TITLE: Smoking Trends and Disparities among African American and Non-Hispanic Whites in California

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ABSTRACT

Objectives: The current study examined disparities in smoking trends across African Americans and non-Hispanic whites in California.

Methods: Data from the 1996 to 2008 California Tobacco Survey were analyzed to examine trends in smoking behaviors and cessation across African Americans and non-Hispanic whites.

Results:

A decrease in overall ever and current smoking was observed for both African American and non-Hispanic whites across the 12-year time period. A striking decrease in proportions of heavy daily smokers for both African American and non-Hispanic whites were observed. Proportions of light and intermittent smokers (LITS) and moderate daily smokers displayed modest increases for African Americans but large increases for non-Hispanic whites. Increases in successful cessation were also observed for African Americans and, to a lesser extent, for non-Hispanic whites.

Discussion:

Smoking behavior and cessation trends across African Americans and non-Hispanic whites were revealing. The decline in heavy daily and former smokers may demonstrate the success and effectiveness of tobacco control efforts in California. However, the increase in proportions of LITS and moderate daily smokers for both African Americans and non-Hispanic whites demonstrates a need for tobacco cessation efforts focused on lighter smokers.

INTRODUCTION

African Americans suffer disproportionately from tobacco-related diseases compared to non-Hispanic whites.[1-3] In the state of California, African Americans have the highest smoking-related morbidity and mortality,[4] and also bear the greatest burden of smoking-related economic impact and productivity loss.[5] Historically, California has had some of the most consistent and strongest tobacco control efforts in the U.S. Despite these efforts, the overall smoking rate for African American adult males in California in 2010 (18.4%) was roughly equivalent to the rate among non-Hispanic white males in 1990 (18.1%),[6] demonstrating a significant disparity in reducing smoking rates among African Americans relative to non-Hispanic whites. We aim to better understand the nature of this disparity by examining trends in specific smoking-related measures for both African Americans and non-Hispanic whites in California since the 1990s.

In the U.S., African Americans smoke fewer cigarettes per day and are more likely to be non-daily smokers than non-Hispanic whites[7] yet have elevated risk of lung cancer.[8] Studies among young adults show that African Americans had a higher proportions of intermittent smoking (65.5% vs. 47.2%, respectively) among past month users compared to non-Hispanic whites.[9] Other studies have found that African Americans on average smoked fewer cigarettes per day and had higher proportions of non-daily or intermittent smoking compared to non-Hispanic whites.[2,7] Despite lower consumption rates, African Americans have equal or greater risk of developing lung cancer compared to their non-Hispanic white counterparts.[8,10,11,8,12]

Health disparities among African Americans are also apparent in quitting behaviors. National data show that in 2012, more African Americans attempted to quit compared to non-Hispanic whites (49.3% vs. 40.9%, respectively) and fewer African American adult ever smokers actually quit compared to non-Hispanic whites (44.1% vs. 57.1%, respectively).[1-3,9] In

California, the pattern is similar with more African American smokers attempting to quit in the past year compared to non-Hispanic whites (72% vs. 54%, respectively), yet the prevalence of former smokers are similar between African Americans and non-Hispanic whites (17.1% vs.18.6%).[4,6]

While reporting of such marked disparities in smoking prevalence from single time points are important, no peer-reviewed studies have examined *trends* in specific smoking behaviors that contribute to the overall smoking rates for African Americans relative to non-Hispanic whites in California, a state with one of the most active and longest-running comprehensive tobacco control programs in the U.S. The current study examines smoking consumption trends with particular attention to the lower levels of consumption, intermittent smoking, and smoking cessation levels among African American and non-Hispanic white populations in California. Such information will contribute to a greater understanding of smoking disparities for African Americans in a state that has invested heavily in tobacco control efforts, and will inform future interventions that seek to reduce health disparities.

METHODS

Data Source

The California Tobacco Surveys (CTS) are large, population-based, random-digit-dialed telephone surveys that monitor changes in tobacco use and attitudes in California. As part of the evaluation program of the California Tobacco Control Program, the CTS has been conducted every 3 years, since 1990.[5,13] The present study utilizes data from the 1996, 1999, 2002, 2005, and 2008 surveys. The adult response rates ranged from 53% to 74% across the five surveys.[4,6,13-16] All surveys used a standardized screening interview to identify household members and to interview smokers and former smokers. The probability of selection was higher

for anyone who was reported by the screener respondent to have smoked in the past five years as compared to never smokers or long-term former smokers. Respondents to the CTS were given base weights reflecting their probability of being selected for an interview. These weights were adjusted further using Census data to reflect the California population. With these weights, population estimates were computed and then used to establish the percentage of California smokers who belonged to various subgroups. The detailed methods for each CTS are described elsewhere.[4,6,7,13,16]

Measures

Demographic Characteristics

Demographic measures of interest included age (18-34 years, 35-49 years, 50-64 years, and 65 years or older), gender, level of education (less than high school, high school graduate, some college, and college graduate), and self-reported race/ethnicity. We used the US Census categories that defined Hispanic/Latino ethnicity and then identified the respondent's race as non-Hispanic white or African American.

Cigarette Consumption

CTS survey respondents were asked, "Have you ever smoked 100 cigarettes?" Respondents were considered ever smokers if they answered yes. Ever smokers were further asked, "Do you now smoke every day, some days, or not at all?" Those who reported smoking every day or some days were considered current smokers. All current smokers were also asked to report the number of cigarettes they consumed on the days when they smoked. Light daily smokers were defined as those every day smokers who consumed 0-5 cigarettes per day, moderate daily smokers were those every day smokers who consumed 6-19 cigarettes per day, and heavy daily smokers were those every day smokers who consumed 20 or more cigarettes per

day.[17] Those who indicated that they smoked only some days were considered intermittent smokers (i.e., occasional/non-daily smokers). Light daily smokers and intermittent smokers (LITS) were combined into a single category.[17,18] Former smokers were defined as ever smokers who reported not smoking at the time of the survey. Former smokers were further asked when they last had a cigarette. Quit dates were ascertained and quit length was calculated from the point of interview. Reporting abstinence for at least 6 months at the time of the survey was chosen as a marker of long-term successful cessation[9,19] and quit rates were calculated as a ratio of successful quitters over ever smokers. Because the overall smoking prevalence rates in the U.S. have declined substantially during the study period and we are primarily interested in the trends in consumption patterns within ethnic/racial groups, we report the prevalence of current and former smokers with the denominator being ever smokers. We use the proportion of the consumption variable of interest (i.e., LITS, moderate smokers, heavy smokers) over the subpopulation of current smokers within ethnic/racial groups to report prevalence for those respective variables.

Statistical Analysis

All estimates were weighted by CTS survey weights, which account for selection probabilities from the sampling design and adjust for survey nonresponse.[2,4,6,7,13,16] All estimates were computed in SAS version 9.3[10,11,20] and variance estimates were computed by using the published CTS replicate weights for use with jackknife procedures[21]. All unadjusted prevalence rates reported in Table 1 and in our figures were computed as weighted proportions by using SAS PROC SURVEYMEANS and PROC SURVEYFREQ for non-Hispanic whites and African Americans separately. Further methodological information for the CTS is described elsewhere.[6]

RESULTS

Demographic Characteristics

Demographic information from 1996 to 2008 for African Americans and non-Hispanic whites are presented in Table 1. African Americans in the 18-34 and 35-49 age groups declined from 41.6% (±2.8) in 1996 to 30.4% (±3.7) in 2008, though both groups accounted for higher proportions of the population throughout the 12-year period. Similarly, non-Hispanic whites in the 18-34 age group declined from 29.0% (±1.0) in 1996 to 21.7% (±1.6) in 2008. This likely reflects the general population shift during this time period.[22]

For both African Americans and non-Hispanic whites, the proportions of men remained between 43.8% and 50.1%. The proportion of African Americans reporting to be college graduates increased from 20.9% (± 8.6) in 1996 to 29.5% (± 2.6) in 2008. Similarly, non-Hispanic whites had an increase in college graduates between 1996 (32.1% ± 2.3) and 2008 (45.8% ± 1.9).

Cigarette Consumption

Table 1 also presents cigarette consumption information for African Americans and non-Hispanic whites between 1996 and 2008. Among African Americans, there was a 13.3% decrease in the proportion of ever smokers between 1996 (42.1% ± 2.3) and 2008 (36.5% ± 2.1). Non-Hispanic whites showed a decrease of 12.2% during between 1996 (49.9% ± 0.6) and 2008 (43.8% ±1.6).

Current Smokers

There was a 25.4% decrease in the number of current smokers among African American ever smokers between 1996 (56.3% ± 3.9) and 2008 (42.0% ± 4.4). The proportion of current

smokers among non-Hispanic white ever smokers showed a similar decrease of 24.8% between 1996 (40.0% ± 0.7) and 2008 (30.1% ± 1.3). Table 1 further presents the prevalence of LITS, moderate daily smokers, and heavy daily smokers among African American and non-Hispanic white current smokers.

Light daily smokers and intermittent smokers (LITS). The proportion of LITS among African American current smokers increased 22.7% between 1996 (37.0% ± 5.5) and 2008 (45.4% ± 10.2). The proportion of LITS among non-Hispanic white current smokers increased from 22.4% (± 1.4) in 1996 to 38.8% (± 3.3) in 2008, indicating an increase of 73.2 % over the study period (see Figure 1).

Moderate daily smokers and heavy daily smokers. Figure 2 shows the proportion of moderate daily smokers among African American current smokers increased 33.9% between 1996 (39.5% ± 5.0) and 2008 (52.9% ± 10.4). In comparison, the proportion of moderate daily smokers among non-Hispanic white current smokers increased 45.4% between 1996 (32.4% ± 1.6) and 2008 (47.1% ± 3.7). Figure 2 also reveals dramatic decreases in the percentage of heavy daily smokers among both African American and non-Hispanic white current smokers over the 12-year study period. The proportion of heavy daily smokers among African American current smokers was 23.5% (± 3.7%) in 1996 compared to 1.7% (± 1.3) in 2008, a decrease of 92.8%. The number of heavy daily smokers among non-Hispanic white current smokers decreased 68.8% between 1996 (45.2% ± 1.8) and 2008 (14.1% ± 2.3).

Former Smoking and Successful Quitting

The proportion of African American former smokers who were successful quitters (abstaining completely for six months or more) was 34.0% (± 5.0) in 1996 compared to 46.2% (±

4.6) in 2008, demonstrating an approximate increase in successful quitting of 35.9% over the 12-year period. The number of successful quitters among non-Hispanic white former smokers increased approximately 20.4% between 1996 (50.4% ± 1.0) and 2008 (60.7% ± 2.8). Although the magnitude of the increase among African Americans is higher than that of non-Hispanic whites, the proportion of successful African American quitters in 2008 was very similar to the proportion of successful non-Hispanic White quitters in 1996.

DISCUSSION

This study examined specific changes in cigarette consumption levels and former smoking and successful quitting among African American and non-Hispanic white populations in California between 1996 and 2008. Decades of tobacco control measures appear to have had a positive effect on reducing cigarette consumption for both African Americans and non-Hispanic whites in California. Our findings are consistent with other studies that demonstrate reductions in smoking prevalence in overall California populations, which have led to $134 billion in healthcare expenditure savings in the state.[17,23] These prior studies attribute the decline to reduced smoking initiation and surmised that more people were quitting. Our findings support the latter and also suggest there has been an overall shift toward lower consumption levels among African American and non-Hispanic whites. A closer look at how these consumption levels changed across time revealed important differences that could impact how to target intervention and cessation efforts.

The decrease in heavy daily smoking among current smokers is unprecedented. To our knowledge, the 93% drop in heavy daily smoking among African Americans and the nearly 70% drop among non-Hispanic whites has not been previously reported in peer-reviewed literature. These rates of decrease are staggering and in the promising direction of reducing the impact of

tobacco on health. Although there was a sharp decrease in heavy daily smoking, it does not directly point to a sharp increase in quitting among either African Americans or non-Hispanic whites. The data also show that the disparities gap in heavy smoking decreased. This is evident when examining the difference in prevalence between African American heavy smokers and non-Hispanic white heavy smokers in 1996 and compared that difference in 2008. Despite this, African Americans still show higher rates of overall current smoking among ever smokers compared to non-Hispanic whites.

The prevalence of former smokers moderately increased over time for both African Americans and non-Hispanic whites throughout the 12-year period. This is a positive indication that tobacco control efforts had an impact on smoking cessation. The increase of former smokers observed is promising but African Americans lagged behind non-Hispanic whites in this regard. The proportion of African American former smokers in 2008 was near the levels of non-Hispanic whites in 1996, showing a 12-year lag and a major disparity in cessation progress among African Americans in California.[14] This suggests that more effective tobacco control policies and cessation programs are required to address the specific needs of African Americans who may experience more difficulty in quitting. This quitting difficulty may be due to menthol cigarette smoking, particularly the higher rates of menthol smoking among African Americans and other racial/ethnic minorities.[24-30] There are various hypothesized mechanisms on how menthol contributes to quitting difficulty, including menthol facilitating a deeper intake of carbon monoxide and nicotine per cigarette,[31-33] menthol itself might act on nicotine metabolism by slowing it down and allowing more nicotine exposure,[31] or the mentholated products contained higher levels nicotine[28,29] all potentially contributing to the disparity in quitting behaviors observed between African American and non-Hispanic whites in this study.

The increases among LITS, particularly the higher proportions of African Americans and the growing proportions among non-Hispanic whites, are both notable. LITS among African Americans were higher than among non-Hispanic whites in the 1990s and continued to increase through 2008. In comparison, the rate of increase among non-Hispanic whites was much steeper over the 12-year period, yet the proportion of LITS in 2008 was similar to that of the African American proportion in 1996. It is encouraging to observe lower levels of consumption across both populations, particularly the marked increase of LITS among non-Hispanic whites. However, one concern is that the rate of increase among African Americans was much less than that for non-Hispanic whites. These findings highlight the need for more in-depth study of the patterns in consumption levels between African Americans and non-Hispanic whites.

While it may seem encouraging to observe increases in light and intermittent smoking, the increase still poses a significant public health problem. Light and intermittent smoking can carry nearly the same health risks for cardiovascular disease and lower respiratory tract infections as daily smoking[34,35] and increased risk for cancer and other morbidity and mortality factors than those who never smoked.[34-36] Furthermore, light and intermittent smoking appears to be a growing problem among younger adults,[37-39] indicating a need for targeted prevention and cessation programs specific for LITS. The health risks associated with light and intermittent smoking among African Americans are of significant concern. African American LITS are still twice as likely to be diagnosed with lung cancer as non-Hispanic whites and Latinos.[7,8] Thus, LITS are an important group to target for cessation efforts to reduce the health disparity. However, more research is needed to understand the correlates and predictors of light and intermittent smoking and quitting behaviors, particularly among African Americans.[40,41] There is evidence that LITS may have different motives for smoking,[42] don't identify as smokers,[43,44]

do not perceive to have elevated health risks[36,45] or addiction risk,[46] and are over-confident in their ability to successfully quit smoking.[47,48] Those who recently transitioned from daily smoking to non-daily or occasional smoking may be more motivated to quit, having tried to quit more often, more recently, and with cessation aids than established non-daily smokers.[40,49] Together, the evidence suggests that as the LITS proportion of current smokers grows, more attention will be needed to address the specific needs of the diverse group that make up LITS.

Limitations

Although the CTS are established population-based surveys conducted over multiple years, the data are cross-sectional. Thus, person-level changes in the magnitude of consumption could not be evaluated because of the design of this study. Our study does not examine psychosocial factors associated with observed trends or examine within racial/ethnic groups differences, all of which are important future directions that will provide clarity on why consumption levels differ within and between racial/ethnic groups.

Our study is limited to African American and non-Hispanic white adults in California between 1996 and 2008. Therefore, the generalizability of the results should be considered carefully in light of these limitations. While this study focused on African American and non-Hispanic whites because of the clear health disparities present between these groups, it should not discount the importance of other racial/ethnic groups[50-52] that could also provide key insight on how groups differ in consumption and quitting patterns and how we might develop targeted interventions to move populations toward successful quitting. Future tobacco control programming and studies should consider a comprehensive approach with special consideration for these vulnerable groups.

It is important to consider the impact of mentholated product use among African American smokers. Approximately 70% of African American adult smokers choose mentholated cigarettes compared to less than 30% of other racial/ethnic groups.[53-55] Smokers who use mentholated products are less likely to have experienced long-term quitting success[27,56] and more likely to experience nicotine addiction.[28,57-61] Although the CTS contained questions regarding cigarette brand preference, it did not assess menthol use specifically. Future studies need to assess brand and type of cigarettes used by participants, particularly because mentholated products are heavily marketed[62,63] and have high prevalence of use among African American and other minority communities.[18,55,57,64]

The definition of light smoking has changed in recent years from about ten cigarettes per day to five cigarettes per day, as we have used in this study.[18] Lower consumption levels today may reflect differential physiologic addiction and/or psychosocial factors related to dependence such as stress, depression, and self-efficacy.[65] This indicates the need for further investigation on the design of targeted cessation programs that address the specific needs of African Americans and the growing proportions of LITS in the population.

Conclusion

The significant decline in heavy daily smoking, especially among African American adults, is a laudable achievement in tobacco control. However, more attention to LITS consumption levels and successful cessation are needed to reduce tobacco-related diseases and death, especially as cigarette consumption levels decrease among smokers from multiple ethnic groups. With greater proportions of smokers consuming less than a pack a day or smoking intermittently, future research is necessary to understand the needs of this growing smoking

demographic in order to design successful tobacco control programs to prevent uptake or increase successful cessation among this population and among diverse racial/ethnic groups.

The CTS population data were last collected in 2008, thus our results are confined to the period prior to the implementation of the 2009 Family Tobacco Prevention Act, in which regulatory authority was given to the Federal Drug Administration for the oversight of tobacco products. Despite this, the results of this study continue to be important for today's tobacco control climate. Observing how patterns of consumption changed across time gives context to who may be vulnerable to new and emerging tobacco products that have since emerged. The proportion of heavy users of cigarettes may have diminished substantially but our results indicate that these users are not quitting completely and therefore may be at increased risk for other tobacco product use. Thus, understanding that disparities exist in the consumption levels of cigarettes and that differences in policies may contribute to ethnic/racial disparities remains an important area of study.

The California Tobacco Control Program (CTCP) appears to have had a powerful impact on reducing heavy smoking prevalence among African American and non-Hispanic white populations.[17]. While this is commendable, the funding for CTCP in recent years has diminished substantially.[4,23,66-68] The total funding for tobacco control programs in California is only meeting 15.5% of the CDC Best Practices funding recommendations[69] earning California an "F" grade in tobacco control by the American Lung Association. Where most states have increased cigarette taxes, California has remained stagnant since 2000 at just $.87 per pack of 20 further dropping the state's ranking to 33rd.[69] Thus, the great gains in reducing cigarette consumption, particularly among heavy smokers, may be jeopardized without continued comprehensive tobacco control programs in place. Furthermore, studies are needed to assess how to advance

LITS and moderate smokers toward cessation and examine which factors contribute to successful quits among these lighter consumers.

The findings of this study demonstrate patterns in cigarette consumption among African Americans and non-Hispanic whites in California across time. Significant declines in heavy smoking and the diffused increases among moderate smokers and LITS indicate a need for more efforts to move smokers toward successful cessation. Studies that identify successful quitting modalities for lower consumption levels, particularly taking into account racial/ethnic differences that may affect physiologic addiction and cultural factors, are crucial for continued reductions in tobacco-related diseases. Understanding these changes in consumption levels and how they may be different for African Americans and non-Hispanic white populations may better inform public health efforts to curb tobacco related health disparities.

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DECLARATION OF INTEREST

None declared.

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Figure 1. Proportion of light daily smokers (i.e., consumption of 0-5 cigarettes per day) and intermittent smokers (i.e., occasional/non-daily smokers) among African American and non-Hispanic white current smokers between 1996 and 2008

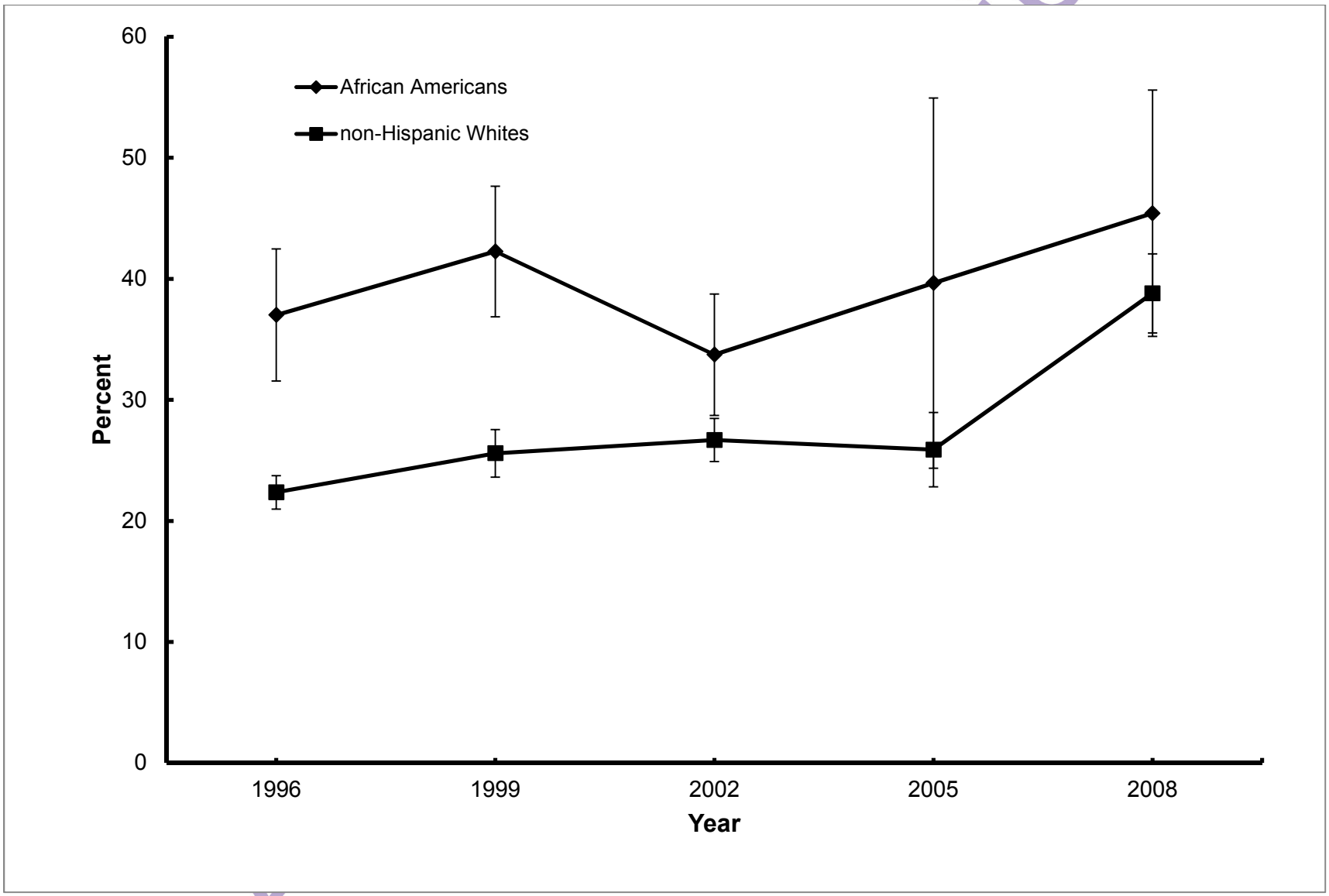

Figure 2. Proportion of moderate daily smokers (i.e., consumption of 6-19 cigarettes per day) and heavy daily smokers (i.e., consumption of 20 or more cigarettes per day) among African American and non-Hispanic white current smokers between 1996 and 2008

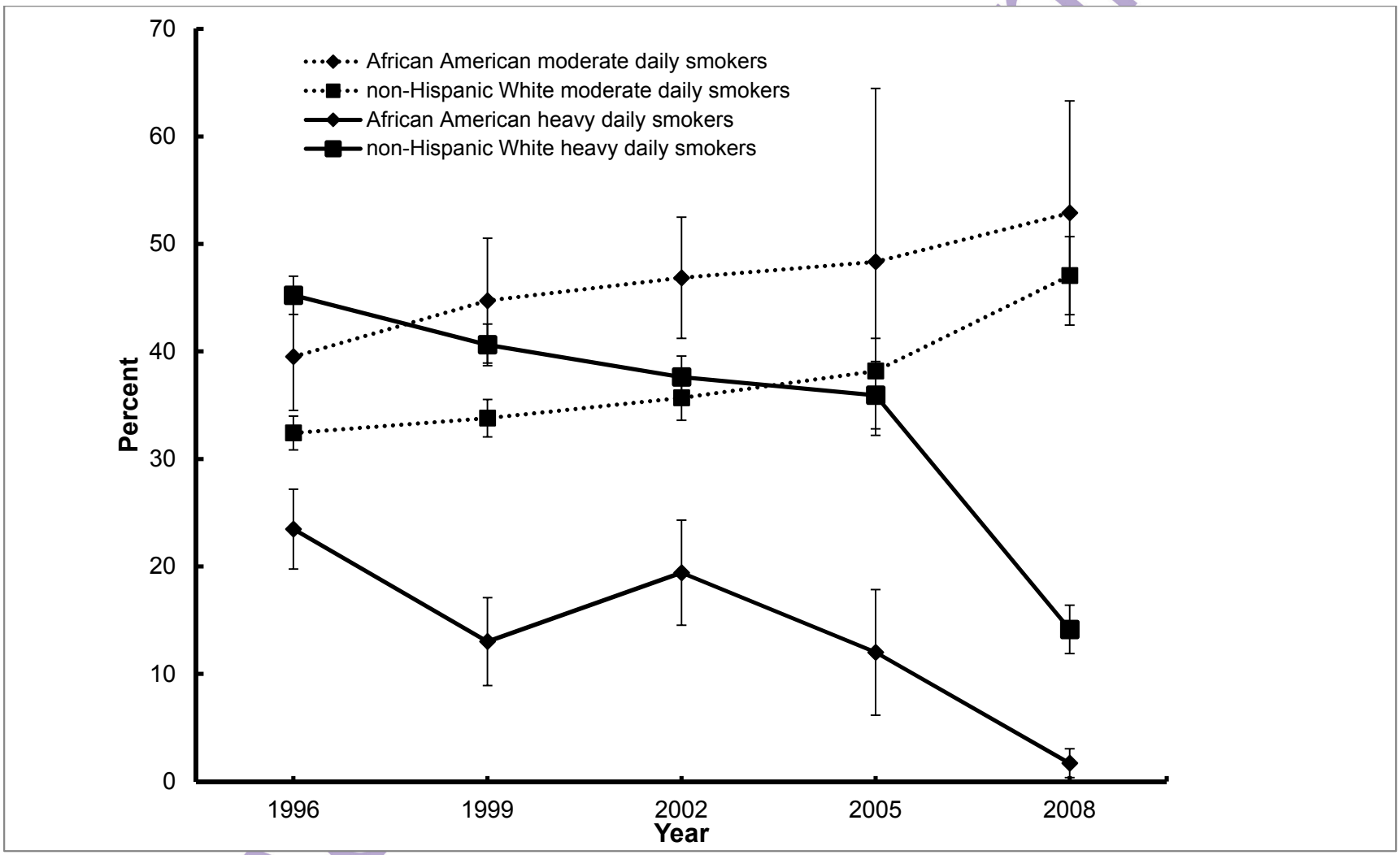

TABLE 1a - Demographic Characteristics and Smoking Behaviors, African Americans, 1996-2008

	1996			1999			2002			2005			2008		
	unweighted n=1132			unweighted n=758			unweighted n=1660			unweighted n=1489			unweighted n=1553		
	%,	95% CI		%,	95% CI		%,	95% CI		%,	95% CI		%,	95% CI	
Age															
18-34	41.6	38.9	44.4	36.9	33.1	40.8	33.4	31.5	35.3	32.2	28.3	36.0	30.4	26.7	34.1
35-49	33.3	30.2	36.4	31.2	26.9	35.5	33.8	31.0	36.6	33.3	28.1	38.5	30.3	26.8	33.7
50-64	14.4	11.9	17.0	18.4	14.8	22.1	21.1	19.4	22.8	20.7	17.3	24.1	20.5	18.5	22.4
65+	10.6	8.1	13.1	13.4	10.1	16.8	11.7	10.1	13.3	13.8	10.6	17.1	18.9	17.3	20.5
Sex															
Male	47.4	43.1	51.7	43.8	39.5	48.2	48.2	45.1	51.4	45.1	40.1	50.1	49.3	43.9	54.8
Female	52.6	48.3	56.9	56.2	51.8	60.5	51.8	48.6	54.9	54.9	49.9	59.9	50.7	45.2	56.1
Education															
Less than high school	10.4	5.8	15.0	12.7	10.3	15.1	7.8	6.6	9.0	21.5	17.3	25.8	8.9	6.6	11.1
High school grad	26.1	18.1	34.2	26.1	23.1	29.0	27.2	25.3	29.0	20.6	16.5	24.6	27.2	24.8	29.5
Some college	42.6	33.7	51.5	38.0	33.8	42.1	40.6	38.1	43.2	32.4	29.1	35.6	34.4	31.5	37.4
College grad	20.9	12.3	29.5	23.3	20.2	26.3	24.4	22.5	26.3	25.5	22.3	28.8	29.5	26.9	32.1
Cigarette Consumption															
Never smokers	57.9	55.7	60.2	59.8	57.6	62.1	59.3	58.2	60.5	57.4	55.3	59.4	63.5	61.4	65.6
Ever smokers	42.1	39.8	44.3	40.2	37.9	42.4	40.7	39.5	41.8	42.6	40.6	44.7	36.5	34.4	38.6
Current smokers	56.3	52.4	60.2	50.4	47.0	53.7	47.2	45.4	49.0	49.8	45.8	53.7	42.0	37.6	46.4
Light and intermittent smokers	37.0	31.6	42.5	42.3	36.9	47.7	33.7	28.7	38.7	39.6	24.4	54.9	45.4	35.2	55.6
Moderate daily smokers	39.5	34.5	44.5	44.7	38.9	50.5	46.8	41.2	52.5	48.3	32.2	64.5	52.9	42.5	63.3
Heavy daily smokers	23.5	19.8	27.2	13.0	8.9	17.1	19.4	14.5	24.3	12.0	6.2	17.9	1.7	0.4	3.0
Former smokers	43.7	39.8	47.6	49.6	46.3	53.0	52.8	51.0	54.6	50.2	46.3	54.2	58.0	53.6	62.4

Note. CI = confidence interval; Percentages and 95%CI were calculated using weighted data. Current and Former smoker prevalence is calculated with the denominator as Ever Smokers; Consumption level prevalence, i.e. Light and intermittent smokers, moderate daily smokers, and heavy smokers, were calculated using current smokers as the denominator.

TABLE 1b - Demographic Characteristics and Smoking Behaviors, Non-Hispanic whites, 1996-2008

	1996	1999	2002	2005	2008
	unweighted n=12846	unweighted n=9410	unweighted n=11163	unweighted n=7542	unweighted n=5156
	%, (95% CI)	%, (95% CI)	%, (95% CI)	%, (95% CI)	%, (95% CI)
Age					
18-34	29.0 (28.0 , 30.0)	27.8 (26.9 , 28.7)	26.7 (25.7 , 27.7)	22.3 (20.6 , 23.9)	21.7 (20.2 , 23.3)
35-49	32.3 (31.0 , 33.6)	31.8 (30.6 , 33.0)	31.6 (30.1 , 33.0)	30.1 (28.0 , 32.2)	30.2 (28.2 , 32.1)
50-64	20.5 (19.6 , 21.5)	21.2 (20.2 , 22.1)	22.1 (20.9 , 23.3)	24.8 (23.0 , 26.6)	26.2 (24.4 , 28.0)
65+	18.2 (17.3 , 19.1)	19.2 (18.1 , 20.2)	19.6 (18.5 , 20.7)	22.8 (20.9 , 24.6)	21.9 (19.9 , 24.0)
Sex					
Male	49.6 (48.7 , 50.6)	48.7 (47.7 , 49.8)	49.9 (48.4 , 51.5)	49.9 (47.3 , 52.4)	50.1 (47.7 , 52.4)
Female	50.4 (49.4 , 51.3)	51.3 (50.2 , 52.3)	50.1 (48.5 , 51.6)	50.1 (47.6 , 52.7)	49.9 (47.6 , 52.3)
Education					
Less than high school	9.2 (7.9 , 10.5)	8.1 (7.7 , 8.6)	7.7 (7.6 , 7.9)	6.8 (6.6 , 7.0)	3.4 (2.7 , 4.1)
High school grad	23.4 (21.3 , 25.4)	23.2 (22.5 , 24.0)	19.4 (18.7 , 20.1)	21.4 (20.8 , 22.0)	22.1 (21.0 , 23.2)
Some college	35.2 (32.8 , 37.5)	34.3 (33.2 , 35.5)	33.2 (31.9 , 34.5)	31.8 (29.3 , 34.3)	28.7 (26.8 , 30.7)
College grad	32.1 (29.8 , 34.4)	34.2 (33.2 , 35.2)	39.6 (38.4 , 40.8)	40.0 (37.6 , 42.5)	45.8 (43.9 , 47.7)
Cigarette Consumption					
Never smokers	50.1 (49.5 , 50.7)	49.7 (49.1 , 50.4)	53.5 (52.8 , 54.1)	54.0 (52.2 , 55.9)	56.2 (54.6 , 57.7)
Ever smokers	49.9 (49.3 , 50.5)	50.3 (49.6 , 50.9)	46.5 (45.9 , 47.2)	46.0 (44.1 , 47.8)	43.8 (42.3 , 45.4)
Current smokers	40.0 (39.3 , 40.7)	38.6 (37.9 , 39.3)	36.8 (36.1 , 37.5)	32.2 (30.5 , 34.0)	30.1 (28.8 , 31.4)
Light and intermittent smokers	22.4 (21.0 , 23.7)	25.6 (23.6 , 27.5)	26.7 (24.9 , 28.5)	25.9 (22.8 , 29.0)	38.8 (35.5 , 42.1)
Moderate daily smokers	32.4 (30.8 , 34.0)	33.8 (32.0 , 35.5)	35.7 (33.6 , 37.8)	38.2 (35.1 , 41.2)	47.1 (43.4 , 50.7)
Heavy daily smokers	45.2 (43.5 , 47.0)	40.6 (38.7 , 42.6)	37.6 (35.7 , 39.6)	35.9 (32.8 , 39.1)	14.1 (11.9 , 16.4)
Former smokers	60.0 (59.3 , 60.7)	61.4 (60.7 , 62.1)	63.2 (62.5 , 63.9)	67.8 (66.0 , 69.5)	69.9 (68.6 , 71.2)

Note. CI = confidence interval; Percentages and 95%CI were calculated using weighted data. Current and Former smoker prevalence is calculated with the denominator as Ever Smokers; Consumption level prevalence, i.e. Light and intermittent smokers, moderate daily smokers, and heavy smokers, were calculated using current smokers as the denominator.