



Examining Policy Successes in Reducing Low-Socioeconomic Adult Smoking Rates

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Abstract

Adults of lower socioeconomic status (SES) smoke at nearly twice the rate of those not living in poverty; low-SES populations have a higher rate of smoking uptake, lower rate of cessation and suffer from higher rates of preventable, smoking-related chronic disease and death. Smoking rates among New York low-SES African-American and White adults remain significantly higher than their higher-earning counterparts.

This epidemiologic study examined the association of comprehensive tobacco control policy initiatives on key tobacco use indicators in the most vulnerable populations.

In 2011 the smoking rate among New York Blacks, Whites, and Latinos earning over \$25,000 was 13.4%, 14.0% and 15.3%, respectively.

These figures did not significantly change by 2014. For those earning under \$25K per year, the smoking rate for Blacks declined to 22.1% in 2014 from 30.4% in 2011; for Whites it declined to 26.4% in 2014 from 31.5% in 2011; and for Latinos it declined from 21.1% to 13.6%.

Results suggest that although smoking rates among low-SES populations are generally higher, these groups are benefitting from current tobacco control policy initiatives. To determine how policy may influence behavior in target populations and which tobacco use behaviors are changing over time we examined indicators, including rates of low/untaxed cigarette purchases, anti-tobacco media awareness, in-home smoke free policies, quitline or quitsite access, as well as quit attempts, provider assistance, and reasons given by smokers for making quit attempts.

Methods

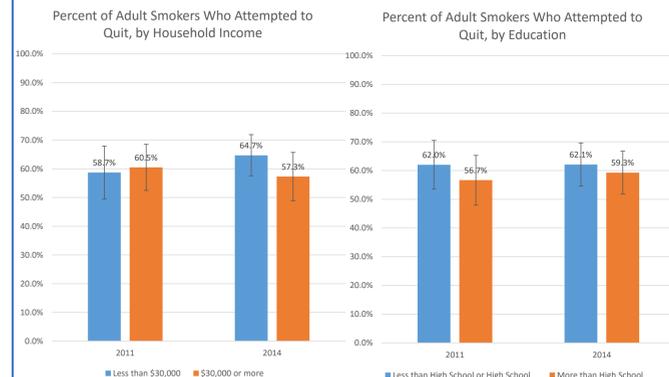
Data from the Behavioral Risk Factor Surveillance System (BRFSS) and the Adult Tobacco Survey (ATS) were analyzed to assess disparities among income and education groups of adult smokers. BRFSS is a random-digit dial telephone survey of adults administered by the Centers for Disease Control and Prevention (CDC). The ATS was developed by the New York Tobacco Control Program in partnership with an independent evaluator. The ATS assesses (a) adult tobacco-related behavior, attitudes, and beliefs; (b) tobacco purchasing and cessation attempt behavior; (c) health status and health-related problems; (d) attitudes toward and exposure to secondhand smoke; (e) perceptions of risk related to tobacco use; (f) exposure to tobacco advertising or anti-tobacco health communications; and (g) attitudes toward other smoking policies. The BRFSS weighted sample sizes of smokers in New York (coinciding with prevalence rates of 18.1 in 2011 and 14.4 in 2014) were 2,701,000 for 2011 and 2,084,000 for 2014. BRFSS uses \$25,000 as the household income cutoff, while ATS uses \$30,000. Unweighted sample sizes are as follows:

	2011	2014	2015
BRFSS	N=7735	N=6865	N/A
ATS	N=4251	N=4262	N=4186

Attempts to Quit Smoking

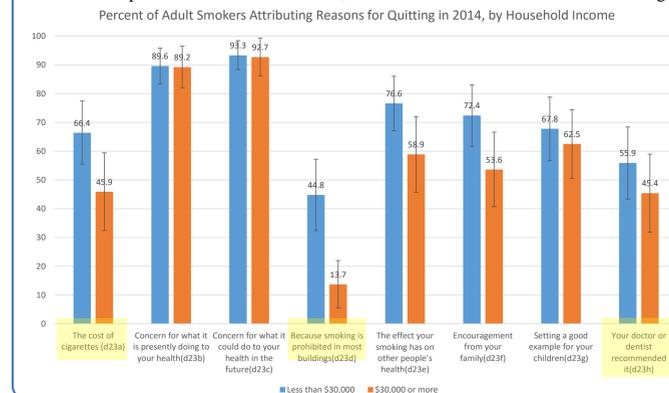
Low-income smokers are making quit attempts at a similar rate to higher-earning smokers over time and within a given year.

- In fact, the disparity of quit attempts among low-income and high-income adults appears to be increasing over time: In 2014, low-income adults and lower-educated adults were trying to quit smoking at higher rates than high-income adults and adults with higher education, respectively. Quit attempts between 2011 to 2014 increased by about 10 percent among low-income adults, whereas they decreased by about five and one-half percent among adults living in households with income above \$30,000.
- Interestingly, while, quit attempts increased among low-income adults between 2011 to 2014, the rate of quit attempts remained approximately stable among lower-educated adults within the same time period. This may reveal inconsistency in using education as a proxy for income in the context of quit attempts.



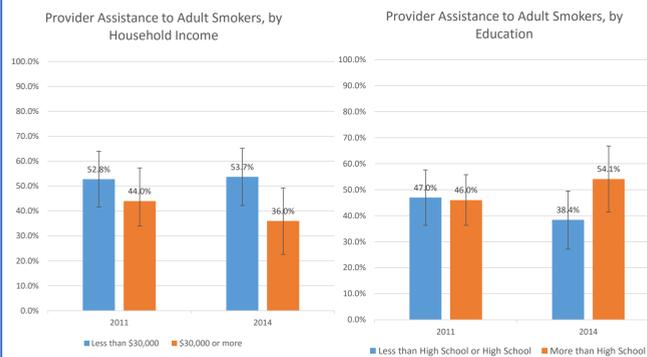
Clean air policies are reaching and affecting low-SES populations.

- Smokers were polled about several reasons for quitting. Personal health reasons for quitting, including concern over health effects of smoking, were consistently cited as the most prominent reasons for quitting across income and education levels.
- Across the board, low-SES adult smokers were more likely to affirm every different reason for quitting than high-SES adult smokers, with the most notable gaps being prohibition of smoking in most buildings. In fact, smokers from low-income households were three times as likely as high-income households to identify buildings' smoking prohibitions as a motivation to quit.
- Reduced inside smoking renders immediate and meaningful outcomes, including reduced exposure to secondhand smoke, increased cessation and social norm change.¹



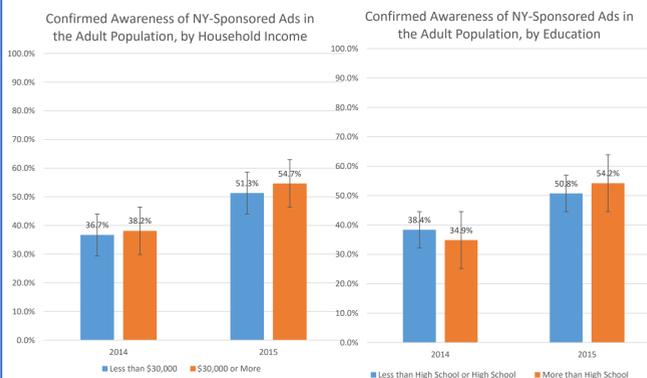
Provider Assistance Increasing to Low-SES Population

Provider assistance is the most likely way to increase quitting among current adult smokers and the best option for reducing prevalence over and above the attrition related to reducing youth smoking rates. Assistance accessing medication and counseling, by a health care provider, doubles likelihood of successful quitting.² When the rates of provider assistance to adults were examined across household income and education levels, seemingly contradictory results were found: higher-income adults received provider assistance at a rate one-third lower than low-income adults in 2014, while higher-education adults received provider assistance at a rate 42 percent higher than low-education adults in the same year. Most concerning is the trend of decreasing provider assistance to adults with low levels of education; the rate of provider assistance fell by 19 percent between 2011 and 2014.



Awareness of NY Anti-Smoking Campaign is Increasing

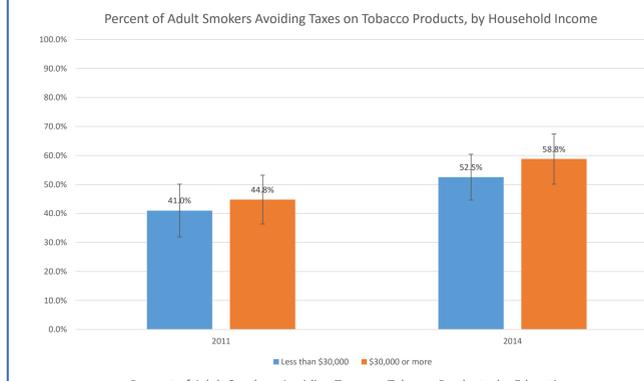
Confirmed awareness of ads sponsored by the state of New York is increasing for smokers and non-smokers alike, but may be rising faster among groups with higher income and education:



Confirmed awareness of sponsored ads continues to be similar (within 5 percentage points) among groups, but the rate of increase over time may have been slightly faster for high-SES adults. Improving confirmed awareness among the highest using populations, including low-SES and education, is important because it's associated with greater quit attempts and more calls to the New York quitline⁴ and thus a tool in helping reduce existing disparities in smoking rates and smoking-related health outcomes.

Price Policies Impact Low-SES Population

When cigarette prices significantly increase, consumption decreases, especially among price sensitive populations such as youth and low-SES adults.³ Accordingly, price policies, including taxes, are an important mechanism for tobacco control. To examine potential disparate impact, survey participants were asked about tax avoidance behavior, which includes purchasing tobacco products online, from Indian reservations, out-of-state, or at duty-free shops. The latest tax increase in New York was 2010, made New York the state with the highest excise tax in the nation and was followed by increasing tax avoidance behavior. Low-income and low-education smokers are more affected by price policies, including taxes. When smokers were asked if they avoid taxes by purchasing tobacco products from low-tax or untaxed sources, low-income and low-education adults were slightly more likely to respond affirmatively. Yet, within 95 percent confidence intervals, similar rates of increasing tax avoidance were observed across income and education levels, showing limited evidence of disparate impact of changes in pricing policy. More research is needed on mechanisms to stabilize and reduce tax avoidance behavior.



No-Smoking Rules in the Home Steady

No-smoking rules within the home help deter adolescents and young adults from smoking.⁵ Respondents were surveyed about their in-home rules. This research question is multifactorial, and may be influenced by cultural norms, home ownership, family dynamics, geography, and building type. Low-income adults were about 12 percentage points less likely than high-income adults to have no-smoking rules in the home in 2014, while low-education adults were 10 percentage points less likely to have rules than adults with higher education. These rates remained relatively constant over the three-year period of 2011-2014.

Discussion

Comprehensive tobacco control appears to be working for those disparately affected by tobacco use. Low-income and low-education populations continue to use tobacco at higher rates than the general population, however, population disparities in rates of use and (perhaps) quit attempts are decreasing. Further and broader research is needed to determine which policies can best reduce the negative impact of tobacco on disparate populations, and to better understand how they can do so. Larger samples sizes could clarify relationships that may exist but could not be detected here. Prohibition of indoor smoking drives low-income and low-education smokers to quit. While several New York Housing Authorities have recently implemented smoke-free policies, it may be informative to track whether and how this factor changes after implementation of HUD's anticipated smoke-free policy. Taxes seem to be equally affecting different income and education groups over time. Given New Yorkers' proximity to Indian reservations, high-tech tax stamps may provide a partial solution to tax evasion, increasing retailer accountability for collecting eligible state tobacco taxes. A closer look is needed to determine whether reduced consumption tied to price increases is off-set by tax avoidance. No-smoking rules in the home remain relatively constant for each group, while confirmed awareness of state anti-smoking ads is increasing across groups. It is critical to improve the reach of ad campaigns to disparate populations. Similarly, policies promoting provider cessation assistance should be examined, specifically for how to continue recent progress on reaching low-income smokers and ways to improve reaching smokers with low levels of education.

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