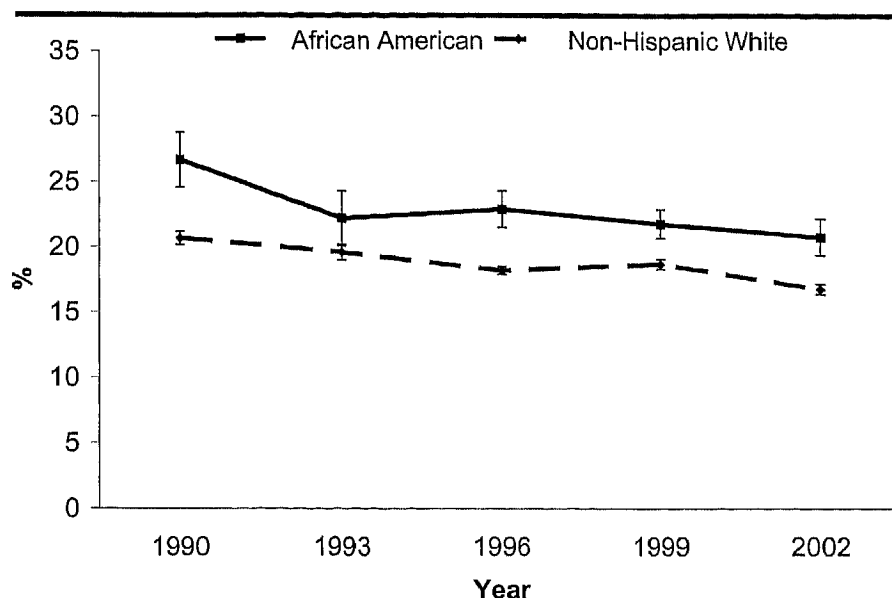


Fig 1. California adult current smoking prevalence, 1990–2002, by race/ethnicity, standardized by sex, age, and educational level to 2002 population totals

base weights were then further adjusted for nonresponse to the latest available California census totals. We used a SAS-callable version of SUDAAN (Research Triangle Institute, Research Triangle Park, NC) to compute estimates, including variances for use in the computation of the 95% confidence intervals provided in the text and figures.

RESULTS

Trends in Overall Adult Current Smoking Prevalence

A general declining trend in current smoking prevalence has been seen for both African-American and non-Hispanic White adults (18+ years) since 1990 (Figure 1). However, in every survey year, African-American adults have exhibited significantly higher overall rates than non-Hispanic Whites, approximately 20% higher since 1993.

Trends in Current Smoking Prevalence, by Age Groups

The first panel in Figure 2 (top-left) shows that adolescent (ages 12–17 years) current smoking prevalence was

much lower among African Americans than non-Hispanic Whites from 1990 to 1996. However, in 1999 and 2002, non-Hispanic Whites showed marked declines so that current smoking prevalence between the groups was similar, despite a slight decline for African Americans by 2002.

The second panel of Figure 2 (top right) illustrates that among young adults (ages 18–29 years) in 1990, current smoking prevalence was no different in African Americans than in non-Hispanic Whites (about 28%). By 1993, African-American young adult current-smoking prevalence had declined significantly to approximately 15% and remained approximately 25% lower than the prevalence for non-Hispanic Whites through 2002. A further stratified analysis by four-year age subgroups of young adults in the 2002 CTS showed that African Americans did not have higher current-smoking prevalence than non-Hispanic Whites in each age group (18–21 years: 22.4% \pm 6.3% vs 27.1% \pm 2.5%; 22–25 years: 20.8% \pm 6.8% vs 33.2% \pm 2.8%; 26–29 years: 18.1% \pm 7.9% vs 26.0% \pm 2.9%, respectively). Notably, the rates

for African Americans did not increase with age.

The third and fourth panels of Figure 2 (bottom left and right) demonstrate that, contrary to the younger age group patterns, older African-American adults showed higher current smoking prevalence than non-Hispanic Whites in every survey year. For those 30–44 years of age, African-American current smoking prevalence was 25% higher than the prevalence for non-Hispanic Whites in 2002, and it was 29% higher for those 45+ years. Despite the lower current-smoking prevalence for young adult African Americans, higher prevalence in the older adult age groups yielded a net overall higher smoking prevalence among all African-American adults when compared to that of non-Hispanic Whites.

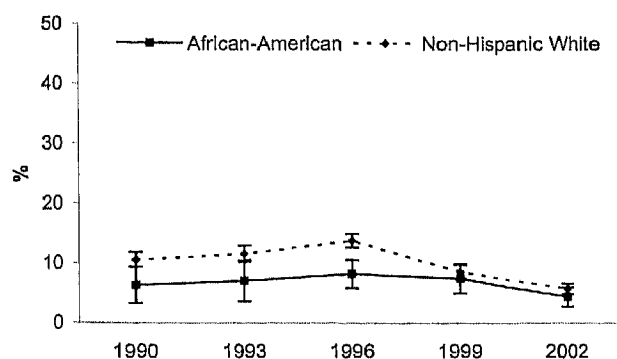
Ever Smoking (Uptake)

The three panels of Figure 3 (left side) show the rates of ever smoking by race and age group in each survey year. For young adults (18–29 years), the rate of ever smoking was similar for both races in 1990, but dropped significantly for African Americans and remained lower thereafter than for non-Hispanic Whites. Among those 30–44 years of age, the rate of ever smoking was similar in 1990 and 2002, but lower for African Americans compared to non-Hispanic Whites in the intermediate years. In those 45 years of age and older, the rates of ever smoking for both races were similar in each survey year. Thus, no evidence was seen that higher current smoking-prevalence among African-American adults is due to higher rates of smoking uptake.

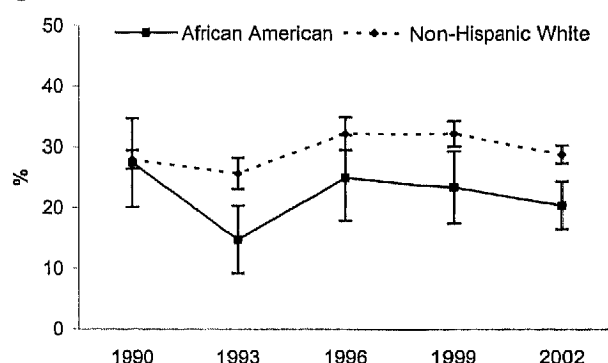
Long-Term Quitting

The three panels of Figure 3 (right side) indicate that in each survey year, African Americans tended to show lower rates of successful quitting (5+ years) than non-Hispanic Whites in all age groups, with the disparity much larger in the older age groups. Specifically, ex-

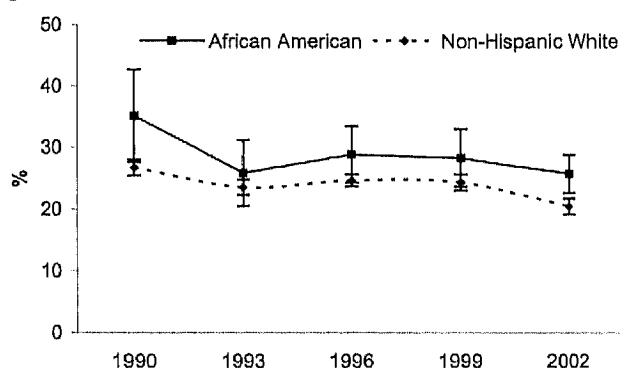
*Ages 12-17**



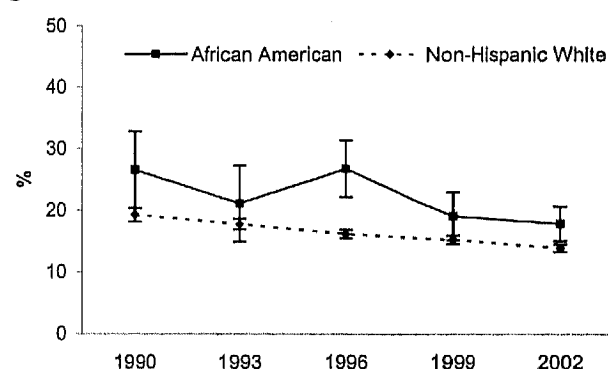
Ages 18-29



Ages 30-44



Ages 45+



* Adolescent current smoking prevalence: Any smoking in past 30 days
Adult current smoking prevalence: Smoked 100+ cigarettes in lifetime and smoked everyday or some days.

Fig 2. California adolescent and adult current smoking prevalence, 1990–2002, by age group and race/ethnicity

cept for in 1990, African Americans 18–29 years of age reported only slightly lower rates of successful quitting than non-Hispanic Whites (approximately 4% vs 6%, respectively). However, among those 30–44 years of age, in every CTS year, only approximately 15% of African-American ever smokers reported successful quitting, compared to >25% of non-Hispanic Whites. For those aged 45+ years, from 1990 to 2002, African-American quit ratios remained between 30% and 40%. In contrast, quit ratios among non-Hispanic Whites were between 50% and 55% during the same period. However, in the oldest age group, both racial groups showed an increasing quit ratio after 1993, which is consistent with the

slightly declining overall prevalence seen in Figure 1.

DISCUSSION

This study examined smoking behavior trends in African Americans and non-Hispanic Whites in an effort to explain the persistently higher current-smoking prevalence in California for African-American adults and to determine how things might change in the future. The higher smoking prevalence rates among older African Americans (30+ years) compared to non-Hispanic Whites appeared to be responsible for the overall higher adult prevalence rates, despite lower prevalence rates among

young adult African Americans. Further examination of the adult African-American data revealed no evidence of delayed initiation, no higher rates of smoking uptake within age groups, but much less successful cessation (5+ years), particularly in the older age groups. Thus, less successful cessation is responsible for the higher current prevalence rates for African Americans in the older age groups.

To explore how trends might change in the future, smoking among younger Californians was examined. African-American adolescent current-smoking prevalence was lower than that of non-Hispanic Whites in the early 1990s, but by 1999, adolescents of both races showed similar prevalence because of

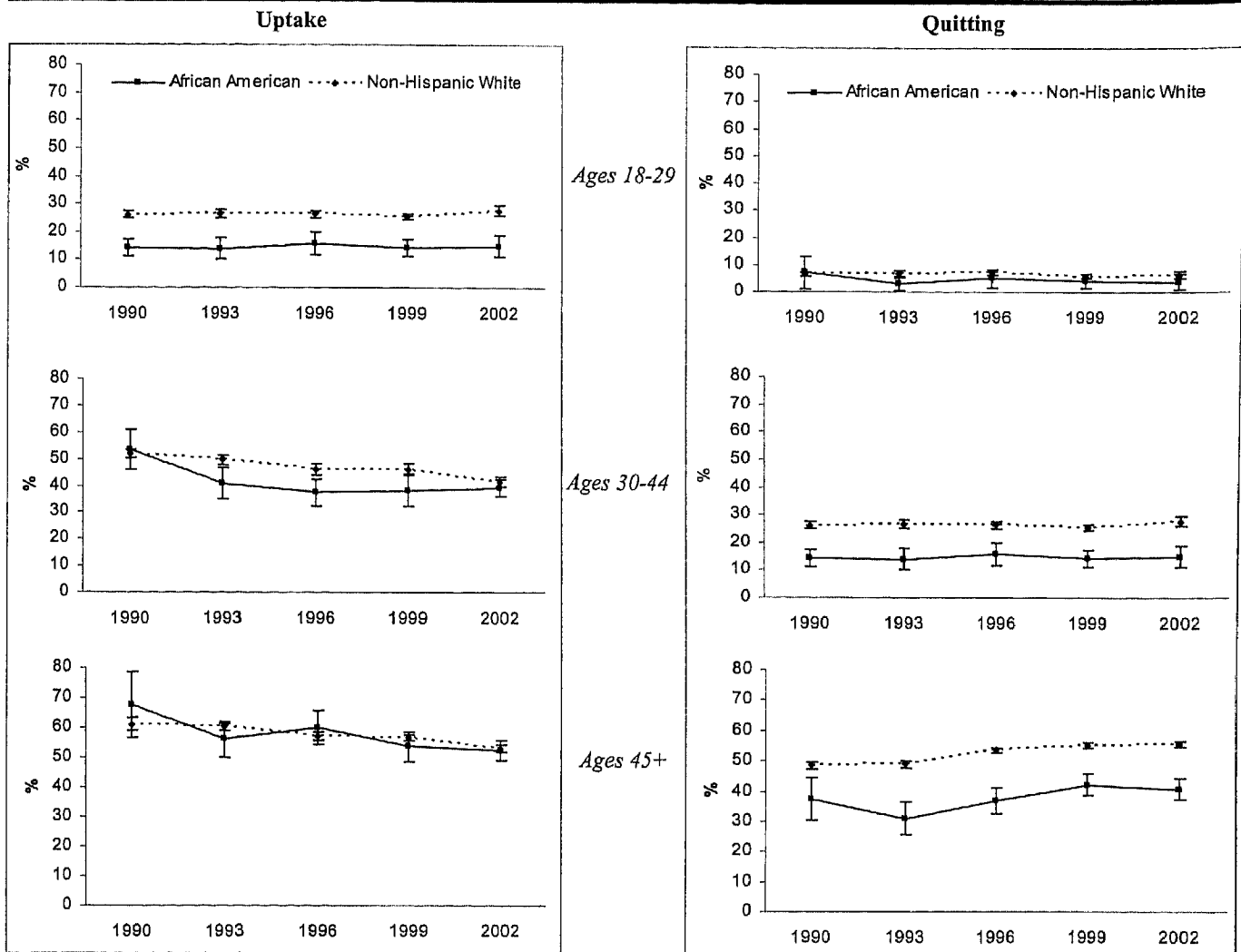


Fig 3. California ever smoking (uptake) and long-term quitting, 1990–2002, by age group and race/ethnicity

greater recent declines among non-Hispanic Whites. Young adult African Americans have exhibited lower current prevalence rates than non-Hispanic Whites since 1993, probably reflecting the aging of adolescent cohorts with lower smoking prevalence earlier in the 1990s. The relatively lower prevalence for young adult African Americans, therefore, may be transitory and might not have a major effect on future overall adult prevalence differences, since in younger cohorts, the prevalence rates for both races were similar in 1999 and 2002. Current-smoking prevalence did not increase with age during young adulthood for African Americans, which

suggests that any delayed initiation that might have occurred among African Americans was offset by early quitting. However, since successful quitting among young adult African Americans appeared to somewhat lag behind that of non-Hispanic Whites, any appreciable delayed uptake is unlikely to have occurred.

If African-American adolescents had continued to show lower smoking rates than non-Hispanic Whites, we would predict that in future years, overall African-American adult smoking prevalence would decline as more recent cohorts of African-American adolescents and young adults get older and replace

the older cohorts with less successful cessation. Smoking uptake rates were not higher for African Americans compared to non-Hispanic Whites in any adult age group, so their higher current-smoking prevalence was completely due to less successful cessation. Nationally, the reduction of African-American adolescent smoking prevalence (perhaps despite some delayed initiation since the late 1970s) likely has contributed to lower adult rates.^{4,5,16,17} However, the convergence of adolescent smoking prevalence in 1999 and 2002 for the two races in California complicates the task of predicting future trends. If both adolescent groups continue to show low

African-American adolescent current-smoking prevalence was lower than that of non-Hispanic Whites in the early 1990s, but by 1999, adolescents of both races showed similar prevalence because of greater recent declines among non-Hispanic Whites.

and similar prevalence rates, future California adult rates for these cohorts will only remain equivalent if African Americans quit to the same extent as non-Hispanic Whites. Convergence in overall adult prevalence would occur faster if older African-American smokers can improve their rates of successful cessation.

The availability of the CTS data from 1990 to 2002 allowed us to gain some insights into the continued discrepancy between adult African-American and non-Hispanic White adult smoking prevalence. Although adolescent and some adult measures of smoking were from self-report, studies have found such measures to be valid, even when compared to biochemical measures. Some differences in misclassification, however, have been observed between African Americans and non-Hispanic Whites.¹⁸⁻²⁰ Additionally, some proxy reports of smoking status were employed for adults from the CTS screening interview, but this method can estimate smoking prevalence with minimal bias.²¹

Some researchers have attributed the reduced rates of adolescent smoking among African Americans to cultural and social influences (eg, parental prohibitions, social norms) that have lim-

ited smoking initiation.^{22,23} This change in the social acceptability of smoking within the African-American community was probably less influential among older age groups, who started smoking years earlier or who experienced delayed initiation.⁴⁻⁷ Some of these same forces may be acting to reduce smoking among non-Hispanic White adolescents in California.

Other research has also suggested that a contributing factor to the historically higher smoking prevalence among older African-American adults is that successful smoking cessation may occur much less frequently among African Americans than non-Hispanic Whites.^{11,24} Our results indicate that this is the case in California, with the disparity in successful smoking cessation being more evident in older age groups. Nationally, a disproportionate amount of smoking cessation efforts are targeted at African Americans relative to other racial groups, which may explain in part the convergent trends.^{1,8,25} Either such a focus on cessation may not be as strong in California (because African Americans make up a relatively small percentage of the total California population); or, such an effort has been made, it has not been as effective. Regardless, increased attention to promoting cessation is needed, particularly among older age groups of California African Americans, who face increased risks for the deleterious health effects of smoking and who could greatly benefit from such efforts.^{5,26,27}

In summary, our results suggest that California African-American adult smoking prevalence will remain higher than that for non-Hispanic Whites for some time, unless successful quitting can be increased among older age groups. If recent adolescent cohorts continue to show equivalently low rates of smoking, this finding should translate into further reductions in smoking prevalence among adults in both races during the next decade. However, to maintain racial equity, these new cohorts of

African-American smokers will need to quit as successfully as their non-Hispanic White counterparts.

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AUTHOR CONTRIBUTIONS

Design and concept of study: Trinidad, Gilpin, Pierce

Acquisition of data: Gilpin, Pierce, White

Data analysis and interpretation: Trinidad, Gilpin, Pierce, White

Manuscript draft: Trinidad, Gilpin, Pierce

Statistical expertise: Gilpin, White

Acquisition of funding: Trinidad, Pierce

Administrative, technical, or material assistance: Pierce

Supervision: Gilpin, Pierce